UKIAH VALLEY BASIN
GROUNWATER SUSTAINABILITY AGENCY

Special Meeting
AGENDA

County of Mendocino Supervisors Chamber ♦ 501 Low Gap Rd. ♦ Ukiah, CA 95482

To participate or view the virtual meeting, go to the following link: *https://us06web.zoom.us/j/86074412428*

Alternatively, you may view the meeting (without participating) by clicking on the date and name of the meeting at www.cityofukiah.com/meetings, then go to the media tab.

December 15, 2025 - 3:00 PM

1. CALL TO ORDER AND ROLL CALL

2. APPROVAL OF AGENDA

3. AUDIENCE COMMENTS ON NON-AGENDA ITEMS

The Groundwater Sustainability Agency (GSA) Board welcomes input from the audience. If there is a matter of business on the agenda that you are interested in, you may address the Board when this matter is considered. If you wish to speak on a matter that is not on this agenda that is within the subject matter jurisdiction of the GSA Board, you may do so at this time. In order for everyone to be heard, please limit your comments to three (3) minutes per person and not more than ten (10) minutes per subject. The Brown Act regulations do not allow action to be taken on audience comments in which the subject is not listed on the agenda.

4. DISCUSSION AND POSSIBLE ACTION ITEMS

4.a. Technical Program Updates.

Recommended Action: Receive a technical presentation from Larry Walker Associates regarding Water Year 2025 Report development, Phase I Well Inventory, and the Upper Russian River Interconnected Surface Water Groundwater Dependent Ecosystem Study.

Attachments:

1. Technical Program Updates Presentation

4.b. Discussion of Well Inventory Phase II Activities and Fiscal Impact.

Recommended Action: Receive and consider Staff's recommendation to amend the On-Call Technical Support agreement with Larry Walker Associates to enable Well Inventory Phase II activities.

Attachments:

1. Considerations for Identifying and Addressing Drinking Water Well Impacts
2. Technical Memorandum: UVBGSA Well Inventory Phase 2

4.c. Discussion of Periodic Evaluation or Periodic Evaluation & Plan Amendment activities and Fiscal Impact

Recommended Action: Receive and consider staff's recommendation to conduct a Periodic Evaluation (PE) of the agency's Groundwater Sustainability Plan (Option 1: PE) and forgo the

combined option to conduct a Periodic Evaluation & Plan Amendment (Option 2: PE + PA), and authorize the General Manager to amend the On-Call Technical contract with Larry Walker Associates to enable that work.

Attachments:
1. Ukiah-Valley-Basin-GSP-Determination
2. GSP Implementation Guidance Report

4.d. Possible Approval of Cost-Sharing Agreement with the Small Groundwater Sustainability Agency Coalition.

Recommended Action: Receive and consider Staff's recommendation to enter into a cost-sharing agreement with the Small Groundwater Sustainability Agency Coalition.

Attachments:
1. Proposed Small GSA Cost Share Agreement
2. Scope of Work Advocacy and Admin

5. CONSENT CALENDAR

The following items listed are considered routine and will be enacted by a single motion and roll call vote by the GSA Board. Items may be removed from the Consent Calendar upon request of a Board Member or a citizen, in which event the item will be considered at the completion of all other items on the agenda. The motion by the Board Members on the Consent Calendar will approve and make findings in accordance with Staff recommendations.

5.a. Approval of the Minutes for the August 28, 2025, GSA Regular Meeting.

Recommended Action: Approve the Minutes for the August 28, 2025, GSA Regular Meeting.

Attachments:
1. 2025-08-28 UVBGSA Draft Minutes

6. STAFF AND PARTNER UPDATES

6.a. Updates from General Manager

Recommended Action: Receive updates from the General Manager regarding ongoing implementation of agency activities and review of the City of Ukiah's Administrative Services Agreement.

Attachments:
1. UVBGSA Staff Update Presentation

6.b. Updates from GSA Legal Counsel.

Recommended Action: Receive updates from GSA Legal Counsel.

7. FUTURE AGENDA ITEMS AND SET NEXT MEETING DATE

7.a. Discussion and Consideration of Future Agenda Items and Scheduling of Next Meeting Date with Meeting to be Held at the County of Mendocino, Board of Supervisors Chamber, 501 Low Gap Rd., Ukiah, CA 95482, at 1:00 p.m.

Recommended Action: Discuss and get consensus to hold the next regular meeting on the scheduled date of March 12, 2026, at 1:00 p.m., or to schedule another day of the Member's choosing.

8. ADJOURNMENT

Please be advised that the Ukiah Valley Basin Groundwater Sustainability Agency (GSA) Board needs to be notified 24 hours in advance of a meeting if any specific accommodations or interpreter services are needed in order for you to attend. The GSA Board complies with ADA requirements and will attempt to reasonably accommodate individuals with disabilities upon request. Materials related to an item on this Agenda submitted to the GSA Board Members after distribution of the agenda packet are available for public inspection at the front counter at the Ukiah Civic Center, 300 Seminary Avenue, Ukiah, CA 95482, during normal business hours, Monday through Friday, 8:00 am to 5:00 pm. Any handouts or presentation materials from the public must be submitted to the clerk 48 hours in advance of the meeting; for handouts, please

include 10 copies.

I hereby certify under penalty of perjury under the laws of the State of California that the foregoing agenda was posted on the bulletin board at the main entrance of the City of Ukiah City Hall, located at 300 Seminary Avenue, Ukiah, California; and at 501 Low Gap Rd., Ukiah, CA 95482; not less than 72 hours prior to the meeting set forth on this agenda.

Kristine Lawler, CMC/CPMC
Dated: 12/11/25

Ukiah Valley Basin Groundwater Sustainability Agency

Board of Directors Meeting

December 15, 2025

Ukiah Valley Basin Technical Updates and Requested Recommendations

Audra Bardsley, PhD
Senior Scientist

Ethan Brown
Project Scientist

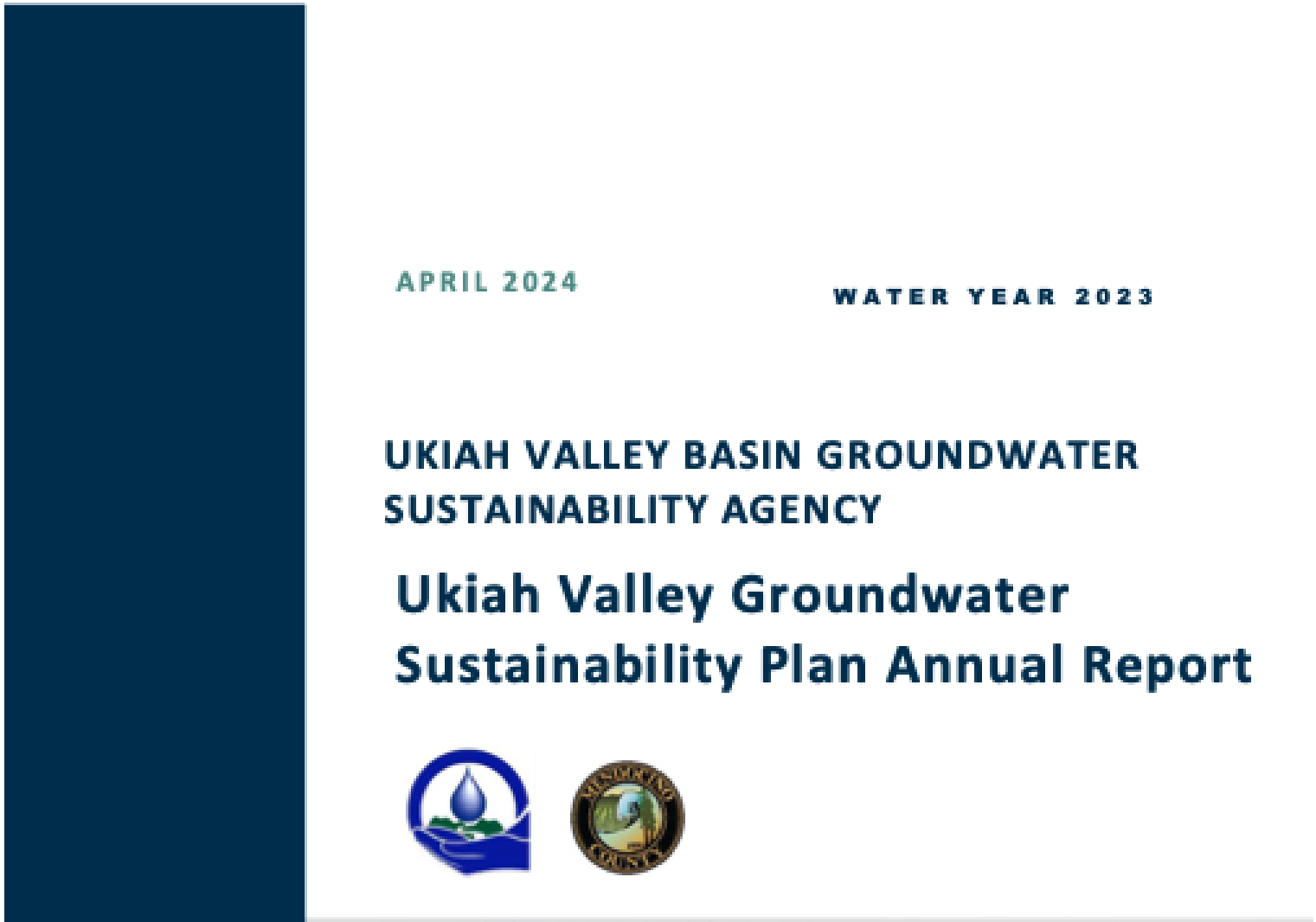
Laura Foglia, PhD
Vice President

LARRY WALKER ASSOCIATES

Outline

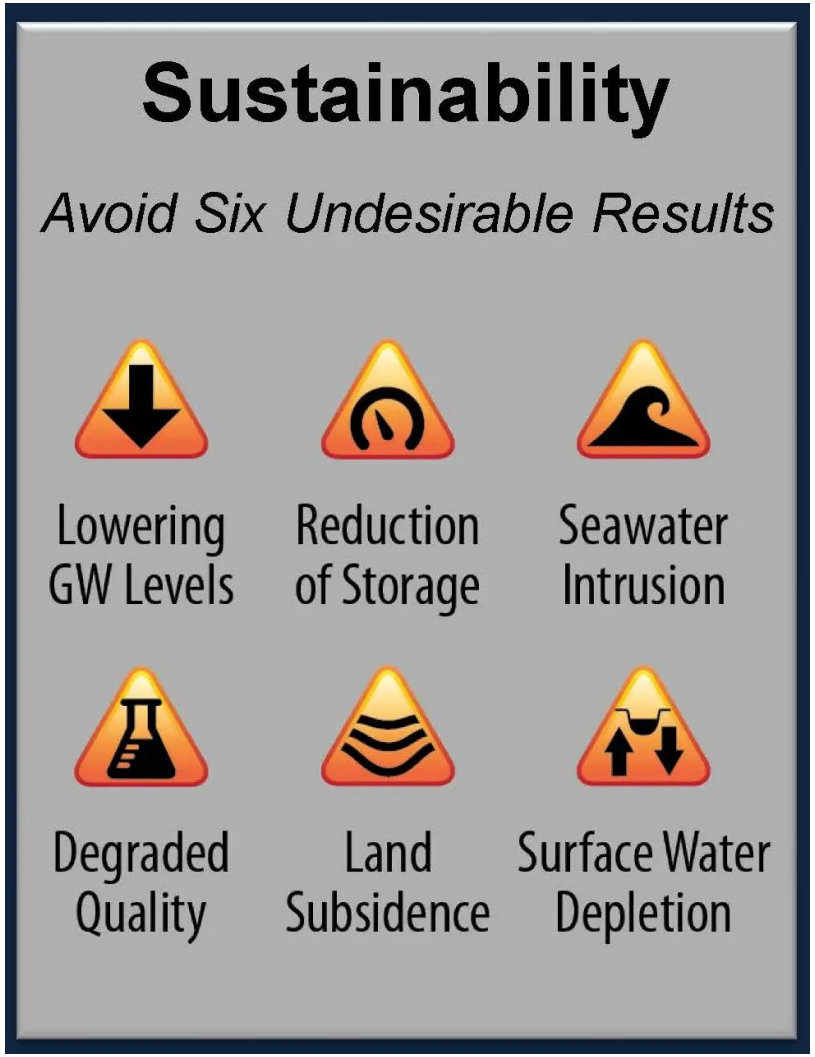
1. **Programmatic Updates**
   a. Water Year 2025 Groundwater Sustainability Plan Annual Report Preparation
   b. Upper Russian River Interconnected Surface Water Groundwater Dependent Ecosystem Study Update
   c. 2027 Periodic Evaluation and Plan Amendment Options
   d. Well Inventory Phase I Results and Phase II Plans
2. **Decision Points**
   a. 2027 Periodic Evaluation and Plan Amendment Compliance Pathway Selection and Task Authorization
   b. UVBGSA Well Inventory Phase II Task Authorization

1a. Water Year 2025 Groundwater Sustainability Plan Annual Report



Groundwater Sustainability Plan (GSP) Annual Report Overview

- **Fourth Annual Report due April 1, 2026**
  - Covering Water Year 2025: October 1, 2024 – September 30, 2025
  - Draft Report anticipated for review at February 11 TAC meeting and March 12 BOD meeting
- Annual Reports include:
  - GSA's progress in GSP implementation
  - Comparison of key sustainability indicator metrics against Sustainable Management Criteria established in the GSP
  - Tabulation of major water demands and diversions



Courtesy of mavensnotebook.com

Data We Collect to Evaluate Basin Conditions

GSA Monitoring Networks:

- Groundwater elevations
- Interconnected surface water depletion
- Water quality

Partner and Other Public Agencies:

- Precipitation
- Groundwater pumping
- Surface water diversions
- Recycled water production
- Water quality

Calculated or Modeled Data:

- Agricultural water demand*
- Change in aquifer storage
- Percolation pond groundwater recharge

Data requests have been distributed, thank you to agencies who have responded!

*DWR's Integrated Water Flow Model Demand Calculator

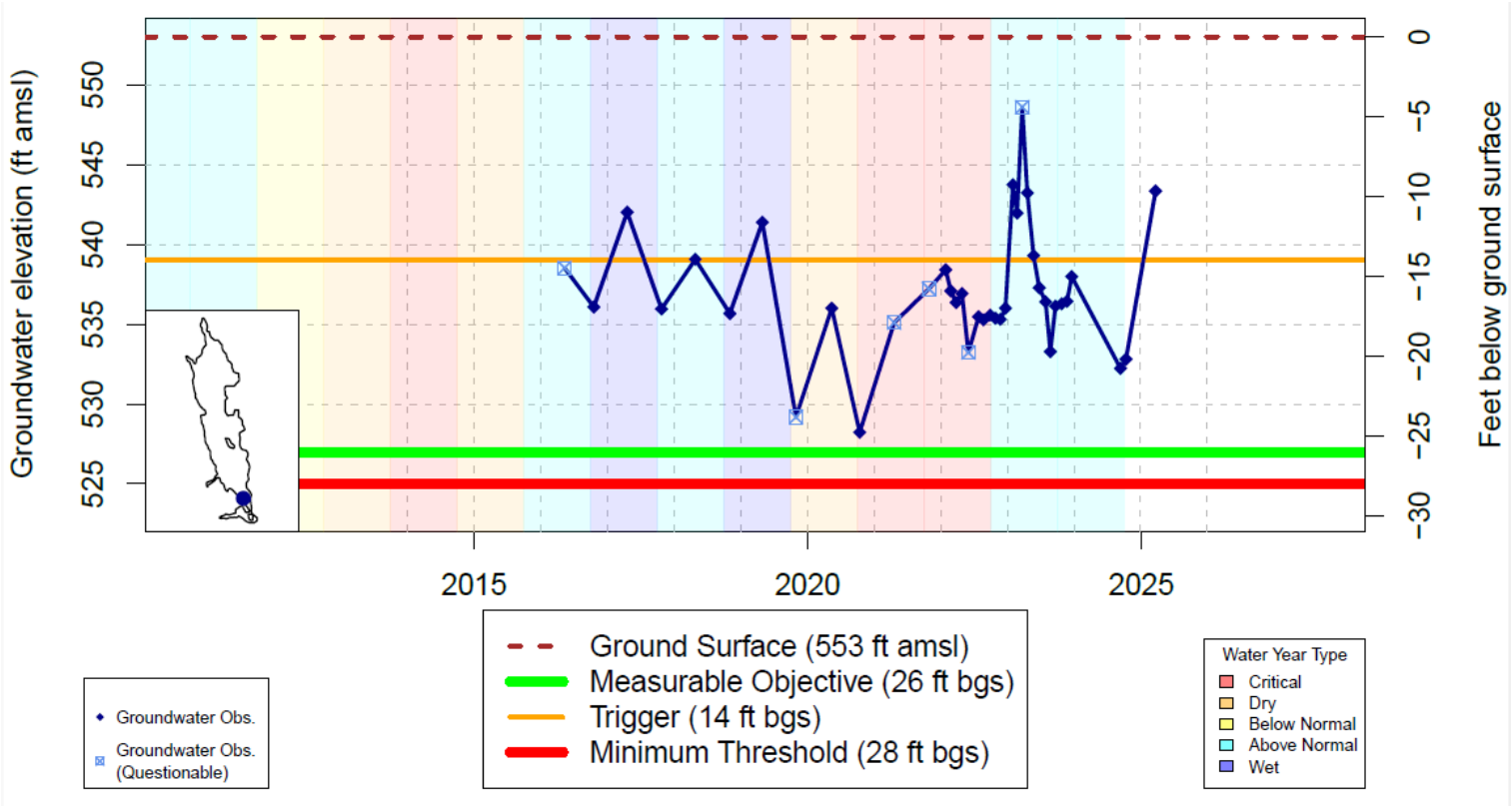
WY 2025 Preview of Representative Monitoring Point GW Levels

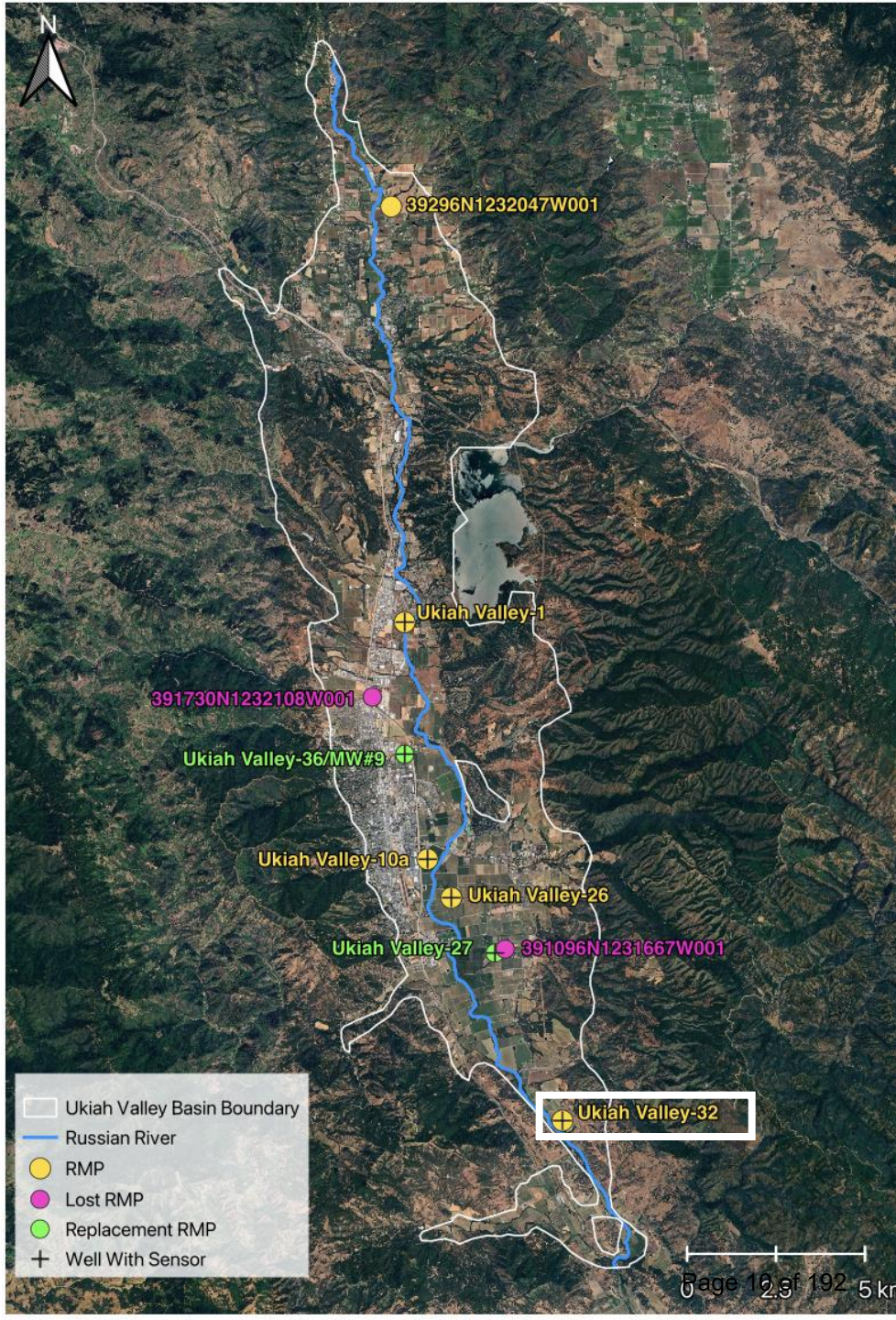
Three indicators developed using historical conditions for each well

- **Trigger Level**: Non-regulatory warning value for evaluating spring elevation
  - How are things looking after winter recharge?
- **Measurable Objective**: Value above which RMP is on track to achieve groundwater sustainability within 20 years
- **Minimum Threshold**: Value below which action must be taken to achieve sustainability goals
  - Transient levels below MT do not indicate non-compliance, but GSA should take notice

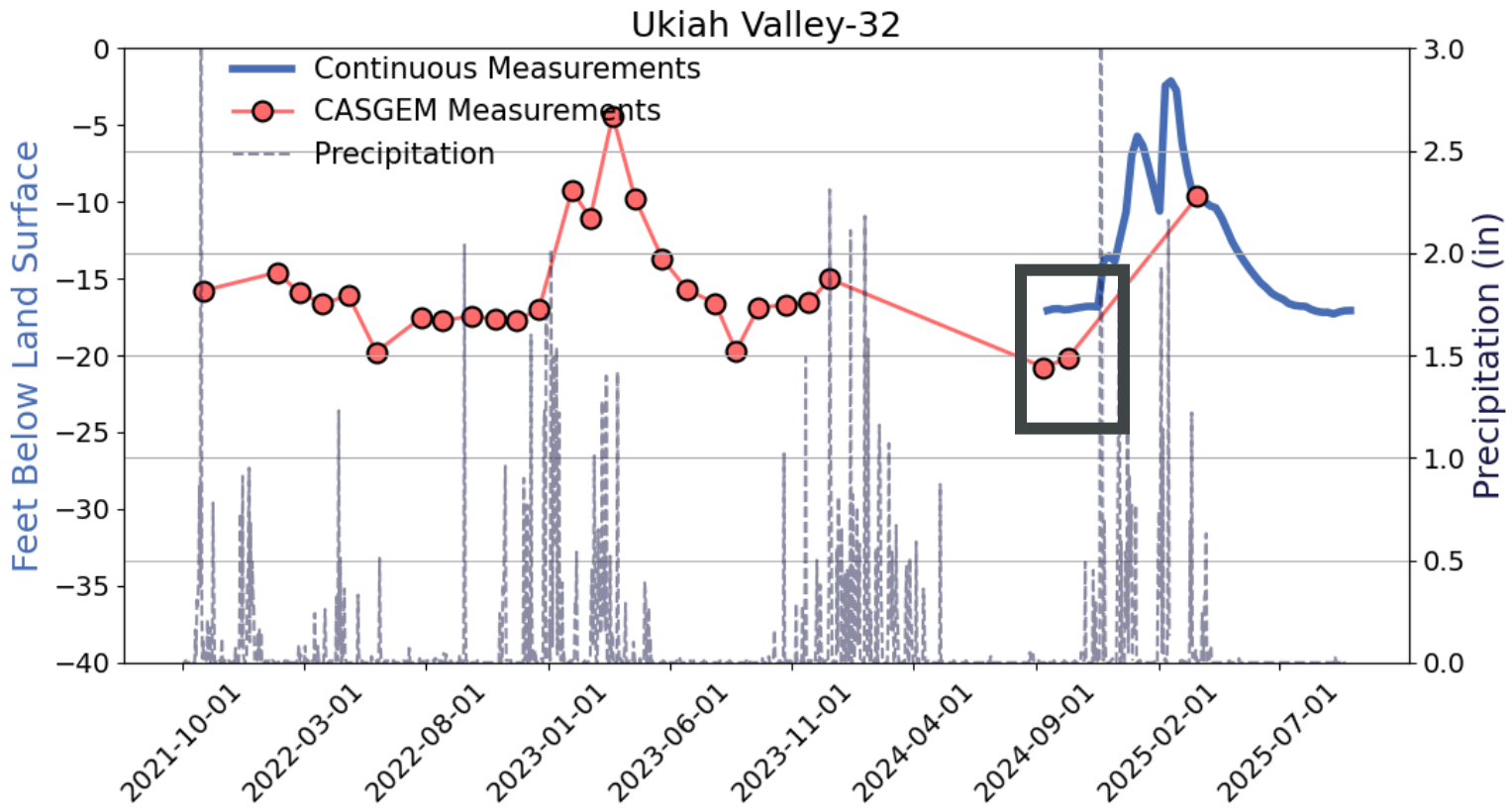
*"An undesirable result would occur if the groundwater level observations in the Fall season[…] in **more than one third of the RMPs in the Basin fall below their respective minimum thresholds for two consecutive years**." (UVBGSA GSP, 2022)*

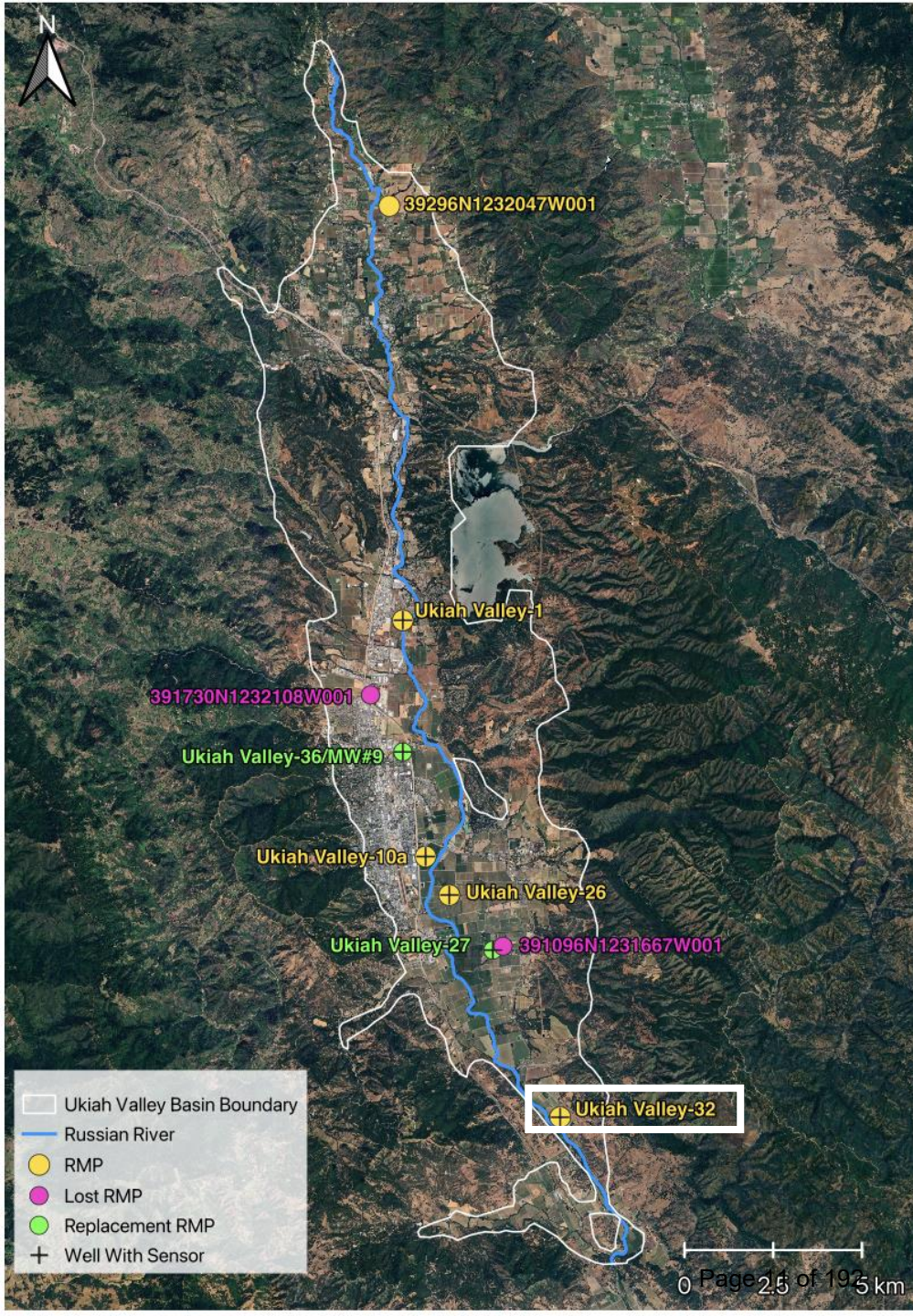
Aquifer I Ukiah Valley-32





Ukiah Valley-32: Groundwater and Precipitation





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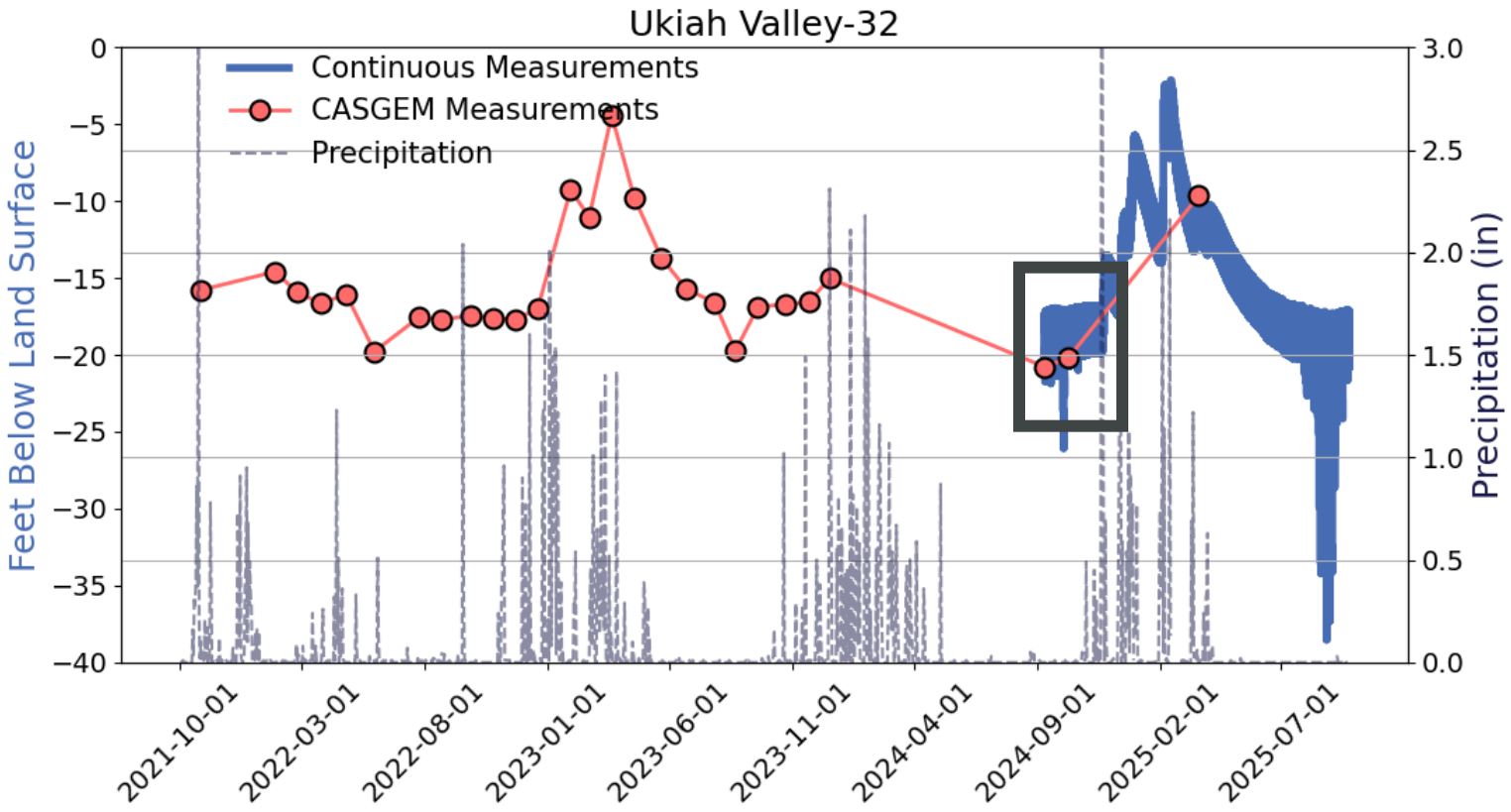

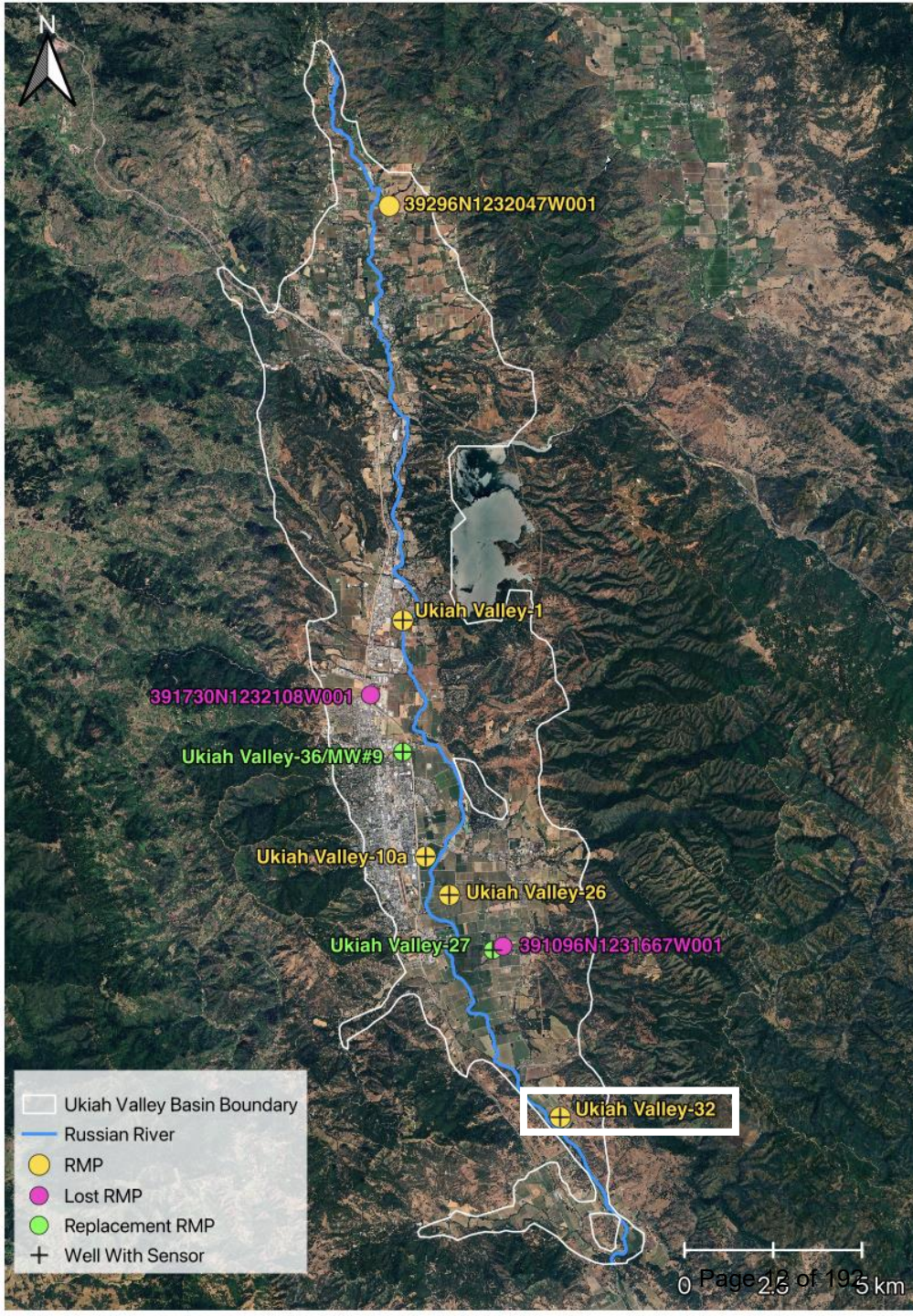

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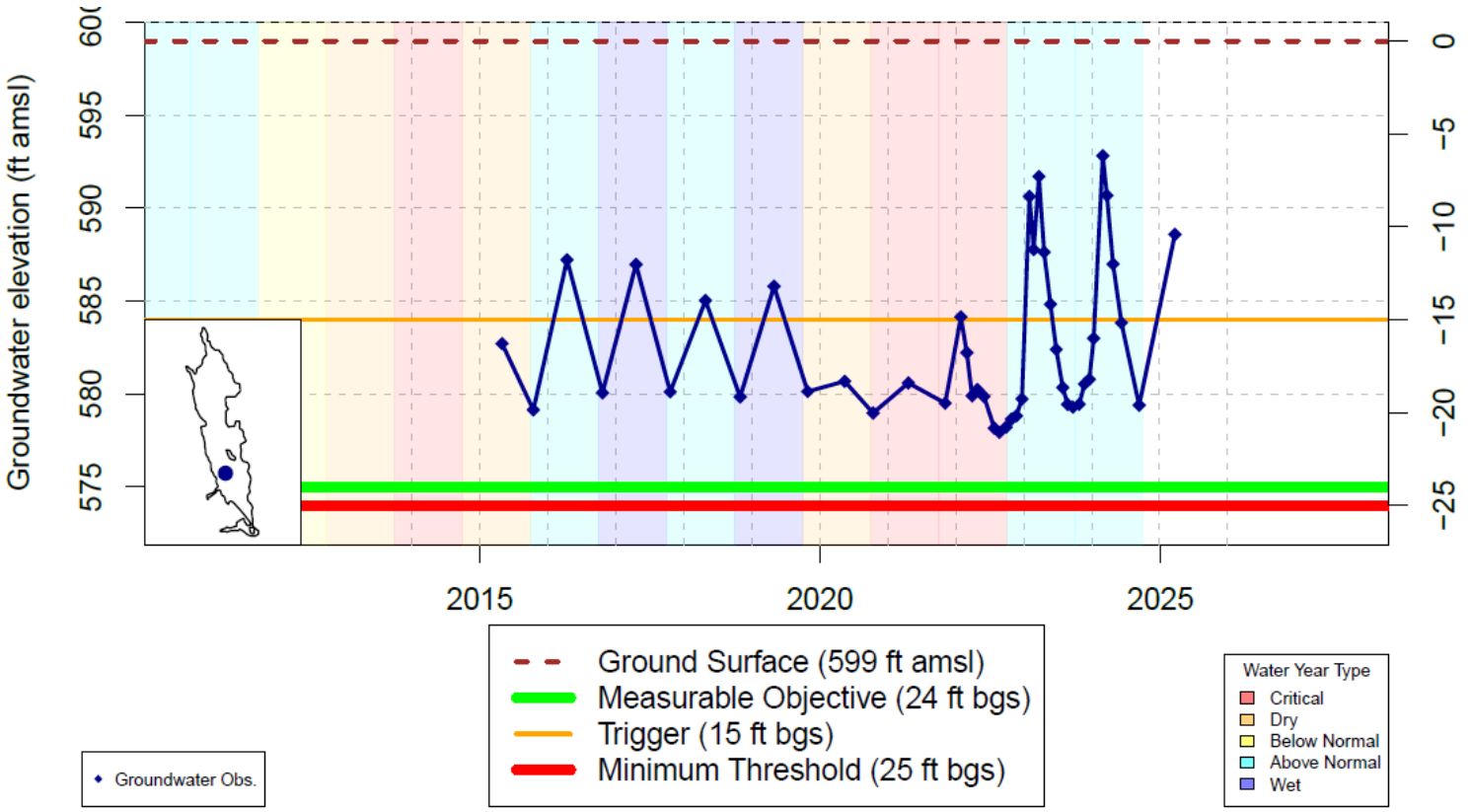
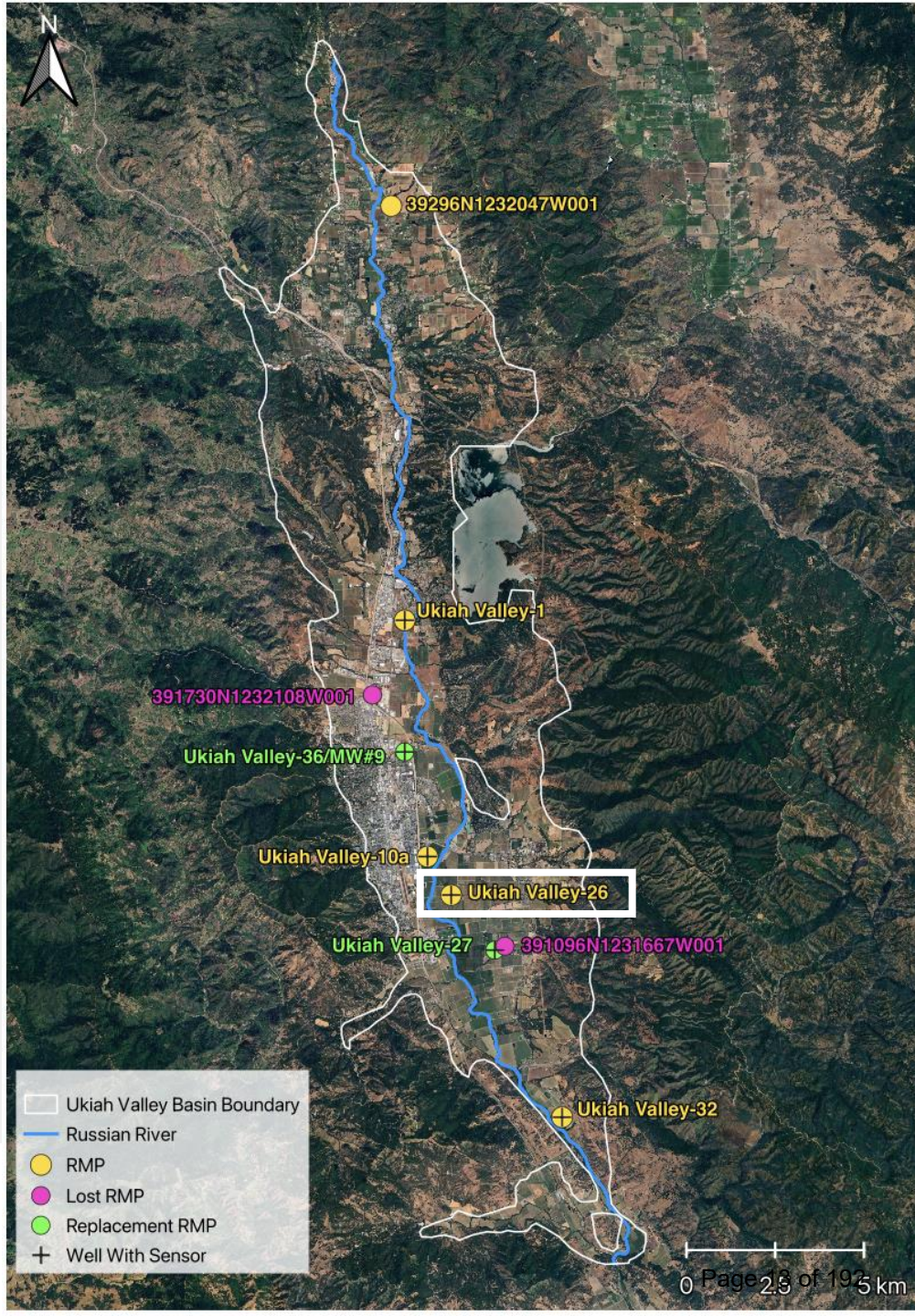


Water Year Types from WY 2019–2024 are preliminary results calculated based on SGMA Water Year Type Dataset Development Report. The results will be finalized once DWR updates the water year type dataset for these years.



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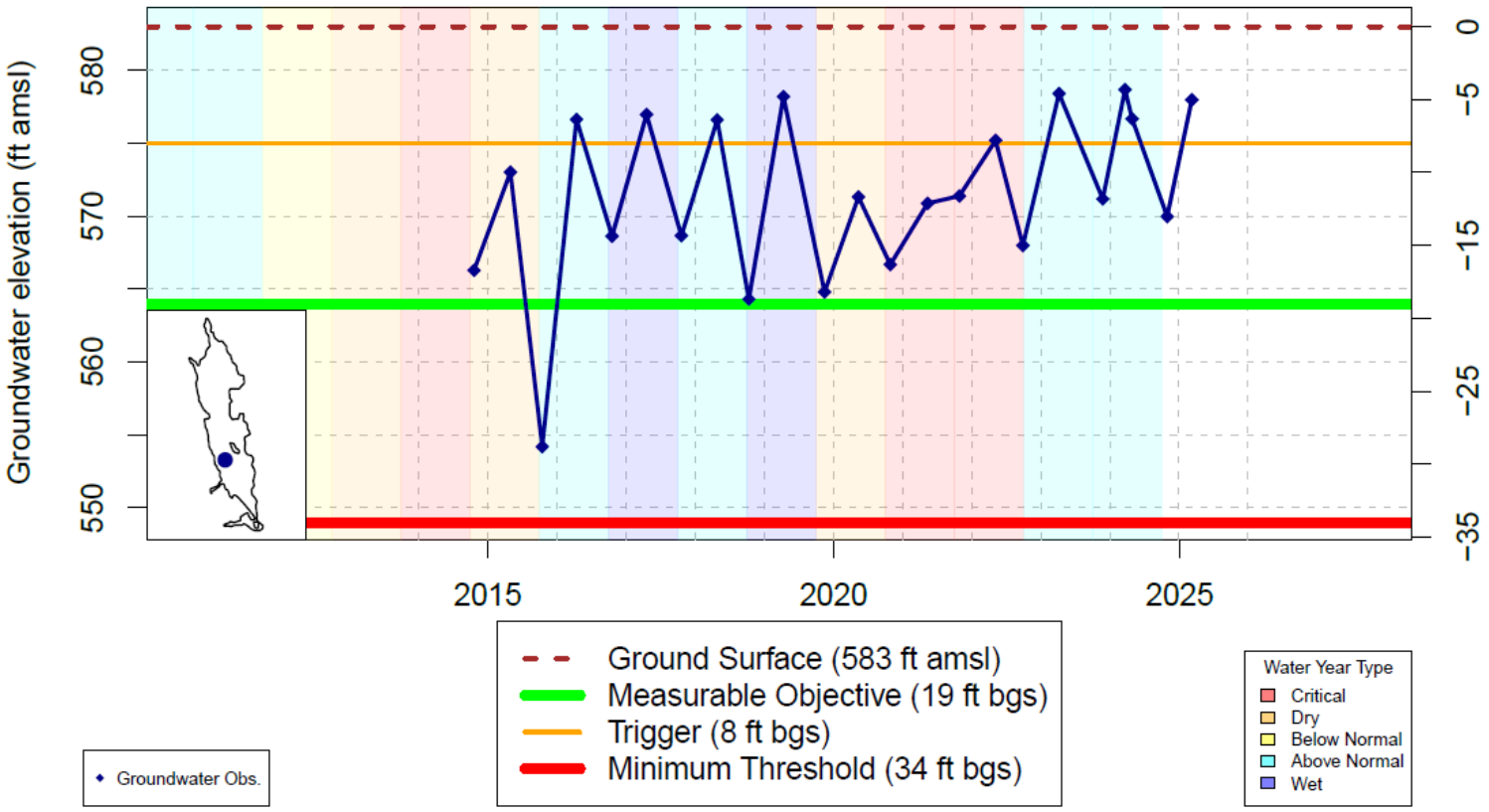

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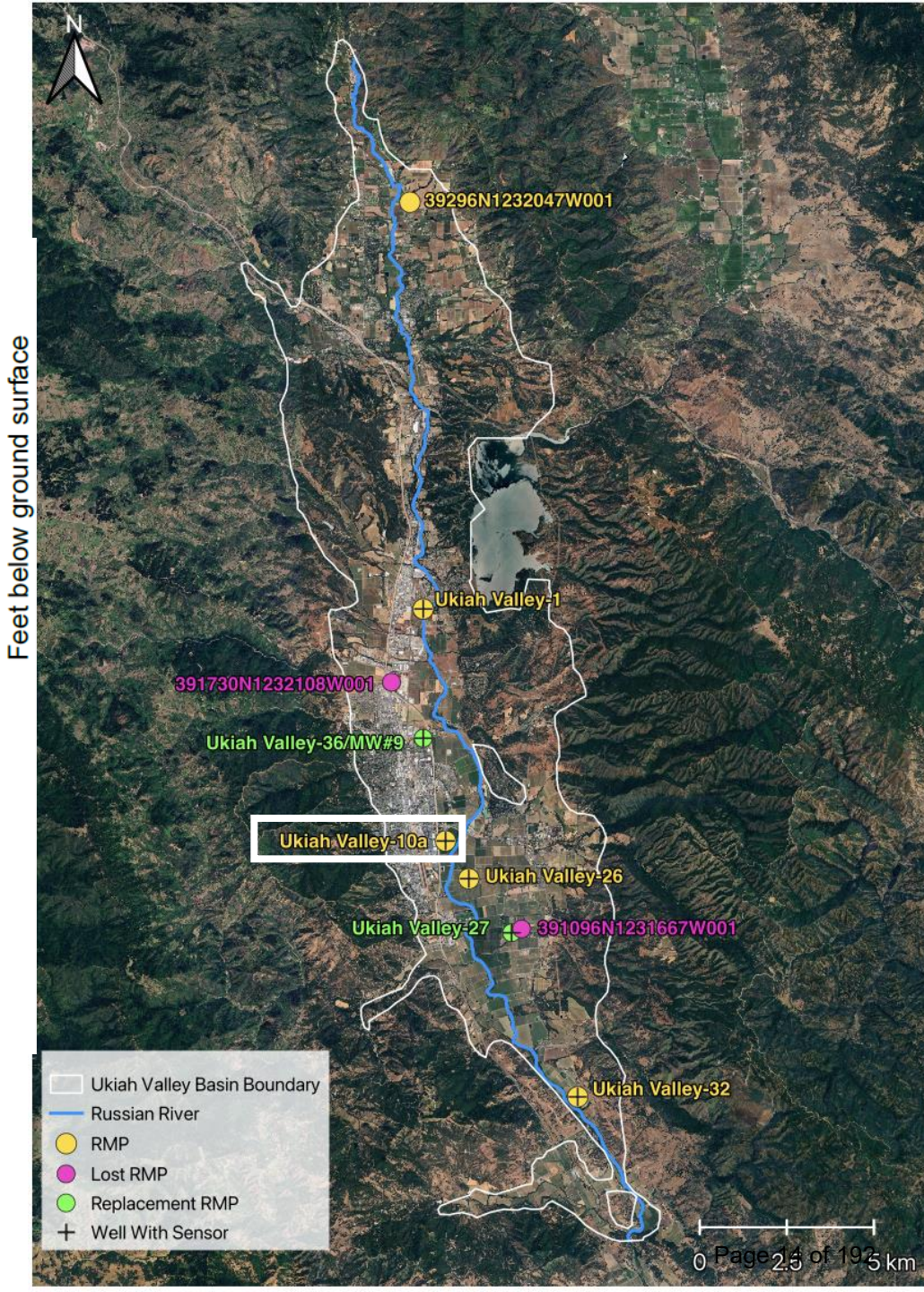

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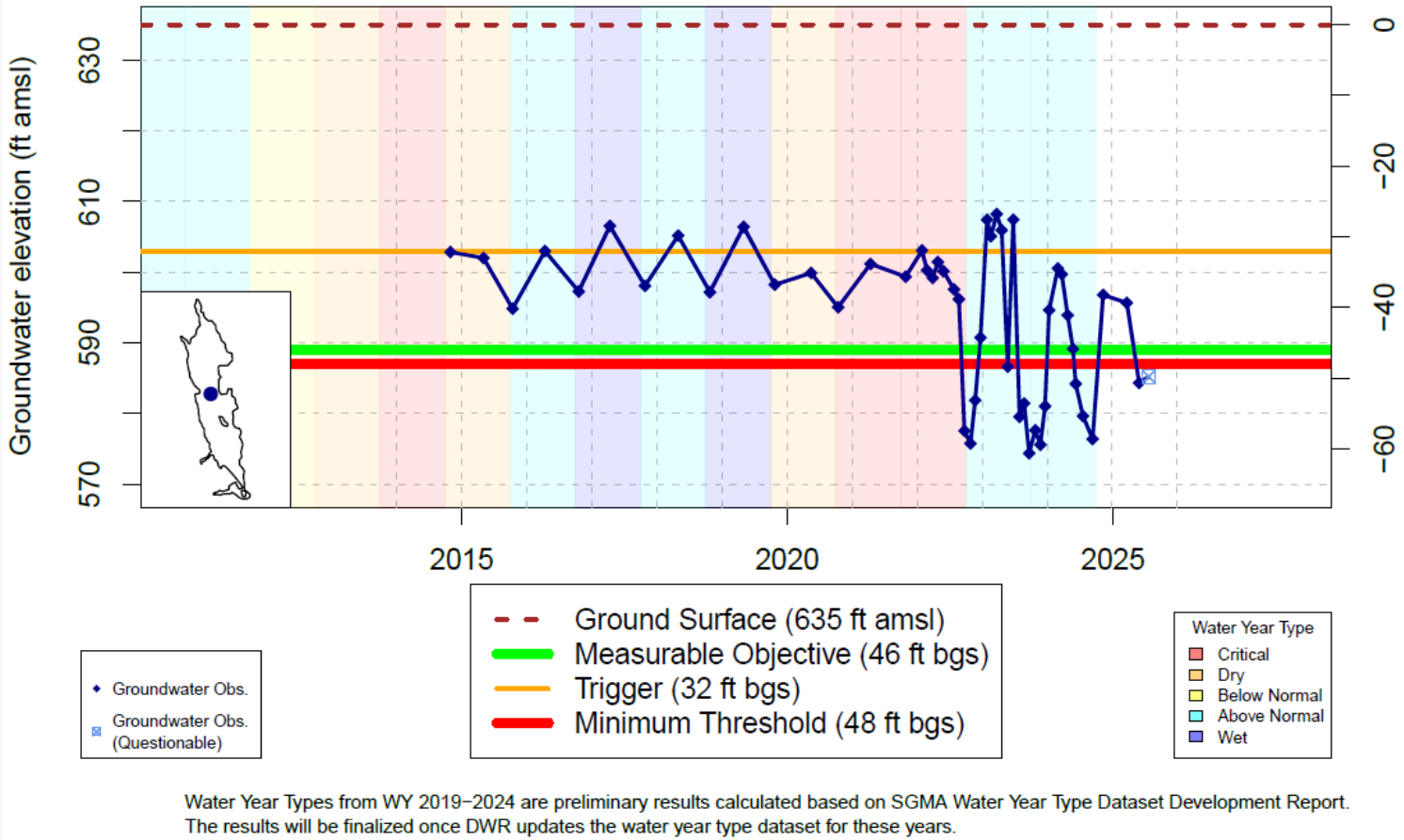

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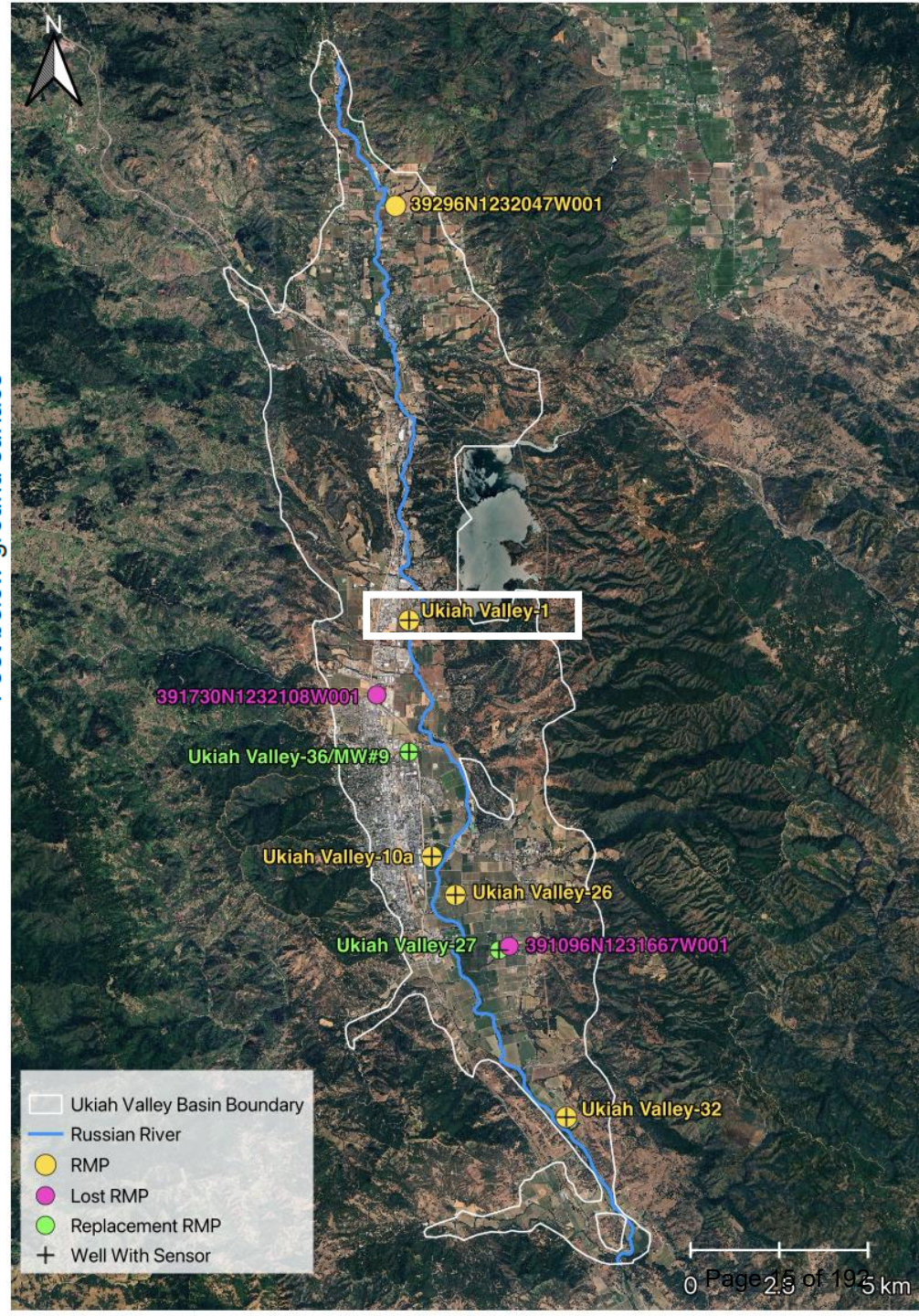
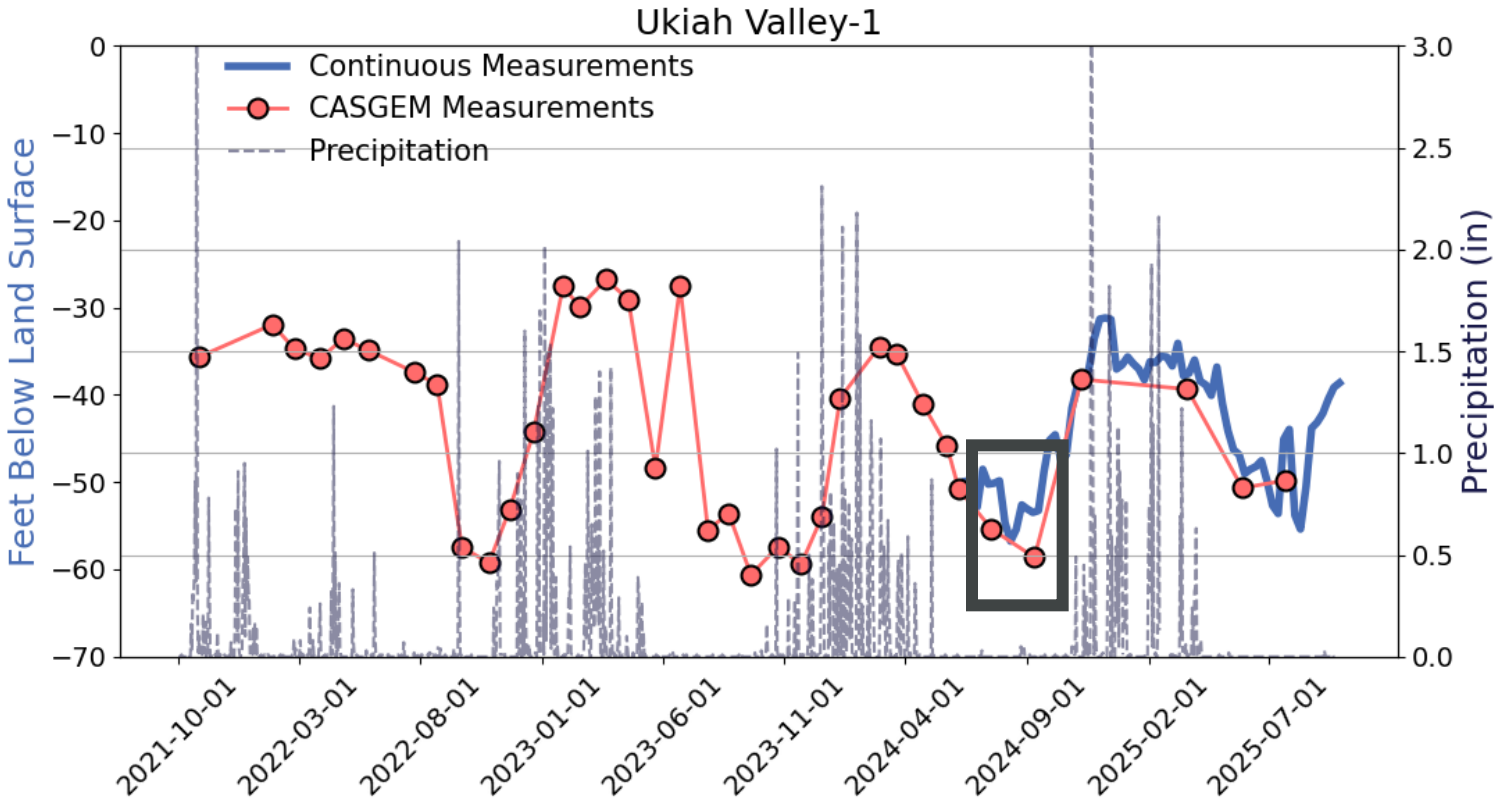
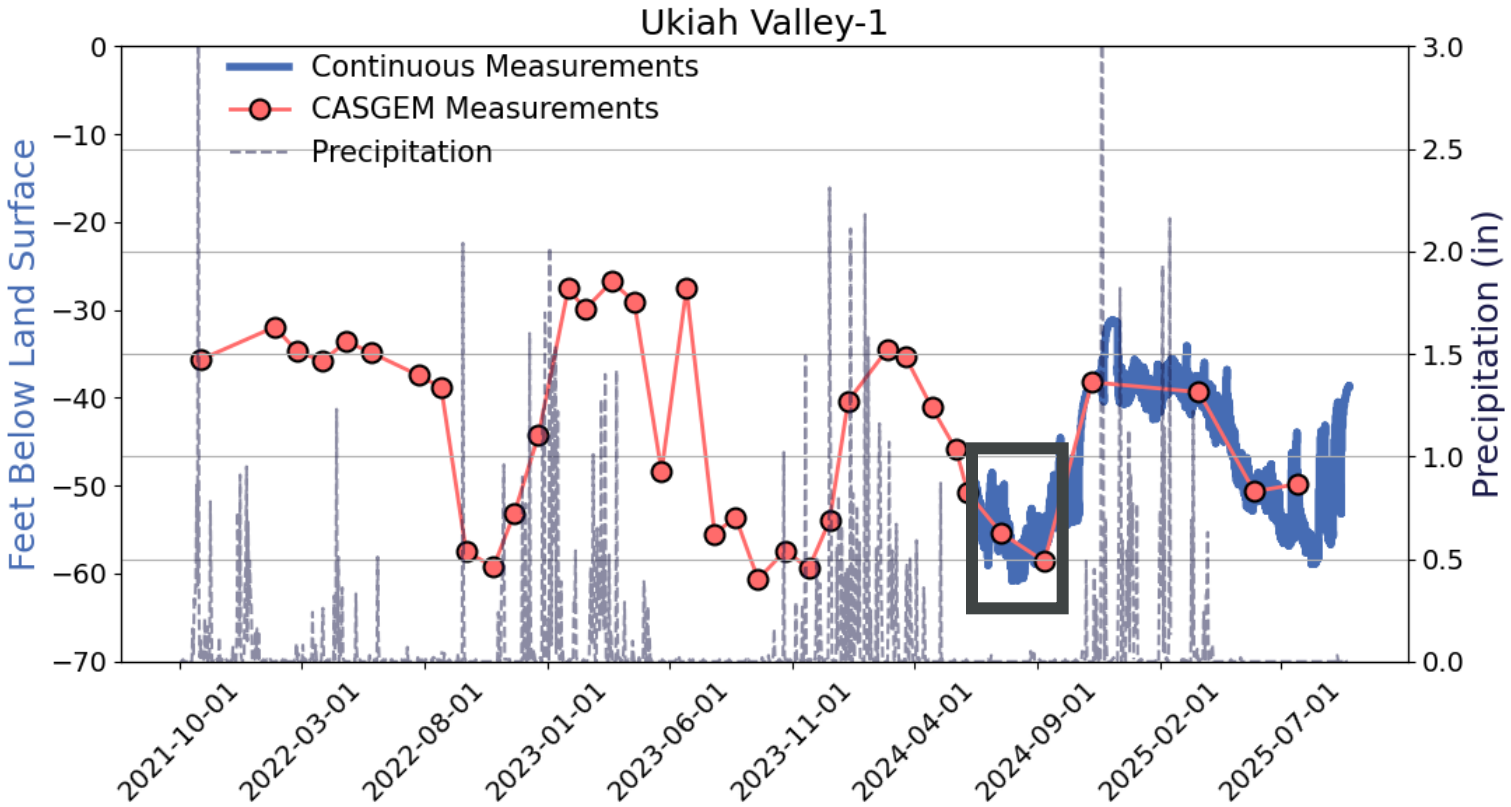


Ukiah Valley-1: Groundwater and Precipitation



Ukiah Valley-1: Groundwater and Precipitation



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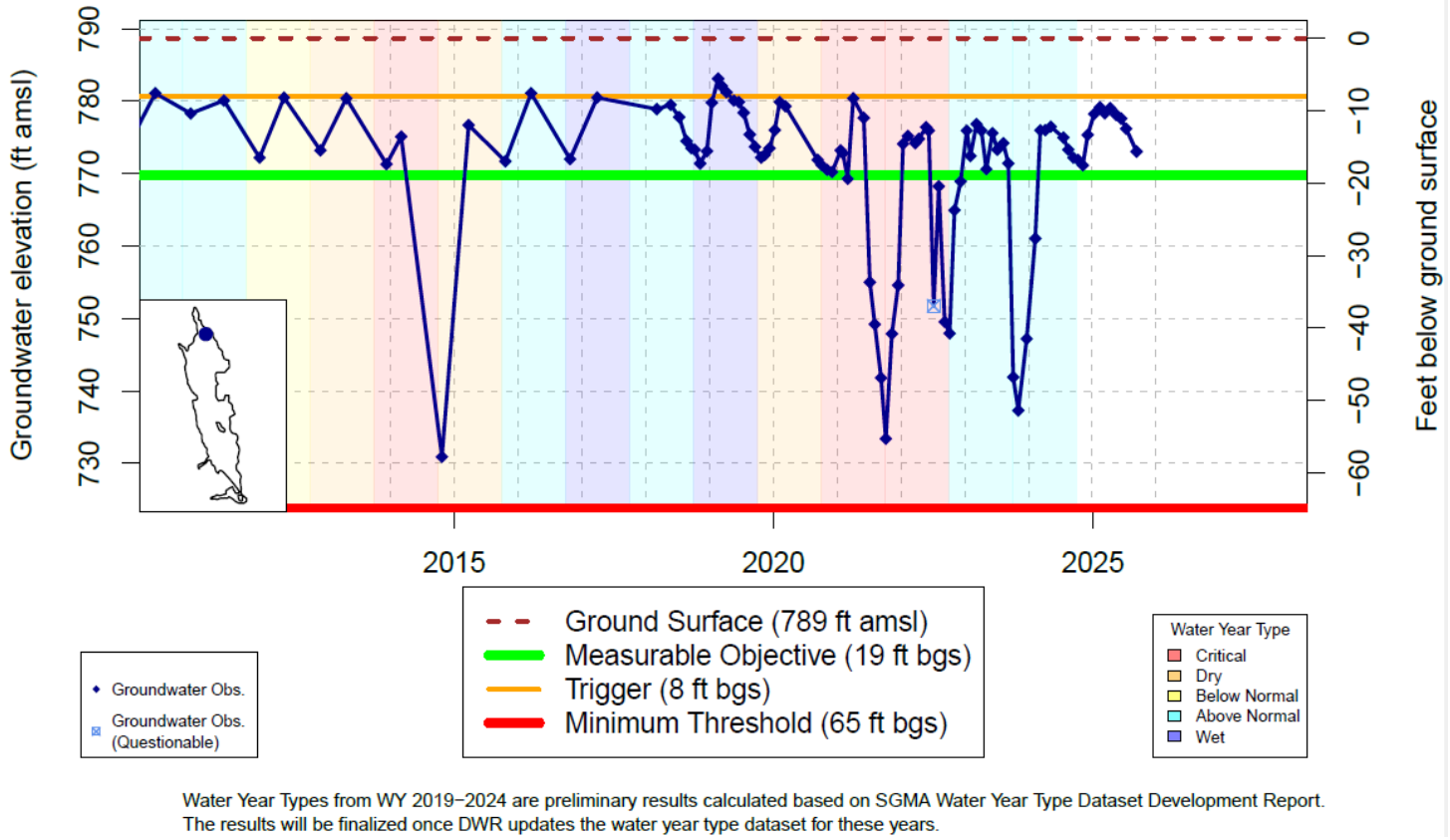

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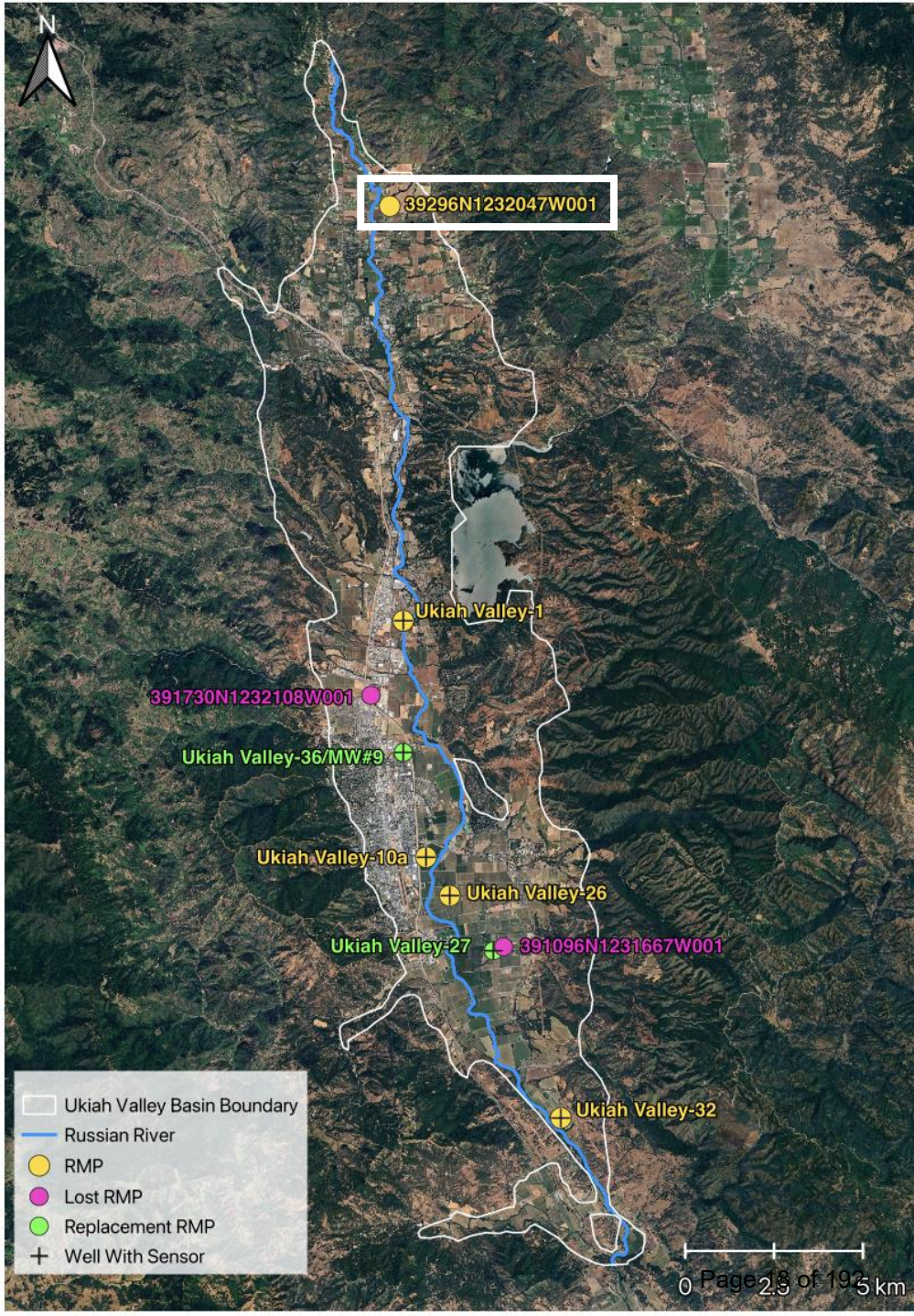


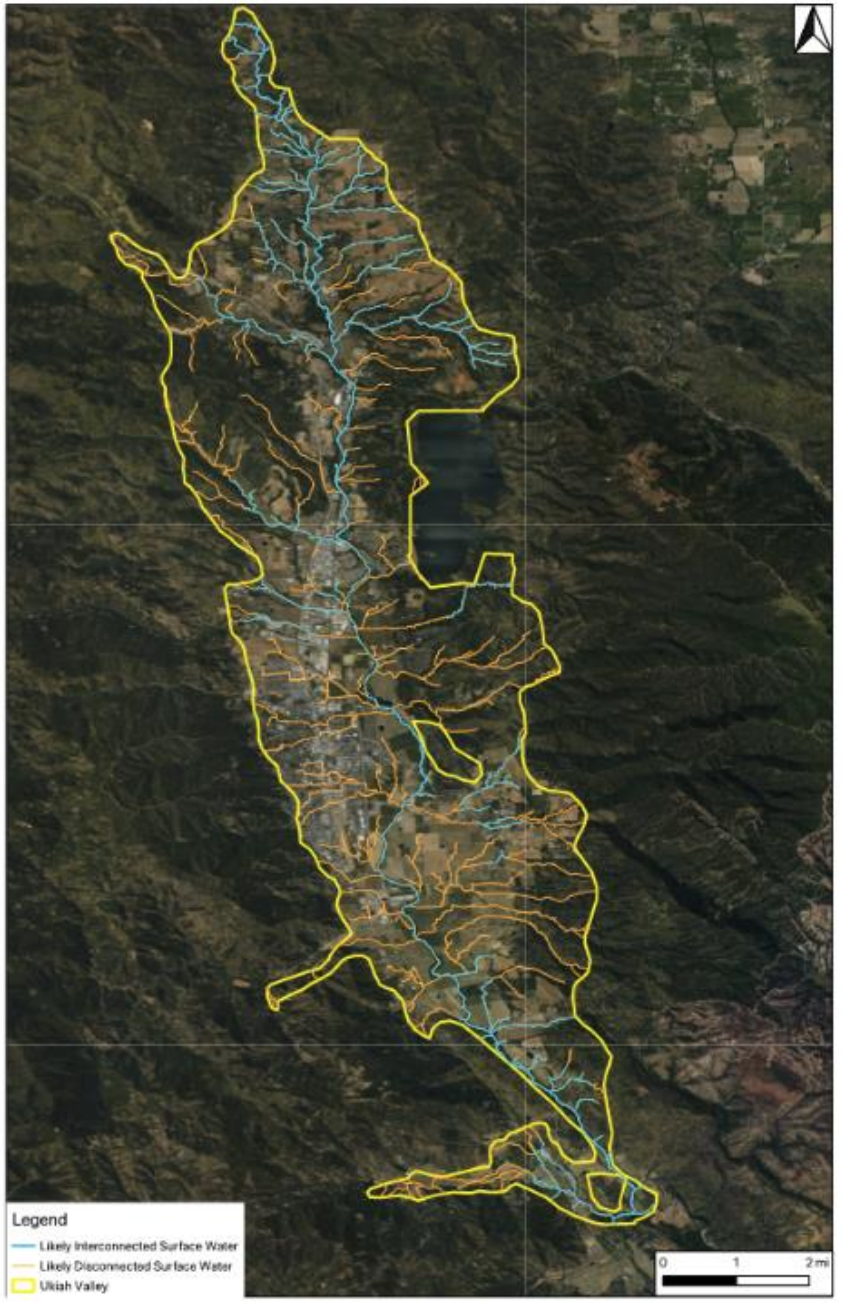
1b. Upper Russian River Groundwater Dependent Ecosystem (GDE) and Interconnected Surface Water (ISW) Study

CDFW Awards $41M to Critical Restoration Projects Statewide

September 25, 2024

Upper Russian River GDE/ISW Study

- Address DWR's Corrective Action #4
  - Prepare for 2027 Periodic Evaluation and future Plan Amendment
- Identify, monitor important stretches of interconnectivity and GDEs
- Track spatial and temporal trends
- Improve integrated hydrologic model calibration with resulting data and run climate/management scenarios
- Inform revision of sustainable management criteria as directed by DWR



Likely Interconnected Surface Waters (UVB GSP 2022)

DWR's Expectations for Progress on ISW/GDE Ahead of The January 2027 Periodic Evaluation[1]

I. Anticipated improvements identified in the UVB GSP[1,2]

- Expand groundwater monitoring network and increase number of Representative Monitoring Points (RMPs)
- Expand depletion of ISW monitoring network
- Collect additional hydrologic data including stream cross-sections, characteristics, streamflow measurements

II. Five additional recommended corrective actions[1]

- Establish quantifiable Minimum Thresholds, Measurable Objectives, and management actions for depletion of ISW.
- Fill data gaps, monitor, and define segments/timing of interconnectivity.
- Collaborate/coordinate to understand ISW beneficial uses, users, impacts.

[1] Per DWR's July 2023 UVB GSP Determination Letter and Staff Report [2] Table 10.2 Data Gaps Analysis

Summary of UVB GSP Public Comment Letters

Commenter	Affiliation	Key Concerns / Themes
City of Ukiah	Local Government	Emphasized coordination with city water planning and infrastructure.
Russian Riverkeeper	Environmental NGO	Raised concerns about **surface water depletion and ecological impacts**.
Mendocino County Farm Bureau	Agricultural Advocacy Group	Focused on agricultural water use, rights, and economic impacts.
James Sullivan	Individual / Local Resident	Provided feedback on groundwater levels and local water access issues.
National Marine Fisheries Service	Federal Agency	Highlighted **potential impacts on fish habitats and interconnected surface water systems**.
NGO Consortium	Environmental & Community Organizations	Advocated for stronger protections for disadvantaged communities and **ecosystems**.
Sonoma County Water Agency	Regional Water Agency	Addressed inter-basin coordination and data sharing for regional water sustainability.

GDE and ISW mentioned by multiple commenters

TAC-Identified Priority Tasks Ahead of January 2027

Topic	Purpose	Progress	Timeline
Expanded, Enhanced Monitoring Network	• Improve model representation of Basin conditions; • Increase number of Representative Monitoring Points (RMPs).	• Installed continuous sensors with telemetry at three current/future RMP locations.	Approximately 2024 – 2030
Interconnected Surface Water Study	• Fill data gaps (location/timing of interconnection, stream characteristics, groundwater elevation); • Update integrated hydrologic model and run scenarios; • Understand beneficial uses and users impacted by ISW depletion (GDEs); • Use data and improved model to develop revised SMCs.	• Obtained CDFW funds for the URR ISW/GDE Study; • Begun integrated hydrologic model improvements through CA Land Stewardship Institute project.	Approximately 2024 – 2028
Well Inventory	• Fill well location and construction data gaps; • Improve subsurface geology characterization; • Improve modeling of pumping impacts on surface waters.	• Completed Phase I of Well Inventory; • Developed recommendations for Phase II.	Approximately 2024 – 2028

SMC: sustainable management criteria; ISW: interconnected surface water; GDE: groundwater dependent ecosystem;

Project Status – Updates since October 2025

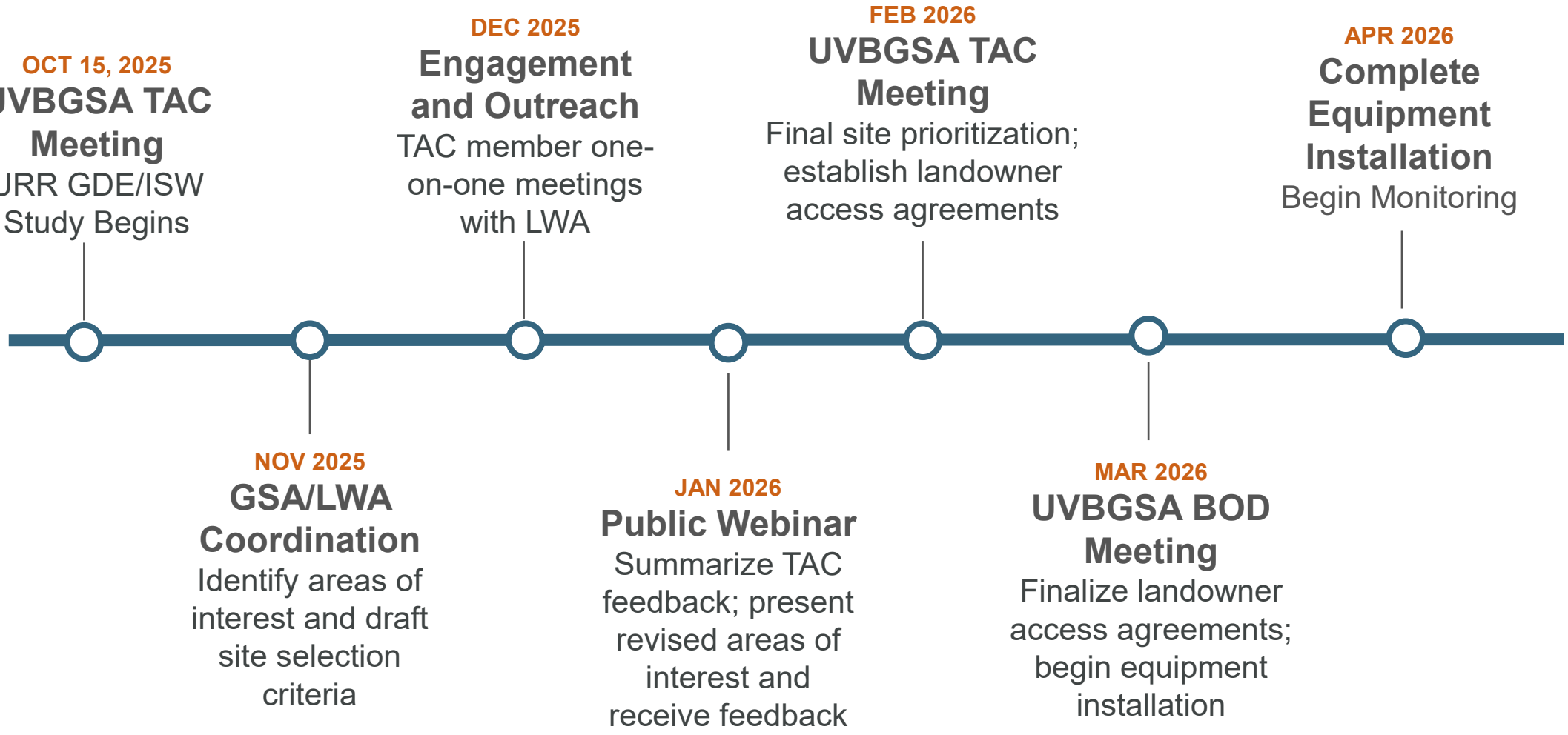
UVBGSA TAC Meeting October 15, 2025

- URR GDE and ISW Study Contract executed between GSA and LWA
- TAC members expressed interest in study scope and site selection
- DWR announced pending release of official guidance on ISW
  - Note: To date, DWR has not published their official guidance documents on ISW

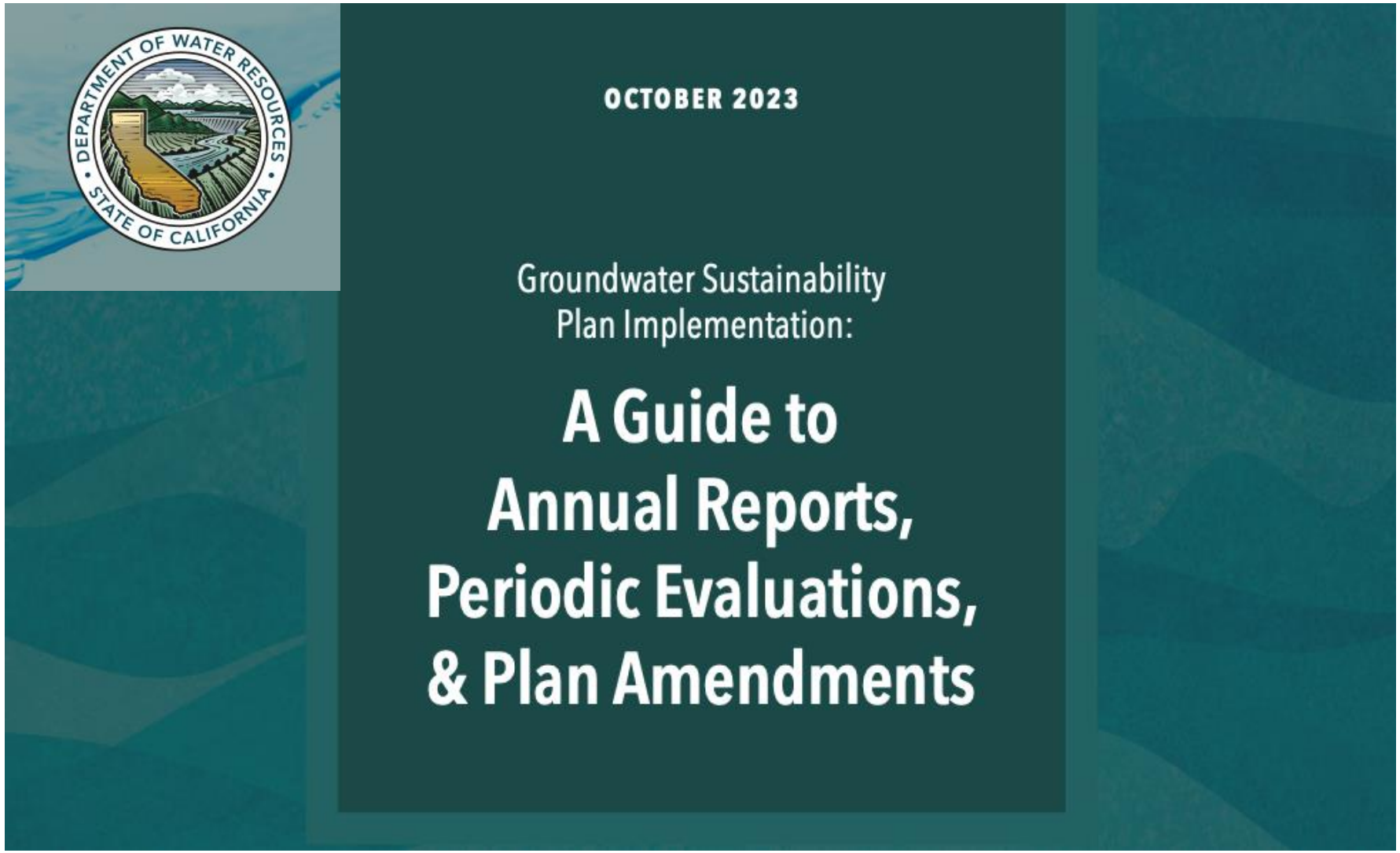
GSA Staff/LWA Activity October 16 - present

- Established project timeline through April 2026
- Initiated literature and desktop review of GDE and ISW in Ukiah Valley
- Identified preliminary areas of interest and developed draft site prioritization criteria
- Developed framework for TAC engagement on potential study sites and scope
- Began TAC engagement through one-on-one informational meetings

Near-Term Timeline



1c. 2027 Periodic Evaluation and Plan Amendment Options



2027 Periodic Evaluation and Plan Amendment Options

Feature	Periodic Evaluation (PE)	Plan Amendment (PA)
Purpose	Report on progress, update data, reaffirm plan trajectory	Make substantive changes to the GSP
Frequency	Required every 5 years following GSP submission for approved GSPs	As needed, must be accompanied by PE
Trigger	SGMA-mandated schedule	Significant plan modifications
Scope of Change	Progress report with minor updates	Substantive revisions to content, goals, or management strategies
Public Review	Not required	Required—must include public engagement and comment period
Examples of What's Included	• Updated monitoring data • Progress on projects • Any implementation changes • New RMP or SMCs using old approach	• SMCs developed using new approach • Structural plan changes • Major new projects or data
Common Use Case	Demonstrate basin is on track for 2042 sustainability target	Comprehensive response to DWR feedback, integrate major new science or stakeholder priorities

Compliance Pathways: PE or PE *and* PA. PE and PA larger effort and requires quicker turnaround due to public engagement and comment period.

DWR Recommended UVB GSP Updates

DWR Staff expect progress on the following GSP updates by the Periodic Evaluation deadline on January 28, 2027:

I. Anticipated improvements identified in the UVB GSP

II. Five additional recommended corrective actions that DWR staff describe in the UVB GSP determination letter
   - Some overlap with anticipated improvements

At March 2024 TAC Meeting, three priority tasks were identified and subsequently shared with the BOD

TAC-Identified Priority Tasks Ahead of January 2027

Topic	Purpose	Progress	Timeline
Expanded, Enhanced Monitoring Network	• Improve model representation of Basin conditions; • Increase number of Representative Monitoring Points (RMPs).	• Installed continuous sensors with telemetry at three current/future RMP locations.	Approximately 2024 – 2030
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Well Inventory	• Fill well location and construction data gaps; • Improve subsurface geology characterization; • Improve modeling of pumping impacts on surface waters.	• Completed Phase I of Well Inventory; • Developed recommendations for Phase II.	Approximately 2024 – 2028

SMC: sustainable management criteria; ISW: interconnected surface water; GDE: groundwater dependent ecosystem;

Summary of Public Comments

Commenter	Affiliation	Key Concerns / Themes
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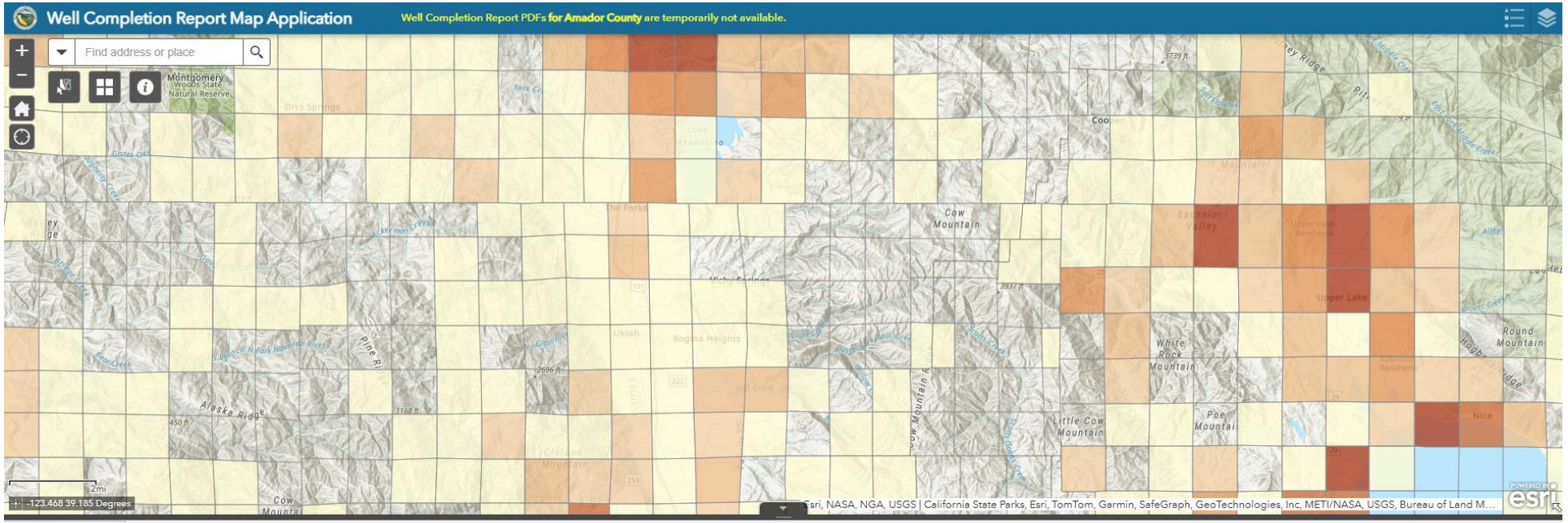
NGO Consortium	Environmental & Community Organizations	Advocated for stronger protections for disadvantaged communities and ecosystems.
Sonoma County Water Agency	Regional Water Agency	Addressed inter-basin coordination and data sharing for regional water sustainability.

1d. Phase I UVBGSA Well Inventory



Well Completion Reports

Options | Filter by map extent | Zoom to | Clear selection | Refresh

WCR Number	Legacy Log Number	Owner Assigned Well Number	Well Location	City	County Name	Local Permit Agency	Permit Date	Permit Number	Region Office	Record Type	Planned Use/Former Use	Driller Name	Driller License Number	Decimal Latitude	Decimal Longitude	Method of Determination LL	LL Accuracy	Horizontal Datum
WCR2005-002869	1073103	SW-3	300 FORD RD	UKIAH	Mendocino	Environmental Health Division - Ukiah Office		None	DWR North Central Region Office	WellCompletion/[	Unknown	CLEAR HEART DRILLING INC. CLEAR HEART DRILLING INC.	780357	39.174980	-123.206690	Location from PLSS Section	Centroid of Section	
WCR2000-008794	728253				Lake	Lake County Health Services Department - Environmental Health Division		None	DWR Northern Region Office	WellCompletion/[or Monitoring/NA	Water Supply Irrigation - Agriculture	HUTTON J W	CONV	39.181811	-122.902533	Location from PLSS Section	Centroid of Section	

*DWR's Online System for Well Completion Reports

Phase I UVBGSA Well Inventory Overview

Key Phase I Objectives

- Data Compilation and Database Development
  - Aggregate OSWCR* tabular data and digitized well completion report PDFs
  - Generate editable geospatial database
- Information Enhancement
  - Cross check various data sources, coordinate with local agencies when possible
  - Refine well locations
  - Improve well construction data completeness and accuracy
- Identify remaining data gaps and recommend options for Phase II

Deliverables

- Technical Memorandum
- Geospatial and tabular well databases

*DWR's Online System for Well Completion Reports

Targeted Well Information

All Wells

- Improved location
- Total depth information

Priority Wells

Groundwater Monitoring Network

- Detailed screened interval(s)
- Vertical datum
- Instrumentation
- Monitoring agency

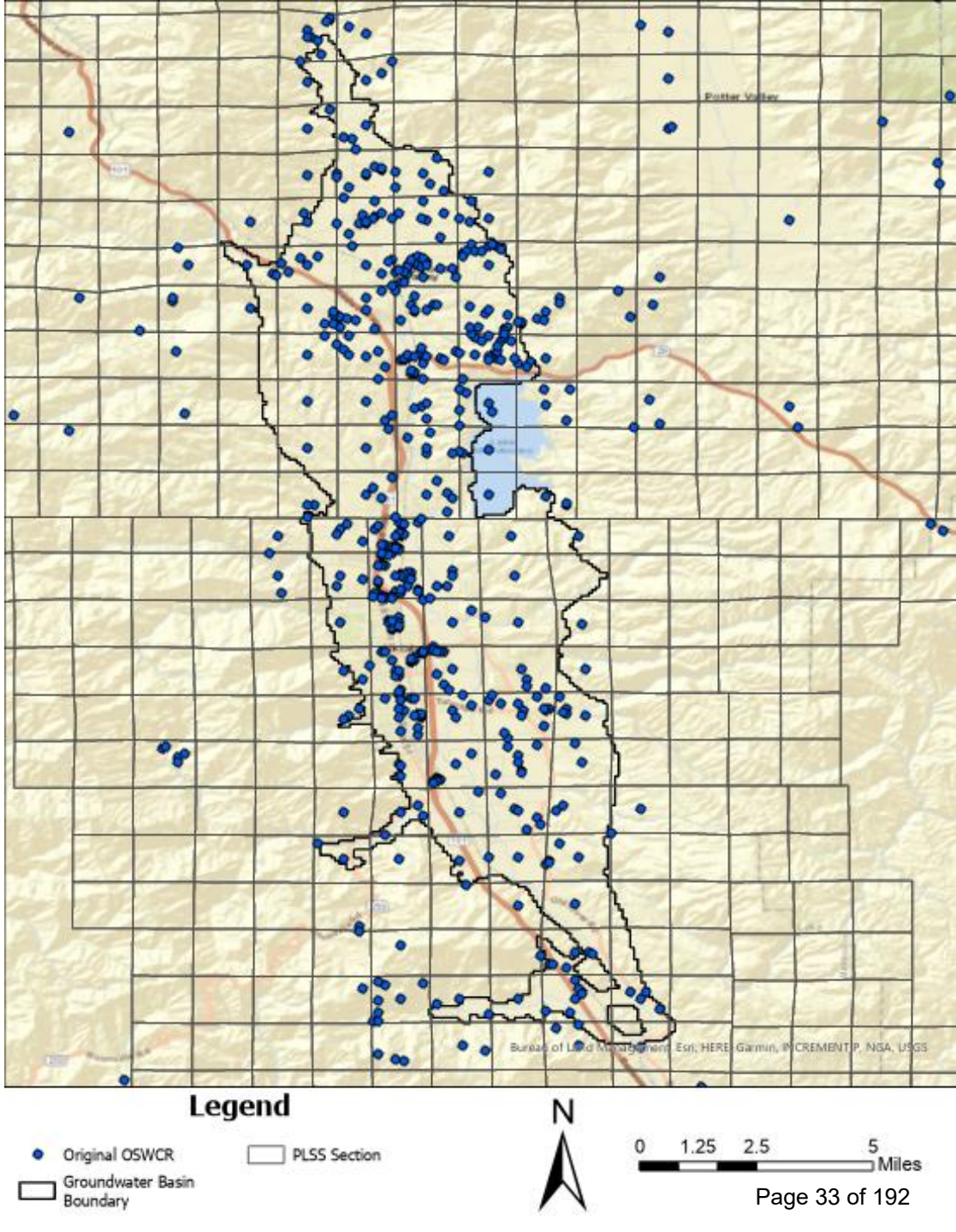
Public Supply Wells

- Detailed screened interval(s)
- Pump test data

Agricultural/Irrigation Wells

- Detailed screened interval(s)
- Pump test data

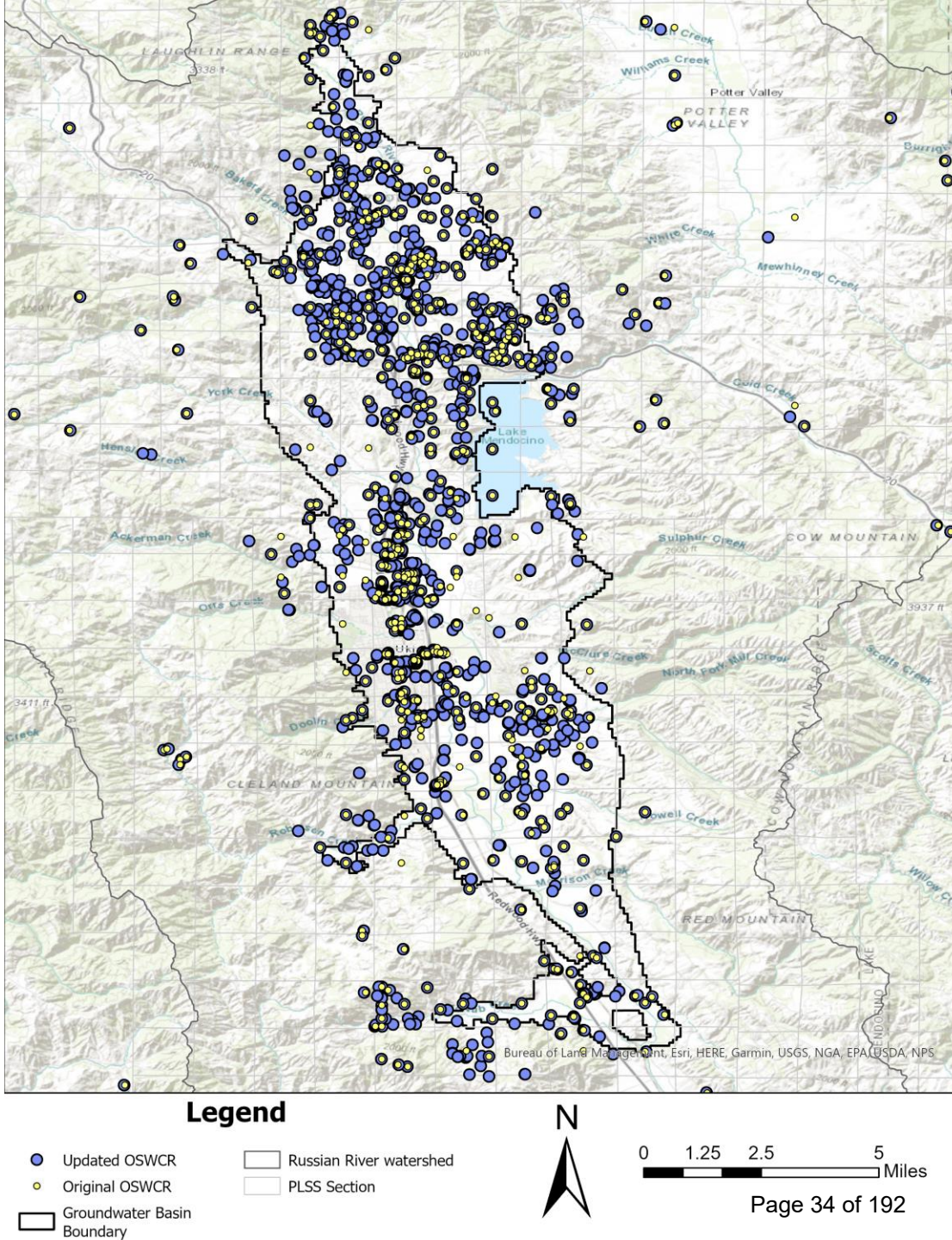
*Public Land Survey System



Phase I Results

- Reviewed 2,714 wells, improving location and total depth info whenever possible
- Compiled additional data for
  - 63 wells in current and historic groundwater monitoring network
  - 24 public supply wells
  - 292 agricultural/irrigation wells

Planned Use	Number of Wells	Use Codes
Agricultural Irrigation	292	Water Supply Irrigation – Agriculture, Irrigation, IRRIGATION
Domestic	737	Water Supply Domestic, Domestic, DOMESTIC
Monitoring	401	Monitoring
Public Water Supply	60	Water Supply Public, PUBLIC WATER
Other	161	Test Well, Remediation, Sparging, Injection, Vapor Extraction, Dewatering, Cathodic Protection, Water Supply Industrial, Water Supply Irrigation - Landscape
Unknown	1,063	Unknown or blank
All Wells	2,714	NA



Key Well Inventory Phase II Priority Tasks

Data Quality Improvements

- Improve Well Use Classifications: Address >1000 wells with unknown use; identify additional irrigation wells
- Comprehensive Cross-Reference with Monitoring Databases
- Survey Elevations for Monitoring Wells: target sites with low quality data
- Verify Well Status: Identify and remove inactive wells; confirm active pre-1977 wells

Management & Model Enhancements

- Complete Missing Database Entries: including WCR links and key metrics
- Update Integrated Hydrologic Model: incorporate information gleaned from Phase II to enhance calibration and improve representation of pumping
- Assess Domestic and Public Supply Well Vulnerability: update inventory to identify areas vulnerable to declining groundwater levels

2. Decision Points

2a. Well Inventory Phase II Task Authorization

Should the UVBGSA move forward with Well Inventory Phase II?

Fiscal Impact

- None. Adequate funds have been allocated in the FY 25-26 budget that the BOD approved at the June 12 meeting

Other Considerations

- UVBGSA TAC identified well inventory as a priority task ahead of 2027 Periodic Evaluation
- Task would benefit upcoming and ongoing activities including GDE/ISW Study, integrated hydrologic model updates, and monitoring network improvements

2b. Periodic Evaluation/Plan Amendment Compliance Pathway

Should the UVBGSA pursue a Periodic Evaluation or a Periodic Evaluation and a Plan Amendment?

Fiscal Impact

- Periodic Evaluation Only: None. Adequate funds have been allocated in the FY 25-26 budget that the BOD approved at the June 12 meeting
- Periodic Evaluation and Plan Amendment: Approximately $200,000 above budget allocated in FY 25-26 budget

Other Considerations

- UVBGSA TAC recommend pursuing a Periodic Evaluation only
- URR GDE/ISW Study will inform major updates to the GSP
- Plan Amendment would need to be drafted by ~August 2026 to allow adequate time for public review, comment and revisions - this timeline may not be practicable

Agenda Item No: 4.b.

MEETING DATE/TIME: 12/15/2025

ITEM NO: 2025-1398

UKIAH VALLEY BASIN
GROUNDWATER SUSTAINABILITY AGENCY (GSA)

STAFF REPORT

SUBJECT: Discussion of Well Inventory Phase II Activities and Fiscal Impact.

PREPARED BY: Blake Adams, Chief Resiliency Officer

PRESENTER: Audra Bardsley, Larry Walker Associates

ATTACHMENTS:

1. Considerations for Identifying and Addressing Drinking Water Well Impacts
2. Technical Memorandum: UVBGSA Well Inventory Phase 2

Summary: The Ukiah Valley Basin Groundwater Sustainability Agency is advancing its Groundwater Well Inventory Program to address SGMA-identified data gaps and DWR corrective actions by improving well location and construction information essential for monitoring, GSP implementation, and UVIHM refinement. Phase I, completed in June 2025, created an open-source geospatial database and incorporated improved data for over 2,700 wells, informing strategic recommendations for Phase II.

Background: The Sustainable Groundwater Management Act (SGMA) requires Groundwater Sustainability Agencies (GSAs) to consider all beneficial uses and users of groundwater when developing and implementing their Groundwater Sustainability Plans (GSPs). Accurate well location and construction information are essential for effective groundwater monitoring, understanding groundwater conditions, and improving the Ukiah Valley Basin Integrated Hydrologic Model (UVIHM). The Ukiah Valley Basin (UVB) GSP identifies "Groundwater Wells Construction Information and Well Inventory" as a high priority data gap in Table 10.2: Data Gap Prioritization and establishes a "Groundwater Well Inventory Program" as a Tier II Project and Management Action.
Additionally, DWR's July 2023 determination letter for the UVB GSP identifies the need to address data gaps related to well inventory as part of the corrective actions.

During the April 25, 2024 GSA Board of Directors Meeting, members received a recommendation from the Technical Advisory Committee (TAC) to prioritize three tasks in preparation for the 2027 Periodic Evaluation: (1) an expanded, enhanced monitoring network, (2) an interconnected surface water study, and (3) a well inventory.

Phase I of the well inventory was completed in June 2025 and established an open-source geospatial database structure that can accommodate new information as it becomes available during subsequent inventory phases. A total of 2,714 wells from DWR's Online System for Well Completion Reports (OSWCR) were reviewed and incorporated into the database. A significant limitation of the OSWCR database is that spatial information for most wells places them at the centroid of their PLSS Public Land Survey System section and other key details are missing or inaccurate. Whenever possible, improved well location accuracy and total depth were established for all inventoried wells through cross-referencing with Mendocino County parcel data, geocoded addresses, aerial imagery, and digitized Well Completion Reports (WCRs). Additional details were compiled for 63 groundwater monitoring wells, 24 public supply wells, and 292 agricultural/irrigation wells which were considered priority use types during Phase I. The resulting technical memorandum identified remaining data gaps and developed strategic recommendations for Phase II to address these gaps and further enhance the well inventory's utility for GSP implementation and model refinement. The discussion below summarizes and builds on those Phase II recommendations.

Discussion: Phase II of the well inventory will address the key data gaps identified in Phase I and provide essential information for GSP implementation and model updates through tasks including:

1. Improvement of Well Use Identification and Classification

Phase I identified 1,063 wells with unknown or blank use designations, representing 39% of all reviewed wells. This substantial number likely contains numerous agricultural, domestic, and other use types that were not properly categorized in the original OSWCR entries. Additionally, Phase I identified 292 wells currently classified as agricultural or irrigation use; however, based on available estimates of groundwater demand for irrigation in the basin and typical well capacities, this number appears insufficient to account for the full volume of agricultural pumping occurring within the UVB.

This task involves identifying wells likely used for agricultural irrigation but not currently classified as such in OSWCR, as well as improving classification for other well use types. The work will include desktop analyses to identify probable irrigation wells based on spatial location (e.g., proximity to agricultural lands) and construction characteristics such as depth, casing diameter, and perforation interval. Wells with unknown use designations that are determined not to be associated with agriculture will be reclassified to their appropriate use category if possible (e.g., domestic, monitoring, industrial, etc.) based on available information from WCRs, parcel data, and spatial analysis. Additionally, previously classified domestic wells will be assessed for possible agricultural or irrigation secondary use, as some wells may serve dual purposes that were not captured in the original OSWCR classification. As appropriate, the task may also incorporate stakeholder outreach to gather additional information regarding well usage.

Accurately identifying agricultural wells is essential for several reasons. Agricultural groundwater use represents a substantial portion of total basin pumping, and understanding the location, depth, and capacity of irrigation wells is critical for: (1) improving the UVIHM's representation of pumping patterns throughout the basin, (2) enabling more accurate analysis of groundwater dynamics and aquifer response, (3) conducting assessments of whether and where groundwater pumping impacts interconnected surface waters, and (4) supporting development of effective projects and management actions to achieve the basin's sustainability goal. Following improvement of the inventory, the UVIHM will be updated with agricultural pumping assigned to the identified wells. Additionally, well log data from WCRs compiled during this task will support refinement of the model's subsurface geology characterization, improving understanding of aquifer properties and layering throughout the basin.

2. Comprehensive Cross-Reference of OSWCR with Monitoring Network and Public Supply Well Databases Developed in Phase I

Phase I substantially improved data accessibility through the development of dedicated databases for monitoring wells and public supply wells, compiling construction details for 63 groundwater monitoring wells and 24 public supply wells. However, primarily due to naming aliases, these datasets were not linked with OSWCR, limiting direct access to associated Well Completion Reports (WCRs).

This task will consist of reviewing publicly available DWR resources, identifying the corresponding WCRs for each monitoring and public supply well, and incorporating those links into the existing databases. The task will also include a thorough reconciliation of all known well identifiers (e.g., DWR IDs, local names, State Well Number, etc.) to ensure that all possible aliases are captured and appropriately cross-referenced, improving data integration and accessibility for ongoing GSP implementation activities.

3. Elevation Surveying for All Wells in the Monitoring Network

Elevations for wells in the monitoring network were assigned using various methods with varying accuracy. The least accurate method averaged Public Land Survey System (PLSS) elevations, resulting in discrepancies of 20 feet or more in some locations. A subset of wells has since been resurveyed using high-accuracy Differential Global Positioning System (DGPS), and their elevation data have been updated accordingly. However, substantial differences remain between these resurveyed wells and nearby wells that still rely on less accurate elevation methods, leading to unrealistic hydraulic gradients.

To ensure internal consistency and improve the reliability of observation data, all wells in the monitoring network should be surveyed using uniform, high-accuracy methods. This task is key to address the corrective action of updating sustainable management criteria (SMCs) from depth-to-water to groundwater elevation required by DWR in the Periodic Evaluation. Accurate elevation data will also improve model calibration and

enhance the monitoring network's ability to track basin conditions relative to established SMCs.

4. Identification and Removal of Inactive Wells, and Verification of Status of Pre-1977 Wells
OSWCR contains records for newly constructed, deepened, and destroyed wells; however, deepening and destruction reports are not inherently linked to their corresponding original construction reports. This lack of linkage makes it challenging to determine the number of wells that are currently active within the basin. In addition, 432 wells were identified but not reviewed due to a 1977 construction cutoff date established to focus on wells likely to remain in active use. However, data from public supply and monitoring wells indicate that some pre-1977 wells remain in active use, suggesting this assumption requires verification. This task will aim to establish linkages across OSWCR records and verify the status of pre-1977 wells to remove inactive wells and improve representation of the basin's active well population, leading to more accurate characterization of current groundwater use and conditions.

5. Add WCR Links to Missing Entries
A subset of OSWCR entries (239 wells identified in Phase I) lacks associated WCR links. This task would attempt to locate missing WCRs through available DWR resources (i.e., map viewer and PLSS-referenced website) and add appropriate links wherever possible. Completing this task would improve overall data completeness and facilitate future well reviews.

6. Enhance Understanding of Domestic Well Vulnerability
DWR's March 2023 guidance document "Considerations for Identifying and Addressing Drinking Water Well Impacts" emphasizes that drinking water well users are considered beneficial users that must be considered during GSP implementation. The guidance specifically recommends that GSAs "enhance and maintain a thorough drinking water well inventory" to understand well location and construction details, as these are "foundational to considering these uses and users."
Phase II will aim to improve the UVBGSA's ability to:
- Identify the location and construction characteristics of domestic wells throughout the basin
- Assess which domestic wells may be susceptible to impacts from declining groundwater levels
- Understand the relationship between monitoring network sites and nearby domestic wells

This enhanced understanding will inform future decisions regarding sustainable management criteria, monitoring network design, and potential projects and management actions to address impacts to drinking water users, consistent with DWR's expectations and SGMA requirements.

Fiscal Impact:
None. Adequate funds have been allocated in the FY 2025-26 budget that the Board approved at the June 12, 2025 meeting.

Recommended Action: Receive and consider Staff's recommendation to amend the On-Call Technical Support agreement with Larry Walker Associates to enable Well Inventory Phase II activities.

MARCH 2023

Guidance for Sustainable Groundwater Management Act Implementation:

Considerations for Identifying and Addressing Drinking Water Well Impacts

Guidance for Sustainable Groundwater Management Act Implementation:

Considerations for Identifying and Addressing Drinking Water Well Impacts

MARCH 2023

Use of this document

The objective of this document is to provide guidance and technical assistance[1] to groundwater sustainability agencies (GSAs) for identifying and addressing drinking water well impacts while implementing and updating their groundwater sustainability plans (GSPs or Plans) under the Sustainable Groundwater Management Act (SGMA). The technical assistance provided in this document may be used by GSAs to guide their consideration of drinking water well users during SGMA implementation and when updating, assessing, or amending their GSPs. This document does not prescribe specific methods that GSAs must use, but it provides technical information and guidance on strategies to consider that may be protective of drinking water well users as GSAs move forward with SGMA implementation. GSAs are encouraged to consider this guidance and its applicability to their basins; however, conformance with specific approaches in this document will not automatically guarantee approval of a GSP by the Department of Water Resources (DWR or Department). Conversely, while the Department believes the approaches presented here likely have broad and general value when implementing SGMA in basins, a GSA need not conform or limit its approach to those contained in this document in order to gain Plan approval. Depending on circumstances in basins, other approaches may also be appropriate. To further assist GSAs, this document also provides links to an online toolkit containing current technical resources and examples of financial assistance to guide GSAs in addressing drinking water well impacts.

CALIFORNIA DEPARTMENT OF
WATER RESOURCES

715 P Street
Sacramento, CA 95814
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1 CWC § 10729 et seq.

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1. BACKGROUND

Enacted into law in 2014, the Sustainable Groundwater Management Act (SGMA) is the primary means to implement the state policy that "…groundwater resources be managed sustainably for long-term reliability and multiple economic, social, and environmental benefits for current and future beneficial uses."[2] Under SGMA, groundwater sustainability agencies (GSAs) must consider all beneficial uses and users in a groundwater basin when developing and implementing their locally-developed groundwater sustainability plans (GSPs or Plans). Drinking water well users, which can include municipal entities, small communities, and individual domestic wells[3], have been identified and are considered beneficial users in all medium and high priority basins and can experience adverse effects such as dry wells, deteriorated water quality, and well damage from land subsidence when excessive groundwater extraction occurs.[4] Each groundwater basin is unique in climate, geology, and land use and therefore the magnitude and scope of potential effects from groundwater extractions and the approach to groundwater management are also unique.

Longstanding state law and policy, codified since at least 1943, states that the use of water for domestic purposes is the highest use of water.[5] In 2013, the state enacted a related policy that "… every human being has the right to safe, clean, affordable, and accessible water adequate for human consumption, cooking, and sanitary purposes."[6] SGMA was passed, in part, to protect communities (i.e., domestic users (de minimis), drinking water systems) from adverse effects of unmanaged groundwater extractions on their drinking water wells and supplies.[7] When administering and implementing SGMA, the Department of Water Resources (DWR or Department) considers these policies[8], which emphasize the importance of drinking water beneficial uses and users.

SGMA authorizes and encourages the Department to provide technical assistance to GSAs and entities that extract or use groundwater.[9] DWR is providing this guidance and technical assistance based on its review of GSPs, primarily for the critically overdrafted basins in 2020 and the various approaches that GSAs have employed to address impacts to drinking water well users. The goal of this document is to support and assist GSAs as they implement and prepare for periodic updates of their GSPs to fully consider how to appropriately address impacts to drinking water well users as part of SGMA implementation. The objectives of this document are:

1. Clarify how interests of drinking water well users are identified and may be addressed consistent with SGMA and the GSP Regulations.
2. Identify tools and resources that can be used by GSAs to enhance implementation of their GSPs and updates to their GSPs related to drinking water well users.
3. Identify and facilitate opportunities for coordination on drinking water well issues among local agencies and county departments with water management responsibilities in a basin and identify state programs to support and facilitate GSAs and local agencies in their coordination efforts.

2 CWC § 113.
3 Drinking water users may broadly refer, as applicable, to the well (property) owners, renters, residents, or tribes that rely on groundwater for household purposes.
4 Stats. 2014, c. 347 (AB 1739) § 1 (a)(3).
5 CWC § 106.
6 CWC § 106.3.
7 AB1739 § 1 (a)(4).
8 23 CCR § 350.4 (g).
9 CWC § 10729 et seq.

1.1 Online Toolkit Accompanying This Document

Since SGMA was enacted, the Department has developed a wide range of technical and planning assistance resources to support GSAs in improving their understanding of their groundwater basin, engaging with interested parties, and identifying financial resources or funding opportunities for implementation of their GSPs. In addition, other state agencies, such as the State Water Resources Control Board (State Water Board), have developed tools that could be useful to GSAs in addressing impacts to drinking water well users. Relevant tools and resources from DWR and other state agencies have been centralized and posted via online "toolkits" which are organized with the same headings and topics as used in this guidance document. The Department will periodically update the toolkits as new resources, information, and funding become available. Links to the relevant toolkits can be found throughout the document wherever the following toolkit icon is found:

Considerations for Identifying and Addressing Drinking Water Well Impacts Toolkits

2. DRINKING WATER UNDER SGMA

One of the founding principles of SGMA is that groundwater resources are most effectively managed at the local or regional level.[10] GSPs are planning documents describing long-term management approaches crafted with both technical and policy considerations. SGMA's preference and design for "local control" gives GSAs the primary authority to debate and establish local policies as they develop and implement their GSPs.

GSP Regulations require GSAs to develop a sustainability goal for their basin that culminates in the absence of undesirable results within 20 years of Plan adoption and implementation.[11] Undesirable results are present when significant and unreasonable effects occur for any of the six sustainability indicators.[12] In defining the undesirable results for the basin, beneficial uses and users of groundwater must be considered, which includes drinking water well users. GSAs are to describe the potential effects based on the technical information presented in the basin setting.[13] Undesirable results are quantified and monitored by using measurements in their established monitoring networks. GSPs must set a minimum threshold value at each representative monitoring site (RMS) which is a "numeric value…that, if exceeded, may [emphasis added] cause undesirable results."[14] An undesirable result is triggered when "…the combination of minimum threshold exceedances … cause significant and unreasonable effects in the basin."[15] Furthermore, the GSP Regulations require the GSP to describe "[h]ow minimum thresholds *may* affect the interests of beneficial uses and users of groundwater or land uses and property interests."[16] Finally, the GSP must define a measurable objective, which is a quantitative goal that reflects the GSA's desired groundwater conditions for the basin. [17] The GSP must present a set of projects and management actions that will assist in achieving the basin's sustainability

10 AB1739 § 1 (a)(8).
11 23 CCR § 354.24.
12 Sustainability indicators under SGMA consist of chronic lowering of groundwater levels, reduction of groundwater storage, seawater intrusion, degraded water quality, land subsidence, and depletion of interconnected surface water.
13 23 CCR § 354.26.
14 23 CCR § 354.28 (a).
15 23 CCR § 354.26 (b)(2).
16 23 CCR § 354.28 (b)(4).
17 23 CCR § 351(s).

goal[18] within 20 years of the implementation of the initial Plan submission, as well as maintained through the 50-year planning and implementation horizon. [19]

Based on the above requirements, GSAs are to use the best available science, establish local management policy based on that science, consider impacts to all beneficial uses and users (including drinking water well users), and "…achieve sustainable groundwater management."[20] DWR, when evaluating GSPs for substantial compliance with the GSP Regulations, is required to determine whether Plans identify a reasonable pathway toward achieving sustainability in the required timeframe and whether the interests of beneficial uses and users, including drinking water well users, have been considered.[21]

GSAs have submitted their initial Plans, but they are required to provide annual reports and periodically update their GSPs at least every five years to document and assess progress toward achieving their sustainability goal.[22] The requirements to submit these reports and regular updates acknowledge that groundwater planning and sustainable groundwater management are likely best achieved through an adaptive, iterative process and that GSPs will need to be adjusted as conditions change, new data become available, and the efficacy of projects and management actions are better understood. The figure on the next page shows a conceptual progression of adaptive management under SGMA, a cycle which GSAs may follow multiple times during the planning and implementation horizon. The following subsections describe each component of this adaptive management framework and how GSAs can consider the interests of drinking water well users at each step through implementation of their GSPs and describe the relevant GSP Regulations. Additionally, DWR's GSP determinations provide examples of how DWR evaluates the adequacy and substantial compliance with the GSP Regulations of GSPs based on locally established policies, procedures, variable basin conditions, and available data throughout the state.

2.1 Identify Drinking Water Well Users

Has drinking water been identified as a beneficial use in the basin and is there a thorough understanding of the location and construction details of drinking water supply wells?

The GSP Regulations require GSAs to identify the interests of all beneficial uses and users of water, which includes all drinking water well users, and specifically to map the density of wells per square mile as well as the location and extent of communities dependent on groundwater.[23] Understanding the locations of drinking water wells in a basin is foundational to considering these uses and users. Furthermore, in addition to well location, well depth and construction details, persons or populations served, and other information is likely necessary to effectively evaluate and monitor how changing groundwater elevations or water quality conditions in the principal aquifers may impact these uses and users within specific basins.

CWC § 10723.2

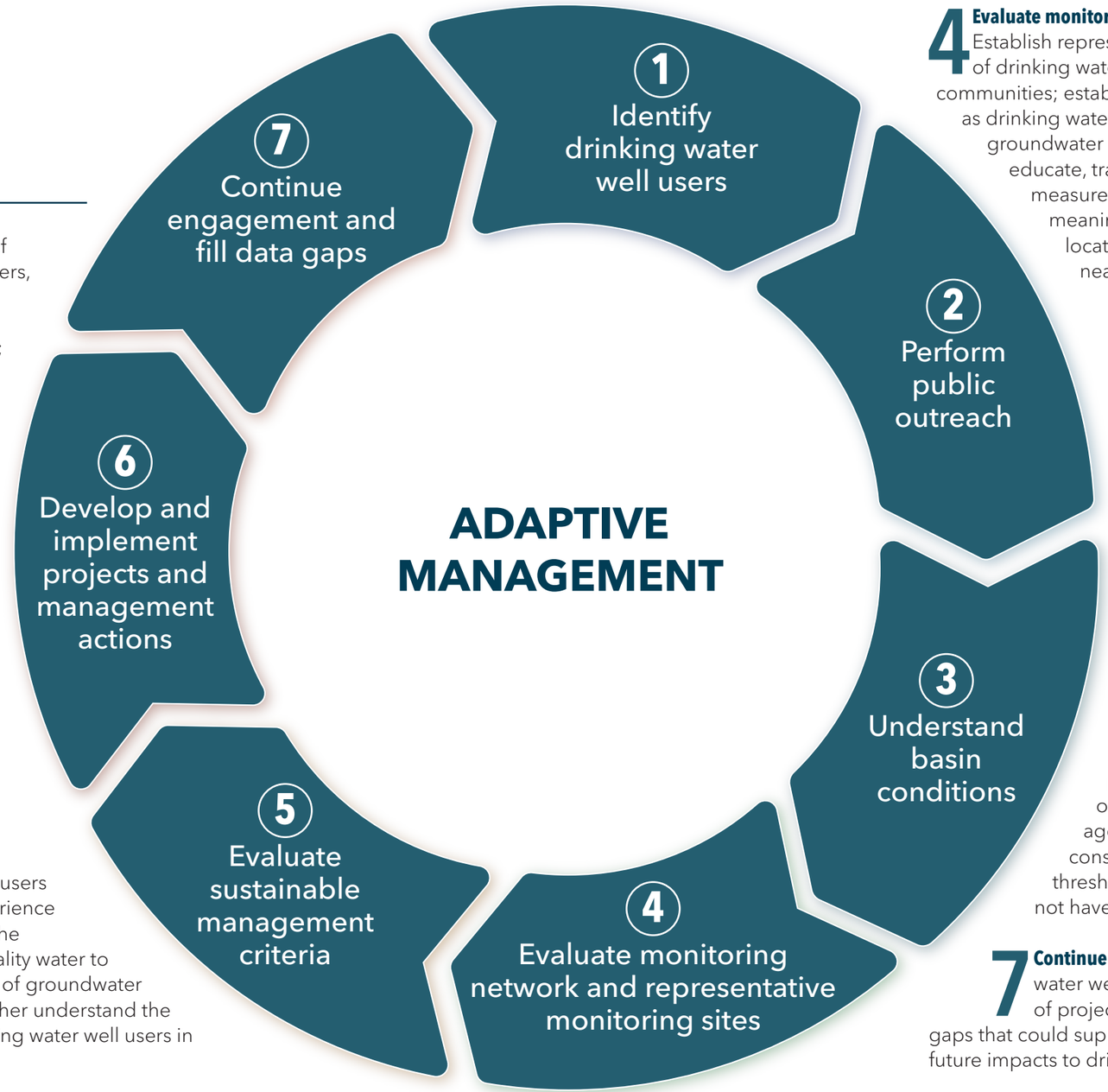
"The groundwater sustainability agency shall consider the interests of all beneficial uses and users of groundwater…"

23 CCR § 354.10

"Each Plan shall include a summary of information relating to notification and communication by the [groundwater sustainability] Agency with other agencies and interested parties, including…" (a) "A description of the beneficial uses and users of groundwater in the basin, including the land uses and property interests potentially affected by the use of groundwater in the basin, the types of parties representing those interests, and the nature of consultation with those parties."

18 23 CCR §§ 354.42 and 354.44.
19 23 CCR § 354.24.
20 23 CCR § 350.4(e).
21 23 CCR § 355.4 (b)(4).
22 23 CCR § 356.4.
23 23 CCR § 354.8 (a)(5).

Considering Drinking Water Users Throughout SGMA Implementation



1 Identify drinking water well users: Identify all types of drinking water well users, including de minimis users, domestic wells, state small water systems, small water systems, public and community water systems, and Tribes that rely on groundwater for drinking water; do not exclude known drinking water well users; establish a thorough understanding of the location and construction details of all drinking water wells.

2 Perform public outreach: Direct outreach to drinking water well users with a meaningful approach for how to engage and involve community members and organizations in decision-making; meet the community in suitable locations and at times when community members are available; communicate in the preferred language of drinking water well users; provide materials so community members can engage and understand technical information for a non-technical audience.

3 Understand basin conditions: Conduct well susceptibility or vulnerability analyses for all drinking water well users; do not exclude subsets of drinking water well users in assessing groundwater conditions; analyze the number of drinking water well users and/or percentage of users in the basin that may experience impacts if future water level conditions were to reach the minimum threshold; analyze the potential for poor quality water to affect drinking water well users in the future as a result of groundwater pumping in association with Plan implementation; further understand the basin conditions of the shallow aquifers used by drinking water well users in relation to the entirety of the basin.

4 Evaluate monitoring network and representative monitoring sites: Establish representative monitoring sites near high densities of drinking water well users, DACs, SDACs, or other rural communities; establish representative wells with similar depths as drinking water wells to be able to monitor and measure groundwater levels and conditions for drinking water well users; educate, train, and empower drinking water well owners to measure water levels, report to GSA, and understand the meaning of groundwater levels and conditions at their well locations, including what the minimum threshold is at or near their well's location.

5 Evaluate sustainable management criteria: Establish and revise sustainable management criteria based on analysis of understanding of basin conditions and considering potential impacts to drinking water well users; if minimum thresholds are set below 2015 groundwater levels, consider projects and management actions to address impacts or carefully justify how unaddressed impacts are consistent with the basin's sustainability goal.

6 Develop and implement projects and management actions: Support drinking water well users to have a long-term, reliable water supply with projects and management actions that address impacts; avoid projects and management actions that exclude certain drinking water well users and ensure that the benefits of projects and management actions are not arbitrary or inequitable; coordinate with local well permitting agencies to ensure new drinking water wells are constructed to provide reliable supply under minimum threshold conditions and that new, large supply wells will not have impacts on nearby drinking water wells.

7 Continue engagement and fill data gaps: Engage drinking water well users during Plan updates and implementation of projects and management actions; continue filling data gaps that could support and improve the understanding of current and future impacts to drinking water well users.

- **Enhance and maintain a thorough drinking water well inventory.** Many previously submitted GSPs relied on readily accessible, statewide tools to understand and identify drinking water wells in their basins. However, these datasets have limitations and GSAs are encouraged to refine their well inventory to fill data gaps for their basin. This can be achieved using local records, surveys, and/or outreach to water systems, communities, and residents to develop a comprehensive understanding of drinking water well locations and construction and service details within their basin.

Relevant data, information, and resources to support GSAs in identifying drinking water well users are available in the Identifying Drinking Water Well Users Section of the Toolkit

2.2 Perform Public Outreach

Are drinking water well users and interests being informed and engaged throughout implementation and when updates are made to the GSPs?

Performing and documenting outreach is a requirement for GSPs, which must describe the parties that represent drinking water well users and detail the nature of consultation between the GSA and those parties.[24] For consideration, drinking water well users may not be represented or organized in consolidated ways that allow for GSAs to consult with and consider their interests in a single meeting or by meeting with one organization. Furthermore, small water systems typically do not have significant resources or staff, and domestic wells are often a one-well per household system. To alleviate these communication challenges, non-governmental organizations (NGOs) and community-based organizations (CBOs) can represent on behalf of these uses and users. Oftentimes, CBOs operate locally at venues such as churches or community facilities like public libraries, but these organizations may not be present in all areas of the state. Other local or municipal agencies (e.g., city, county, or health departments) may also have information or communication pathways to understand and consult with drinking water well users and well owners. Depending on the specific circumstances in their basins, GSAs may need to consider the following additional ways to meet their obligations to communicate and consult with and consider drinking water well users:

- Perform direct outreach to drinking water well users within their basins.
- Leverage existing communication and consultation pathways established by other existing entities such as NGOs, CBOs, or other local or municipal agencies.
- Coordinate Senate Bill (SB) 552 implementation. Counties fulfilling their responsibilities under SB 552 (described in Section 4.2) are also performing outreach to domestic users and small water systems through local drought task forces. Close coordination between GSAs and counties may therefore increase available information and understanding and foster coordinated activities related to emergency response and projects to build long-term resilience for drinking water well users.

Relevant data, information, and resources to support GSAs in performing public outreach are available in the Public Outreach Section of the Toolkit

24 23 CCR § 354.10 (a).

2.3 Understand Basin Conditions

Is there thorough understanding and analysis of historic, current, and future groundwater conditions and identified locations of wells that may go dry, have potential for water quality impairments, or impacts due to seawater intrusion or land subsidence?

GSP Regulations require GSAs to assess potential future impacts to drinking water well users, including how sustainable management criteria and minimum thresholds may affect drinking water uses and users, land uses, and property interests.[25] Understanding the location and nature of potential future impacts is critical to taking proactive measures to avoid or minimize those impacts and achieve sustainable groundwater management. Potential activities to achieve and demonstrate this understanding as part of GSP implementation could include:

- **Perform a shallow well analysis.** Many previously submitted GSPs used a shallow well analysis to establish sustainable management criteria in their basins. These analyses typically included reviewing production well locations in relation to representative monitoring sites, known well construction information such as well screen and total depth, and describing the beneficial use of the identified shallow wells in the vicinity of each representative monitoring site. In this way, a shallow well analysis informs the GSA when establishing sustainable management criteria by providing an evaluation and disclosure of the potential impacts to shallow production wells, including drinking water well users, of potential groundwater management approaches.

- **Project future groundwater conditions and forecast potential impacts to drinking water well users.** Methodologies to complete such analyses may vary, with some basins leveraging their calibrated numerical models and other basins using simpler methods, such as Geographic Information System (GIS) or spreadsheet analyses. The analysis may identify wells at risk of going dry, experiencing a degradation of water quality, experiencing land subsidence, and/or experiencing seawater intrusion. In particular, the analysis should evaluate the potential impacts at minimum thresholds.[26] If a GSA identifies potential impacts to drinking water wells caused by groundwater extractions projected to occur under intended management of the

23 CCR § 354.16

"Each Plan shall provide a description of current and historical groundwater conditions in the basin, including data from January 1, 2015, to current conditions, based on the best available information that includes…"(d) "… [g]roundwater quality issues that may affect the supply and beneficial uses of groundwater…"

23 CCR § 354.18

(e) "Each Plan shall rely on the best available information and best available science to quantify the water budget for the basin in order to provide an understanding of historical and projected hydrology, water demand, water supply, land use, population, climate change, sea level rise, groundwater and surface water interaction, and subsurface groundwater flow. If a numerical groundwater and surface water model is not used to quantify and evaluate the projected water budget conditions and the potential impact to beneficial uses and users of groundwater, the Plan shall identify and describe an equally effective method, tool, or analytical model to evaluate projected water budget conditions."

CWC § 10721 (e)

"'De minimis extractor' means a person who extracts, for domestic purposes, two acre-feet or less per year."

25 23 CCR §§ 354.18 (e), 354.26 (b)(3), and 354.28 (b)(4).
26 23 CCR §§ 354.28(b)(4).

basin, including impacts to de minimis users[27] and disadvantaged communities, those impacts should be described in the GSP and periodic updates.[28] At a minimum, GSAs should disclose anticipated conditions and work with counties and other entities to respond, and/or implement projects and management actions to assist the identified users or avoid the adverse conditions.

- **Provide data and support to other local entities.** Well owners, counties, drillers, or other interested parties may need to better understand current and potential projected basin conditions, and GSAs should support them with information about sustainable management criteria, monitoring reports, and other data, customized to a particular well site.

Relevant data, information, and resources to support GSAs in understanding basin conditions are available in the Understanding Basin Conditions Section of the Toolkit

2.4 Evaluate Monitoring Network and Representative Monitoring Sites

Do the monitoring networks for the Plan area contain sites that will monitor impacts to drinking water uses and users?

GSP Regulations require GSAs to develop a monitoring network to monitor groundwater management, including impacts to all beneficial uses and users of groundwater, which includes all categories of drinking water well users.[29] Groundwater level and water quality monitoring is particularly important for drinking water users to observe trends in groundwater conditions and anticipate where and when potential drinking water or well impacts may occur. To effectively monitor impacts to drinking water uses and users in their basins, GSAs may need to consider the following when establishing, refining, or evaluating their monitoring network:

23 CCR § 354.34

(a) "Each Agency shall develop a monitoring network capable of collecting sufficient data to demonstrate short-term, seasonal, and long-term trends…"
(b) "…The monitoring network objectives shall be implemented to…"
(2) "Monitor impacts to the beneficial uses or users of groundwater."
(f) "The Agency shall determine the density of monitoring sites and frequency of measurements to demonstrate short-term, seasonal, and long-term trends based upon…"
(3) "Impacts to beneficial uses and users of groundwater and land uses and property interests affected by groundwater production…"

23 CCR § 354.36

(a) "Representative monitoring sites may be designated by the Agency as the point at which sustainability indicators are monitored, and for which quantitative values for minimum thresholds, measurable objectives, and interim milestones are defined."
(c) "The designation of a representative monitoring site shall be supported by adequate evidence demonstrating that the site reflects general conditions in the area."

23 CCR § 354.38

(e) "Each Agency shall adjust the monitoring frequency and density of monitoring sites to provide an adequate level of detail about site-specific surface water and groundwater conditions and to assess the effectiveness of management actions under circumstances that include…"
(3) "Adverse impacts to beneficial uses and users of groundwater."

27 De minimis users are defined in CWC § 10721 (e) as domestic users that extract less than 2 acre-feet per year.
28 CWC § 10723.2 and 23 CCR §§ 354.26(b)(3), 354.28(b)(4), 354.34(b)(2), 354.34(f)(3), 354.38(e)(3), 355.4(b)(4).
29 23 CCR § 354.34 (b)(2).

Considerations for Groundwater Level Monitoring Network

- **Establish monitoring network based on local conditions.** The monitoring network should consider the major geologic features that affect groundwater flow in the basin, which include the principal aquifers and aquitards, faults, and folds,[30] and should include monitoring sites that will represent conditions experienced by drinking water well users identified in Section 2.1 above. This monitoring network should be of a sufficient density to collect measurements through depth-discrete perforated intervals to characterize the groundwater table or potentiometric surfaces for each principal aquifer. Monitoring sites and networks should also inform planning by supporting characterization of seasonal low and seasonal high groundwater conditions.

- **Evaluate areas needing more monitoring and enhance networks.** Identify areas in need of additional monitoring sites or increased monitoring frequency, such as areas currently experiencing declining water levels, dry wells, or issues due to land subsidence. Using well location and depth information described in Section 2.1, evaluate if monitoring sites and selected representative monitoring sites are adequately located, in distance and depth, to monitor groundwater conditions affecting drinking water user wells.

Considerations for Groundwater Quality Monitoring Network

- **Utilize existing water quality monitoring.** Understand and utilize existing water quality monitoring programs when appropriate. Use of existing monitoring programs could, among other potential benefits, save resources, allow for more thorough monitoring when used in conjunction with new monitoring sites added by GSA(s), and provide additional data to characterize basin conditions, understand basin interactions, and reveal long-term or historic trends. If leveraging other water quality monitoring programs for compliance with SGMA, GSPs should explain the correlation and how the requirements of the other programs satisfy the requirements of SGMA and the GSP Regulations.[31]

- **Evaluate the adequacy of monitoring.** GSAs should evaluate the established monitoring frequencies for constituents or other water quality criteria to ensure that the monitoring will effectively identify trends and allow timely management actions.

Considerations for Representative Monitoring Sites

- **Evaluate adequacy of representative monitoring sites to observe potential effects to drinking water well users.** Using well location and depth information described in Section 2.1 and from the established monitoring network, evaluate if selected representative monitoring sites adequately reflect general conditions in the area and can sufficiently monitor groundwater conditions that may affect drinking water uses and users and associated wells.

30 23 CCR § 354.14 (b)(4)(C).
31 23 CCR § 354.34 (e), 23 CCR § 354.34 (g)(1), 23 CCR § 354.34 (g)(2).

Relevant data, information, and resources to support GSAs in establishing monitoring networks and representative monitoring sites are available in the Monitoring Network Section of the Toolkit

2.5 Evaluate Sustainable Management Criteria

Do the sustainable management criteria in the GSP seek to avoid or minimize impacts to drinking water well users?

The sustainable management criteria section in a GSP defines conditions within the basin which constitute sustainable groundwater management, which SGMA defines as the management and use of groundwater in a manner that can be maintained during the planning and implementation horizon without causing undesirable results related to the six sustainability indicators.[32] As described in the introduction to Section 2, defining sustainable management criteria consists of four components:

- Sustainability Goal[33]
- Undesirable Results[34]
- Minimum Thresholds[35]
- Measurable Objectives[36]

Four of the six sustainability indicators[37] are potentially applicable to drinking water well users:

- Chronic lowering of groundwater levels
- Seawater intrusion
- Degraded water quality
- Land subsidence

The potential effects of these indicators on drinking water uses and users and how a GSP may structure its criteria for these indicators in consideration of drinking water uses and users are discussed in the subsections below.

Relevant data, information, and resources to support GSAs in evaluating sustainable management criteria are available in the Sustainable Management Criteria Section of the Toolkit

32 Sustainability indicators under SGMA consist of chronic lowering of groundwater levels, reduction of groundwater storage, seawater intrusion, degraded water quality, land subsidence, and depletion of interconnected surface water.
33 23 CCR § 354.24.
34 23 CCR § 354.26.
35 23 CCR § 354.28.
36 23 CCR § 354.30.
37 Groundwater storage could potentially affect drinking water users in various ways, including storage lost to aquifer compaction due to subsidence. However, for simplicity this document discusses lowering of groundwater levels and subsidence since they are the root causes of changes in storage.

2.5.1 Chronic Lowering of Groundwater Levels

Domestic and small water system wells are typically drilled shallower than larger agricultural and municipal wells and are often the first to experience the effects of declining water levels, potentially leaving drinking water users and well owners with increased operating or maintenance costs, changes in water quality, or lacking an adequate drinking water supply. While SGMA does not require that all impacts to individual drinking water well users be avoided or mitigated, SGMA and other state laws and policies do require deliberate and careful consideration and a well-supported management approach regarding potential impacts to these users. Attempts to ignore or dismiss such impacts are inconsistent with the intent of SGMA and GSP Regulations. In recognition of the seriousness with which such issues need to be considered and addressed in GSPs, DWR has noted in its determinations how drinking water issues have been addressed in submitted GSPs. DWR's evaluations are on a case-by-case basis using basin-specific circumstances and the management approach of specific Plans. DWR's GSP evaluations[38] elaborate on basin-specific recommendations, and, in conjunction with the guidance in this document, serve as additional insight for how GSAs may address drinking water wells in their basin plans and updates.

The GSP Regulations require GSPs to analyze and disclose the effects of their selected undesirable results and minimum thresholds on beneficial uses and users of groundwater in a basin, which includes drinking water well users.[39] To do so, an adequate understanding of the location and construction details of the drinking water supply wells in the basin is needed, as described in Section 2.1 above. A well impact analysis that uses information on known drinking water supply wells and uses the minimum thresholds at monitoring network sites (which should be located near, and be representative of conditions experienced by, drinking water well users) is encouraged to demonstrate and disclose an adequate understanding of potential impacts to drinking water well users.[40] Results of this analysis should be compared to what is considered significant and unreasonable effects for the basin and convey when undesirable results are encountered.

SGMA does not require that GSPs address undesirable results that occurred prior to and were not corrected by January 1, 2015.[41] Therefore, some GSPs may not contain projects or management actions for previous (prior to 2015) impacts to drinking water wells. However, if minimum thresholds would allow water levels to drop and to potentially cause new undesirable results, and projects and management actions are not proposed that will address the impacts, the GSP should contain a thorough discussion, with supporting facts and rationale, explaining how and why the GSA did not include specific actions to address drinking water impacts from continued groundwater lowering below previous pre-SGMA levels. Such rationale could include, but is not limited to, economic analyses and descriptions of how such lowering is consistent with the GSP's sustainability goal. Conversely, if a GSA maintains that its GSP is not required to address certain impacts to drinking water wells that are considered undesirable results, the GSA should precisely describe those potential impacts and conditions in its basin and explain how it determined they fall within the exclusion provided in CWC § 10727.2(b)(4). Under CWC §10727.2(b)(4), GSAs are not required to address certain previous undesirable results, but they do have discretionary authority to do so if desired.

Based on a well impact analysis, if a portion of drinking water wells are at risk of losing access to adequate drinking water, the GSAs are encouraged to develop and implement projects and management actions to address the potential impacts. Section 2.6 below contains guidance for

38 Available on the SGMA Portal: https://sgma.water.ca.gov/portal/gsp/status.
39 23 CCR §§ 354.26 (b)(3) and 354.28 (b)(4).
40 23 CCR § 354.28 (b)(4).
41 Water Code § 10727.2 (b)(4).

projects and management actions GSAs may want to consider. Furthermore, coordination with counties implementing SB 552, which has requirements related to addressing impacts to drinking water well users, is encouraged as described in Section 4.2 below.

If a GSP proposes a management strategy that relies on a well mitigation program to justify the lowering of groundwater levels that may cause adverse effects to drinking water well users, the GSA must provide enough detail and evidence for DWR to determine whether the mitigation is feasible and likely to prevent undesirable results (e.g, describe the scope of the program, including a timeline for implementation, and how users impacted by continued groundwater level decline will be addressed).[42] With every basin and management approach being unique, the need and scale of such a mitigation program will vary from basin to basin. However, such a program should be reasonably structured so that it does not arbitrarily or inequitably exclude certain drinking water well users and GSAs should be cautious in program requirements that may exclude users based on age of well, location, socioeconomic status, demographics, and other relevant factors.

Relevant data, information, and resources to support GSAs in evaluating their chronic lowering of groundwater levels sustainable management criteria are available in the Chronic Lowering of Groundwater Levels Section of the Toolkit

2.5.2 Seawater Intrusion

Seawater intrusion has the potential to affect drinking water well users in coastal areas. GSP Regulations require that minimum thresholds be based on a chloride concentration isocontour for each principal aquifer and be based on current and projected sea levels.[43] In consideration of drinking water wells that are near an area that may be at risk of experiencing seawater intrusion, GSAs may consider the following guidance:

- **Evaluate if minimum threshold isocontour values are consistent with drinking water uses.** Regulated drinking water systems have a recommended maximum contaminant level for chloride of 250 milligrams per liter[44] and GSAs may consider this an appropriate guideline for drinking water purposes.

- **Establish monitoring wells screened at a similar depth as drinking water wells.** These wells that are used to generate the chloride isocontours should be screened similarly to drinking water wells, since seawater intrusion will vary with depth based on geology and seawater density.

- **Establish sentinel wells.** Monitoring wells on the seaward side of the proposed isocontours should be considered for monitoring. If they are placed strategically, they could allow early detection of intrusion fronts if it is progressing landward.

- **Use electrical conductivity (EC) measurements to better understand seawater intrusion conditions.** EC can serve as a surrogate for seawater intrusion and is a relatively easy and cost-effective measurement to gather in the field. Electrical conductivity transducers can be

42 23 CCR 355.4(b)(5).
43 23 CCR § 354.28 (c)(3).
44 22 CCR § 64449 Table B.

installed in the screen of monitoring wells and record measurements at regular intervals. Frequent measurements can provide valuable insight on how seawater intrusion may change seasonally or based on aquifer stresses.

- **Use geophysics to better understand seawater intrusion conditions.** Geophysical techniques are available that can assist GSAs with understanding and mapping seawater intrusion. Electromagnetic geophysical methods are sensitive to the high electrical conductivity associated with seawater-saturated sediments and are a commonly used method for mapping seawater intrusion. The airborne electromagnetic (AEM) method can be used to map the lateral extent of seawater intrusion in agricultural areas that are not densely populated and provide seawater intrusion interpretations to depths up to 1,000 feet below surface. Towed electromagnetic (t-TEM) methods can be deployed in smaller open spaces and provide seawater intrusion interpretations to depths up to 300 feet. Finally, the electromagnetic tomography (ERT) method can be deployed along coastlines by installing sensors in an array and provides seawater intrusion interpretations to depths that are dependent on the length of the sensor array (typically depths up to 600 feet).

Relevant data, information, and resources to support GSAs in evaluating their seawater intrusion sustainable management criteria are available in the Seawater Intrusion Section of the Toolkit

2.5.3 Degradation of Water Quality

GSP Regulations require that the GSA consider local, state, and federal drinking water quality standards applicable to the basin.[45] Existing water quality standards may include, but are not limited to, those established by the State Water Board's Division of Drinking Water, the Regional Water Quality Control Board's (RWQCB's) basin plan(s), Irrigated Lands Regulatory Program (ILRP), and/or Central Valley Salinity Alternatives for Long-Term Sustainability (CV-SALTS).[46] The GSA may rely on water quality programs for monitoring, but should consider additional monitoring in areas where the drinking water wells are screened at different depths from the program's wells or where there is no existing monitoring.

- **Reevaluate constituents of concern (COCs).** The GSP Regulations require that the GSA set minimum thresholds for water quality degradation that impairs water supplies, which includes drinking water supplies.[47] Therefore, the GSA should describe what groundwater conditions are considered suitable for drinking water use and identify a set of COCs that may affect that suitability and need to be monitored.[48] A reasonable starting point is to review constituents regulated by the State Water Board's Division of Drinking Water with a drinking water standard, evaluate previously collected groundwater quality data in the basin, and identify constituents that may have values elevated above screening thresholds[49], increasing trends, and/or values greater than or at drinking water standards. The selected COCs should be supported by the

45 23 CCR § 354.28 (c)(4).
46 23 CCR § 354.28 (c)(4).
47 23 CCR § 354.28 (c)(4).
48 23 CCR § 354.28 (c)(4).
49 See the Degradation of Water Quality Section of the Toolkit

groundwater conditions section of the GSP. Additional constituents that could be reasonably anticipated based on land uses and hydrogeologic conditions in the basin can be considered as potential COCs.

As mentioned above, domestic and small water system wells are often drilled shallower than larger wells and may be more susceptible to poor water quality from land use activities. Water quality degradation can result from non-point sources such as broad application of fertilizer or pesticides on agricultural lands or from point sources such as concentrated animal feeding operations or contaminated sites from spills or leaks. GSP Regulations require that the GSA consider the potential impact of migrating contaminant plumes when identifying COCs and minimum thresholds.[50] Many locations with contaminated groundwater and contamination plumes are actively regulated by local, state, or federal agencies under various authorities. GSAs should coordinate with these agencies to understand how groundwater management in the basin may be impacting ongoing regulatory activities and overall water quality that may affect drinking water well users in the basin. Such water quality issues, either from contamination or from natural sources, emphasize the need for good monitoring that is representative of conditions experienced by drinking water wells and described in Section 2.4 above.

Relevant data, information, and resources to support GSAs in evaluating their degradation of water quality sustainable management criteria are available in the Degradation of Water Quality Section of the Toolkit

2.5.4 Land Subsidence

GSP Regulations require that GSAs present the best available information to document conditions related to land subsidence in the basin.[51] The GSP must set minimum thresholds at a rate and extent that avoids substantial interference with land uses.[52] To support this, many GSAs have identified infrastructure that are sensitive to changes in ground surface elevation such as canals, aqueducts, pipelines, wastewater systems, railways, roads, and bridges. However, wells are also susceptible to damage from subsidence. Subsidence can cause well casing to collapse, above-ground equipment to fail, and damage sanitary seals that can cause a well to fail or contaminants to enter the well. GSAs should consider the following to protect drinking water well users from these effects:

- **Identify wells that may be susceptible to subsidence.** Both the location and depth of wells in a basin should be determined and considered to understand if they are constructed through clay layer(s) where subsidence-causing compaction may occur and potentially damage wells.
- **Consider drinking water wells when revising sustainable management criteria.** As mentioned above, various types of infrastructure may be at risk of damage due to subsidence and drinking water wells should be considered in revising sustainable management criteria.
- **Monitor for subsidence in areas with drinking water wells.** The subsidence monitoring network should not exclude areas with drinking water wells.

50 23 CCR § 354.28 (c)(4).
51 23 CCR § 354.16 (e).
52 23 CCR § 354.28 (c)(5).

Relevant data, information, and resources to support GSAs in evaluating their land subsidence sustainable management criteria are available in the Land Subsidence Section of the Toolkit

2.6 Develop and Implement Projects and Management Actions

Are there projects and management actions proposed and being implemented that will avoid or minimize impacts to drinking water well users?

The GSP Regulations require GSPs to identify projects and management actions that will achieve the sustainability goal for the basin.[53] GSAs, local agencies, and NGOs or CBOs may benefit from coordination and potential partnerships to plan and prioritize projects and management actions in their respective basins. Examples of the benefits of these partnerships could include identification of details on what will be achieved with a project, who will implement the project, and how a project will be managed.

Some projects and management actions may be proposed and implemented to respond to near-term effects, including emergency needs and drought impacts, where drinking water well users may lose access to adequate drinking water supply. Such actions could include bottled water, tanked water, and treatment measures. These responses should be closely coordinated with local and state emergency authorities along with counties implementing their drought planning responsibilities under SB 552. However, GSAs should also focus on measures that will avoid these conditions and promote long-term sustainability.

Examples of the types of projects and management actions that, depending on circumstances in a basin, could achieve reliable, long-term supplies for drinking water well users include:

- **Management actions**
  - Demand reduction surrounding communities reliant on groundwater for drinking water
  - Adjusting the location of demand, such as creating buffer zones for drinking water users
  - Managed aquifer recharge near communities to replenish shallow aquifers, with considerations of potential water quality effects

- **Alternate supply projects**
  - Shifting drinking water well users to surface water supplies
  - Consolidation of drinking water users into existing community and municipal systems
  - Establishing new community water systems
  - Drilling new wells for drinking water users

- **Well modification projects**
  - Lowering pumps in existing drinking water wells
  - Rehabilitating existing drinking water wells
  - Deepening existing drinking water wells

- **Treatment projects**
  - Point of use or point of entry treatment for drinking water users

The list above is not exhaustive and the types of projects and management actions that may be feasible will vary from basin to basin as determined by the GSAs. When developing or implementing

53 23 CCR §§ 354.24 and 354.44 (a).

such actions, GSAs should strive to include all drinking water well users and should carefully consider any requirements so that assistance to drinking water users is not administered arbitrarily or inequitably as elaborated in Section 2.5.1 above.

GSAs may need to prioritize their projects and management actions. Prioritization factors could include:

- Effectiveness
- Number of users benefitted
- Permitting and environmental considerations
- Water rights
- Cost

Based on the established priority, GSPs should describe the circumstances under which the projects and management actions will be implemented as required by GSP Regulations.[54] However, projects and management actions are often best implemented proactively, meaning GSAs should not necessarily wait for triggering events. Similar to other disasters, once the emergency conditions that impair drinking water supplies are present, it may be too late to implement some of the projects and management actions that would have avoided the impacts had they been implemented sooner.

GSAs may want to engage drillers and well permitting agencies to make sure they are able to determine the minimum threshold at a particular well site if the site is within a medium or high priority basin. Knowing the depth of the minimum threshold will allow them to:

- Inform existing well owners of the level of risk that their well could go dry or experience issues associated with water levels declining to the minimum threshold and allow well owners to take proactive measures
- Inform or require owners and drillers of new wells to drill to a depth which would continue to provide an adequate supply at minimum threshold conditions
- Assess whether a new supply well may have impacts on nearby drinking water wells

Relevant data, information, and resources to support GSAs in developing and implementing projects and management actions are available in the Projects and Management Actions Section of the Toolkit

2.6.1 Funding

Funding to support both short-term emergency efforts and long-term solutions that build resilience may be available from many public sources at the local, county, state, and federal levels. Numerous funding programs require that recipients (GSAs) match the requested grant funding, either in dollars or "in-kind" services.

2.6.1.1 Costs of Addressing Drinking Water Impacts

Specific costs for projects, management actions, and assistance to impacted drinking water well users will depend on the nature, type, and scale of a given project. The Framework for a Drinking Water Well Impact Mitigation Program (2022)[55] provides estimates for well activities such as diagnostics,

54 23 CCR § 345.44 (b)(1)(A).
55 Available at: https://www.selfhelpenterprises.org/wp-content/uploads/2022/07/Well-Mitigation-English.pdf

pump lowering, and new well drilling. While these estimates give an approximation of potential costs to well owners, they can vary widely depending on the size and depth of well, material costs, and other market forces.

2.6.1.2 Funding Sources

Most public financial assistance programs change frequently as the sources of funding for these programs have specific requirements on how and when the dollars must be spent. The website toolkit connected with this document serves as a resource for GSAs and parties whose drinking water sources have been impacted. It will be updated regularly to provide the most current and accurate information regarding applicable financial assistance programs.

2.6.1.2.1 State and Federal Grants and Loans

While there are many relevant financial assistance programs, this section highlights some state and federal funding programs that are likely to continue to be available into the future. The federal and state governments maintain websites that serve as clearinghouses for available funding programs, and DWR and the Sustainable Groundwater Management (SGM) Program also maintain funding websites. Each of these websites are listed below and additional funding programs can be found via internet search of the terms "drinking water", "domestic well", "small community water systems", or simply "water" or "groundwater".

- **Federal:** https://www.grants.gov/
- **California Statewide:** https://www.grants.ca.gov/
- **DWR:** https://water.ca.gov/Work-With-Us/Grants-And-Loans
- **SGM Program:** https://water.ca.gov/work-with-us/grants-and-loans/sustainable-groundwater

2.6.1.2.2 GSA Fees and Assessments

SGMA gives GSAs the authority to levy fees and assessments based on usage, acreage, or other criteria.[56] Some GSAs have already implemented such fees and assessments and others may do so as they implement their GSPs. Such revenue sources may be necessary to implement GSPs and projects and management actions because state, federal, and other funding sources typically have requirements of the types of activities that can be funded and often require cost match or repayment of loans. GSAs may need to explore different fee and assessment processes depending on their governance structure and other relevant laws or policies.

Relevant and current information about potential funding approaches and opportunities are available in the Funding Section of the Toolkit

2.7 Continue Engagement and Fill Data Gaps

Are drinking water well users and interests continually being informed and engaged during GSP implementation activities such as projects and management actions, annual reports, and updates to GSPs?

As GSAs move forward with implementation of their GSPs, keeping the public informed of Plan progress, basin conditions, and the status of projects and management actions is critical[57] and may

56 Water Code §§ 10725 et seq. and 10730 et seq.
57 23 CCR § 354.44 (b)(1)(B).

foster greater community understanding and support of GSA efforts. In basins that identify the potential for impacts to drinking water well users, either during the development of the GSP or through evaluation of new monitoring data, refinements of numerical models, or other mechanisms, ongoing public outreach to engage drinking water well users may provide opportunities to receive feedback and identify creative solutions to address these challenges. Ongoing public outreach with drinking water well users is important to inventory wells in the basin, provide educational materials on well infrastructure and maintenance, involve drinking water users so they can understand groundwater planning and management efforts, and inform them how and with whom to communicate if impacts occur to their wells.

GSAs have data gaps identified in their GSPs, and as part of implementation should be working to fill those gaps and any additional gaps that may have been identified after GSP adoption. GSAs should provide information regarding those data gaps that are filled in annual reports and periodic updates of the GSPs. Such data gaps could help address or further identify potential effects on drinking water users and continual engagement with drinking water users on the changes in the GSPs is encouraged.

Relevant data, information, and resources to support GSAs in performing ongoing public outreach and filling data gaps are available in the Public Outreach and Filling Data Gaps Sections of the Toolkit

3. TOOLS AND RESOURCES

The toolkits on the website are organized to support the guidance presented in Section 2 and aligned with the overall outline of this document. The toolkits are intended to be dynamic and will be updated as new information is available.

The toolkits contain links to reference documents, websites, data, and online tools that have been developed under various state programs. The toolkits focus on state resources, but the website also contains a link to the Groundwater Exchange, which is a useful portal for accessing non-state tools and resources related to groundwater management.

Considerations for Identifying and Addressing Drinking Water Well Impacts Toolkits

4. COMPLEMENTARY PROGRAMS AND INITIATIVES

Complementary programs and initiatives exist that can be aligned to help address impacts to drinking water well users. Alignment and coordination with these initiatives can aid GSAs in the understanding and development of processes for determining if groundwater management and extraction is resulting in impacts to drinking water well users. The initiatives that might be most useful to the GSAs when developing and implementing their GSPs and associated reports and updates include the Drinking Water Principles and Strategies document, SB 552 (Drought Planning for Small

Water Suppliers and Rural Communities), local government general plans, well permitting, and other relevant programs within the basin.

Relevant information, about complementary programs and initiatives are available in the Complementary Programs and Initiatives Section of the Toolkit

4.1 Groundwater Management Principles and Strategies

To fulfill an April 2021 Emergency Proclamation by the Governor, DWR, in coordination with the State Water Board, developed Groundwater Management Principles and Strategies to Monitor, Analyze, and Minimize Impacts to Drinking Water Wells: A Framework for State Action to Support Drought Resilient Communities (Groundwater Management Principles and Strategies). The principles and strategies document provides a shared, interagency framework that captures key actions the state will pursue to help address and minimize impacts to drinking water well users. Strategy 6.2 of the Groundwater Management Principles and Strategies, identifies that the state will, "develop guidance for local agencies to collaborate on mitigation strategies and actions to offset impacts of groundwater pumping and management on drinking water well users in partnership with local agencies and NGOs [Non-Governmental Organizations]". Additional strategies outlined in the Groundwater Management Principles and Strategies document are featured as items in the online toolkit associated with this guidance document. The status of other principles and strategies can be found at the program website https://water.ca.gov/Programs/Groundwater-Management/Drinking-Water-Well.

4.2 Senate Bill 552: Drought Planning for Small Water Providers and Rural Communities

In response to drought conditions, the State Legislature passed SB 552 in September 2021, also known as Drought Planning for Small Water Suppliers and Rural Communities. SB 552 requires state and local governments to share the responsibility for preparing and acting in the case of a water shortage event. Specifically, the law requires small water suppliers (15 to 3,000 connections and serving less than 3,000 acre-feet per year) to develop a water shortage contingency plan and requires counties to assemble a standing drought task force to facilitate drought planning, response and management, and to develop drought resilience plans to prepare for water shortage for state small water systems (serving 5 to 14 connections), domestic wells, and other privately supplied homes within the county's jurisdiction. The requirements of SB 552 were also identified in the Groundwater Management Principles and Strategies document described above, as part of the state's actions that will help address drinking water needs. The nexus of the two programs (SGMA and SB 552) and their differences, including that SGMA applies only to groundwater basins and SB 552 is statewide, is documented and illustrated in a fact sheet on alignment and coordination between the two programs.

Prior to planning or implementing activities to address drinking water impacts, GSAs are encouraged to begin coordination with other local entities such as local water systems and counties. Small water suppliers will have water shortage contingency plans for compliance with SB 552[58] as a stand-alone plan and larger suppliers will have a drought contingency plan as part of their urban water management plans. Under SB 552, counties will have a drought resilience plan that addresses domestic wells either as a stand-alone or as part of an existing county plan such as a local hazard mitigation plan, emergency operations plan, climate action plan, or general plan. The drought

58 DWR's SB 552 website: https://water.ca.gov/Programs/Water-Use-And-Efficiency/SB-552

resilience plan has elements that focus on short-term response as well as long-term strategies, so coordination between GSAs and counties is important.

At a minimum, GSAs should identify who is the county contact for emergency response and/or responsible for drought resilience plans, invite them to be part of the GSP implementation process, and inform them of GSP implementation activities related to drinking water users, and identify opportunities for collaboration on projects and management actions.

4.3 General Plans

Coordination with cities and counties (planning agencies) and their associated general or land use plans can be leveraged to aid GSAs in understanding and avoiding future land use changes that could increase groundwater demand and could result in impacts from groundwater management and extraction practices on drinking water well users. As per California Government Code, "it is vital that there be close coordination and consultation between California's water supply or management agencies and California's land use approval agencies to ensure that proper water supply and management planning occurs to accommodate projects that will result in increased demands on water supplies or impact water resources management."[59]

When a city or county proposes to adopt or substantially amend a general plan, the GSA should receive notification and subsequently provide the planning agency their GSP as well as a report on the anticipated effects of the general plan adoption or amendment on the implementation of the GSP.[60,61] Similarly, a GSP shall "take into account the most recent planning assumptions stated in local general plans of jurisdictions overlying the basin"[62] and "include a description of the consideration given to the applicable county and city general plans and…an assessment of how the groundwater sustainability plan may affect those plans."[63]

Specifically, GSPs shall include description of how the land use elements of general plans, or land use plans, "may change water demands within the basin or affect the ability of the [GSA] to achieve sustainable groundwater management over the planning and implementation horizon, and how the [GSP] addresses those potential effects."[64] . This codified coordination between planning agencies and groundwater management agencies helps to ensure bilateral decision-making regarding existing and future water supplies, demands, and their associated potential impacts on drinking water uses and users.

4.4 Well Permitting

Regulatory authority over well construction, alteration, and destruction typically rests with local jurisdictions, such as the county department of environmental health. However, some cities or water agencies may have gained the well permitting authority for their jurisdictions. GSAs should coordinate closely with these well permitting agencies to ensure that local well ordinances and well permitting processes are consistent with implementation of the GSP and will support sustainability. GSAs should identify the contacts at the well permitting agencies in their basin, invite them to be part of the GSP implementation and modification process, and inform them of GSP implementation activities.

A previous statewide drought emergency executive order required well permitting agencies to obtain written verification from GSAs that a proposed new well or well modification would not "…

59 Government Code § 65352.5(a).
60 Select additional information may be required as per Government Code § 65352.5(d)(2).
61 Government Code § 65352.5(d)(1) and 65352.5(d)(3).
62 Water Code § 10726.9.
63 Water Code § 10727.2(g).
64 23 CCR § 354.8(f)(3).

interfere with the production and functioning of existing nearby wells…", "…cause subsidence…", or "…be inconsistent with any sustainable groundwater management program".[65] As discussed in Section 2.6 above, this type of coordination is intended to help ensure that during drought periods: new wells won't affect nearby drinking water wells, exacerbating drought impacts and potentially leaving them without an adequate drinking water supply. Permitting agencies, drillers, and owners of new wells in high and medium priority groundwater basins should know the depth of the groundwater level minimum threshold at the well site and should construct the well deeper than the minimum threshold, as identified in the GSP.

4.5 Other Relevant Programs

Listed below are a set of other programs that GSAs may want to coordinate with on issues related to impacts to drinking water well users.

- **RWQCBs** – There are nine Regional Water Quality Control Boards throughout the state with each board making decisions for water quality in their region, including setting standards, issuing waste discharge requirements, determining compliance with those requirements, and taking appropriate enforcement actions.
- **GAMA** – The Groundwater Ambient Monitoring and Assessment Program under the State Water Board SWRCB is a comprehensive groundwater quality monitoring program and collaborates with the RWQCBs, DWR, the Department of Pesticide Regulations, U.S. Geological Survey, Lawrence Livermore National Laboratory, and cooperates with local water agencies and well owners to collect water quality information and make the data available to the public.
- **DDW** – The Division of Drinking Water is a program of the State Water Board that regulates public drinking water systems.
- **SAFER** – The Safe and Affordable Funding for Equity and Resilience is a State Water Board program under DDW which focuses on short- and long-term drinking water solutions through the identification of "at risk" systems and wells, providing grants and loans, encouraging community engagement, and, when necessary, regulation and enforcement.
- **ILRP** – The Irrigated Lands Regulatory Program is a State Water Board program designed to prevent agricultural runoff from impairing surface waters, and later included the addition of groundwater regulations.
- **CV-SALTS** – The Central Valley Salinity Alternatives for Long-Term Sustainability is a cooperative effort among regulators, permittees, environmental interests, and other parties to create a comprehensive Central Valley Salinity Management Plan.

65 Executive Order N-7-22 Action 9.

TECHNICAL MEMORANDUM

DATE: June 30, 2025

TO: Blake Adams, UVBGSA General Manager, City of Ukiah

COPY TO:

AUDRA BARDSLEY, PH.D.
CAMILLE WOICEKOWSKA
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SUBJECT: Phase I Ukiah Valley Basin Well Inventory

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INTRODUCTION AND BACKGROUND

PROJECT CONTEXT

The Ukiah Valley Basin (UVB) Groundwater Sustainability Agency (GSA) is preparing for the 2027 Periodic Evaluation of its Groundwater Sustainability Plan (GSP) as required under the Sustainable Groundwater Management Act (Water Code § 10733.8(b); GSP Regulations § 356.4(a)(3)). During the April 25, 2024, GSA Board of Directors Meeting, members received a recommendation from the Technical Advisory Committee to prioritize three critical actions in preparation for this evaluation: (1) an expanded, enhanced monitoring network, (2) an interconnected surface water study, and (3) a well inventory.

These three priorities were specifically identified to address key data gaps outlined in the UVB GSP and corrective actions specified in the Department of Water Resources' GSP approval letter. The UVB GSP identifies "Groundwater Wells Construction Information and Well Inventory" as a high priority data gap in Table 10.2: Data Gap Prioritization and establishes a "Groundwater Well Inventory Program" as a Tier II Project and Management Action in Table 4.2: Tier II PMAs Summary Table.

The Phase I Well Inventory (Phase I) described in this technical memorandum represents a foundational element for improving the GSA's understanding of groundwater conditions and management capabilities within the basin. Accurate well location and construction information are essential for effective groundwater monitoring, improved representations of pumping in the Basin using the Ukiah Valley Basin Integrated Hydrologic Model (UVIHM).

PHASE I WELL INVENTORY OBJECTIVES

Phase I focused on the systematic collection, aggregation, and informed revision of well location and construction information from publicly available sources. The primary objectives include:

- **Data Compilation and Database Development**: Establishment of a comprehensive, open-source geospatial database containing well location information from the California Online System of Well Completion Reports (OSWCR), with links to associated digitized Well Completion Reports (WCRs) and structured fields for targeted well construction information. For select datasets, supplemental spreadsheets capture information relevant to modeling efforts that could not fit in the existing OSWCR database structure.
- **Information Enhancement**: Cross-referencing well locations represented in the OSWCR database against digitized WCRs to improve spatial accuracy and populate or confirm select construction details.
- **Multi-Agency Coordination**: Coordination with local agencies, water districts, regulatory entities, and non-governmental organizations to obtain and assess any existing well data, integrating this information into the revised OSWCR database and supplementary spreadsheets as appropriate.
- **Spatial Analysis and Correction**: Evaluation well locations recorded using Public Land Survey System (PLSS) coordinates through desktop spatial exercises, aerial imagery analysis, and review of digitized well completion reports to improve location accuracy.

- **Data Gap Identification**: Identification of remaining data gaps and development of strategic recommendations for addressing these gaps in subsequent phases of the well inventory process.

PROJECT SIGNIFICANCE

The resulting well inventory database and supplementary spreadsheets will serve as an important foundation for updating the UVIHM. Enhanced well location and construction information will enable more accurate representation of pumping locations and depths. This improved modeling capability will, in turn, allow for more precise analysis of groundwater dynamics in the basin, including critical assessments of whether and where groundwater pumping impacts surface waters.

The Phase I approach emphasizes the development of a sustainable, updatable database structure that can accommodate new information as it becomes available during subsequent inventory phases. By utilizing open-source QGIS software, the database will be accessible through spatial software platforms and exportable to standard spreadsheet applications like Microsoft Excel, ensuring broad accessibility for GSA staff and stakeholders.

SCOPE AND LIMITATIONS

Phase I is specifically designed as a desktop-based analysis focusing on publicly available information sources. This phase does not include field verification activities, direct well owner outreach, or physical site visits. The geographic scope encompasses the entire Ukiah Valley Basin as defined by the GSA boundaries with select examination of agricultural wells within the broader watershed area.

While this initial phase provides a comprehensive foundation for the well inventory, it represents the first step in a multi-phase process. Subsequent phases will likely require additional analyses, cross-database verifications, stakeholder engagement, and targeted data collection to address gaps identified during this preliminary assessment.

METHODOLOGY

DATA SOURCES AND AGENCY COORDINATION

Data sources utilized in Phase I were primarily publicly available, with some additional information gathered from local agencies. Key sources included Department of Water Resources' (DWR) OSWCR and the associated digitized WCR PDFs hosted on DWR's Box platform.

A significant limitation of OSWCR geospatial data (latitude and longitude associated with a given well entry in the OSWCR database) is that most wells are placed at the centroid of a PLSS section or otherwise inaccurately placed when compared to details gleaned from the digitized WCR or the Assessor's Parcel Number (APN) listed in the OSWCR database entry. For many wells, more accurate location information is available on the digitized WCR via the APN, street address or

cross streets of the parcel where the new well was drilled, hand drawn maps, or other types of geographic descriptions.

To improve location and generate a more accurate geospatial dataset, Mendocino County Parcel data, publicly available geocoded addresses (via GIS software 'locate' tools or Google Maps), and aerial imagery were cross-referenced with completion reports for all wells that were not placed using the automated process. Mendocino County Parcel data containing APNs was provided by Mendocino County GIS Coordinator Leif Farr. PLSS records were referenced to select wells that should be targeted for review relative to the study area of interest, and to verify which wells were placed at the centroid of the PLSS section. This process is described in greater detail below in the Database Development and Well Review Process section.

Additional resources reviewed include select well construction information associated with the existing UVBGSA groundwater level monitoring network records culled from the California Statewide Groundwater Elevation Monitoring program (CASGEM) and otherwise gathered during GSP development. Limited well construction information for local public supply wells was obtained from major water retailers and members of the Ukiah Valley Water Authority including the City of Ukiah, Millview County Water District, Redwood Valley County Water District, Calpella County Water District, and Willow County Water District. The Mendocino County Resource Conservation District(MCRCD), which is tasked with supporting groundwater level monitoring for the UVBGSA also provided digitized WCRs for small subset of monitored wells. Information gathered from local agencies was often difficult to directly associate with wells in the OSWCR database due to lack of well completion report number or other key identifying information that could be used to cross references. Mendocino County Environmental Health did not have records available that differed from those in the OSCWR database. Data collected from Ukiah Valley growers by local NGO California Land Stewardship Council as part of a US Bureau of Reclamation-funded project had limited utility due to lack of critical well identification information such as WCR numbers or legacy record numbers, as well as missing basic construction information including total depth and screened intervals.

TARGETED WELL CHARACTERISTICS

Phase I targeted location and total depth information for all wells in the Basin. For wells identified as a priority use type, relevant detailed information was gathered in addition to location and depth. These priority well categories were intended to capture high volume wells that account for the bulk of groundwater use in the Basin and key monitoring wells:

- Agricultural/irrigation wells located in the broader watershed area that drains to the UVB.
- Public supply wells operated by water retailers in the UVB.
- Wells in the current UVBGSA groundwater level monitoring network, which were by default exclusively located in the UVB.

Obtaining additional details for these three priority well use categories allowed for improvements to the UVIHM's representation of pumping and aquifer response throughout the

Basin. For wells that had a planned use designation of 'agriculture' or 'irrigation' in OSWCR, entries were reviewed for completion depth, drill depth, pump depth, detailed screened interval(s), static water level, drawdown, and yield and updated with details gleaned from digitized WCRs. For wells that are part of the UVGSA's groundwater level monitoring network, information was compiled on instrumentation details, monitoring agencies, monitoring network status, detailed screened interval(s), vertical datum (with associated method and accuracy), various naming conventions and aliases. Well completion report numbers and legacy record numbers were also captured for the limited instances where that information was available. For wells identified as public supply wells in the Basin available information was compiled on location, total depth, detailed screened interval(s), pump depth, and static water level.

DATABASE DEVELOPMENT AND WELL REVIEW PROCESS

To facilitate manual review and update of well location and construction details, a shapefile of OSWCR data was created that incorporates links to WCRs hosted on the DWR Box platform. To do so, a copy of the statewide OSWCR CSV file was read into a shapefile using the DECIMALLONGITUDE and DECIMLLATITUDE column and merged, using WCRNUMBER as the key for the join, with the DWR CSV file containing URLs to the WCRs.

As described above, three types of wells were identified as priority in Phase I: agricultural/irrigation wells, public supply wells, and wells in the UVBGSA groundwater level monitoring network. A more comprehensive review of well construction details was conducted for priority use types using OSWCR, WCRs, geospatial tools and information shared by local agencies. Because some detailed construction information for priority wells (including full information on screened intervals) did not fit within the existing structure of the OSWCR database, three supplemental spreadsheets were generated to serve as repositories for these additional data. These supplemental spreadsheets also facilitate incorporation of relevant information to the UVIHM. Because all agricultural/irrigation planned use information was ultimately derived from OSWCR, where appropriate, improved location and construction details for agricultural/irrigation wells was also updated in the revised OSWCR database. By contrast, information for groundwater level monitoring and public supply wells was often pulled from CASGEM, GSP development documents, or local agencies, so creating clear linkages with OSWCR was more challenging. Comprehensive cross verification between the groundwater level monitoring network and public supply supplemental spreadsheets and the revised OSWCR database remains a data gap.

All other wells in the Basin were considered non-priority. Any non-priority wells potentially located in the groundwater basin and expected to still be in active use were included in the inventory. These were identified by selecting all wells within every PLSS section that intersects the groundwater basin and implementing a cut-off date 1977 with the assumption that wells constructed prior to 1977 are less likely to be in active use. This assumption aligns with well screening protocols used in the Mendocino County Drought Resilience Plan[1].

[1]Mendocino County Drought Resilience Plan, May 2025.
https://www.mendocinocounty.gov/home/showpublisheddocument/71585/638834390830470000

For select, non-priority wells a first-pass automated process identified improved well location if a given OSWCR database entry had an associated Assessor Parcel Number (APN) within its specified PLSS. If the well could be located via this process, it was placed at the center of the parcel with the specified APN. No further review on these wells was conducted beyond verification of total depth information.

For all remaining wells, WCR PDFs were manually reviewed for location and total depth information. If the location could be improved from PLSS centroid, the well was moved to the improved location. Additional information like APN, address, written descriptions and drillers maps were used to determine the improved location. Total drill and completion depth were confirmed and updated in OSWCR as necessary. The method of determining the location, WCR quality, and any other notes were recorded by the reviewer.

RESULTS AND FINDINGS

DATABASE SUMMARY STATISTICS

Phase I successfully inventoried a total of 2,714 wells from OSWCR and compiled comprehensive information on 63 wells in the UVB groundwater monitoring network, 24 public supply wells, and 292 agricultural/irrigation wells. An additional 432 wells were identified but not reviewed due to the 1977 cutoff date established and consistent with the Mendocino Drought Resilience Plan, to focus on wells likely to remain in active use. **Figure 1** provides a visual summary of location improvements made during the well inventory review process.

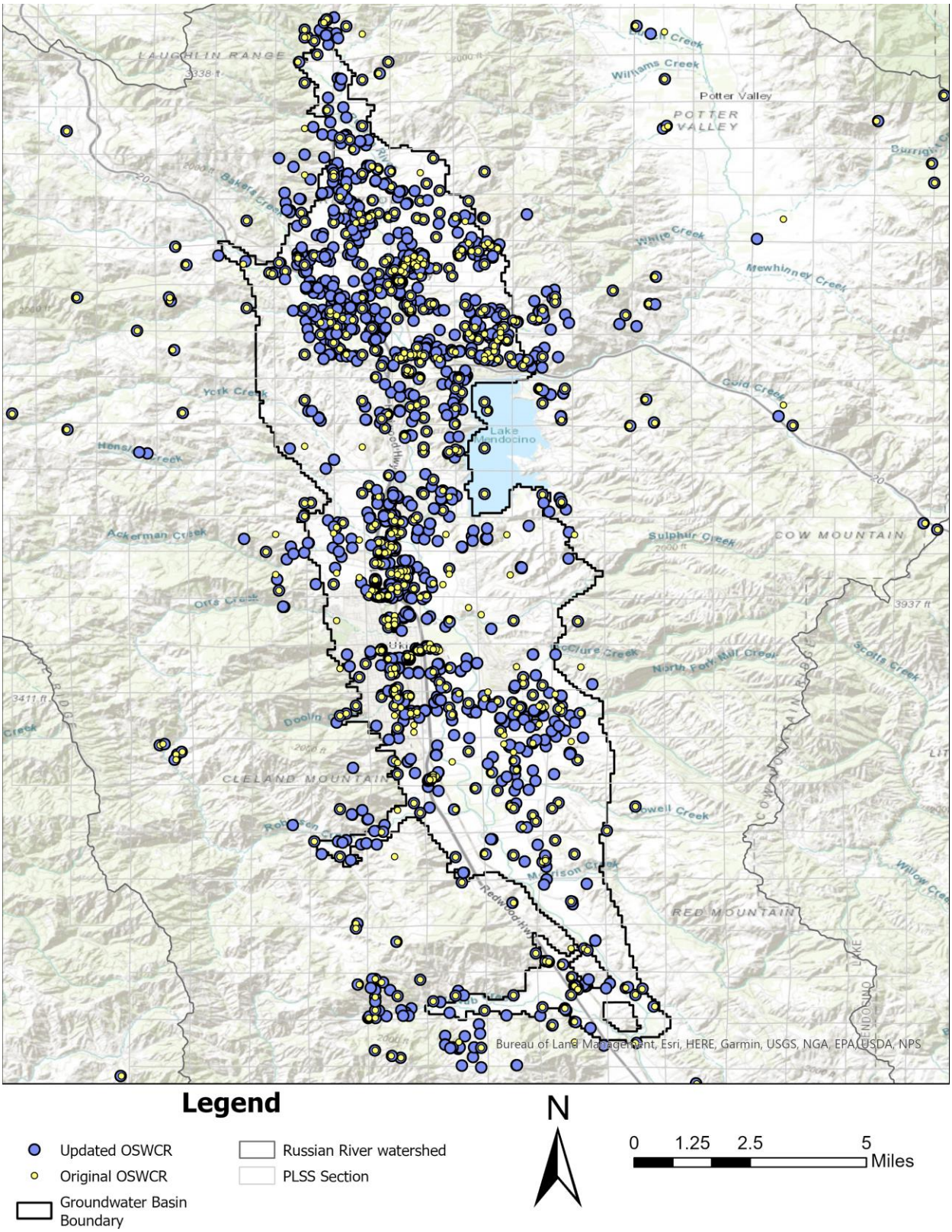

Figure 1. Well Location Improvements Made During Phase I of the Well Inventory

Table 1 provides information on the distribution of inventoried wells by planned use category providing information on groundwater utilization patterns within the basin.

Table 1. Phase I Well Inventory Reviewed Wells by Planned Use Category

Planned Use	Number of Wells	Use Codes
Agricultural Irrigation	292	Water Supply Irrigation – Agriculture, Irrigation, IRRIGATION
Domestic	737	Water Supply Domestic, Domestic, DOMESTIC
Monitoring	401	Monitoring
Public Water Supply	60	Water Supply Public, PUBLIC WATER
Other	161	Test Well, Remediation, Sparging, Injection, Vapor Extraction, Dewatering, Cathodic Protection, Water Supply Industrial, Water Supply Irrigation - Landscape
Unknown	1,063	Unknown or blank
All Wells	2,714	NA

These data reveal that domestic wells represent the largest category (27% of reviewed wells), followed by wells with unknown or blank use designations (39% of reviewed wells). Monitoring wells comprise 15% of the inventory, while agricultural irrigation wells account for 11%. Public water supply wells represent a smaller but critical portion at 2% of the total inventory. The substantial number of wells with unknown use designations (1,063 wells) represents a significant data gap that may require targeted investigation in subsequent phases. This unknown category likely contains a mix of domestic, agricultural, and other use types that were not properly categorized in the original OSWCR entries.

Most inventoried wells have total depths of less than 200 feet with a substantial proportion having a total depth of less than 100 feet as seen in **Figure 2**.

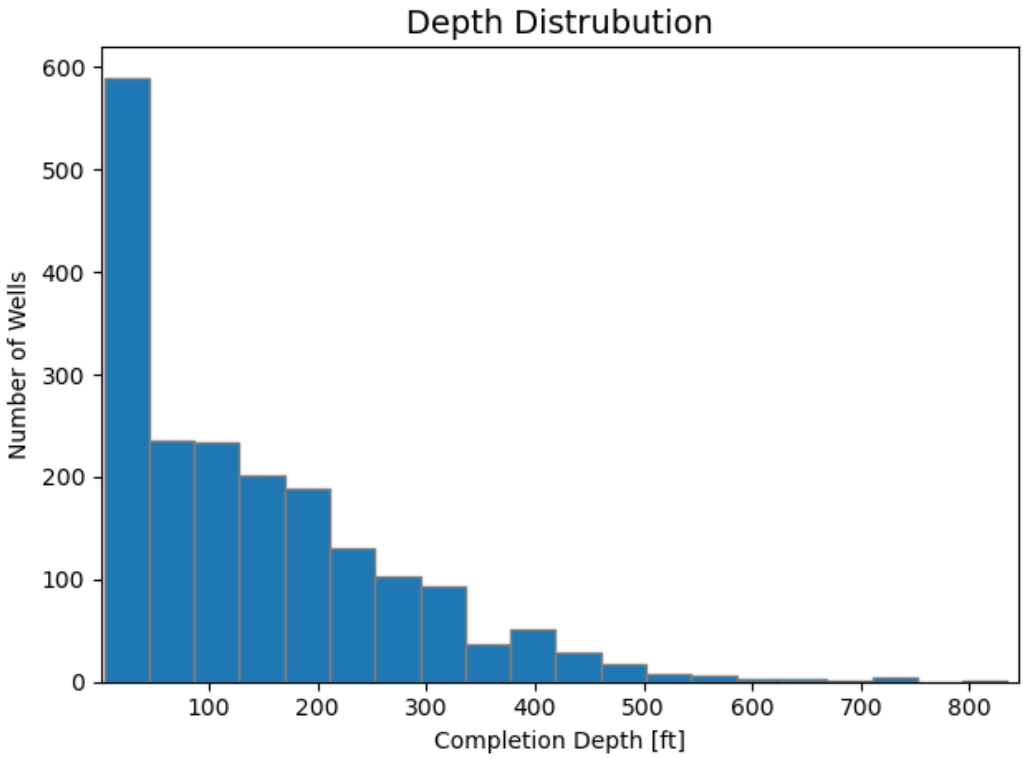

Figure 2. Distribution of Completion Depth for All Inventoried Wells

Figure 3 provides an overview of the spatial distribution of wells by use type and depth. The highest concentration of inventoried wells occurs in the central portion of the study area, with particularly dense clustering of irrigation wells throughout the valley floor coincident with the Ukiah Valley Basin. Domestic wells appear more scattered but are present throughout the study area. Well depth patterns show considerable variation across the study area. There are fewer deeper wells distributed throughout the region, while shallow wells appear most concentrated mid-Basin. The northern portion of the Basin has a notable concentration of various well types and depths.

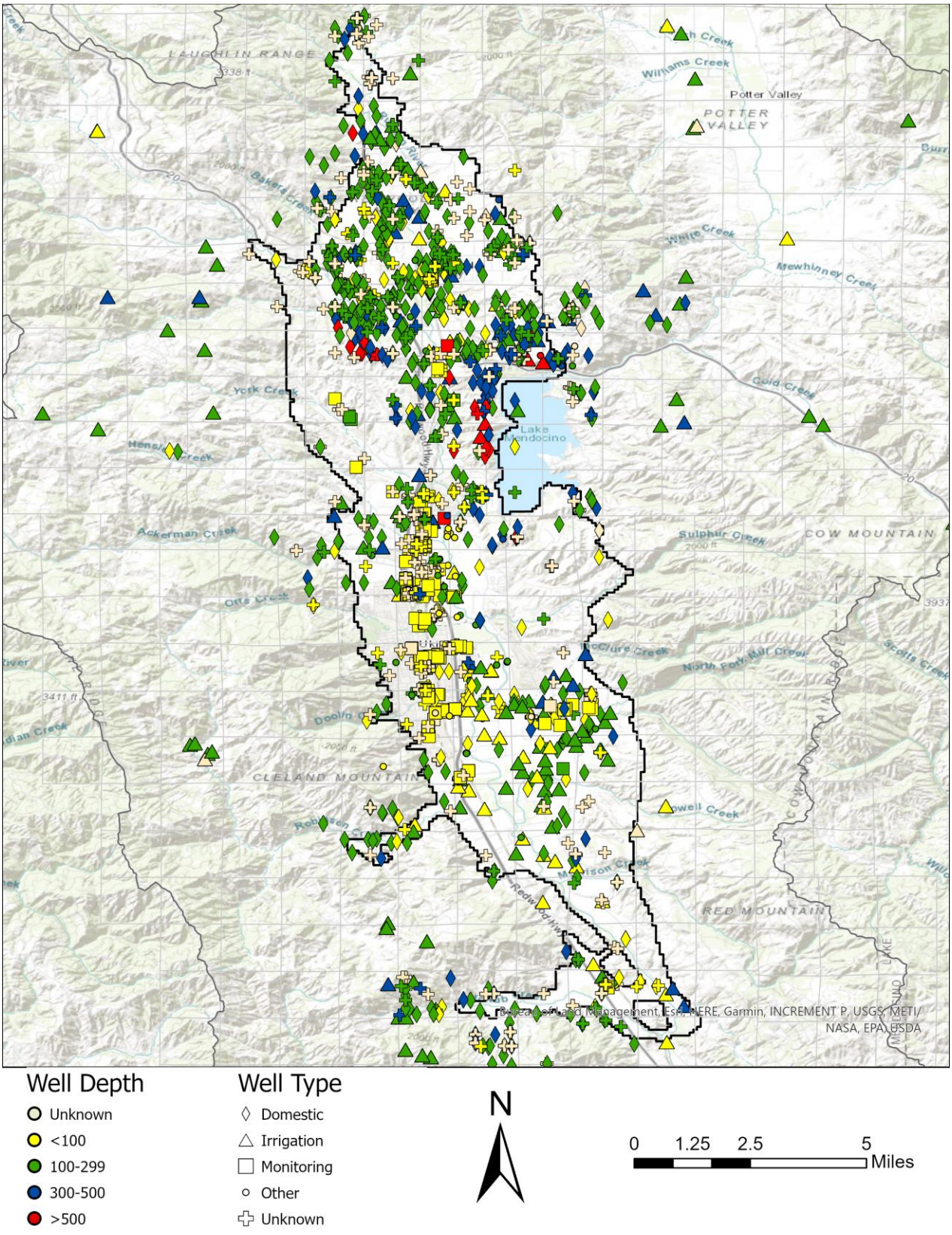

Figure 3. Well Use Type and Completion Depth for Inventoried Wells

DATA QUALITY ASSESSMENT

The quality of well location improvements varied significantly based on the information available in individual WCRs and the methods used for spatial correction. Review notes were systematically maintained to document how new placements for well locations were determined, providing transparency and enabling future quality assessments.

High-quality location improvements were achieved when WCRs contained specific APNs that could be matched to current parcel boundaries. Moderate quality improvements were possible when street addresses were provided and could be successfully geocoded using current address databases, though accuracy varied depending on address specificity and changes in addressing systems over time.

Lower quality but still meaningful improvements were made using hand-drawn driller maps that showed relative positions to roads, property boundaries, or other landmarks. While these improvements moved wells from PLSS centroids to more realistic locations, spatial accuracy remained limited to the quality and interpretability of the original driller sketches.

The review process revealed considerable variation in WCR quality and completeness, particularly for older reports. Wells drilled in recent decades generally contained more detailed and accurate location information, while reports from the 1980s and earlier often lacked sufficient detail for significant location improvements. This temporal variation in data quality represents an inherent limitation that affects the overall spatial accuracy of the historical well inventory.

DATA GAPS AND RECOMMENDATIONS FOR PHASE II

A primary objective in Phase I is to identify remaining data gaps and development of strategic recommendations for addressing these gaps in subsequent phases of the well inventory process. The following data gaps and recommended actions were identified.

COMPREHENSIVELY CROSS REFERENCE GROUNDWATER LEVEL MONITORING WELL NETWORK AND PUBLIC SUPPLY WELLS WITH OSWCR

Issue: Considerable improvements have been made in centralizing construction details for groundwater level monitoring and public supply wells and that key information has been incorporated into the UVIHM. However, much of the data compiled lacks clear association with WCR numbers and therefore is not linked to the updated OSWCR database.

As part of this effort, comprehensive supplemental databases were developed for the UCBGSA groundwater level monitoring network and public supply wells by compiling data from multiple agencies, including CASGEM, UVBGSA, MCRCD, water retailers, and non-profit organizations. This compilation significantly improves the availability and organization of monitoring well and water supply information across the basin and its representation in the UVIHM.

However, a key limitation of this improved dataset is the lack of WCR numbers or links. Most agency records do not include WCR identifiers, and a systematic effort to reference monitoring wells back to the OSWCR database was not made in Phase I.

Recommendation: Perform a detailed cross-reference of monitoring wells in OSWCR with the monitoring well and public supply well supplemental databases developed in Phase I. Add WCR numbers and links to monitoring well and public supply well supplemental databases and fill in gaps in construction details as needed.

EXPAND IDENTIFICATION OF AGRICULTURAL WELLS

Issue: Agricultural groundwater use exceeds the capacity of wells currently tagged as agricultural in OSWCR.

The OSWCR database includes 292 wells with a planned use designation of 'agriculture' or 'irrigation.' However, based on available estimates of groundwater demand for irrigation in the basin and typical well capacities, this number of wells appears insufficient to account for the full volume of agricultural pumping occurring within the UVB. This discrepancy suggests that additional wells used for agricultural purposes may be present but are not properly identified in the OSWCR database.

Some wells may be miscategorized, such as wells used for both domestic and agricultural purposes that may be labeled only as "domestic" in the OSWCR system. Others may lack a planned use designation altogether and fall into the substantial "unknown" category identified in Phase I. The 1,063 wells with unknown use designations likely contain numerous agricultural wells that were not properly classified during the original completion report filing process.

Recommendation: Conduct a targeted analysis to identify additional agricultural wells. Land use data should be cross-referenced with well locations updated in Phase I to flag candidates for reclassification. Additional indicators such as pump depth and capacity can be referenced to support reclassification.

IDENTIFY AND REMOVE INACTIVE WELLS, VERIFY STATUS OF PRE-1977 WELLS

Issue: OSWCR does not distinguish between completed, backfilled, or destroyed wells. Phase I data review indicates that a small portion of public supply and monitoring network wells were constructed pre-1977 and remain in use.

Entries within OSWCR may represent a well that has been completed, backfilled, or destroyed. There is no field in OSWCR to differentiate these types of well logs. As a result, wells that are no longer active in the basin often remain in the database without clear status indicators. While some reviewers manually flagged destroyed or backfilled wells during Phase I, any wells updated via the automated review process could not capture this information.

Additionally, destruction reports that exist as standalone entries have no inherent link to their associated completion reports. Creating such linkages would be necessary to identify destroyed wells and would require detailed matching based on location and construction information.

Finally, a key assumption made during Phase I was to remove all non-priority wells constructed prior to 1977 to streamline the review effort under the assumption that they were unlikely to still be in active use. Review of the UVBGSA's groundwater level monitoring network and available data on public supply wells indicates a subset of these priority use types were constructed prior to 1977 and remain in use. Subsequent phases of the well inventory may wish to re-examine wells constructed prior to 1977 that are currently designated as 'unknown' use category in the effort to identify additional agricultural wells (described above). This would ensure consideration of pre-1977 wells that may still be in use for each of the key priority use categories.

Recommendation: Conduct a review to mark all OSWCR entries associated with backfilled or destroyed wells, with particular focus on wells updated via automated processing.

Recommendation: Include wells constructed prior to 1977 that do not have use designation in the effort to identify additional agricultural wells.

Potential Recommendation: To develop a clearer picture of the active wells in the basin, a targeted review could be conducted to match destruction records with original construction reports including those for wells constructed prior to 1977. This effort would be labor-intensive and technically challenging, given that the varying level of quality and detail in WCRs, particularly reports 40 years or older.

ADD WCR LINKS TO ENTRIES MISSING

Issue: A small subset of OSWCR entries could not be linked to an associated digitized well completion report.

Of the reviewed wells, there were 239 wells within a PLSS section that insects the groundwater basin that could not be linked to a WCR hosted on the DWR Box website based on WCRNUMBER.

Recommendation: Use additional resources, including DWR interactive map viewer, to identify and link WCRs with each OSWCR entry. Conduct well review once the WCR has been identified.

CONCLUSIONS AND NEXT STEPS

Phase I of the UVB well inventory successfully established a comprehensive foundation for understanding groundwater infrastructure within the basin. The systematic review of 2,714 wells and compilation of detailed monitoring network information represents a significant advancement in data availability and spatial accuracy compared to previous datasets. The recommendations outlined above offer a strategic pathway for addressing these gaps while building upon the solid foundation established during this initial phase.

The enhanced database structure and standardized review protocols developed during Phase I will support efficient expansion and refinement of the well inventory as additional information becomes available through subsequent phases, cross comparison efforts, field verification activities, and ongoing stakeholder engagement efforts.

Agenda Item No: 4.c.

MEETING DATE/TIME: 12/15/2025

ITEM NO: 2025-1399

UKIAH VALLEY BASIN
GROUNDWATER SUSTAINABILITY AGENCY (GSA)

STAFF REPORT

SUBJECT: Discussion of Periodic Evaluation or Periodic Evaluation & Plan Amendment activities and Fiscal Impact

PREPARED BY: Blake Adams, Chief Resiliency Officer
PRESENTER: Audra Bardsley, Larry Walker Associates

ATTACHMENTS:
1. Ukiah-Valley-Basin-GSP-Determination
2. GSP Implementation Guidance Report

Summary: The Sustainable Groundwater Management Act (SGMA) requires that Groundwater Sustainability Agencies (GSAs) submit a Periodic Evaluation (PE) to the Department of Water Resources (DWR) at least every five years after initial Groundwater Sustainability Plan (GSP) submittal for approved plans. The Ukiah Valley Basin GSP was submitted in January 2022 and approved by DWR in July 2023. Staff recommend that the Board select the Periodic Evaluation (PE) pathway for January 2027 and authorize staff/LWA to prepare a PE consistent with DWR guidance; defer any Plan Amendment (PA) until after URR GDE and ISW Study results and monitoring/model updates are available.

Background: As noted in DWR's July 2023 determination letter the first PE for the Ukiah Valley Basin GSP must be submitted by January 28, 2027. A Plan Amendment (PA) may be prepared at the Board's discretion at any time but must be accompanied by a PE to describe why, what, and how adjustments were made in the Amendment and must follow public notification and Board adoption requirements.

DWR's October 2023 guidance document clarifies roles and content for Periodic Evaluations and Plan Amendments. The PE is a written assessment of GSP implementation and basin conditions relative to established sustainable management criteria; a PA is used for substantive changes and requires 90-day public notice, Board re-adoption, and DWR review. A PE can include minor changes to the GSP including addition of new representative monitoring points (RMPs) and development of sustainable management criteria (SMCs) for new RMPs sites using an approach consistent the approach already used for existing RMPs.

Based on Technical Advisory Committee input provided at the October 15, 2025 meeting and current project timing, staff recommends the Board select the PE-only pathway for January 2027 and defer any PA until Groundwater Dependent Ecosystem and Interconnected Surface Water Study results and monitoring/model updates are available, likely in alignment with the 2032 PE.

Discussion: Compliance pathway options:

Option A — Periodic Evaluation (PE) Only:
- Meets SGMA's five-year requirement; focuses on GSP implementation progress, SMC evaluation, monitoring networks, projects management actions, and new information.
- No additional public process beyond PE noticing for Board/stakeholder review; aligns with January 2027 submission schedule.
- No cost impact: adequate funds have been allocated in the FY 2025-26 budget.

Option B — Periodic Evaluation + Plan Amendment (PA):

- Allows substantive GSP changes now, but requires 90-day public notice, Board re-adoption, and DWR amendment review.
- Schedule challenges: a PA would need drafting by ~August 2026 to allow public review, comment and revisions; this may be impracticable given current lead time.
- Higher cost: approximately $200,000 above the FY 2025–26 budget currently allocated for PE-only.

Fiscal Impact:

Option A — PE Only: None. Adequate funds have been allocated in the FY 2025–26 budget.
Option B — PE + PA: Approximately $200,000 additional cost above the current FY 2025–26 allocation.

Recommended Action: Receive and consider staff's recommendation to conduct a Periodic Evaluation (PE) of the agency's Groundwater Sustainability Plan (Option 1: PE) and forgo the combined option to conduct a Periodic Evaluation & Plan Amendment (Option 2: PE + PA), and authorize the General Manager to amend the On-Call Technical contract with Larry Walker Associates to enable that work.

CALIFORNIA DEPARTMENT OF WATER RESOURCES

SUSTAINABLE GROUNDWATER MANAGEMENT OFFICE

715 P Street, 8th Floor | Sacramento, CA 95814 | P.O. Box 942836 | Sacramento, CA 94236-0001

July 27, 2023

Erik Cadaret
Ukiah Valley Basin GSA
340 Lake Mendocino Dr
Ukiah, CA 95482
staff@ukiahvalleygroundwater.org

RE: Ukiah Valley Basin - 2022 Groundwater Sustainability Plan

Dear Erik Cadaret,

The Department of Water Resources (Department) has evaluated the groundwater sustainability plan (GSP) submitted for the Ukiah Valley Basin and has determined the GSP is approved. The approval is based on recommendations from the Staff Report, included as an exhibit to the attached Statement of Findings, which describes that the Ukiah Valley Basin GSP satisfies the objectives of the Sustainable Groundwater Management Act (SGMA) and substantially complies with the GSP Regulations. The Staff Report also proposes recommended corrective actions that the Department believes will enhance the GSP and facilitate future evaluation by the Department. The Department strongly encourages the recommended corrective actions be given due consideration and suggests incorporating all resulting changes to the GSP in future updates.

Recognizing SGMA sets a long-term horizon for groundwater sustainability agencies (GSAs) to achieve their basin sustainability goals, monitoring progress is fundamental for successful implementation. GSAs are required to evaluate their GSPs at least every five years and whenever the Plan is amended, and to provide a written assessment to the Department. Accordingly, the Department will evaluate approved GSPs and issue an assessment at least every five years. The Department will initiate the first periodic review of the Ukiah Valley Basin GSP no later than January 28, 2027.

Please contact Sustainable Groundwater Management staff by emailing sgmps@water.ca.gov if you have any questions related to the Department's assessment or implementation of your GSP.

Thank You,

Paul Gosselin

Paul Gosselin
Deputy Director
Sustainable Groundwater Management

Attachment:

1. Statement of Findings Regarding the Approval of the Ukiah Valley Basin Groundwater Sustainability Plan

STATE OF CALIFORNIA
DEPARTMENT OF WATER RESOURCES

STATEMENT OF FINDINGS REGARDING THE APPROVAL OF THE UKIAH VALLEY BASIN GROUNDWATER SUSTAINABILITY PLAN

The Department of Water Resources (Department) is required to evaluate whether a submitted groundwater sustainability plan (GSP or Plan) conforms to specific requirements of the Sustainable Groundwater Management Act (SGMA or Act), is likely to achieve the sustainability goal for the basin covered by the Plan, and whether the Plan adversely affects the ability of an adjacent basin to implement its GSP or impedes achievement of sustainability goals in an adjacent basin. (Water Code § 10733.) The Department is directed to issue an assessment of the Plan within two years of its submission. (Water Code § 10733.4.) This Statement of Findings explains the Department's decision regarding the Plan submitted by the Ukiah Valley Basin Groundwater Sustainability Agency (GSA or Agency) for the Ukiah Valley Basin (Basin No. 1-052).

Department management has discussed the Plan with staff and has reviewed the Department Staff Report, entitled Sustainable Groundwater Management Program Groundwater Sustainability Plan Assessment Staff Report, attached as Exhibit A, recommending approval of the GSP. Department management is satisfied that staff have conducted a thorough evaluation and assessment of the Plan and concurs with staff's recommendation and all the recommended corrective actions. The Department therefore **APPROVES** the Plan and makes the following findings:

A. The Plan satisfies the required conditions as outlined in § 355.4(a) of the GSP Regulations (23 CCR § 350 et seq.):

    1. The Plan was submitted within the statutory deadline of January 31, 2022. (Water Code § 10720.7(a); 23 CCR § 355.4(a)(1).)

    2. The Plan was complete, meaning it generally appeared to include the information required by the Act and the GSP Regulations sufficient to warrant a thorough evaluation and issuance of an assessment by the Department. (23 CCR § 355.4(a)(2).)

    3. The Plan, either on its own or in coordination with other Plans, covers the entire Ukiah Valley Basin. (23 CCR § 355.4(a)(3).)

B. The general standards the Department applied in its evaluation and assessment of the Plan are: (1) "conformance" with the specified statutory requirements, (2) "substantial compliance" with the GSP Regulations, (3) whether the Plan is likely to achieve the sustainability goal for the Ukiah Valley Basin within 20 years of the

implementation of the Plan, and (4) whether the Plan adversely affects the ability of an adjacent basin to implement its GSP or impedes achievement of sustainability goals in an adjacent basin. (Water Code § 10733.) Application of these standards requires exercise of the Department's expertise, judgment, and discretion when making its determination of whether a Plan should be deemed "approved," "incomplete," or "inadequate."

The statutes and GSP Regulations require Plans to include and address a multitude and wide range of informational and technical components. The Department has observed a diverse array of approaches to addressing these technical and informational components being used by GSAs in different basins throughout the state. The Department does not apply a set formula or criterion that would require a particular outcome based on how a Plan addresses any one of SGMA's numerous informational and technical components. The Department finds that affording flexibility and discretion to local GSAs is consistent with the standards identified above; the state policy that sustainable groundwater management is best achieved locally through the development, implementation, and updating of local plans and programs (Water Code § 113); and the Legislature's express intent under SGMA that groundwater basins be managed through the actions of local governmental agencies to the greatest extent feasible, while minimizing state intervention to only when necessary to ensure that local agencies manage groundwater in a sustainable manner. (Water Code § 10720.1(h)) The Department's final determination is made based on the entirety of the Plan's contents on a case-by-case basis, considering and weighing factors relevant to the particular Plan and Ukiah Valley Basin under review.

C. In making these findings and Plan determination, the Department also recognized that: (1) the Department maintains continuing oversight and jurisdiction to ensure the Plan is adequately implemented; (2) the Legislature intended SGMA to be implemented over many years; (3) SGMA provides Plans 20 years of implementation to achieve the sustainability goal in the Ukiah Valley Basin (with the possibility that the Department may grant GSAs an additional five years upon request if the GSA has made satisfactory progress toward sustainability); and, (4) local agencies acting as GSAs are authorized, but not required, to address undesirable results that occurred prior to enactment of SGMA. (Water Code §§ 10721(r); 10727.2(b); 10733(a); 10733.8.)

D. The Plan conforms with Water Code §§ 10727.2 and 10727.4, substantially complies with 23 CCR § 355.4, and appears likely to achieve the sustainability goal for the Ukiah Valley Basin. It does not appear at this time that the Plan will adversely affect the ability of adjacent basins to implement their GSPs or impede achievement of sustainability goals.

1. The sustainable management criteria and goal, which are to maintain groundwater levels within historical conditions minus a well-specific margin not to exceed 10 feet designed to account for data uncertainty, are sufficiently justified and explained. While Department staff have identified recommended corrective actions that staff believes may be necessary to achieve sustainability within the SGMA timeframe, because the overall groundwater level and storage conditions in the Basin are generally stable, these issues do not preclude Plan approval at this time. The GSP also includes a framework for improving the GSA's understanding of interconnected surface water (23 CCR § 355.4(b)(1).) The GSP identifies plans to fill key data gaps and relies on the best available information and science to quantify the groundwater conditions that the Plan seeks to avoid and provides objective way to determine whether the Ukiah Valley Basin is being managed sustainably in accordance with SGMA. (23 CCR § 355.4(b)(1).)

2. The Plan demonstrates a reasonable understanding of where data gaps exist and demonstrates a commitment to eliminate those data gaps. For example, the GSA plans on expanding the monitoring network to fill significant spatial and temporal gaps to improve basin characterization, as well as to provide for continuous monitoring and additional stream gage locations. The GSA plans to incorporate this new data and other information into the Ukiah Valley Integrated Hydrological Model to improve water budget calculations and increase the understanding of surface water and groundwater interaction. Filling these known data gaps, and others described in the Plan, should lead to refinement of the GSA's monitoring networks and sustainable management criteria and help inform and guide future adaptive management strategies and projects and management actions. (23 CCR § 355.4(b)(2).)

3. The projects and management actions proposed are designed to address data gaps, help maintain the sustainability goal and avoid undesirable results. The projects and management actions are reasonable and commensurate with the level of understanding of the Ukiah Valley Basin setting. The projects and management actions described in the Plan provide a feasible approach to achieving the Ukiah Valley Basin's sustainability goal and should provide the GSA with greater versatility to adapt and respond to changing conditions and future challenges during GSP implementation. (23 CCR § 355.4(b)(3).)

4. The Plan provides a detailed explanation of how the varied interests of groundwater uses and users in the Ukiah Valley Basin were considered in developing the sustainable management criteria and how those interests,

including domestic wells, would be impacted by the chosen minimum thresholds. (23 CCR § 355.4(b)(4).)

5. The Plan's projects and management actions appear feasible at this time and appear capable of preventing undesirable results and ensuring that the Ukiah Valley Basin is managed within its sustainable yield within 20 years. The Department will continue to monitor Plan implementation and reserves the right to change its determination if projects and management actions are not implemented or appear unlikely to prevent undesirable results or achieve sustainability within SGMA timeframes. (23 CCR § 355.4(b)(5).)

6. The Plan includes a reasonable assessment of overdraft conditions and includes reasonable means to mitigate overdraft, if present. (23 CCR § 355.4(b)(6).)

7. At this time, it does not appear that the Plan will adversely affect the ability of an adjacent basin to implement its GSP or impede achievement of sustainability goals in an adjacent basin. The Ukiah Valley Basin adjoins one very-low priority Basin that at this time is not required to develop a GSP or manage groundwater for long-term sustainability, and to date no such plan has been submitted. (23 CCR § 355.4(b)(7).)

8. Because a single plan was submitted for the Subbasin, a coordination agreement was not required. (23 CCR § 355.4(b)(8).)

9. The GSA's member agencies and their history of groundwater management provide a reasonable level of confidence, at this time, that the GSA has the legal authority and financial resources necessary to implement the Plan. (23 CCR § 355.4(b)(9).)

10. Through review of the Plan and consideration of public comments, the Department determines that the GSA adequately responded to comments that raised credible technical or policy issues with the Plan, sufficient to warrant approval of the Plan at this time. The Department also notes that the recommended corrective actions included in the Staff Report are important to addressing certain technical or policy issues that were raised and, if not addressed before future, subsequent plan evaluations, may preclude approval of the Plan in those future evaluations. (23 CCR § 355.4(b)(10).)

E. In addition to the grounds listed above, DWR also finds that:

1. The Plan sets forth minimum thresholds for chronic lowering of groundwater levels that take into consideration shallow water supply wells (Ukiah Valley GSP, p. 275). The Plan generally sets minimum thresholds

at the lowest historical groundwater levels plus a well-specific margin not to exceed 10 feet and defines unreasonable results as levels at which the percentage of impacted wells exceeds five percent. The GSP includes a well impact analysis that indicates that groundwater levels at minimum thresholds will not lead to significant and unreasonable impacts on shallow wells, based on the period analyzed from Spring 2014 to Fall 2018. The Plan's compliance with the requirements of SGMA and substantial compliance with the GSP Regulations supports the state policy regarding the human right to water (Water Code § 106.3). The Department developed its GSP Regulations consistent with and intending to further the policy through implementation of SGMA and the Regulations, primarily by achieving sustainable groundwater management in a basin. By ensuring substantial compliance with the GSP Regulations, the Department has considered the state policy regarding the human right to water in its evaluation of the Plan. (23 CCR § 350.4(g).)

2. The Plan acknowledges and identifies interconnected surface waters within the Ukiah Valley Basin. The GSA proposes initial sustainable management criteria to manage this sustainability indicator and measures to improve understanding and management of interconnected surface water. The GSA acknowledges, and the Department agrees, many data gaps related to interconnected surface water exist. The GSA should continue filling data gaps, collecting additional monitoring data, and coordinating with resources agencies and interested parties to understand beneficial uses and users that may be impacted by depletions of interconnected surface water caused by groundwater pumping. Future updates to the Plan should aim to improve the initial sustainable management criteria as more information and improved methodology becomes available.

3. The basin is not currently in a state of long-term overdraft and projections of future basin extractions are likely to stay within current and historic ranges, at least until the next periodic evaluation by the GSA and the Department. Basin groundwater levels and other SGMA sustainability indicators are unlikely to deteriorate while the GSA implements the Department's recommended corrective actions. State intervention is not necessary at this time to ensure that local agencies manage groundwater in a sustainable manner. (Wat. Code § 10720.1(h).)

4. The California Environmental Quality Act (Public Resources Code § 21000 *et seq*.) does not apply to the Department's evaluation and assessment of the Plan.

Accordingly, the GSP submitted by the Agency for the Ukiah Valley Basin is hereby **APPROVED.** The recommended corrective actions identified in the Staff Report will assist the Department's future review of the Plan's implementation for consistency with SGMA and the Department therefore recommends the Agency address them by the time of the Department's periodic review, which is set to begin on January 28, 2027, as required by Water Code § 10733.8. Failure to address the Department's recommended corrective actions before future, subsequent plan evaluations, may lead to a Plan being determined incomplete or inadequate.

Signed:

Karla Nemeth

Karla Nemeth, Director
Date: July 27, 2023

Exhibit A: Groundwater Sustainability Plan Assessment Staff Report – Ukiah Valley Basin

State of California
Department of Water Resources
Sustainable Groundwater Management Program
Groundwater Sustainability Plan Assessment
Staff Report

Groundwater Basin Name:	Ukiah Valley Basin (No. 1-052)
Submitting Agency:	Ukiah Valley Basin Groundwater Sustainability Agency
Submittal Type:	Initial GSP Submission
Submittal Date:	January 28, 2022
Recommendation:	Approved
Date:	July 27, 2023

The Ukiah Valley Basin Groundwater Sustainability Agency (GSA or Agency) submitted the Ukiah Valley Groundwater Sustainability Plan (GSP or Plan) for the Ukiah Valley Basin (Basin) to the Department of Water Resources (Department) for evaluation and assessment as required by the Sustainable Groundwater Management Act (SGMA)[1] and GSP Regulations.[2] The GSP covers the entire Basin for the implementation of SGMA.

After evaluation and assessment, Department staff conclude that the Plan includes the required components of a GSP, demonstrates a thorough understanding of the Basin based on what appears to be the best available science and information, sets well explained, supported, and reasonable sustainable management criteria to prevent undesirable results as defined in the Plan, and proposes a set of projects and management actions that will likely achieve the sustainability goal defined for the Basin.[3] Department staff will continue to monitor and evaluate the Basin's progress toward achieving the sustainability goal through annual reporting and future periodic evaluations of the GSP and its implementation.

- ***Based on the current evaluation of the Plan, Department staff recommend the GSP be approved with the recommended corrective actions described herein.***

This assessment includes five sections:

1) **Section 1 – Summary:** Overview of Department staff's assessment and recommendations.

[1] Water Code § 10720 *et seq*.
[2] 23 CCR § 350 *et seq*.
[3] 23 CCR § 350 *et seq*.

2) **Section 2 – Evaluation Criteria:** Describes the legislative requirements and the Department's evaluation criteria.
3) **Section 3 – Required Conditions:** Describes the submission requirements, Plan completeness, and basin coverage required for a GSP to be evaluated by the Department.
4) **Section 4 – Plan Evaluation:** Provides an assessment of the contents included in the GSP organized by each Subarticle outlined in the GSP Regulations.
5) **Section 5 – Staff Recommendation:** Includes the staff recommendation for the Plan and any recommended or required corrective actions, as applicable.

1 SUMMARY

Department staff recommend approval of the Ukiah Valley GSP. The GSA has identified areas for improvement of its Plan (e.g., improving monitoring networks, improving data and information gaps identified in the hydrogeological conceptual model and the Ukiah Valley Integrated Hydrological Model, and refining projects and management actions). Department staff concur that those items are important and recommend the GSA address them as soon as possible. Department staff have also identified additional recommended corrective actions within this assessment that the GSA should consider addressing by the first periodic evaluation of the Plan. The recommended corrective actions generally focus on the following:

(1) Provide additional details and discussion related to the water budget.
(2) Refine and provide additional details and discussion related to chronic lowering of groundwater levels sustainable management criteria.
(3) Clarify and provide additional details and discussion related to degraded water quality sustainable management criteria.
(4) Continue to fill data gaps, collecting additional monitoring data, coordinating with resources agencies and interested parties to understand beneficial uses and users that may be impacted by depletions of interconnected surface water caused by groundwater pumping, and refine sustainable management criteria.
(5) Clarify details related to the degraded water quality monitoring network.

Addressing the recommended corrective actions identified in Section 5 of this assessment will be important to demonstrate, on an ongoing basis, that implementation of the Plan is likely to achieve the sustainability goal.

2 EVALUATION CRITERIA

The GSA submitted a single GSP to the Department to evaluate whether the Plan conforms to specified SGMA requirements[4] and is likely to achieve the sustainability goal for the Ukiah Valley Basin.[5] To achieve the sustainability goal for the Basin, the GSP must demonstrate that implementation of the Plan will lead to sustainable groundwater management, which means the management and use of groundwater in a manner that can be maintained during the planning and implementation horizon without causing undesirable results.[6] Undesirable results must be defined quantitatively by the GSAs.[7] The Department is also required to evaluate whether the GSP will adversely affect the ability of an adjacent basin to implement its GSP or achieve its sustainability goal.[8]

For the GSP to be evaluated by the Department, it must first be determined that the Plan was submitted by the statutory deadline,[9] and that it is complete and covers the entire basin.[10] If these conditions are satisfied, the Department evaluates the Plan to determine whether it complies with specific SGMA requirements and substantially complies with the GSP Regulations.[11] Substantial compliance means that the supporting information is sufficiently detailed and the analyses sufficiently thorough and reasonable, in the judgment of the Department, to evaluate the Plan, and the Department determines that any discrepancy would not materially affect the ability of the Agency to achieve the sustainability goal for the basin, or the ability of the Department to evaluate the likelihood of the Plan to attain that goal.[12]

When evaluating whether the Plan is likely to achieve the sustainability goal for the Basin, Department staff reviewed the information provided and relied upon in the GSP for sufficiency, credibility, and consistency with scientific and engineering professional standards of practice.[13] The Department's review considers whether there is a reasonable relationship between the information provided and the assumptions and conclusions made by the GSA, including whether the interests of the beneficial uses and users of groundwater in the basin have been considered; whether sustainable management criteria and projects and management actions described in the Plan are commensurate with the level of understanding of the basin setting; and whether those projects and management actions are feasible and likely to prevent undesirable results.[14]

[4] Water Code §§ 10727.2, 10727.4.
[5] Water Code § 10733(a).
[6] Water Code § 10721(v).
[7] 23 CCR § 354.26 *et seq.*
[8] Water Code § 10733(c).
[9] 23 CCR § 355.4(a)(1).
[10] 23 CCR §§ 355.4(a)(2), 355.4(a)(3).
[11] 23 CCR § 350 *et seq.*
[12] 23 CCR § 355.4(b).
[13] 23 CCR § 351(h).
[14] 23 CCR §§ 355.4(b)(1), (3), (4), and (5).

The Department also considers whether the GSA has the legal authority and financial resources necessary to implement the Plan.[15]

To the extent overdraft is present in a basin, the Department evaluates whether the Plan provides a reasonable assessment of the overdraft and includes reasonable means to mitigate the overdraft.[16] The Department also considers whether the Plan provides reasonable measures and schedules to eliminate identified data gaps.[17] Lastly, the Department's review considers the comments submitted on the Plan and evaluates whether the GSA adequately responded to the comments that raise credible technical or policy issues with the Plan.[18]

The Department is required to evaluate the Plan within two years of its submittal date and issue a written assessment of the Plan.[19] The assessment is required to include a determination of the Plan's status.[20] The GSP Regulations define the three options for determining the status of a Plan: Approved,[21] Incomplete,[22] or Inadequate.[23]

Even when review indicates that the GSP satisfies the requirements of SGMA and is in substantial compliance with the GSP Regulations, the Department may recommend corrective actions.[24] Recommended corrective actions are intended to facilitate progress in achieving the sustainability goal within the basin and the Department's future evaluations, and to allow the Department to better evaluate whether the Plan adversely affects adjacent basins. While the issues addressed by the recommended corrective actions do not, at this time, preclude approval of the Plan, the Department recommends that the issues be addressed to ensure the Plan's implementation continues to be consistent with SGMA and the Department is able to assess progress in achieving the sustainability goal within the basin.[25] Unless otherwise noted, the Department proposes that recommended corrective actions be addressed by the submission date for the first periodic evaluation of the GSP.[26]

The staff assessment of the GSP involves the review of information presented by the GSA, including models and assumptions, and an evaluation of that information based on scientific reasonableness, including standard or accepted professional and scientific methods and practices. The assessment does not require Department staff to recalculate or reevaluate technical information provided in the Plan or to perform its own geologic or

[15] 23 CCR § 355.4(b)(9).
[16] 23 CCR § 355.4(b)(6).
[17] 23 CCR § 355.4(b)(2).
[18] 23 CCR § 355.4(b)(10).
[19] Water Code § 10733.4(d); 23 CCR § 355.2(e).
[20] Water Code § 10733.4(d); 23 CCR § 355.2(e).
[21] 23 CCR § 355.2(e)(1).
[22] 23 CCR § 355.2(e)(2).
[23] 23 CCR § 355.2(e)(3).
[24] Water Code § 10733.4(d).
[25] Water Code § 10733.8.
[26] 23 CCR § 356.4 *et seq*.

engineering analysis of that information. The staff recommendation to approve a Plan does not signify that Department staff, were they to exercise the professional judgment required to develop a GSP for the basin, would make the same assumptions and interpretations as those contained in the Plan, but simply that Department staff have determined that the assumptions and interpretations relied upon by the submitting GSA are supported by adequate, credible evidence, and are scientifically reasonable.

Lastly, the Department's review and approval of the Plan is a continual process. Both SGMA and the GSP Regulations provide the Department with the ongoing authority and duty to review the implementation of the Plan.[27] Also, GSAs have an ongoing duty to provide reports to the Department, periodically reassess their plans, and, when necessary, update or amend their plans.[28] The passage of time or new information may make what is reasonable and feasible at the time of this review to not be so in the future. The emphasis of the Department's periodic reviews will be to assess the progress toward achieving the sustainability goal for the basin and whether Plan implementation adversely affects the ability of adjacent basins to achieve their sustainability goals.

3 REQUIRED CONDITIONS

A GSP, to be evaluated by the Department, must be submitted within the applicable statutory deadline. The GSP must also be complete and must, either on its own or in coordination with other GSPs, cover the entire basin.

3.1 SUBMISSION DEADLINE

SGMA required basins categorized as high- or medium-priority and not subject to critical conditions of overdraft to submit a GSP no later than January 31, 2022.[29]

The GSA submitted its Plan on January 28, 2022.

3.2 COMPLETENESS

GSP Regulations specify that the Department shall evaluate a GSP if that GSP is complete and includes the information required by SGMA and the GSP Regulations.[30]

The GSA submitted an adopted GSP for the entire Basin. After an initial, preliminary review, Department staff found the GSP to be complete and appearing to include the

[27] Water Code § 10733.8; 23 CCR § 355.6.
[28] Water Code §§ 10728 *et seq.*, 10728.2.
[29] Water Code § 10720.7(a)(2).
[30] 23 CCR § 355.4(a)(2).

required information, sufficient to warrant a thorough evaluation by the Department.[31] The Department posted the GSP to its website on February 14, 2022.[32]

3.3 Basin Coverage

A GSP, either on its own or in coordination with other GSPs, must cover the entire basin.[33] A GSP that is intended to cover the entire basin may be presumed to do so if the basin is fully contained within the jurisdictional boundaries of the submitting GSAs.

The GSP intends to manage the entire Ukiah Valley Basin and the jurisdictional boundary of the submitting GSA fully contains the Basin.[34]

4 Plan Evaluation

As stated in Section 355.4 of the GSP Regulations, a basin "shall be sustainably managed within 20 years of the applicable statutory deadline consistent with the objectives of the Act." The Department's assessment is based on a number of related factors including whether the elements of a GSP were developed in the manner required by the GSP Regulations, whether the GSP was developed using appropriate data and methodologies and whether its conclusions are scientifically reasonable, and whether the GSP, through the implementation of clearly defined and technically feasible projects and management actions, is likely to achieve a tenable sustainability goal for the basin. The Department staff's evaluation of the likelihood of the Plan to attain the sustainability goal for the Basin is provided below.

4.1 Administrative Information

The GSP Regulations require each Plan to include administrative information identifying the submitting Agency, its decision-making process, and its legal authority;[35] a description of the Plan area and identification of beneficial uses and users in the Plan area;[36] and a description of the ability of the submitting Agency to develop and implement a Plan for that area.[37]

The Ukiah Valley Basin Groundwater Sustainability Agency (GSA or Agency) is the sole GSA for the Basin and is responsible for the entire area covered by the GSP.[38] The GSA

[31] The Department undertakes a preliminary completeness review of a submitted Plan under section 355.4(a) of the GSP Regulations to determine whether the elements of a Plan required by SGMA and the Regulations have been provided, which is different from a determination, upon review, that a Plan is "incomplete" for purposes of section 355.2(e)(2) of the Regulations.
[32] https://sgma.water.ca.gov/portal/gsp/preview/84.
[33] Water Code § 10727(b); 23 CCR § 355.4(a)(3).
[34] Ukiah Valley GSP, Section 2.1.1.1, p. 46.
[35] 23 CCR § 354.6 *et seq*.
[36] 23 CCR § 354.8 *et seq*.
[37] 23 CCR § 354.6(e).
[38] Ukiah Valley GSP, Section 2.1.1.1, p. 46.

was formed through a Joint Powers Agreement (JPA)[39] between Mendocino County, City of Ukiah, Russian River Flood Control and Water Conservation Improvement District (RRFC), Upper Russian River Water Agency, and agricultural and Tribal interested-party groups.[40] The GSP states that the GSA has the legal authority to "perform duties, exercise powers and accept responsibility while sustainably managing groundwater within the Ukiah Valley Groundwater Basin" and to "develop, implement and manage a Groundwater Sustainability Plan for the Ukiah Valley Basin."[41] According to the GSP, the legal authority stems from SGMA, the JPA, and the GSA Bylaws.[42] The governance of the GSA is by a Board of Directors containing six members, with one member representing each agency and interested-party group. In addition, a Technical Advisory Committee was formed for technical guidance during GSP development.[43]

The GSP provides a discussion of the plan area. The medium-priority Ukiah Valley Basin is located in Mendocino County and underlies the Ukiah and Redwood Valleys. The Basin encompasses 37,500 acres within the Russian River Watershed, with the Russian River flowing the entire length of the Basin and being joined by several tributaries. Lake Mendocino borders the eastern side of the Basin and provides managed releases to the East Fork of the Russian River to maintain minimum instream flows and meet water supply demands.[44] The Basin is bounded by the Mendocino Range of the Coastal Ranges and bordered by the very low-priority Sanel Valley Groundwater Basin (No. 1-053) to the south.[45] Agencies with jurisdiction in the Basin include Mendocino County, City of Ukiah, City of 10,000 Buddhas, Flight Ridge, Yokayo Tribe Water System, RRFC, Upper Russian River Water Agency, Ukiah Valley Sanitation District, two water companies, four water districts, and four areas designated as tribal lands.[46]

In addition to the local agencies with water management responsibilities identified above, the State Water Resources Control Board has jurisdiction over a number of groundwater wells in the Basin whose source has been deemed to constitute Russian River underflow,[47] including wells operated by the City of Ukiah, the largest public water service provider in Ukiah Valley.[48] Department staff encourage the GSA develop a clear understanding and provide an explanation in the next periodic evaluation of the GSP of how the management of the wells that are subject to State Water Resources Board jurisdiction may impact the overall management of the Basin.

[39] Ukiah Valley GSP, Appendix 1-B, pp. 419-439.
[40] Ukiah Valley GSP, Sections ES 1.3-1.3.1.6, and 2.1.5.1, pp. 2, 35-37, and 70, Figure 2.3, p. 47.
[41] Ukiah Valley GSP, Section 1.3.4, p. 38.
[42] Ukiah Valley GSP, Section 1.3.4, p. 38.
[43] Ukiah Valley GSP, Section 2.1.5.2, p. 72.
[44] Ukiah Valley GSP, Section ES 2.2.1, p. 9.
[45] Ukiah Valley GSP, Sections ES-2.1.1 and 2.1.1, pp. 5 and 43, Figure 2.2, p. 45.
[46] Ukiah Valley GSP, Section 2.1.1.1, p. 46.
[47] Electronic Water Rights Information Management System. Retrieved June 5, 2023, from https://www.waterboards.ca.gov/waterrights/water_issues/programs/ewrims/index.html.
[48] Ukiah Valley GSP, Appendix 2-A LACO Initial Hydrogeologic Conceptual Model, pp. 680-687.

The GSP states that based on the 2010 Land Use Survey, the three largest land use categories within the Basin are Native and Riparian Vegetation (51.3%), Vineyards (20.7%), and Urban (19.14%).[49] Department staff note discrepancies within land use categories and percentages in various sections, tables and figures,[50] of the GSP. Department staff encourage the GSA to reconcile these in the next periodic evaluation of the GSP.

The GSP does not contain information on how the implementation of existing land use plans may change water demands within the Basin and affect the ability of the GSA to achieve sustainable groundwater management. Department staff recommend that the GSA evaluate the interaction of land use planning and water use as part of its efforts to maintain sustainability and include this information[51] in the next annual report.

Population of the Basin was approximately 29,671 in the 2010 census,[52] with an estimated 85%[53] of that population located within census tracts designated as Disadvantaged Communities or Severely Disadvantaged Communities. The GSP identified the number of wells per recorded use category from DWR's OSWCR database. The GSP states that in the Basin, there are 117 agricultural wells, 1,058 domestic wells, 46 injection wells, 344 monitoring wells, 70 public or municipal wells, and 1,148 unclassified wells.[54] A map depicting the Basin boundary is provided below (Figure 1).

[49] Ukiah Valley GSP, Section ES-2.1.1, p 5.
[50] Ukiah Valley GSP, Sections ES-2.1.1 and 2.1.1.3, pp. 5 and 53, Table 2-1, p. 53, Figure 2.6, p.54.
[51] 23 CCR §§ 354.8(d), 354.8(f)(2).
[52] Ukiah Valley GSP, Section ES 2.1.1, p. 5.
[53] Ukiah Valley GSP, Section 2.1.1.1, p. 46.
[54] Ukiah Valley GSP, Section 2.1.1.4, p. 56.

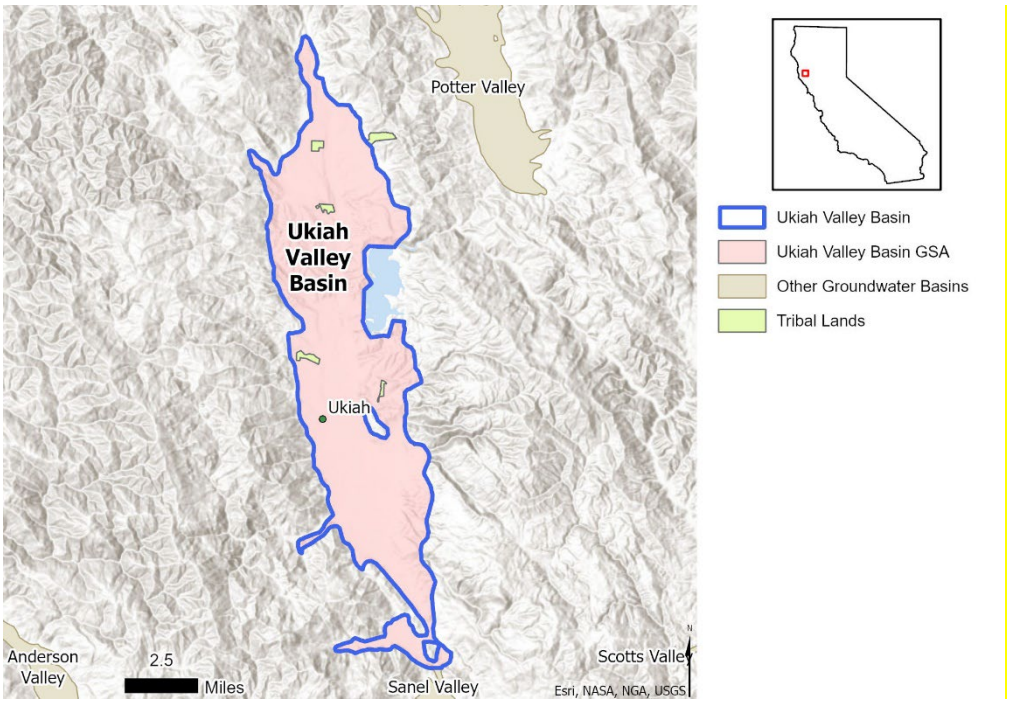

Figure 1: Ukiah Valley Basin Location Map.

The GSP identifies the beneficial uses and users of groundwater in the Basin as Public Water Systems (Agricultural, Urban, Private Users), California Native American Tribes (Coyote Valley Reservation, Pinoleville Pomo Nation, Potter Valley Rancheria, Guidiville Rancheria, Hopland Reservation), Agriculture, State Entities (State Lands, Environmental and Ecosystem), Federal Entities (Federal Lands, Environmental and Ecosystem), and the General Public (Disadvantaged Communities, Citizen Groups, Basin Residents).[55]

The GSP discusses the GSA's plan for achieving sustainability during implementation of the Plan. The GSP states: "[t]he key finding of the GSP, based on a thorough analysis of the best available information, is that the Basin will be sustainable over the next twenty years if planned projects and management actions are implemented as needed with respect to climate change and changes in the water system."[56] The average annual cost estimate for GSP implementation, over the next twenty-five years, ranges from $220,000 to $365,000 and excludes large capital projects.[57] The GSP explains that it will: "pursue various available funding opportunities to assist in covering the yearly costs" and "conduct a rate fee study to analyze and choose the best available option for fee collection."[58] The GSA declares that agency members will contribute funds for the initial five years until the implementation of a fee structure.[59]

[55] Ukiah Valley GSP, Table 2.2, p. 56.
[56] Ukiah Valley GSP, Section ES Abstract, p. 2.
[57] Ukiah Valley GSP, Sections ES-5, 1.3.5, and 5.2, pp. 29, 39, and 377-378, Table 5.2, 378.
[58] Ukiah Valley GSP, Section 1.3.5, p. 39.
[59] Ukiah Valley GSP, Sections ES Abstract, ES-5, and 1.3.5, pp. 2, 29, and 39.

The GSP's discussion and presentation of administrative information generally covers the specific items listed in the GSP Regulations in an understandable format using appropriate data. Department staff are aware of no significant inconsistencies or contrary information presented in the GSP and therefore have no significant concerns regarding the quality, data, and discussion of this subject in the GSP. The administrative information included in the Plan substantially complies with the requirements outlined in the GSP Regulations.

4.2 Basin Setting

GSP Regulations require information about the physical setting and characteristics of the basin and current conditions of the basin, including a hydrogeologic conceptual model; a description of historical and current groundwater conditions; and a water budget accounting for total annual volume of groundwater and surface water entering and leaving the basin, including historical, current, and projected water budget conditions.[60]

4.2.1 Hydrogeologic Conceptual Model

The hydrogeologic conceptual model is a non-numerical model of the physical setting, characteristics, and processes that govern groundwater occurrence within a basin, and represents a local agency's understanding of the geology and hydrology of the basin that support the geologic assumptions used in developing mathematical models, such as those that allow for quantification of the water budget.[61] The GSP Regulations require a descriptive hydrogeologic conceptual model that includes a written description of geologic conditions, supported by cross sections and maps,[62] and includes a description of basin boundaries and the bottom of the basin,[63] principal aquifers and aquitards,[64] and data gaps.[65]

The GSP describes the structural geology of the Basin. The structural setting of the Ukiah Valley Basin is dominated by tectonic deformation caused by the northwest-trending San Andreas fault system. Local extensions of this fault system in and around the Basin include the northwest-trending Maacama Fault and its associated lineaments.[66] The Plan identifies major geologic units of the Basin as Mesozoic basement rocks and Cenozoic sedimentary formations.[67] The Mesozoic basement rock comprises the Franciscan Formation, which contains the surface exposure of the Mendocino Range surrounding

[60] 23 CCR § 354.12.
[61] Department of Water Resources. Best Management Practices for the Sustainable Management of Groundwater: Hydrogeologic Conceptual Model, December 2016. Retrieved June 5, 2023, from https://water.ca.gov/-/media/DWR-Website/Web-Pages/Programs/Groundwater-Management/Sustainable-Groundwater-Management/Best-Management-Practices-and-Guidance-Documents/Files/BMP-3-Hydrogeologic-Conceptual-Model_ay_19.pdf.
[62] 23 CCR §§ 354.14 (a), 354.14 (c).
[63] 23 CCR §§ 354.14 (b)(2-3).
[64] 23 CCR § 354.14 (b)(4) *et seq.*
[65] 23 CCR § 354.14 (b)(5).
[66] Ukiah Valley GSP, Section 2.2.1.3, p. 94.
[67] Ukiah Valley GSP, Section 2.2.1.3, pp. 97, 98.

the Basin and underlies the Cenozoic sedimentary formations within the Basin.[68] Overlying the basement rock are the Tertiary to Quaternary Continental Basin Deposits; overlying this unit are Quaternary Terrace Deposits and Quaternary Alluvium.[69] The Plan provides detailed descriptions of these geologic formations including their general locations, approximate thicknesses, depositional environments, and water-bearing characteristics.[70]

The GSP describes the Basin's lateral boundaries. The lateral extent of the Basin is confined by the Mendocino Range on all sides, and Basin adjoins the Sanel Valley Groundwater Basin (No. 1-053) to the south by an approximately 0.5-mile interface. The Plan describes that the boundaries of the Basin are generally defined by the depositional contact between the Franciscan Formation and the overlying Tertiary to Quaternary sedimentary and alluvial deposits.[71] The Plan defines the vertical extent of the Basin as the contact with the Franciscan Formation, which varies in depth throughout the Basin, with the maximum depth being at least 1,950 feet below ground surface.[72]

The Plan includes three scaled cross-sections oriented approximately northeastward that depict lithology and structural features including faults. Department staff note that depiction of the subsurface in some areas of the cross sections does not agree with other information described in the Plan. For example, Principal Aquifer I is described as Quaternary Alluvium located along the Russian River and its tributaries; however, cross-section A-A' does not display the Quaternary Alluvium (Principal Aquifer I) near the Russian River, even though it crosses this unit on the geologic map. Additionally, the cross-sections presented in the Plan do not appear to match the horizontal distances of their associated transect lines. The cross-section location map clearly displays cross-sections of different lengths; however, all cross-sections presented in the Plan are drawn to a horizontal distance of 20,000 or 30,000 units and do not include the horizontal or vertical units of scale. Department staff encourage the GSA to update these discrepancies, in the next periodic evaluation of the GSP.

Additionally, as currently described in the Plan, the lateral extent of Principal Aquifer I, is unclear, and discrepancies exist between the geologic map and the cross-sections. An estimate of the extent of Principal Aquifer I would enhance the description of the Basin and data collection activities within the Basin. If the lateral extent of Principal Aquifer I is unknown, the Plan should identify this as a data gap and describe how the data gap will potentially be filled in the future.

[68] Ukiah Valley GSP, Sections 2.2.1.1 and 2.2.1.3, pp. 90, 97.
[69] Ukiah Valley GSP, Section 2.2.1.3, p. 98.
[70] Ukiah Valley GSP, Section 2.2.1.3, pp. 97, 98; Table 2.8, p. 104.
[71] Ukiah Valley GSP, Section 2.2.1.1, p. 90.; Appendix 2-D, p. 608.
[72] Ukiah Valley GSP, Section 2.2.1.1, p. 90.

The Plan describes two principal aquifers within the Basin defined on the basis of geologic units. Principal Aquifer I formed from Quaternary alluvium and Principal Aquifer II which consists of terrace deposits and continental basin deposits.

Principal Aquifer I is defined by the extent of the Quaternary Alluvium, which consists of sands and gravels.[73] The Plan states that occurrence of the Quaternary Alluvium is limited to sections along the Russian River and its tributaries and it interprets that the aquifer's maximum width varies by between 3,000 and 10,000 feet, widening southward.[74] Its depth extends from the ground surface down to a maximum of approximately 200 feet below ground surface, thickening southward.[75] While the extent of the Quaternary Alluvium is displayed on the geologic map, cross sections presented in the Plan display discrepancies in the lateral extent of the alluvium compared to the geologic map. Department staff encourage the GSA to resolve this inconsistency in the next periodic evaluation of the GSP. Principal Aquifer I is described as an unconfined aquifer with high conductivity and permeability. Principal Aquifer I is the primary production aquifer for the Basin and is primarily used for irrigation, domestic, and municipal purposes.[76]

Principal Aquifer II is defined by both the Terrace Deposits and the Continental Basin Deposits, which are composed of cemented sands and gravels, thick clay layers, and intermittent gravely clays.[77] The areal extent of Principal Aquifer II is not described by the Plan; however, based on the geologic map and cross sections presented in the Plan, outcrops of both the Terrace Deposits and Continental Basin Deposits make up the majority of geologic surface exposures in the Basin, and these units extend under the subsurface of the Basin across its full extent.[78] The aquifer's depth extends from the ground surface down to the Basin bottom, which is at least 1,950 feet below ground surface.[79] Principal Aquifer II is an unconfined to locally confined aquifer with low conductivity and permeability. Principal Aquifer II is a low-producing aquifer and is primarily used for domestic purposes.[80]

The GSP infers that the two principal aquifers are hydraulically connected,[81] and indicates that while no regionally extensive aquitards are present, the Plan shows that clays in the Continental Basin Deposits of Principal Aquifer II can create areas where the aquifer is partially or locally confined.[82] The Plan does not identify any geologic structures within the principal aquifers that are known to affect groundwater flow; however, the Maacama

[73] Ukiah Valley GSP, Section 2.2.1.4, p. 114.
[74] Ukiah Valley GSP, Section 2.2.1.3, p. 110; Section 2.2.1.4, p. 114.
[75] Ukiah Valley GSP, Section 2.2.1.3, Figure 2.15, p. 96, Table 2.9, p. 110; Section 2.2.1.4, pp. 111, 117.
[76] Ukiah Valley GSP, Section 2.2.1.4, pp. 111, 114, 124.
[77] Ukiah Valley GSP, Section 2.2.1.4, p. 117.
[78] Ukiah Valley GSP, Section 2.2.1.3, Figure 2.15, p. 96, Figures 2.18 through 2.20, pp. 102, 108, 109.
[79] Ukiah Valley GSP, Section 2.2.1.4, p. 117.
[80] Ukiah Valley GSP, Section 2.2.1.4, p. 124.
[81] Ukiah Valley GSP, Section 2.2.1.3, p. 99; Section 2.2.1.4, pp. 111, 124; Section 2.2.1.5, p. 130.
[82] Ukiah Valley GSP, Section 2.2.1.4, p. 124.

Fault that trends northwest-southeast through the middle of the Basin was identified as an area needing further study with regard to its relationship to the groundwater system.[83]

Groundwater quality data for both principal aquifers is limited, but the GSP indicates that groundwater in the Basin is generally of good quality and suitable for beneficial uses.[84] Localized areas of poor groundwater are present including elevated concentrations of boron, iron, manganese and total dissolved solids, particularly in Principal Aquifer II.

The Plan identifies several data gaps in the hydrogeologic conceptual model and provides suggestions for addressing two items:

1) Hydrogeologic properties of the Basin are not well-understood and may be addressed by conducting pumping tests, geophysical studies, and managed aquifer recharge projects;
2) Several water quality issues are not well-understood and will be addressed through additional data collection. Specific issues include: water quality characterization of both Principal Aquifer I and Principal Aquifer II; chemical connection between Principal Aquifer I and the Russian River; and identification of potential areas of water quality concerns.[85]

Other identified data gaps include an understanding of the:

- Mechanisms for recharge for Principal Aquifer I;
- Hydraulic relationship between Principal Aquifer I and the Russian River;
- Hydraulic relationships, including vertical flow, between Principal Aquifer I and Principal Aquifer II, and between the aquifers and streams;
- Hydrogeological properties of the Maacama fault.[86]

While the Plan identifies these data gaps, the GSP is unclear on the timeframe or schedule for when these data gaps will be addressed. Department staff encourage the GSA to, at a minimum, provide a general timeline that indicates whether these data gaps will be addressed with specific projects that are planned or yet to be scheduled, or whether they will be addressed in an ongoing basis throughout the 20-year implementation period, in the next periodic evaluation of the GSP.

The information provided in the GSP that comprises the hydrogeologic conceptual model substantially complies with the requirements outlined in the GSP Regulations. In general, the Plan's descriptions of the regional geologic setting, the Basin's physical characteristics, the principal aquifers, and hydrogeologic conceptual model appear to utilize the best available science. Department staff are aware of no significant

[83] Ukiah Valley GSP, Section 2.2.1.3, p. 99; Section 2.2.1.7, p. 143.
[84] Ukiah Valley GSP, Section 2.2.1.4, pp. 121, 122.
[85] Ukiah Valley GSP, Section 2.2.1.7, p. 143; Appendix 2-E, p. 1182.
[86] Ukiah Valley GSP, Section 2.2.1.7, p. 143.

inconsistencies or contrary technical information to that presented in the Plan and encourage the GSA to address the identified data gaps.

4.2.2 Groundwater Conditions

The GSP Regulations require a written description of historical and current groundwater conditions for each of the applicable sustainability indicators and groundwater dependent ecosystems that includes the following: groundwater elevation contour maps and hydrographs,[87] a graph depicting change in groundwater storage,[88] maps and cross-sections of the seawater intrusion front,[89] maps of groundwater contamination sites and plumes,[90] maps depicting total subsidence,[91] identification of interconnected surface water systems and an estimate of the quantity and timing of depletions of those systems,[92] and identification of groundwater dependent ecosystems.[93]

The GSP provides a description of current and historical groundwater conditions within the Basin.[94] The GSP provides groundwater level contour maps representing Spring and Fall conditions for 2017 for the Basin as a whole, but does not provide contour maps specific to each principal aquifer.[95] The GSP states that seasonal highs in the Basin occur in March or April and seasonal lows occur in October.[96] The Plan states that there are a limited number of wells in Principal Aquifer I from which to produce meaningful contour maps and does not clearly indicate that this is also true for Principal Aquifer II.[97] Department staff encourage the GSA to provide the required groundwater elevation contour maps for all principal aquifers in the next periodic evaluation of the Plan.

The GSP provides seven hydrographs that depict long-term groundwater elevations for the entire Basin, primarily beginning in 2014 or 2015 and ending in 2020, except for records from three DWR-monitored wells spanning from the mid-1960s to 2021.[98] In general, the hydrographs depict stable groundwater conditions throughout the Basin. The greatest groundwater level variability observed is in one of the DWR-monitored wells, where the total difference between historic highs and lows appears to be approximately 100-150 ft.[99] However, most of this well's groundwater level record after roughly 1990 depicts variability that is consistent with other wells in the Basin. For comparison, the

[87] 23 CCR § 354.16 (a)(1-2).
[88] 23 CCR § 354.16 (b).
[89] 23 CCR § 354.16 (c).
[90] 23 CCR § 354.16 (d).
[91] 23 CCR § 354.16 (e).
[92] 23 CCR § 354.16 (f).
[93] 23 CCR § 354.16 (g).
[94] Ukiah Valley GSP, pp. Section 2.2.2, pp. 144-223.
[95] Ukiah Valley GSP, Section 2.2.2.1, Figures 2.35, 2.36, pp. 157, 158.
[96] Ukiah Valley GSP, Section 2.2.2.1, p. 150.
[97] Ukiah Valley GSP, Section 2.2.2.1, p. 150.
[98] Ukiah Valley GSP, Section 2.2.2.1, Figures 2.31 through 2.39, pp. 152-155, 157-161.
[99] Ukiah Valley GSP, Section 2.2.2.1, Figure 2.31, p. 152.

remaining hydrographs appear to depict groundwater level variability within a few tens of feet.[100]

The GSP states that vertical hydraulic gradients exist within the Basin.[101] Vertical hydraulic separation and relationship are observed between Principal Aquifer I and Principal Aquifer II, as well as a general downward vertical gradient within the Basin. The Plan notes that this gradient is less pronounced in nested wells located near the City of Ukiah.

The GSP includes a description of the change in groundwater storage and a graph depicting both the modeled annual and cumulative storage change in the Basin from 1992 to 2018.[102] Groundwater storage is generally stable, and the Plan indicates that variation in storage is related to precipitation variability.[103] The GSP includes a graph depicting groundwater storage changes for the entire Basin noting that the available storage is estimated to be between 60,000 and 120,000 acre-feet annually in Principal Aquifer I and 324,000 acre-feet annually in Principal Aquifer II.[104]

The GSP states that the Basin is located far from coastal areas and seawater intrusion is not a relevant sustainability indicator for the Basin. Given the geographic setting of the basin, Department staff regard the reasoning of the GSP as sufficient to demonstrate that sea water intrusion is not present in the basin and is not likely to occur in the future.

The Plan includes a description of current and historical groundwater quality issues, along with a series of maps and graphs describing the locations and historic concentrations of several water quality constituents of interest.[105] The GSP has identified 5 constituents of interest: boron, iron, manganese, nitrate, and specific conductivity. These constituents were chosen based on whether existing groundwater quality data exists above or below state and federal drinking water standards and state water quality objectives.[106] The GSP also provided both a description and map of point-source contamination sites.[107] The GSP states that there are 36 open clean-up sites in the Basin according to the GeoTracker website, with 15 of these sites listed as inactive.[108]

The GSP includes both a description and map of the current and historical land subsidence conditions in the Basin.[109] The GSP utilizes Department-provided Interferometric Synthetic Aperture Radar (InSAR) data from June 2015 to either September 2019 or September 2020. The Plan also discusses one Continuous Global

[100] Ukiah Valley GSP, Section 2.2.2.1, Figures 2.31 through 2.39, pp. 152-155, 157-161.
[101] Ukiah Valley GSP, Section 2.2.2.1, p. 151.
[102] Ukiah Valley GSP, Section 2.2.2.2 p. 142; Figure 2.40, p. 143.
[103] Ukiah Valley GSP, Section 2.2.2.2, p. 163, Figure 2.40, p. 164.
[104] Ukiah Valley GSP, Section 2.2.2.2, p. 163.
[105] Ukiah Valley GSP, Section 2.2.2.4, pp. 165-187.
[106] Ukiah Valley GSP, Section 2.2.2.4, p. 169.
[107] Ukiah Valley GSP, Section 2.2.2.4, pp. 185-186, Figure 2.51, p. 187.
[108] Ukiah Valley GSP, Section 2.2.2.4, p. 185.
[109] Ukiah Valley GSP, Section 2.2.2.5, p. 188; Figure 2.52, p. 189.

Positioning System (CGPS) site, which spans from 2005 to an unspecified date, and indicates that records from this site are consistent with the InSAR data.[110] The Plan is unclear about the end of the time period over which both the InSAR and the CGPS data are presented, and Department staff encourage the GSA to provide this additional information in the next periodic evaluation of the GSP. The Plan concludes that the total range of displacement observed in the Basin is within the error of the InSAR dataset and therefore not indicative of historical inelastic subsidence.

The Plan identifies surface water bodies in the Basin that potentially have connectivity to groundwater using an analysis that includes comparing estimated stream bed elevations with groundwater elevations. Based on feedback from stakeholders and anecdotal observations of river flows, the results of this analysis were updated to ensure that all segments of the mainstem of the Russian River are classified as interconnected surface waters. As a result of the update, an estimated 45% of stream and riverbed segments within the Basin were classified as likely interconnected surface waters, leaving 55% of surface water segments as unlikely interconnected surface waters.[111] The GSP does not estimate the quantity and timing of depletions of interconnected surface waters at this time.

The GSP includes a series of maps to identify potential locations of groundwater dependent ecosystems within the Basin.[112] The GSA utilizes several datasets to identify these locations, including: (1) California ecoregions identified by Environmental Protection Agency Level III Ecoregions of California, provided by the United States Geological Survey;[113] (2) habitat extent of several species of concern, provided by the California Department of Fish and Wildlife Biogeographic Information and Observation System Viewer;[114] (3) extent of critical habitats for threatened species, provided by the National Oceanic and Atmospheric Administration Protected Resources App; [115] (4) extent of vegetation, wetland, land use/land cover, and crop cover features, provided by the Department's Natural Communities Commonly Associated with Groundwater dataset; [116] and (5) groundwater elevations, provided by the Department's Periodic Groundwater Level Database.[117] A summary of endangered, threatened, rare, or species of special concern identified for the Basin is presented in the GSP[118] for a subset of species for which the California Department of Fish and Wildlife Biogeographic Information and Observation System provides the extent of suitable habitat. The Plan also indicates that based on National Oceanic and Atmospheric Administration Protected

[110] Ukiah Valley GSP, Section 3.8.1.3, pp. 308-309.
[111] Ukiah Valley GSP, Section 2.2.2.6, p. 192.
[112] Ukiah Valley GSP, Section 2.2.2.7, pp. 197-223.
[113] Ukiah Valley GSP, Section 2.2.2.7, p. 197.
[114] Ukiah Valley GSP, Section 2.2.2.7, pp. 197-198.
[115] Ukiah Valley GSP, Section 2.2.2.7, p. 198.
[116] Ukiah Valley GSP, Section 2.2.2.7, p. 198.
[117] Ukiah Valley GSP, Section 2.2.2.7, p. 217.
[118] Ukiah Valley GSP, Section 2.2.2.7, Table 2.21, p. 179.

Resources App, the Russian River mainstem, Forsythe Creek, Mariposa Creek, and Salt Hollow Creek are critical habitats for threatened-listed Steelhead; and the Russian River mainstem is also listed as critical habitat for Chinook Salmon, listed as threatened.

The GSP provides additional information and analysis including descriptions and maps of assumed rooting depths, depth to groundwater, and potential of groundwater dependent ecosystems having access to groundwater, classified as likely connected, likely disconnected or potential groundwater dependent ecosystems.[119] The GSP acknowledges, and Department staff concur, that field-based data should be collected to affirm the presence and characterization of groundwater dependent ecosystems.[120]

Department staff conclude that, overall, the GSP sufficiently describes the historical and current groundwater conditions throughout the Basin. The GSP also acknowledges data gaps present that warrant further study. Department staff conclude that the information included in the GSP substantially complies with the requirements outlined in the GSP Regulations.

4.2.3 Water Budget

GSP Regulations require a water budget for the basin that provides an accounting and assessment of the total annual volume of groundwater and surface water entering and leaving the basin, including historical; current; and projected water budget conditions,[121] and the sustainable yield.[122]

The Ukiah Valley GSP relies on the Ukiah Valley Integrated Hydrological Model and GSFLOW[123] software to estimate historical, current, and future water budgets. Water budgets data are provided for the Basin as a whole, however the GSP states that in the next periodic evaluation of the GSP water budgets will be provided for each principal aquifer.[124]

The Plan provides a historical water budget for water years 1992-2018.[125] The inflow sources for the historical Basin water budget include inflow from the upper watershed, deep percolation and recharge, stream loss to groundwater, and groundwater boundary inflow. Outflow sources include agricultural pumping, municipal pumping, stream gain from groundwater and outflow from the groundwater system. The GSP explains that historical conditions have not impacted the Basin severely and have not resulted in

[119] Ukiah Valley GSP, Section 2.2.2.7, pp. 217-218, Figures 2.66 through 2.70, pp. 216, 219-222.
[120] Ukiah Valley GSP, Section 2.2.2.7, p. 223.
[121] 23 CCR §§ 354.18 (a), 354.18 (c) *et seq*.
[122] 23 CCR § 354.18 (b)(7).
[123] GSFLOW-Coupled Groundwater and Surface water FLOW model based on the integration of the Precipitation-Runoff Modeling System (PRMS) and the Modular Ground-Water Flow Model (MODFLOW-2005), Markstrom, S.L., Niswonger, R.G., Regan, R.S., Prudic, D.E., and Barlow, P.M., 2008, U.S. Geological Survey Techniques and Methods 6-D1, 240 p.
[124] Ukiah Valley GSP, Section 2.2.3.2, p. 233.
[125] Ukiah Valley GSP, Section 2.2.3.3, pp. 233-241.

overdraft.[126] Water levels and groundwater storage have been in a dynamic equilibrium with inflows to and outflows from the aquifer system, with no significant, discernable negative trend in water levels or groundwater storage.

The GSP does not provide a quantitative evaluation of surface water availability or reliability. Since the Ukiah Valley Basin includes surface water imports and reservoir releases that are subject to instream flow requirements, there appears to be potential for actual surface water deliveries to be reduced from the planned amounts. As a result, Department staff believe it is necessary for availability or reliability of those surface water supplies to be evaluated and discussed as part of the water budget (see Recommended Corrective Action 1a). As part of the evaluation, Department staff encourage the GSA to provide annual data on surface water imports from the Eel River (Lake Mendocino through the PG&E Potter Valley Project) explicitly and in tabular format. Department staff also note that not all the water budget information is presented in both graphical and tabular format, as required by the GSP Regulations. For example, the GSP provides surface water diversion data for the historical water budget for the Upper Russian River Watershed[127] in graphical form only. Department staff encourage the GSA to include all water budget information and its components in both graphical and tabular format in the next periodic evaluation of the GSP.

Additionally, it is unclear from the information provided within the Plan if Lake Mendocino is represented in the model. Despite Lake Mendocino being outside the Basin boundary and an explanation regarding the incompatibility of the reservoir operations model and Ukiah Valley Integrated Hydrological Model, Lake Mendocino shares a border with the basin boundary that is within the GSFLOW model boundary.[128] As a result, any lake-aquifer interaction should be included as part of the water budget. It is unclear to Department staff if the lake-aquifer interaction is included in the water budget, and staff recommend that the GSA explain how Lake Mendocino storage and aquifer interaction is simulated in the Ukiah Valley Integrated Hydrological Model (see Recommended Corrective Action 1b).

The GSP provides a current water budget for water years 2015-2018, and states that this period includes an end-of-drought year and a very wet year and reflects the best historical period available to assess conditions of the Basin considering the availability of data and other relevant information.[129]

The GSP provides a projected water budget for water years 2019-2070 and incorporates climate change (one future baseline, and two climate change scenarios including 2030 and central tendency of projected conditions in 2070).[130] The 50-year baseline used for

[126] Ukiah Valley GSP, Section 2.2.3.7, p. 250.
[127] Ukiah Valley GSP, Section 2.2.3.3, Figure 2.75, p. 241.
[128] Ukiah Valley GSP, Section 2.2.3.1, p. 226; Figure 2.71.
[129] Ukiah Valley GSP, Section 2.2.3.4, pp. 242-245.
[130] Ukiah Valley GSP, Section 2.2.3.6, pp. 245-249.

the projected water budget is based on climatic and hydrologic data and input for water years 1969-2018. According to the GSP, results indicate that similar to the historical period, the projected water budget is largely dependent on precipitation and water year type, specifically for groundwater recharge, streams and groundwater exchange, and inflow from upper watershed tributaries. The Plan concludes that although results indicate a decline in aquifer recharge and stream loss to aquifers, no significant trend in cumulative storage change was established in the analysis.[131]

The projected water budget provides an estimate of the sustainable yield for the Basin. The GSP states the sustainable yield is at least 6,500 acre-feet per year based on the average groundwater pumping estimated during the historical period. The GSP further explains that the sustainable yield in the Basin is not equal to the historic 1992-2018 average groundwater pumping, because groundwater conditions during that period have not resulted in overdraft, and the Plan states that the sustainable yield may be greater than the 6,500 acre-feet per year estimate.[132]

According to the GSP, exploratory pumping scenarios could be modeled to project the sustainable yield of the Basin, however, due to existing data gaps such estimation would be more accurate upon collection of additional data. The Plan also stipulates that sustainable yield may require a spatial component to protect against significant and unreasonable depletion of the interconnected surface water. For example, the Plan states that if much of the pumping occurs close to surface water bodies, mainly the mainstem Russian River (for uses such as Frost Protection), and from the shallower aquifers, significant and unreasonable depletion of interconnected surface waters and impacts to groundwater dependent ecosystems are more likely to be observed than when pumping is well distributed and withdrawing from deeper depths.[133] Department staff encourage the GSA to continue working towards addressing existing data gaps and refining the estimate of the Basin's sustainable yield.

While Department staff have identified recommended corrective actions for the GSA to address prior to the next periodic update, these recommendations do not preclude approval at this time as it does not appear to limit the understanding of the Basin or prevent the GSA from implementing the Plan. Department staff conclude the information provided in the GSP that comprises the water budget substantially complies with the requirements outlined in the GSP Regulations.

4.2.4 Management Areas

The GSP Regulations provide the option for one or more management areas to be defined within a basin if the GSA has determined that the creation of the management areas will facilitate implementation of the Plan. Management areas may define different minimum

[131] Ukiah Valley GSP, Section 2.2.3.6, p. 247.
[132] Ukiah Valley GSP, Section 2.2.3.7, p. 250.
[133] Ukiah Valley GSP, Section 2.2.3.7, p. 250.

thresholds and be operated to different measurable objectives, provided that undesirable results are defined consistently throughout the basin.[134]

There are no management areas proposed within the Plan area.

4.3 SUSTAINABLE MANAGEMENT CRITERIA

GSP Regulations require each Plan to include a sustainability goal for the basin and to characterize and establish undesirable results, minimum thresholds, and measurable objectives for each applicable sustainability indicator, as appropriate. The GSP Regulations require each Plan to define conditions that constitute sustainable groundwater management for the basin including the process by which the GSA characterizes undesirable results and establishes minimum thresholds and measurable objectives for each applicable sustainability indicator.[135]

4.3.1 Sustainability Goal

GSP Regulations require that GSAs establish a sustainability goal for the basin. The sustainability goal should be based on information provided in the GSP's basin setting and should include an explanation of how the sustainability goal is likely to be achieved within 20 years of Plan implementation.[136]

The GSP describes the sustainability goal as to "maintain groundwater resources in ways that best support the continued and long-term health of the people, the environment, and the economy in Ukiah Valley, for generations to come. This includes managing groundwater conditions for each of the applicable sustainability indicators in the Basin so that:

- Groundwater elevations and groundwater storage do not significantly decline below their historically measured range, protect groundwater uses in the Basin, protect groundwater dependent ecosystems, and avoid significant streamflow depletion due to groundwater pumping.
- Groundwater quality is suitable for the beneficial uses in the Basin and is not significantly or unreasonably degraded.
- Significant and unreasonable land subsidence is prevented in the Basin. Infrastructure and agricultural production in Ukiah Valley remain safe from permanent subsidence of land surface elevations.
- Significant and undesirable streamflow depletions due to groundwater pumping are avoided through projects and management actions consistent with existing regulatory requirements.
- The GSA's groundwater management is efficiently and effectively integrated with other watershed and land use planning activities through collaborations and partnerships with local, state, and federal agencies, private landowners, and other

[134] 23 CCR § 354.20.
[135] 23 CCR § 354.22 *et seq*.
[136] 23 CCR § 354.24.

> organizations, to achieve the broader watershed goal of sufficient surface water flows that sustain healthy ecosystem functions."[137]

The GSP describes an approach to achieve the sustainability goal through the potential implementation of various projects and management actions. The GSP states that the Basin "has not historically experienced conditions of overdraft or undesirable results", and therefore, projects and actions are proposed to promote long-term resiliency to varying climatic conditions and adaptive management strategies and help maintain the Basin's conditions in the future.[138] The GSP states that project and management actions are designed to support the following objectives related to sustainable management criteria: achieve thresholds and objectives for interconnected surface water sustainability indicator, provide sufficient capacity for conjunctive use of groundwater and surface water to prevent water shortages during periods of low surface water availability, and prevent lowering of groundwater levels to protect wells from outages, preserve groundwater dependent ecosystems, and avoid additional stresses on interconnected surface waters and their habitat.[139]

The GSP includes projects and management actions which encompass supply augmentation, water conservation, managed aquifer recharge, water demand management, conservation, drought mitigation, and water quality enhancement efforts which the Plan states will assist the subbasin in reaching its sustainability goal. The evaluation and implementation of these efforts are subject to funding availability, and for several projects and actions contingent on securing grant funding.

4.3.2 Sustainability Indicators

Sustainability indicators are defined as any of the effects caused by groundwater conditions occurring throughout the basin that, when significant and unreasonable, cause undesirable results.[140] Sustainability indicators thus correspond with the six undesirable results – chronic lowering of groundwater levels indicating a significant and unreasonable depletion of supply if continued over the planning and implementation horizon, significant and unreasonable reduction of groundwater storage, significant and unreasonable seawater intrusion, significant and unreasonable degraded water quality, including the migration of contaminant plumes that impair water supplies, land subsidence that substantially interferes with surface land uses, and depletions of interconnected surface water that have significant and unreasonable adverse impacts on beneficial uses of the surface water[141] – but refer to groundwater conditions that are not, in and of themselves, significant and unreasonable. Rather, sustainability indicators refer to the effects caused by changing groundwater conditions that are monitored, and for which criteria in the form

[137] Ukiah Valley GSP, Section 3.2, p. 256.
[138] Ukiah Valley GSP, Section 4.1, p. 330.
[139] Ukiah Valley GSP, Section 4.1, p. 330.
[140] 23 CCR § 351(ah).
[141] Water Code § 10721(x).

of minimum thresholds are established by the agency to define when the effect becomes significant and unreasonable, producing an undesirable result.

GSP Regulations require that GSAs provide descriptions of undesirable results including defining what are significant and unreasonable potential effects to beneficial uses and users for each sustainability indicator.[142] GSP Regulations also require GSPs provide the criteria used to define when and where the effects of the groundwater conditions cause undesirable results for each applicable sustainability indicator. The criteria shall be based on a quantitative description of the combination of minimum threshold exceedances that cause significant and unreasonable effects in the basin.[143]

GSP Regulations require that the description of minimum thresholds include the information and criteria relied upon to establish and justify the minimum threshold for each sustainability indicator.[144] GSAs are required to describe how conditions at minimum thresholds may affect beneficial uses and users,[145] and the relationship between the minimum thresholds for each sustainability indicator, including an explanation for how the GSA has determined conditions at each minimum threshold will avoid causing undesirable results for other sustainability indicators.[146]

GSP Regulations require that GSPs include a description of the criteria used to select measurable objectives, including interim milestones, to achieve the sustainability goal within 20 years.[147] GSP Regulations also require that the measurable objectives be established based on the same metrics and monitoring sites as those used to define minimum thresholds.[148]

The following subsections thus consolidate three facets of sustainable management criteria: undesirable results, minimum thresholds, and measurable objectives. Information, as presented in the Plan, pertaining to the processes and criteria relied upon to define undesirable results applicable to the Basin, as quantified through the establishment of minimum thresholds, are addressed for each applicable sustainability indicator. A submitting agency is not required to establish criteria for undesirable results that the agency can demonstrate are not present and are not likely to occur in a basin.[149]

4.3.2.1 Chronic Lowering of Groundwater Levels

In addition to components identified in 23 CCR §§ 354.28 (a-b), for the chronic lowering of groundwater, the GSP Regulations require the minimum threshold for chronic lowering of groundwater levels to be the groundwater elevation indicating a depletion of supply at a given location that may lead to undesirable results that is supported by information

[142] 23 CCR §§ 354.26 (a), 354.26 (b)(c).
[143] 23 CCR § 354.26 (b)(2).
[144] 23 CCR § 354.28 (b)(1).
[145] 23 CCR § 354.28 (b)(4).
[146] 23 CCR § 354.28 (b)(2).
[147] 23 CCR § 354.30 (a).
[148] 23 CCR § 354.30 (b).
[149] 23 CCR § 354.26 (d).

about groundwater elevation conditions and potential effects on other sustainability indicators.[150]

The GSP states that the sustainable management criteria for the chronic lowering of groundwater levels was developed around the goal of maintaining groundwater levels within or near historically measured range, protecting groundwater uses in Basin, protecting groundwater dependent ecosystems, and avoiding significant streamflow depletion due to groundwater pumping.[151] The Plan describes significant and unreasonable lowering of groundwater levels as conditions when "such lowering threatens long-term viability of domestic, agricultural, municipal, or environmental users of groundwater."[152] The extent of impacts to beneficial users that constitute undesirable results for chronic lowering of groundwater is defined with the following quantitative criteria:

- percentage of impacted domestic, agricultural, or public wells exceeds 5 percent
- percentage decrease in connected groundwater dependent ecosystems area exceeds 20 percent compared to reference year; and
- depletion of interconnected surface water exceeds historical depletions recorded during past multi-year droughts.[153]

The Plan defines the occurrence of an undesirable result for chronic lowering of groundwater levels as when "groundwater level observations in the Fall season (i.e., the minimum elevation in any given water year) in more than one third of the representative monitoring points in the Basin fall below their respective minimum thresholds for two consecutive years."[154] The GSP states that the minimum thresholds for groundwater level are based on limited historical groundwater elevation data available in the Basin.[155] The Plan claims that declines beyond minimum thresholds at a third of the representative monitoring points for two consecutive years are designed to reflect a return to a drought similar in intensity to the 2012 through 2016 drought, plus an additional margin to account for hydrologic uncertainty. Department staff note that the undesirable result definition combines both principal aquifers.

The GSP states that historical groundwater level measurements in the Basin for all wells, except for three active Principal Aquifer II wells monitored by the Department dating back to the mid-1960s, started in 2014 or later, and do not fully cover the 2012 to 2016 drought period.[156] As a result, the GSA is limited in its ability to thoroughly evaluate the impacts of extended drought on the Basin, including impacts on groundwater levels.

[150] 23 CCR § 354.28(c)(1) *et seq*.
[151] Ukiah Valley GSP, Section 3.2, p. 256.
[152] Ukiah Valley GSP, Section 3.4.2, p. 273.
[153] Ukiah Valley GSP, Section 3.4.2, p. 274.
[154] Ukiah Valley GSP, Section 3.4.2, p. 274.
[155] Ukiah Valley GSP, Section 3.4.2, p. 274.
[156] Ukiah Valley GSP, Section 2.2.2.1, p. 146.

The Plan sets minimum thresholds for chronic lowering of groundwater levels at four representative monitoring points in Principal Aquifer I and three representative monitoring points in Principal Aquifer II. The GSP explains that the minimum thresholds set at each representative monitoring point are "estimated according to the following framework:

- Wherever possible based on data availability, the minimum threshold is set as average of three lowest (Fall season) historical measurements on record for depth to groundwater taken during drought periods. A well-specific margin, not exceeding minimum of 10 percent or 10 feet, is further added to the minimum threshold to account for uncertainty in measuring annual low groundwater levels. This criterion applies to representative monitoring points with historical groundwater level measurements that at least cover the 2012-2016 drought period.
- For representative monitoring points with insufficient historical groundwater elevation data, the minimum threshold is set at historic maximum depth to water measurement, plus a well-specific margin, not exceeding minimum of 10 percent or 10 feet, to account for uncertainty in measuring annual low groundwater levels and to account for lack of data in drought periods."[157]

The GSP establishes the minimum thresholds for chronic lowering of groundwater levels, as well as other sustainable management criteria for this sustainability indicator including measurable objectives and interim milestones, in terms of depth to groundwater values, and not in terms of groundwater elevations as required by SGMA.[158] Department staff conclude that applicable sustainable management criteria, including the minimum thresholds, should be provided in terms of groundwater elevations. The depth to groundwater values should continue to be provided as they serve as the basis for the development of the well-specific margins established in the GSP that are a component of the minimum thresholds. (See Recommended Corrective Action 2a).

The GSP explains the methodology to establish the minimum thresholds included groundwater level analysis and interpolation, and stakeholder input to evaluate impact of historically observed groundwater conditions on well failure, depletion of interconnected surface water, and groundwater dependent ecosystems. The Plan asserts that impact of the minimum thresholds on shallow wells, interconnected surface water depletion, and groundwater dependent ecosystems did not lead to significant and unreasonable impacts, based on the period analyzed from Spring 2014 to Fall 2018.[159] GSP regulations require that GSAs provide the information and criteria relied upon to establish and justify the minimum thresholds for each sustainability indicator.[160] The Plan explains that the well-specific margin was established based on an analysis of groundwater level data from other basins, including ones managed by Sonoma Water, completed to develop an

[157] Ukiah Valley GSP, Section 3.4.3, p. 277.
[158] 23 CCR § 354.28 (c), § 354.30 (b), and § 354.30 (e).
[159] Ukiah Valley GSP, Section 3.4.3.1, p. 279.
[160] 23 CCR § 354.28 (a).

estimate of the uncertainty in measurement of annual high and low groundwater levels. The margin of 10 percent or 10 feet, whichever was lower, was determined appropriate to be considered as an overall ceiling to account for the uncertainty in measurement. A well-specific assessment was performed, and the margin was decreased to 5 percent for representative monitoring points where impact of low groundwater levels was deemed important to depletion of interconnected surface water and groundwater dependent ecosystems needs.[161] The GSP does not provide any specifics or data on the analysis used to develop the 10 percent or 10 feet, or the 5 percent well-specific margin criteria. Department staff conclude that including this information in the GSP will provide additional technical details supporting the description of how the GSA established the sustainable management criteria for chronic lowering of groundwater levels (see Recommended Corrective Action 2b).

A shallow well impact analysis is provided in the Plan. The analysis is based on an evaluation of available historical groundwater elevation data, from Spring 2014 through Fall 2018, and examines the number of impacted wells under three different water level scenarios, including Fall 2016 levels, 10 feet below Fall 2016 levels, and 20 feet below Fall 2016 levels. [162] The analysis indicates that the Fall 2016 levels were chosen as a baseline scenario because no dry wells were reported in the Basin during the Fall of 2016, and because it represents a time when "groundwater levels in the Basin were at a low level" after "four consecutive years of drought and excess pumping to augment lost surface water supply."[163] The GSP does not explicitly disclose why 2015 groundwater level data, which are generally lower than 2016 groundwater levels at all representative monitoring points, were not used to examine impacts, and how the 2016 groundwater levels correlate to the 2015 levels and the results of the impact analysis. Department staff recommend that the GSA consider including this information in the next periodic evaluation of the GSP to further support the description of how conditions at minimum thresholds may affect beneficial uses and users.

According to the GSP, the results of the shallow well impact analysis were used in the creation of minimum thresholds that avoid significant and unreasonable impacts to wells in the Basin. According to the GSP, based on input from a working group, undesirable results include scenarios when the percentage of impacted wells exceeds five percent. The GSA concludes that the results of the shallow well impact analysis predict outages of two percent (6 domestic wells), five percent (1 agricultural and 15 domestic wells), and eight percent (1 agricultural and 25 domestic wells) of total wells in the basin for the conditions of returning to Fall 2016 levels, 10 ft below Fall 2016 levels, and 20 ft below Fall 2016 levels, respectively, and that the scenarios with greater groundwater level decline than Fall 2016 levels breach the significant and unreasonable five percent impact threshold. The Plan further concludes that "lowering Fall 2016 groundwater levels by 10

[161] Ukiah Valley GSP, Section 3.4.3, p. 277.
[162] Ukiah Valley GSP, Appendix 3-A, p. 1233.
[163] Appendix 3-A, p. 1233.

feet would be a worse scenario than conditions proposed by minimum thresholds since the maximum difference in groundwater levels at representative monitoring points and their respective minimum thresholds is five feet."[164]

The GSP asserts that an analysis of impacts to groundwater dependent ecosystems found that the minimum thresholds are sufficiently protective of these ecosystems in the Basin. The analysis was based on comparing groundwater dependent ecosystems rooting depths to groundwater elevation contour map developed from available data for the Fall of 2016, and additional contour maps generated by adding 2.5- and 5-feet to the Fall 2016 depth to groundwater. According to the GSP, results of this analysis indicate that increasing depth to groundwater by 2.5- and 5-feet basin-wide will result in groundwater dependent ecosystems coverage loss of 13 percent and 20 percent, respectively. The Plan further asserts that this is well within historical margins and comparable to Fall 2015. The GSP also states that the minimum thresholds avoid conditions lower than historical surface water depletion amounts, and that the defined sustainable management criteria will prevent serious or irreparable harm as related to interconnected surface waters indicator while additional data and information is gathered.[165]

The GSP discusses an adaptive management approach to address data gaps through implementation of project and management actions including a Groundwater Well Inventory Program, and Well Analysis, Rehabilitation, and Impact Mitigation, such as to improve management criteria during GSP implementation. The GSP also describes the relationship between the groundwater levels sustainable management criteria and the other sustainability indicators.

According to the Plan, to proactively avoid the occurrence of undesirable results, the GSA will track two triggers that if exceeded, would result in management actions including initiation of an investigation. The primary trigger includes Spring groundwater levels falling below historic seasonal-low at any representative monitoring point and the secondary trigger includes reported well outages exceeding two percent of active wells.[166] The GSA plans to use public well outage tracking provided by the Department and reported individually to the GSA, until a Groundwater Well Inventory Program is completed.

The measurable objective for representative monitoring sites is established at the average observed Fall groundwater elevation for sites with longer historical measurement than the common CASGEM period within the Basin. For all other representative monitoring sites, the 75th percentile of Fall depth to groundwater measurements is used as the measurable objective. All measurable objectives are adjusted using a similar well-specific margin developed for minimum thresholds to account for uncertainty in measuring minimum and maximum annual groundwater level measurements. The GSP states that

[164] Ukiah Valley GSP, Appendix 3-A, p. 1244.
[165] Ukiah Valley GSP, Section 3.4.3.1, p. 284.
[166] Ukiah Valley GSP, Section 3.4.3, p. 277.

the interim milestones were defined by dividing range of operational flexibility between the measurable objective and the minimum threshold at each representative monitoring network into four regions, such that the Basin makes linear progress towards achieving the measure objectives in each five-year increment.

Based on the information presented, Department staff conclude that the sustainable management criteria for groundwater levels are commensurate with the understanding of current conditions, limited historical groundwater level data available within the Basin, and generally includes adequate support, justification, and information to understand the GSA's process, analysis, and rationale. Although one or more recommended corrective actions were identified, Department staff conclude that the GSP's discussion and presentation of information substantially covers the specific items listed in the GSP Regulations. As highlighted in the recommended corrective actions above, the GSP should establish applicable sustainable management criteria for chronic lowering of groundwater levels in terms of groundwater elevations and include additional supporting technical details that provide further description as to how the GSA established the sustainable management criteria for chronic lowering of groundwater levels.

4.3.2.2 Reduction of Groundwater Storage

In addition to components identified in 23 CCR §§ 354.28 (a-b), for the reduction of groundwater storage, the GSP Regulations require the minimum threshold for the reduction of groundwater storage to be a total volume of groundwater that can be withdrawn from the basin without causing conditions that may lead to undesirable results. Minimum thresholds for reduction of groundwater storage shall be supported by the sustainable yield of the basin, calculated based on historical trends, water year type, and projected water use in the basin.[167]

The GSP defines undesirable result for the reduction of groundwater storage as the "reduction of groundwater in storage [which] interferes with beneficial uses of groundwater in Basin."[168]

The Plan uses sustainable management criteria defined for chronic lowering of groundwater levels as a proxy for reduction of groundwater storage. The GSP states that "protecting against chronic lowering of groundwater levels will directly protect against chronic reduction of groundwater storage because lowering of groundwater levels would directly lead to a predictable reduction of groundwater storage", and that "there cannot be a reduction in groundwater storage without a commensurate, observable reduction in water levels". The Plan explains that "due to direct correlation between groundwater levels and storage, groundwater levels are selected as proxy for groundwater storage", and chronic lowering of groundwater levels criteria and representative monitoring points will be used as a proxy for groundwater storage sustainable management criteria.[169]

[167] 23 CCR § 354.28(c)(2).
[168] Ukiah Valley GSP, Section 3.5.1, p. 288.
[169] Ukiah Valley GSP, Section 3.5, p. 288

Accordingly, the Plan quantitively defines an undesirable result for the reduction of groundwater storage as when groundwater levels in more than one third of the representative monitoring points exceed the minimum threshold for two consecutive fall measurements. Additionally, the GSP states that the measurable objectives and interim milestones are the same as those established for the chronic lowering of groundwater.

Based on the information presented within the Plan, Department staff conclude that the GSAs' rationale to use chronic lowering of groundwater levels as a proxy for the reduction in storage sustainability indicator to be reasonable. Department staff conclude the sustainable management criteria defined for reduction of groundwater storage substantially covers the specific items listed in the regulations in an understandable format using appropriate data.

4.3.2.3 Seawater Intrusion

In addition to components identified in 23 CCR §§ 354.28 (a-b), for seawater intrusion, the GSP Regulations require the minimum threshold for seawater intrusion to be defined by a chloride concentration isocontour for each principal aquifer where seawater intrusion may lead to undesirable results.[170]

The GSP states that "due to distance between Basin and the Pacific Ocean, bays, deltas, or inlets, seawater intrusion is not present and is not likely to occur within Basin in future and therefore, it is not an applicable sustainability indicator in Basin."[171] Given the physical setting of the Basin and based on review of the information presented in the GSP, Department staff concur and find that this sustainability indicator is not applicable to the Ukiah Valley Basin.

4.3.2.4 Degraded Water Quality

In addition to components identified in 23 CCR §§ 354.28 (a-b), for degraded water quality, the GSP Regulations require the minimum threshold for degraded water quality to be the degradation of water quality, including the migration of contaminant plumes that impair water supplies or other indicator of water quality as determined by the Agency that may lead to undesirable results. The minimum threshold shall be based on the number of supply wells, a volume of water, or a location of an isocontour that exceeds concentrations of constituents determined by the Agency to be of concern for the basin. In setting minimum thresholds for degraded water quality, the Agency shall consider local, state, and federal water quality standards applicable to the basin.[172]

The GSP states that water quality degradation is typically associated with increasing rather than decreasing concentration of constituents; therefore, the GSA has decided to not use the term "minimum threshold" in the context of water quality, but instead use the term "maximum threshold (MT)". While Department staff understand the reasoning behind

[170] 23 CCR § 354.28(c)(3).
[171] Ukiah Valley GSP, Section 3.6, p. 289.
[172] 23 CCR § 354.28(c)(4).

using the term “maximum threshold” for groundwater quality sustainable management criteria, it is recommended to use the terminology that is identified and defined in the GSP regulations.[173] For this review, the term minimum threshold will refer to the GSA’s description of maximum threshold.

The GSP defines significant and unreasonable water quality conditions as “degradation of water quality that would impair beneficial uses of groundwater within Basin or result in failure to comply with groundwater regulatory thresholds including state and federal drinking water standards and Basin Plan water quality objectives.”[174] Undesirable results are encountered “if the maximum thresholds are exceeded at 50% or more of the groundwater quality monitoring wells sampled in the respective sampling period for any constituents of interest with a defined maximum threshold.”[175]

The GSP states that the minimum thresholds for “groundwater quality were defined using existing groundwater quality data, beneficial uses of groundwater in Basin, existing regulations, including water quality objectives under Basin Plan, maximum contaminant levels and secondary maximum contaminant levels established in Title 22 of California Code of Regulations and consultation with GSA advisory committee and stakeholders”.[176] The GSP does not set sustainable management criteria for iron, manganese, and boron because these constituents are “known to be naturally occurring in Basin at higher concentrations than their water quality objectives” and “their concentrations are not representative of general water quality of the Basin and are impacted significantly by natural processes and local geological conditions that are not controllable by GSA.”[177]

While the GSP identifies five constituents of interest – nitrate, specific conductivity, iron, manganese, and boron – based on measured exceedances in past 30 years, importance for tracking sustainability in future, and/or stakeholder input and prevalence as a groundwater contaminant in California, it establishes minimum thresholds (identified as maximum thresholds in the GSP) for nitrate and specific conductivity only.

The maximum contaminant level for nitrate and the secondary contaminant level for specific conductivity are set as the minimum thresholds. Measurable objectives are established at 75% of the minimum threshold, and triggers are identified at approximately 50% of the minimum threshold.[178] The GSP acknowledges that the water quality objectives identified in the Basin Plan for specific conductivity are more stringent than the minimum thresholds established in the GSP and asserts that the Basin Plan objectives are reflected in the trigger values defined in the GSP for this constituent.[179] Department staff note that the Basin Plan water quality objective for specific conductivity, at the 90%

[173] 23 CCR § 351(t)
[174] Ukiah Valley GSP, Section 3.7.2, p. 297.
[175] Ukiah Valley GSP, Section 3.7.2, 297.
[176] Ukiah Valley GSP, Section 3.7.3, p. 299.
[177] Ukiah Valley GSP, Section 3.7.3, p. 299.
[178] Ukiah Valley GSP, Section 3.7.4, pp. 300-302.
[179] Ukiah Valley GSP, Section 3.7.4, p. 300.

Upper Limit, is set to 320 micromhos (as identified in the GSP).[180] Department staff recommend that the GSA clarify how this more stringent limit set in the Basin Plan is reflected in the trigger value of 450 micromhos[181] defined in the GSP especially given that significant and unreasonable degradation of groundwater quality is in part defined in the Plan as a failure to comply with Basin Plan water quality objectives.[182] The Plan further explains that trigger values are established to provide the GSA with sufficient time for coordination and developing and implementing management actions to maintain groundwater quality at or below the measurable objectives and at existing conditions. Department staff recommend the GSA clarify how the more stringent water quality objective for Specific Conductivity set in the Basin Plan is reflected in the sustainable management criteria, including the trigger value, defined in the GSP for this constituent, especially given that significant and unreasonable degradation of groundwater quality is in part defined in the GSP as a failure to comply with Basin Plan water quality objectives (see Recommended Corrective Action 3).

The GSP also explains that federal and state standards for water quality, water quality objectives defined in Basin Plan, as well as management of known and suspected contaminated sites within Basin will continue to be managed by relevant agencies and other regulatory programs. The GSA will coordinate with other regulatory agencies to evaluate water quality conditions as needed, and future projects and management actions implemented by GSA will be evaluated and designed to avoid causing undesirable groundwater quality outcomes.[183] The GSP also explains the minimum thresholds relationship with the other sustainability indicators, and the effects on each beneficial use and user in the Basin.

Basin-wide measurable objectives for degraded water quality are established for nitrate and specific conductivity and set to maintain groundwater quality at a minimum of 90 percent of wells monitored for water quality at under 75 percent of maximum threshold. Interim milestones are set equivalent to the measurable objectives with the goal of maintaining water quality within the historical range of values.[184]

While some recommendations have been identified, overall, based on review of the GSP's discussion of the establish sustainable management criteria, Department staff conclude that the GSP's discussion and presentation of information on degradation of water quality substantially covers the specific items listed in the regulations in an understandable format using appropriate data.

[180] Ukiah Valley GSP, Appendix 2-F, p. 1205.
[181] Ukiah Valley GSP, Section 3.7.2.2, Table 3.8, p. 299.
[182] Ukiah Valley GSP, Section 3.7.2, p. 297.
[183] Ukiah Valley GSP, Section 3.7.6, p. 303.
[184] Ukiah Valley GSP, Section 3.7.6, p. 305.

4.3.2.5 Land Subsidence

In addition to components identified in 23 CCR §§ 354.28 (a-b), the GSP Regulations require the minimum threshold for land subsidence to be the rate and extent of subsidence that substantially interferes with surface land uses and may lead to undesirable results.[185] Minimum thresholds for land subsidence shall be supported by identification of land uses and property interests that have been affected or are likely to be affected by land subsidence in the basin, including an explanation of how the Agency has determined and considered those uses and interests, and the Agency's rationale for establishing minimum thresholds in light of those effects and maps and graphs showing the extent and rate of land subsidence in the basin that defines the minimum thresholds and measurable objectives.[186]

The GSP defines significant and unreasonable land subsidence as "any land subsidence caused by chronic lowering of groundwater levels occurring in Basin." The Plan further explains that there is no historical record of inelastic subsidence in Basin resulting in permanent land subsidence, and that available DWR/TRE ALTAMIRA InSAR data show no significant subsidence occurring during period of mid-June 2015 to mid-September 2019. Additionally, specific geology of aquifer materials comprising the Basin is not known to contain thicker clay confining units that typically exhibit inelastic subsidence due to excessive groundwater pumping.

The GSP quantifies the undesirable result as "pumping induced subsidence greater than 0.1 feet in any single year, essentially zero subsidence after accounting for measurement error."[187] The GSP describes how the subsidence minimum threshold may be related to the other sustainability indicators and identifies the effects of subsidence on beneficial uses and users. The minimum threshold for land subsidence is therefore set to no more than 0.1 feet in any single year, resulting in no long-term permanent subsidence.

The GSP defines the measurable objective for land subsidence as the "maintenance of current ground surface elevations", and states that since the "objective is essentially already met, specific goal is to maintain this level of land subsidence." The interim milestones for subsidence are the same as measurable objectives.

The GSP states that because subsidence is currently not a significant concern for the Basin, and is not likely to be in future, InSAR-based subsidence monitoring network, along with data from the single continuous GPS monitoring station that could be used to ground truth the satellite data, will allow sufficient monitoring both spatially and temporally to adequately assess that measurable objective is being maintained.

Department staff conclude the GSP's discussion and presentation of information for land subsidence to substantially cover the specific items listed in the GSP Regulations and is

[185] 23 CCR § 354.28(c)(5).
[186] 23 CCR §§ 354.28(c)(5)(A-B).
[187] Ukiah Valley GSP, Section 3.8.2, p. 309.

based on the best available information and science. Department staff are aware of no significant inconsistencies or contrary information to what is presented in the GSP and therefore, have no significant concerns regarding the quality, data, and discussion of land subsidence and the associated sustainable management criteria.

4.3.2.6 Depletions of Interconnected Surface Water

SGMA defines undesirable results for the depletion of interconnected surface water as those that have significant and unreasonable adverse impacts on beneficial uses of surface water and are caused by groundwater conditions occurring throughout the basin.[188] The GSP Regulations require that a Plan identify the presence of interconnected surface water systems in the basin and estimate the quantity and timing of depletions of those systems.[189] The GSP Regulations further require that minimum thresholds be set based on the rate or volume of surface water depletions caused by groundwater use, supported by information including the location, quantity, and timing of depletions, that adversely impact beneficial uses of the surface water and may lead to undesirable results.[190]

The Plan acknowledges the presence of interconnected surface waters in the Basin and identifies their location by using stream bed elevations mapped from high resolution terrain data and groundwater level contour maps from wells in the Department's periodic groundwater level dataset.[191] Based on this analysis, the GSP includes a map of interconnected surface water and disconnected surface water within the Basin.[192] The GSP also identifies gaining, dry and losing streams based upon a Ukiah Valley Integrated Hydrological Model analysis developed for each water year type.[193] The GSA acknowledges uncertainties and data gaps in the assessment of presence of interconnected surface waters, and states that the assessment will be reevaluated upon additional data and information collection.[194] Based on information presented within the Plan, Department staff are satisfied that the GSA has adopted a reasonable approach to identify the location of interconnected surface waters in the Basin.

At this time, the GSP does not quantify the rate or volume of surface water depletions due to groundwater pumping as the sustainable management criteria as required by the GSP Regulations.[195] Instead, the initial minimum thresholds for interconnected surface water utilize groundwater elevation as a proxy and are set equivalent to the minimum thresholds defined for chronic lowering of groundwater elevation in Principal Aquifer I. The GSP explains that since no long-term decline in groundwater levels has been identified, the Basin is not in overdraft, and no historical undesirable results have been

[188] Water Code § 10721(x)(6).
[189] 23 CCR § 354.16 (f).
[190] 23 CCR § 354.28 (c)(6).
[191] Ukiah Valley GSP, Section 2.2.2.6, p. 190.
[192] Ukiah Valley GSP, Section 2.2.2.6, Figure 2.53, p. 193.
[193] Ukiah Valley GSP, Section 7.3, Figures 7.8 -7.12, pp. 1127-1131.
[194] Ukiah Valley GSP, Section 3.9, p. 312.
[195] 23 CCR § 354.28 (c)(6).

experienced with respect to depletion of interconnected surface water, the minimum threshold defined above is expected to be protective against future potential undesirable results during the first five to ten years of the implementation period. The GSP explains that due to existing data gaps and uncertainties, the GSA believes it is not appropriate at this time to define the interconnected surface water sustainable management criteria based on calculated depletion rate or volume.[196] The key data gaps and uncertainties cited specifically for this sustainability indicator include: lack of historical and high-frequency groundwater elevation data; spatial gaps in streamflow measurements; and lack of historical and current data regarding surface water diversions and groundwater pumping.[197] The GSP also mentions that managed releases (currently not directly represented in the Ukiah Valley Integrated Hydrological Model) from the Coyote Valley Dam and Lake Mendocino increase the complexity of the calculation of a depletion rate or volume and limit the use of simplified analytical methods.[198] However, the lack of other data does not amount to a technical justification for the use of groundwater elevations as a proxy for quantifying the location, quantity, and timing of depletions of interconnected surface water due to groundwater extraction. As a result, the GSA has not demonstrated by adequate evidence that groundwater elevation can serve as a sustainability indicator for the depletion of interconnected surface water.

Due to the data gaps, the GSA proposes an adaptive approach to setting sustainable management criteria for interconnected surface water. This adaptive approach uses the five-year evaluations of the GSP as an opportunity to adapt the criteria. The GSA proposes to utilize groundwater levels as a proxy in the first five to ten years of implementation. During this time, the GSA will gather data and information to improve its understanding of surface water and groundwater interaction, cover existing data gaps, and re-calibrate and improve the Ukiah Valley Integrated Hydrological Model, which the GSA ultimately plans to utilize to monitor and assess the depletion of interconnected surface water. Upon gathering sufficient data and information, the GSA plans to revise the criteria to be based on the volume or rate of depletion of surface water due to groundwater pumping at proposed monitoring transect locations using measured data and model estimation. Ultimately, the GSA plans to use the model to simulate a pumping and no-pumping scenario to quantify surface water depletion due to pumping by subtracting simulated streamflow of the “business-as-usual” scenario from that of the no-pumping scenario.

The GSP describes significant and unreasonable depletion of interconnected surface water as a condition that can be attributed to groundwater extraction when “such depletion exceeds historical depletion or adversely impacts the long-term viability of domestic,

[196] Ukiah Valley GSP, Section 3.9.1, p. 317.
[197] Ukiah Valley GSP, Section 3.9.1.1, p. 318.
[198] Ukiah Valley GSP, Section 3.9.1, p. 317.

agricultural, municipal, or environmental groundwater users, including groundwater dependent ecosystems or other beneficial users of surface water."[199]

The undesirable result for interconnected surface water during the first evaluation of the Plan is defined the same as the undesirable result for chronic lowering of groundwater elevations. This equates to groundwater levels at more than a third of the representative monitoring points in the Basin falling below their defined minimum thresholds in two consecutive years.[200]The initial minimum thresholds for interconnected surface water utilize groundwater elevation as a proxy and are set equivalent to the minimum thresholds defined for chronic lowering of groundwater elevation in Principal Aquifer I. The GSP explains that since no long-term decline in groundwater levels has been identified, the Basin is not in overdraft, and no historical undesirable results have been experienced with respect to depletion of interconnected surface water, the minimum threshold defined above is expected to be protective against future potential undesirable results during the first five to ten years of the implementation period. The GSP states that upon receiving better information and data, minimum thresholds will be revised and defined based on the volume of depletion at stream gages in the monitoring network at the proposed transects.

The GSA appears to propose two different approaches to setting measurable objectives for interconnected surface water. It is unclear if the GSA intends to ultimately utilize only one of these approaches or both. The GSP sets the initial measurable objectives for interconnected surface water as equivalent to the measurable objectives defined for chronic lowering of groundwater elevation.[201] This equates to the 75th percentile of the fall season groundwater levels measured in each well with insufficient groundwater elevation data (all of the representative monitoring points within Aquifer I). The GSP also states that the initial measurable objectives will be revised and adapted to be based on the volume or rate of surface water depletion at stream gages in the monitoring network for each monitoring transect as better data and information become available.[202] However, the GSP also proposes another approach to setting measurable objectives, one based on a watershed-wide goal of securing sufficient environmental flows typically developed by various agencies and non-governmental organizations involved in managing a watershed. The GSP acknowledges that using this "watershed goal as the measurable objective rather than a quantitative value for the desired maximum stream depletion (consistent with the quantification/measurement of streamflow depletion that is used to establish the minimum threshold) is a deviation from DWR regulation (23 CCR § 354.30)", but that the GSA considers this measurable objective [watershed goal] for the interconnected surface water sustainability indicator… more appropriate" than the qualitative measurable objective "as it reflects that the driver behind the interconnected surface water sustainable management criteria is the Clean Water Act, the Public Trust

[199] Ukiah Valley GSP, Section 3.9.2, p. 320.
[200] Ukiah Valley GSP, Section 3.9.2, p. 320.
[201] Ukiah Valley GSP, Section 3.9.5, p. 327.
[202] Ukiah Valley GSP, Section 3.9.5, p. 327

Doctrine obligations, the Endangered Species Act, and SGMA". [203] Department staff is encouraged by the GSA's wholistic approach towards collaborative water resource management within the Basin; however, Department staff also reminds the GSA that in addition to any watershed-based qualitative measurable objectives that the GSA may establish in the future, the GSA should continue utilizing, monitoring and adapting quantitative measurable objectives for interconnected surface water as required by the Regulations.

Department staff understand that quantifying depletions of surface water from groundwater extractions is a complex task that likely requires developing new, specialized tools, models, and methods to understand local hydrogeologic conditions, interactions, and responses. During the initial review of GSPs, Department staff have observed that most GSAs have struggled with this new requirement of SGMA. However, staff believe that most GSAs will more fully comply with regulatory requirements after several years of Plan implementation that includes projects and management actions to address the data gaps and other issues necessary to understand, quantify, and manage depletions of interconnected surface waters. Accordingly, Department staff believes that affording GSAs adequate time to refine their Plans to address interconnected surface waters is appropriate and remains consistent with SGMA's timelines and local control preferences.

The Department will continue to support GSAs in this regard by providing, as appropriate, financial and technical assistance to GSAs, including the development of guidance describing appropriate methods and approaches to evaluate the rate, timing, and volume of depletions of interconnected surface water caused by groundwater extractions. Once the Department's guidance related to depletions of interconnected surface water is publicly available, the GSA, where applicable, should consider incorporating appropriate guidance approaches into their future periodic evaluations of the GSP (see Recommended Corrective Action 4a). GSAs should consider availing themselves of the Department's financial or technical assistance, but in any event must continue to fill data gaps, collect additional monitoring data, and implement strategies to better understand and manage depletions of interconnected surface water caused by groundwater extractions and define segments of interconnectivity and timing within their jurisdictional area (see Recommended Corrective Action 4b). Furthermore, Department staff acknowledges that one or more public comments were received expressing concern about the proposed management of depletions of interconnected surface water in the Plan, including from state and federal agencies that may act under other laws and authorities to address biological or ecological concerns regarding instream flows in the Basin. GSAs should continue to coordinate with local, state, and federal resources agencies as well as interested parties to better understand the full suite of beneficial uses and users that may be impacted by pumping induced surface water depletion (see Recommended Corrective Action 4c).

[203] Ukiah Valley GSP, Section 3.9.2.3, p. 322

4.4 MONITORING NETWORK

The GSP Regulations describe the monitoring network that must be developed for each sustainability indicator including monitoring objectives, monitoring protocols, and data reporting requirements. Collecting monitoring data of a sufficient quality and quantity is necessary for the successful implementation of a groundwater sustainability plan. The GSP Regulations require a monitoring network of sufficient quality, frequency, and distribution to characterize groundwater and related surface water conditions in the basin and evaluate changing conditions that occur through implementation of the Plan.[204] Specifically, a monitoring network must be able to monitor impacts to beneficial uses and users,[205] monitor changes in groundwater conditions relative to measurable objectives and minimum thresholds,[206] capture seasonal low and high conditions,[207] include required information such as location and well construction and include maps and tables clearly showing the monitoring site type, location, and frequency.[208] Department staff encourage GSAs to collect monitoring data as specified in the GSP, follow SGMA data and reporting standards,[209] fill data gaps identified in the GSP prior to the first periodic update,[210] update monitoring network information as needed, follow monitoring best management practices,[211] and submit all monitoring data to the Department's Monitoring Network Module immediately after collection including any additional groundwater monitoring data that is collected within the Plan area that is used for groundwater management decisions. Department staff note that if GSAs do not fill their identified data gaps, the GSA's basin understanding may not represent the best available science for use to monitor basin conditions.

The Ukiah Valley GSP developed a monitoring network for chronic lowering of groundwater levels, reduction of groundwater in storage, degraded water quality, land subsidence, and depletions of interconnected surface water. The Plan uses the groundwater level monitoring network as a proxy for the reduction of groundwater in storage and depletions of interconnected surface water sustainability indicators. The GSP does not establish a dedicated monitoring network for the seawater intrusion sustainability indicator because the GSA determined that this indicator is not applicable to the Basin.[212]

A total of 32 monitoring wells are included in the monitoring network for the chronic lowering of groundwater levels sustainability indicator,[213] with 12 wells screened in Principal Aquifer I and 20 screened in Principal Aquifer II.[214] Seven of these wells are

[204] 23 CCR § 354.32.
[205] 23 CCR § 354.34(b)(2).
[206] 23 CCR § 354.34(b)(3).
[207] 23 CCR § 354.34(c)(1)(B).
[208] 23 CCR §§ 354.34(g-h).
[209] 23 CCR § 352.4 *et seq*.
[210] 23 CCR § 354.38(d).
[211] Department of Water Resources, 2016, Best Management Practices and Guidance Documents.
[212] Ukiah Valley GSP, p. 278.
[213] Ukiah Valley GSP, Table 3.3, pp. 290-291.
[214] Ukiah Valley GSP, Table 3.3, pp. 290-291.

used as representative monitoring points in the Basin,[215] with four in Principal Aquifer I and three in Principal Aquifer II.[216] According to the Plan, representative monitoring points are "identified to be representative of groundwater conditions (here groundwater levels) in their area and have a long and reliable measurement record". [217] Although the GSP provides hydrographs for all seven wells identified as representative monitoring points to demonstrate their long period of record, it is unclear how the hydrographs provide adequate evidence to demonstrate that these wells reflect general conditions in the area. Department staff encourage the GSA to include additional discussion on how representative monitoring points were identified and justify how the monitoring density will allow the GSA to monitor impacts to beneficial uses and users as part of the next periodic evaluation of the GSP. The proposed monitoring frequency varies within the network with wells monitored either continuously, monthly, or semi-annually during high and low groundwater elevation seasons.[218] The GSA identifies several data gaps that it plans to address prior to the next periodic evaluation of the GSP including spatial and temporal data gaps that exist in both principal aquifers.[219]

The groundwater quality network includes water quality data collected by seven monitoring entities, including Calpella County Water District, City of Ukiah, Millvew County Water District, River Estates Mutual Water Corporation, Rogina Water Company, Willow County Water District, and the GSA.[220] The GSP includes several references to the total number of wells both in the whole network and in each principal aquifer, however, these totals are inconsistent across several references.[221] The GSP also includes several references to the monitoring schedule for this network and describes the monitoring schedule inconsistently across these references, especially as it relates to specific conductivity.[222] The GSP states that the degraded water quality network is sufficient to assess overall water quality and does not outline data gaps for this network.[223] The GSA should address these discrepancies related to the water quality monitoring network in the next periodic evaluation of the GSP (see Recommended Corrective Action 5).

The land subsidence monitoring network utilizes the Department's Interferometric Synthetic Aperture Radar (InSAR) remote sensing dataset to monitor and evaluate land subsidence. The GSP states that the DWR InSAR satellite data represents the best available science, and that the GSA will review the data annually.[224] The Plan notes that there is one Continuous Global Positioning System station in the Basin that provides data

[215] Ukiah Valley GSP, Tables 3.3 through 3.4, pp. 290-291, 300.
[216] Ukiah Valley GSP, Tables 3.3 through 3.4, pp. 290-291, 300.
[217] Ukiah Valley GSP, p. 288.
[218] Ukiah Valley GSP, Tables 3.2 through 3.3, pp. 283-284, 290-291.
[219] Ukiah Valley GSP, Appendix 2-E, pp. 1213-1214.
[220] Ukiah Valley GSP, Figure 3.5, p. 314; Table 3.7, p. 315.
[221] Ukiah Valley GSP, Section 3.3.2, Table 3.2, pp. 262-263; Section 3.7.1.1, p. 291, Tables 3.6 through 3.7, pp. 292, 294.
[222] Ukiah Valley GSP, Section 3.7.1.1, p. 291, Tables 3.6 through 3.7, pp. 292, 294.
[223] Ukiah Valley GSP, Section 3.7.1.2, p. 295.
[224] Ukiah Valley GSP, Section 3.8.1.2, p. 308.

of higher accuracy and frequency and a longer period of record than the DWR InSAR dataset. The single station is considered by the GSP to be spatially inadequate to monitor subsidence throughout the Basin but provides information to ground truth and verify the accuracy of local DWR InSAR data.[225]

The GSP proposes to establish a dedicated depletions of interconnected surface water monitoring network through both a selection of wells from the groundwater level monitoring network and a series of streamflow gauges.[226] The GSP states that groundwater levels will be used as a proxy for interconnected surface water depletion for the first 5-10 years of GSP implementation and that measurements of both groundwater levels and streamflow together more accurately capture hydraulic interconnectivity than either measurement could capture alone.[227] Groundwater level monitoring wells were selected such that they form three transects with nearby streamflow gauges along the Russian River.[228] Twenty one sites comprise the interconnected surface water monitoring network. Seven of these sites are streamflow gauges, which are proposed to be monitored daily. None of the streamflow gauge sites are currently proposed as representative monitoring sites due to the lack of available streamflow data. Representative monitoring sites are proposed in the future at six of the seven sites once a sufficient historical record is established. The remaining 14 sites are monitoring wells from the groundwater level monitoring network. Of these 14 sites, 10 will be monitored continuously with continuous measurement devices. The remaining four will be measured monthly until they are fitted with continuous measurement devices, at which point they will measure continuously. Three of the wells that are scheduled for monthly measurements are also representative monitoring sites. Of the three representative monitoring sites, two are screened in Principal Aquifer I and the third is screened in Principal Aquifer II.[229] The GSP states that existing data provides an insufficient record of groundwater level and streamflow measurements and that the proposed network is intended to address some of these data gaps and improve the temporal and spatial distribution of data. Data from this monitoring network will be utilized to improve the Ukiah Valley Integrated Hydrological Model estimates of groundwater and surface water interaction.[230] Ultimately, the GSA proposes to utilize the model to quantify potential interconnected surface water depletions from groundwater pumping and include the models as a component of this monitoring network once additional data has been collected.[231]

Although various monitoring network site information is present in the GSP's descriptions, figures, and tables, some information is missing, and no monitoring network contains the

[225] Ukiah Valley GSP, Section 3.8.1.3, pp. 308-309.
[226] Ukiah Valley GSP, Section 3.9.1, pp. 312-313.
[227] Ukiah Valley GSP, Section 3.4.3.1, p. 284; Section 3.9.1, pp. 312-313.
[228] Ukiah Valley GSP, Section 3.9.1, p. 312, Figure 3.9, p. 314.
[229] Ukiah Valley GSP, Section 3.3.2, Table 3.2, pp. 262-263; Tables 3.9-3.10, pp. 315-316.
[230] Ukiah Valley GSP, Section 3.9.1, p. 313.
[231] Ukiah Valley GSP, Section 3.9.1, p. 313, 318.

entirety of applicable information required in the data reporting standards. Department staff encourage the GSA to ensure future GSP updates provide all of the required information for all sites within the Plan's monitoring network including: a narrative description of the site location; identification, description, and elevation of reference point; elevation of ground surface; active or inactive well status; single, nested, clustered, or other well type identification; borehole depth; a description of the standards used to install the monitoring site; well capacity, casing diameter, and other well construction information; and well completion reports, geophysical logs, well construction diagrams, or other similar documentation.

Despite the identified recommended corrective actions, the description of the monitoring network included in the Plan substantially complies with the requirements outlined in the GSP Regulations. Overall, the GSP describes a monitoring network that promotes the collection of data of sufficient quality, frequency, and distribution to characterize groundwater and related surface water conditions in the Basin and evaluate changing conditions that occur through Plan implementation. The Plan also identifies a number of existing data gaps and the steps that will be taken to fill data gaps and improve the monitoring network prior to the next periodic evaluation of the GSP. Department staff will evaluate the GSAs' progress of filling data gaps through annual reporting and GSP evaluations.

4.5 Projects and Management Actions

The GSP Regulations require a description of the projects and management actions the submitting Agency has determined will achieve the sustainability goal for the basin, including projects and management actions to respond to changing conditions in the basin.[232] Each Plan's description of projects and management actions must include details such as: how projects and management actions in the GSP will achieve sustainability, the implementation process and expected benefits, and prioritization and criteria used to initiate projects and management actions.[233]

The GSP describes an approach to achieve the sustainability goal through the potential implementation of various projects and management actions. The GSP states that the Basin "has not historically experienced conditions of overdraft or undesirable results", and therefore, projects and actions are proposed to: promote long-term resiliency to varying climatic conditions or potential changes in the water system, and adaptive management strategies; and help maintain the Basin's conditions in the future.[234] The GSP acknowledges that climate change impacts are not fully understood due to data gaps, and states that the GSA will implement more comprehensive data collection that improves modeling capabilities and can provide a better assessment of climate change impacts.[235]

[232] 23 CCR § 354.44 (a).
[233] 23 CCR § 354.44 (b) *et seq.*
[234] Ukiah Valley GSP, Section 4.1, p. 330.
[235] Ukiah Valley GSP, Executive Summary, p. 3.

Although overdraft conditions are not identified in the Basin, benefits to groundwater levels, groundwater storage, and surface water depletion are expected for each planned project and action.

The Plan groups all projects and actions into two tiers: Tier I - Existing or Ongoing Projects and Management Actions, and Tier II - Planned and Potential Future Projects and Management Actions. Tier I projects were fully or almost fully implemented prior to the submittal of the GSP, and their estimated quantified benefit is 1,327 acre-feet per year. Expected benefits include preventing undesirable results related to the chronic lowering of groundwater levels, groundwater storage, and depletion of interconnected surface water sustainability indicators within the Basin.[236]

Most projects and actions identified in the GSP are grouped as Tier II and are planned for near-term feasibility evaluation, initiation and implementation within the next five years or may be considered in the future. Tier II projects include supply augmentation, managed aquifer recharge, water demand management and conservation, groundwater monitoring, drought mitigation, climate change assessment, economic analyses, and public participation. Specific Tier II projects and actions are identified below.

- Supply Augmentation[237]
    - Rehabilitation of Existing Reservoirs
    - Construction of Additional Off-Stream Reservoirs
    - Construction of Additional Off-Stream Tanks for Storage
    - Well Analysis, Rehabilitation, and Impact Mitigation
    - City of Ukiah Recycled Water Project – Phase IV
    - Pump(s) for Potable Water Intertie
- Managed Aquifer Recharge (MAR)[238]
    - City of Ukiah Groundwater Recharge
    - Rogina Mutual Water Company and Millview County Water District MAR and/or Injection Wells
    - Mendocino County Water Agency Groundwater Recharge Projects
    - City of Ukiah Western Hills Source Water Protection
    - RRFC On-Farm Groundwater Recharge Multi-Benefit Demonstration Project
    - Stream Enhancement Projects
    - Distributed Storm Water Collection and Managed Aquifer Recharge
    - RRFC On-Farm Groundwater Recharge Multi-Benefit Demonstration Project
    - Aquifer Storage and Recovery and Flood-MAR Feasibility & Implementation
- Demand Management and Water Conservation[239]

[236] Ukiah Valley GSP, Chapter 4.2, pp. 334-339.
[237] Ukiah Valley GSP, Chapter 4.3.1, pp. 345-348.
[238] Ukiah Valley GSP, Chapter 4.3.1, pp. 348-355.
[239] Ukiah Valley GSP, Chapter 4.3.1, pp. 355-361.

  - Reduce Evaporative Losses from Existing Surface Water Storage
  - Conservation Programs and Green Infrastructure
  - Irrigation Efficiency Improvements
  - Voluntary Land Repurposing
  - Alternative Lower ET crops
  - Municipal Supply and Use Efficiency Improvements
  - Develop Emergency and Drought Mitigation Strategies through Demand Management and Groundwater Conservation
- Other Management Actions[240]
  - Monitoring Activities
  - Groundwater Well Inventory Program
  - Drought Mitigation Measures
  - Forbearance
  - Voluntary Well Metering Program
  - Outreach and education
  - Rate fee study
  - Climate Change Impact Assessment

Expected benefits of Tier II project and actions include preventing undesirable results related to the chronic lowering of groundwater levels, groundwater storage, water quality, land subsidence, and depletion of interconnected surface water sustainability indicators within the Basin.[241] The estimated quantified benefits are expected to be greater than 1,950 acre-feet per year. The GSP states that prioritization and feasibility assessment of Tier II projects and actions will occur throughout 2022. Results of this analysis should be provided in the next annual report as part of the progress of plan implementation. Additionally, the Plan does not include detailed information on triggers for the implementation and termination of projects, and Department staff encourage the GSA to provide this information in the next annual report or periodic evaluation of the GSP.

Although Department staff understand that many of the project and management details will be developed during the next several years, Department staff conclude that the GSP describes proposed projects and management actions in a manner that is generally consistent and substantially complies with the GSP Regulations. The projects and management actions are directly related to the sustainable management criteria and present a generally feasible approach to achieving the sustainability goal of the Basin. Since meeting the sustainability goal for the Basin is largely dependent upon the implementation of these projects and management actions, failure to implement these projects or management actions, or making material modifications, may affect the Department's conclusions regarding the adequacy of the GSP or its implementation in future evaluations.

[240] Ukiah Valley GSP, Chapter 4.3.1, pp. 361-364.
[241] Ukiah Valley GSP, Chapter 4.3, pp. 340-364.

4.6 Consideration of Adjacent Basins/Subbasins

SGMA requires the Department to "…evaluate whether a groundwater sustainability plan adversely affects the ability of an adjacent basin to implement their groundwater sustainability plan or impedes achievement of sustainability goals in an adjacent basin."[242] Furthermore, the GSP Regulations state that minimum thresholds defined in each GSP be designed to avoid causing undesirable results in adjacent basins or affecting the ability of adjacent basins to achieve sustainability goals.[243]

The Ukiah Valley Basin adjoins the Sanel Valley Groundwater Basin (No. 1-053) to the south by an approximately 0.5-mile interface. Both Basins are located within the Russian River watershed and have a direct hydraulic connection. However, since the Sanel Valley Groundwater Basin is designated as very-low priority, based on the Department's Basin Prioritization, it is not required by SGMA to develop a GSP or manage groundwater for long-term sustainability, and to date no such plan has been submitted. Accordingly, the Ukiah Valley GSP does not provide any analysis of potential impacts on adjacent basins to implement their GSPs or to achieve their sustainability goals.

4.7 Consideration of Climate Change and Future Conditions

The GSP Regulations require a GSA to consider future conditions and project how future water use may change due to multiple factors including climate change.[244]

Since the GSP was adopted and submitted, climate change conditions have advanced faster and more dramatically. It is anticipated that the hotter, drier conditions will result in a loss of 10% of California's water supply. As California adapts to a hotter, drier climate, GSAs should be preparing for these changing conditions as they work to sustainably manage groundwater within their jurisdictional areas. Specifically, the Department encourages GSAs to:

1. Explore how their proposed groundwater level thresholds have been established in consideration of groundwater level conditions in the basin based on current and future drought conditions;
2. Explore how groundwater level data from the existing monitoring network will be used to make progress towards sustainable management of the basin given increasing aridification and effects of climate change, such as prolonged drought;
3. Take into consideration changes to surface water reliability and that impact on groundwater conditions;
4. Evaluate updated watershed studies that may modify assumed frequency and magnitude of recharge projects, if applicable, and

[242] Water Code § 10733(c).
[243] 23 CCR § 354.28(b)(3).
[244] 23 CCR § 354.18.

5. Continually coordinate with the appropriate groundwater users, including but not limited to domestic well owners and state small water systems, and the appropriate overlying county jurisdictions developing drought plans and establishing local drought task forces[245] to evaluate how their Plan's groundwater management strategy aligns with drought planning, response, and mitigation efforts within the basin.

5 STAFF RECOMMENDATION

Department staff recommend approval of the GSP with the recommended corrective actions listed below. The Ukiah Valley Basin GSP conforms with Water Code Sections 10727.2 and 10727.4 of SGMA and substantially complies with the GSP Regulations. Implementation of the GSP will likely achieve the sustainability goal for the Ukiah Valley Basin. The GSA has identified several areas for improvement of its Plan and Department staff concur that those items are important and should be addressed as soon as possible. Department staff have also identified additional recommended corrective actions that should be considered by the GSA for the first periodic assessment of its GSP. Addressing these recommended corrective actions will be important to demonstrate that implementation of the Plan is likely to achieve the sustainability goal.

The recommended corrective actions include:

RECOMMENDED CORRECTIVE ACTION 1

Provide additional information related to the water budget information as follows:

a. Provide a quantitative evaluation of the availability or reliability of historical surface water deliveries.

b. Explain how Lake Mendocino storage and aquifer interaction is simulated in the Ukiah Valley Integrated Hydrological Model.

RECOMMENDED CORRECTIVE ACTION 2

Update the sustainable management criteria for the chronic lowering of groundwater levels as follows:

a. Establish minimum thresholds, measurable objectives, and interim milestones for chronic lowering of groundwater as groundwater elevation values, as required by SGMA, in addition to the depth to groundwater values presented in the GSP to allow for accurate assessment of the impact analysis and tracking of progress towards sustainability. The depth to groundwater values should continue to be

[245] Water Code § 10609.50.

included as they are used as the basis for the development of the well-specific margins that are a component of the minimum thresholds.

b. Provide details on the analysis used to develop and justify the use of the 10 percent or 10 feet, and the five percent values for the well-specific margin criteria.

RECOMMENDED CORRECTIVE ACTION 3

Clarify how the more stringent water quality objective for Specific Conductivity set in the Basin Plan is reflected in the sustainable management criteria, including the trigger value, defined in the GSP for this constituent, especially given that significant and unreasonable degradation of groundwater quality is in part defined in the GSP as a failure to comply with Basin Plan water quality objectives.

RECOMMENDED CORRECTIVE ACTION 4

Department staff understand that estimating the location, quantity, and timing of stream depletion due to ongoing, Basin-wide pumping is a complex task and that developing suitable tools may take additional time; however, it is critical for the Department's ongoing and future evaluations of whether GSP implementation is on track to achieve sustainable groundwater management. The Department plans to provide guidance on methods and approaches to evaluate the rate, timing, and volume of depletions of interconnected surface water and support for establishing specific sustainable management criteria in the near future. This guidance is intended to assist GSAs to sustainably manage depletions of interconnected surface water. In addition, the GSA should work to address the following items by the first periodic update:

a. Consider utilizing the interconnected surface water guidance, as appropriate, when issued by the Department to establish quantifiable minimum thresholds, measurable objectives, and management actions.

b. Continue to fill data gaps, collect additional monitoring data, and implement the current strategy to manage depletions of interconnected surface water and define segments of interconnectivity and timing.

c. Prioritize collaborating and coordinating with local, state, and federal regulatory agencies as well as interested parties to better understand the full suite of beneficial uses and users that may be impacted by pumping induced surface water depletion within the GSA's jurisdictional area.

RECOMMENDED CORRECTIVE ACTION 5

Clearly identify the total number of monitoring wells in the degraded water quality monitoring network, the number of wells monitoring each principal aquifer, the number of wells monitored by each monitoring entity, and the monitoring schedule for the degraded water quality monitoring network.

OCTOBER 2023

Groundwater Sustainability Plan Implementation:

A Guide to Annual Reports, Periodic Evaluations, & Plan Amendments

Groundwater Sustainability Plan Implementation:

A Guide to Annual Reports, Periodic Evaluations, and Plan Amendments

OCTOBER 2023

Purpose of this document

This document provides guidance to groundwater sustainability agencies (GSAs) preparing Annual Reports, Periodic Evaluations, and Groundwater Sustainability Plan (GSP or Plan) Amendments under the Sustainable Groundwater Management Act (SGMA or Act) and the GSP Regulations. This guidance document does not create any new requirements or obligations for GSAs but is intended to clarify the necessary content of the documents already required by SGMA and the GSP Regulations. This document does not prescribe specific methods GSAs must use, but rather provides guidance regarding approaches to consider that showcase progress made during SGMA implementation. The use of mandatory language in this document reflects unambiguous requirements of SGMA or the GSP Regulations, and any ambiguity would be resolved by reference to SGMA or the Regulations. GSAs are encouraged to consider this guidance and its applicability to their reporting obligations for management of their basins; however, conformance with specific approaches in this document will not guarantee Department of Water Resources (DWR or the Department) approval of Plan implementation or continued compliance with SGMA. Conversely, while the Department believes the approaches presented here likely have broad and general value when describing management of basins under SGMA, a GSA need not conform or limit its approaches to those contained in this document in order to maintain GSP approval during the Department's Periodic Reviews. Depending on circumstances in particular basins, approaches other than those presented here may be appropriate. To further assist GSAs, this document provides links to applicable resources and other materials for GSAs to reference as they continue to implement SGMA to reach groundwater sustainability in their basins.

This guidance document is not a substitute for a complete review of SGMA or the GSP Regulations. SGMA in its entirety can be found in Division 6, Part 2.74, of the California Water Code Section 10720. The GSP Regulations are found in Subchapter 2 of Chapter 1.5, Division 2 of Title 23 of the California Code of Regulations (CCR). References to specific sections of SGMA and GSP Regulations that relate to Annual Reports, Periodic Evaluations, and Plan Amendments are provided throughout this guidance.

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SECTION 1: INTRODUCTION

Implementation of a GSP, or an alternative to a GSP (Alternative),[1] is a key component of SGMA. Once a GSP is adopted and submitted, SGMA and the GSP Regulations impose requirements on GSAs to demonstrate GSP implementation to the Department and interested parties. Annual Reports,[2] Periodic Evaluations,[3] and Plan Amendments[4] are all methods for GSAs to demonstrate GSP implementation and progress towards sustainability. In turn, the Department conducts Periodic Reviews[5] of approved GSPs, Annual Reports, Periodic Evaluations, and any Plan Amendments to determine whether the GSP continues to comply with SGMA and the GSP Regulations.

This document provides guidance on preparing Annual Reports, Periodic Evaluations, and Plan Amendments. Each guidance section includes the purpose of each aspect of implementation, considerations for preparing the submittals, and instructions for submitting the materials to the Department. Annotated outlines are provided for Annual Reports and Periodic Evaluations to encourage consistency for each submittal; however, as indicated in the Purpose of this Document section, this document does not prescribe specific methods that GSAs must use. Annual Reports, Periodic Evaluations, and Plan Amendments each result in their own deliverable and contain important differences, which this document discusses and clarifies for GSAs.

Each GSA deliverable demonstrates different aspects of GSP implementation:

Annual Report: a report documenting current groundwater conditions, data gathering and monitoring efforts, activities to fill data gaps, water year comparisons, and GSP implementation progress (due by April 1 each year) – this is a progress tracking tool.
Periodic Evaluation: an evaluation and written assessment of an approved GSP to occur at least every five years and when a Plan is amended (due no later than five years after initial GSP submittal) – this is an implementation evaluation tool.
Plan Amendment: a revised GSP that necessitates going through the Plan adoption process and submission to the Department for review (an agency may amend their GSP at any time; a Periodic Evaluation is required with every Plan Amendment) – this is an adaptive management tool.

An Annual Report is due by April 1 of every year for each basin with a GSP or Alternative. The Annual Report is a yearly status update provided through a data driven summary of the physical conditions in the basin that requires the GSA to compile and analyze data gathered over the previous water year. The data are used to assess annual conditions for each applicable sustainability indicator, compare

1 SGMA allows for basins to be managed under approved Alternatives instead of GSPs. While basins with approved Alternatives are not subject to the Periodic Evaluation requirements, Alternative basins must submit Annual Reports every year and the Alternative Plan must be resubmitted to the Department every five years for review and assessment. As with GSPs, Alternatives are subject to Periodic Reviews in which the Department will issue an assessment evaluating the progress toward achieving the sustainability goal within the basin. Water Code § 10733.6; 23 CCR §§ 358.2 and 358.4.
2 23 CCR § 356.2.
3 23 CCR § 356.4.
4 23 CCR § 355.10.
5 23 CCR § 355.6.

those conditions to the sustainable management criteria, identify any issues or data gaps that still exist, and provide an implementation status update on projects and management actions identified in the GSP. GSAs are also required to submit data via the SGMA Portal Monitoring Network Module.

A Periodic Evaluation is due at least every five years after initial GSP submission for each basin with an approved GSP. The Periodic Evaluation requires the GSA to conduct a more thorough assessment of how the Plan is performing and whether modifications are necessary. A Periodic Evaluation should describe whether implementation of the GSP is meeting the sustainability goal for the basin. Additionally, the GSA's written assessment documenting the Periodic Evaluation is required to compare current groundwater conditions over the evaluation cycle with relevant sustainable management criteria, and provide an evaluation of the extent to which progress made in implementing projects and management actions show a GSA is on track to meet the GSP sustainability goal. In addition, it includes an assessment of monitoring networks, and a discussion of any other GSP topics that have changed during implementation of the GSP. The GSA's written assessment of its Periodic Evaluation is submitted to the Department for review. The Department is required to issue an assessment of its Periodic Reviews at least every five years.

A Plan Amendment is a process available to GSAs to formally revise their GSPs as deemed necessary by the GSAs. This guidance document covers information GSAs may consider when they decide to amend their GSPs. As with a GSP, an Amendment must follow public noticing requirements, be adopted by the Board, and be submitted to the Department for review.[6] In addition, a Periodic Evaluation must accompany an Amendment to describe why, what, and how adjustments were made in the Amendment. GSAs should provide transparent messaging to interested parties when changes are being considered to Plan implementation, including amending the Plan. Further discussion of how an Amendment and Periodic Evaluation complement each other is included in SECTION 3 and SECTION 4 of this document.

The Department notes that, at times, the terms "GSP Update" or "Revised GSP" have been used by GSAs when a Plan has been amended or in discussing potential Plan Amendments. The Department encourages GSAs to use terminology consistent with SGMA and the GSP Regulations, which refer to a **Plan Amendment**, to avoid confusion on reporting and deliverable requirements.

REMINDER:
When a Periodic Evaluation is prepared in conjunction with a Plan Amendment, duplication should be avoided between the two documents; the Periodic Evaluation in such circumstances serves primarily to justify and explain the reasons for the Plan Amendment not simply to repeat the same text and information contained in the Amendment.

6 Water Code § 10728.4.

Figure 1 shows the deliverables and timing for which a GSA should plan, depending on the Department's review process and determination of the GSP.

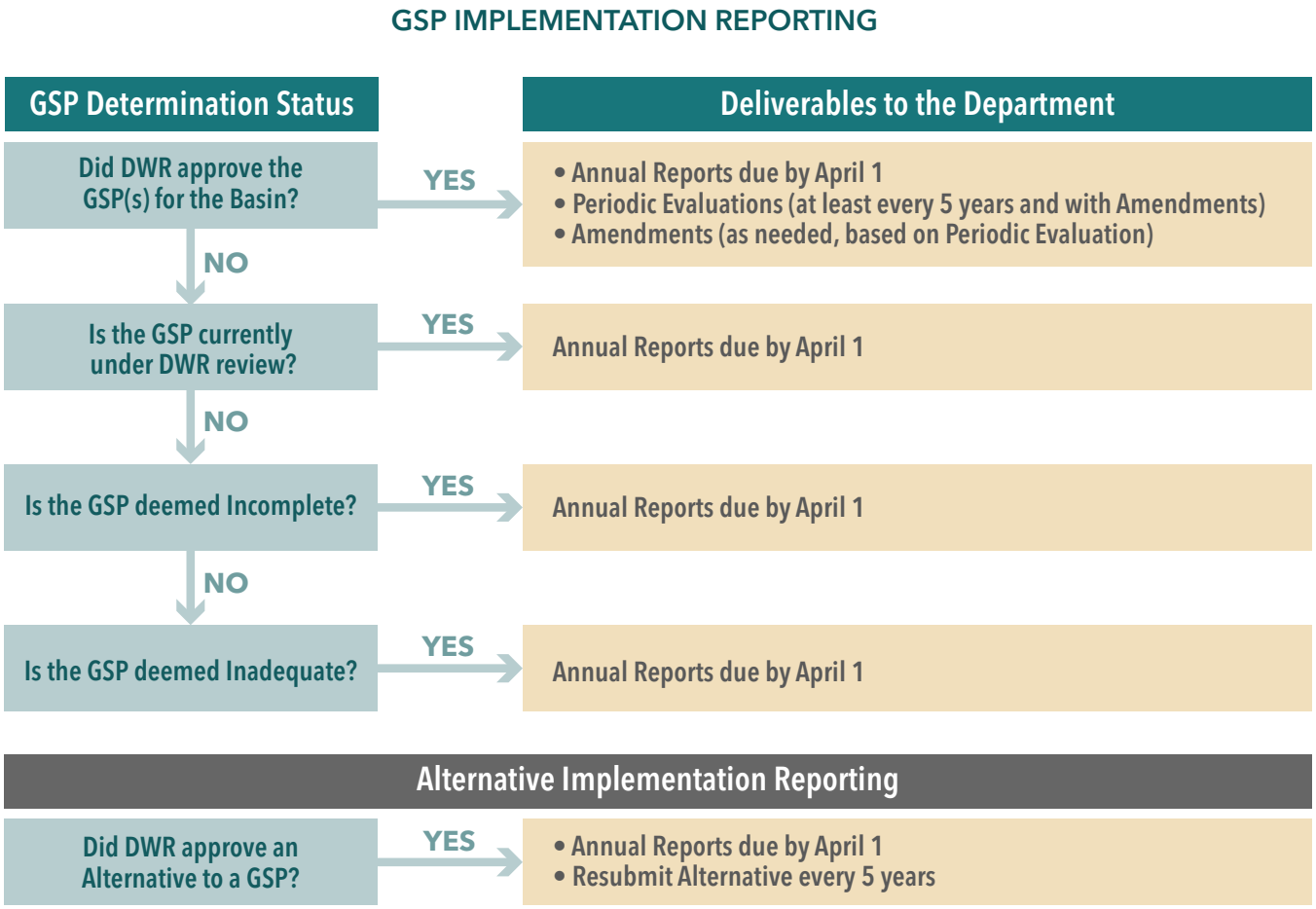

Figure 1: Summary of Implementation Deliverables for each Basin Determination Type

Water Code § 10733, § 10733.8, and Article 6 of the GSP Regulations describe requirements for the Department's review of GSP implementation reporting materials submitted by the GSA, including:

- Review and evaluation of adopted Plans
- Periodic Review of approved Plans
- Review of Annual Reports
- Review of Periodic Evaluations
- Review and evaluation of Plan Amendments

An approval of a basin's previous GSP does not guarantee an automatic approval of a GSA's implementation of that GSP. If progress on implementation is deemed insufficient, or GSP changes no longer comply with SGMA and the GSP Regulations, the Department may determine a GSP incomplete or inadequate during the Periodic Review.

GSP implementation follows an adaptive management process that was initiated by the adoption of a Plan by the GSA Board and approval by the Department. The adaptive management process continues with annual reporting, monitoring conditions, project implementation, and periodic evaluation to reach and maintain sustainability during the planning and implementation horizon (i.e., 50 years).[7] Figure 2 provides a graphical representation of the plan implementation adaptive management approach.

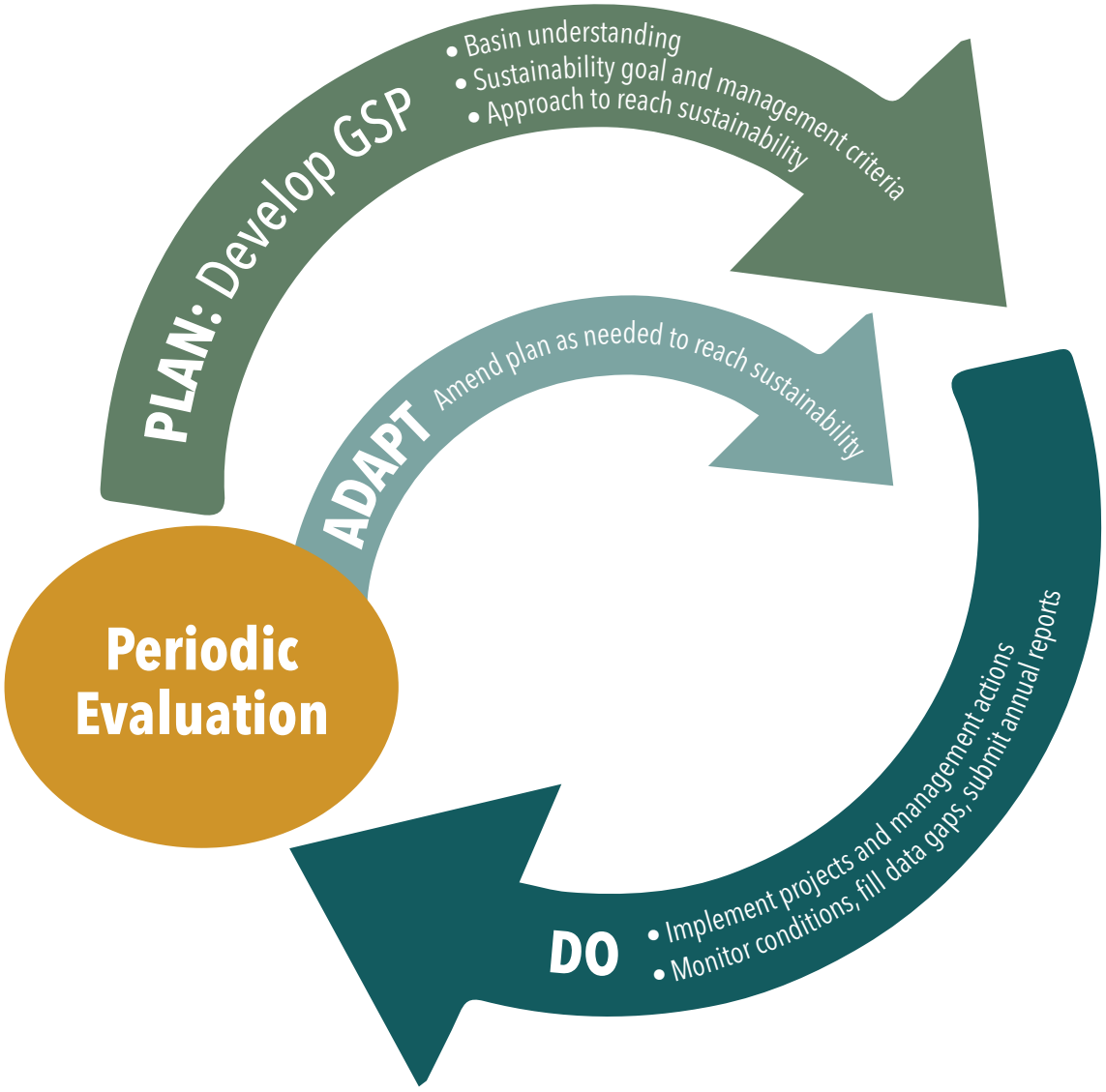

Figure 2: GSP Implementation Adaptive Management Approach

This document includes two attachments to assist GSAs with GSP implementation reporting:

- Attachment 1 provides answers to frequently asked questions regarding GSP reporting requirements.
- Attachment 2 provides links to online resources available from the Department for GSAs to use during GSP implementation.

7 Water Code § 10721(r).

SECTION 2: ANNUAL REPORT GUIDANCE

Annual Reports are intended to be a compilation and analysis of data in the basin from the previous water year and a summary of GSP implementation progress. This guidance section describes the requirements of SGMA and the GSP Regulations and provides an overview of Annual Reports and an example Annual Report annotated outline. This section also includes instructions on submitting the Annual Report and associated data to the Department and review by the Department.

2.1 GSA Requirements

GSAs are required to develop Annual Reports every water year to track whether their Plans are being implemented in a manner that will likely achieve the sustainability goal for their respective basins. The Annual Report is the mechanism for the GSAs to convey critical information and data to their boards, local stakeholders, interested parties, the general public, and the Department on changing groundwater conditions, groundwater management efforts, and next steps for GSP implementation. The GSP Regulations require an Annual Report to:

- Compile and transmit groundwater conditions data collected from established monitoring networks during the previous water year.
- Assess conditions relative to the sustainable management criteria established in the GSP.
- Summarize total water use including groundwater extraction, total surface water received, and the volume of surface water used for recharge efforts.
- Estimate annual change in groundwater storage for each principal aquifer
- Describe progress made on GSP projects, management actions, and other implementation efforts such as continued outreach and engagement. Discuss how those efforts help the basin achieve their measurable objectives and sustainability goal.

The Annual Report process should emphasize the successes and most pressing challenges the GSAs are facing during Plan implementation. The Annual Report should also outline actions necessary to advance sustainable groundwater management solutions. As indicated, the Annual Report is a way to convey data and information on a yearly basis to interested parties and the Department. With that, the Annual Report should not be used to make substantial changes to the Plan but rather provide foundational information needed to assess whether the Plan is being implemented successfully and whether Plan amendments are necessary. Water Code Section 10728 identifies the Annual Report criteria, and Section 356.2 of the GSP Regulations further details required Annual Report components.

Water Code § 10728.

On the April 1 following the adoption of a groundwater sustainability plan and annually thereafter, a groundwater sustainability agency shall submit a report to the department containing the following information about the basin managed in the groundwater sustainability plan:

a) Groundwater elevation data.
b) Annual aggregated data identifying groundwater extraction for the preceding water year.
c) Surface water supply used for or available for use for groundwater recharge or in-lieu use.
d) Total water use.
e) Change in groundwater storage

GSP Regulations § 356.2. Annual Reports

Each Agency shall submit an annual report to the Department by April 1 of each year following the adoption of the Plan. The annual report shall include the following components for the preceding water year:

a) General information, including an executive summary and a location map depicting the basin covered by the report.

b) A detailed description and graphical representation of the following conditions of the basin managed in the Plan:

1. Groundwater elevation data from monitoring wells identified in the monitoring network shall be analyzed and displayed as follows:

A) Groundwater elevation contour maps for each principal aquifer in the basin illustrating, at a minimum, the seasonal high and seasonal low groundwater conditions.

B) Hydrographs of groundwater elevations and water year type using historical data to the greatest extent available, including from January 1, 2015, to current reporting year.

2. Groundwater extraction for the preceding water year. Data shall be collected using the best available measurement methods and shall be presented in a table that summarizes groundwater extractions by water use sector, and identifies the method of measurement (direct or estimate) and accuracy of measurements, and a map that illustrates the general location and volume of groundwater extractions.

3. Surface water supply used or available for use, for groundwater recharge or in-lieu use shall be reported based on quantitative data that describes the annual volume and sources for the preceding water year.

4. Total water use shall be collected using the best available measurement methods and shall be reported in a table that summarizes total water use by water use sector, water source type, and identifies the method of measurement (direct or estimate) and accuracy of measurements. Existing water use data from the most recent Urban Water Management Plans or Agricultural Water Management Plans within the basin may be used, as long as the data are reported by water year.

5. Change in groundwater in storage shall include the following:

A) Change in groundwater in storage maps for each principal aquifer in the basin.

B) A graph depicting water year type, groundwater use, the annual change in groundwater in storage, and the cumulative change in groundwater in storage for the basin based on historical data to the greatest extent available, including from January 1, 2015, to the current reporting year.

c) A description of progress towards implementing the Plan, including achieving interim milestones, and implementation of projects or management actions since the previous annual report.

2.2 Annual Report Document Overview

The following section includes a suggested Annual Report annotated outline intended to streamline the preparation of Annual Reports. The annotated outline highlights the GSP Regulation requirements for Annual Reports, summarizes information and context the Department recommends be included, and provides a consistent format for developing Annual Reports by the GSAs. The Annual Report annotated outline is only intended to be a guide. GSAs have the option of using this information as they compile and evaluate their data and prepare their Annual Reports; however, GSAs must include, at a minimum, the information required by the GSP Regulations. GSAs are encouraged to review Attachment 1 of this document for Department answers to frequently asked questions regarding Annual Reports.

2.3 Suggested Annual Report Annotated Outline

EXECUTIVE SUMMARY

The executive summary[8] should summarize key information presented in the Annual Report, including the water year covered and a map(s) depicting the basin, GSA boundaries, and management areas, if applicable. It should reiterate the Plan's sustainability goal, indicate if minimum thresholds have been exceeded for any of the applicable sustainability indicators, and explain if undesirable results are occurring. It should briefly summarize current conditions in the basin, annual water use, change in storage, GSP implementation activities, and other progress made toward achieving the basin's sustainability goal during the prior water year.

DATA ANALYSIS SUMMARY

Groundwater levels, changes in groundwater storage, and water use data collected during the preceding water year must be presented in the Annual Report and uploaded to the Department's SGMA Portal as part of the Annual Report submittal. Data submittal requirements are described in Section 2.4.

Groundwater Elevation

The Annual Report must include a section on groundwater elevation data collected during the preceding water year[9] and a description of the hydrologic conditions and water year type. This section should present the groundwater level monitoring sites and any new information or changes to the monitoring network that are provisional pending evaluation by the Department. Changes to the representative monitoring network should be explained, provided in a tabular format, and reconciled with the Department's SGMA Portal Monitoring Network Module.

The groundwater elevation section should discuss current groundwater level conditions and recent trends, including a comparison to previous water years. Groundwater elevation contour maps should be provided for each principal aquifer for at least the seasonal high and seasonal low groundwater conditions during the previous water year. Hydrographs depicting historical groundwater level conditions to the greatest extent possible and at least from January 1, 2015, to the current water year should be provided for all monitoring wells in the current monitoring network. The hydrographs for representative monitoring sites should indicate where the minimum thresholds, interim milestones, and measurable objectives are set relative to current groundwater level conditions and recent trends. The location of each monitoring site should be clearly identified

8 23 CCR § 356.2(a).
9 23 CCR § 356.2(b)(1).

in a tabular format, on the hydrographs, and identified on a monitoring network map in the Annual Report. Hydrographs for each GSP monitoring well can be generated from the Department's SGMA Data Viewer web application by selecting GSP monitoring network wells in the water levels dropdown menu. An example representative monitoring well hydrograph from the SGMA Data Viewer is shown on Figure 3.

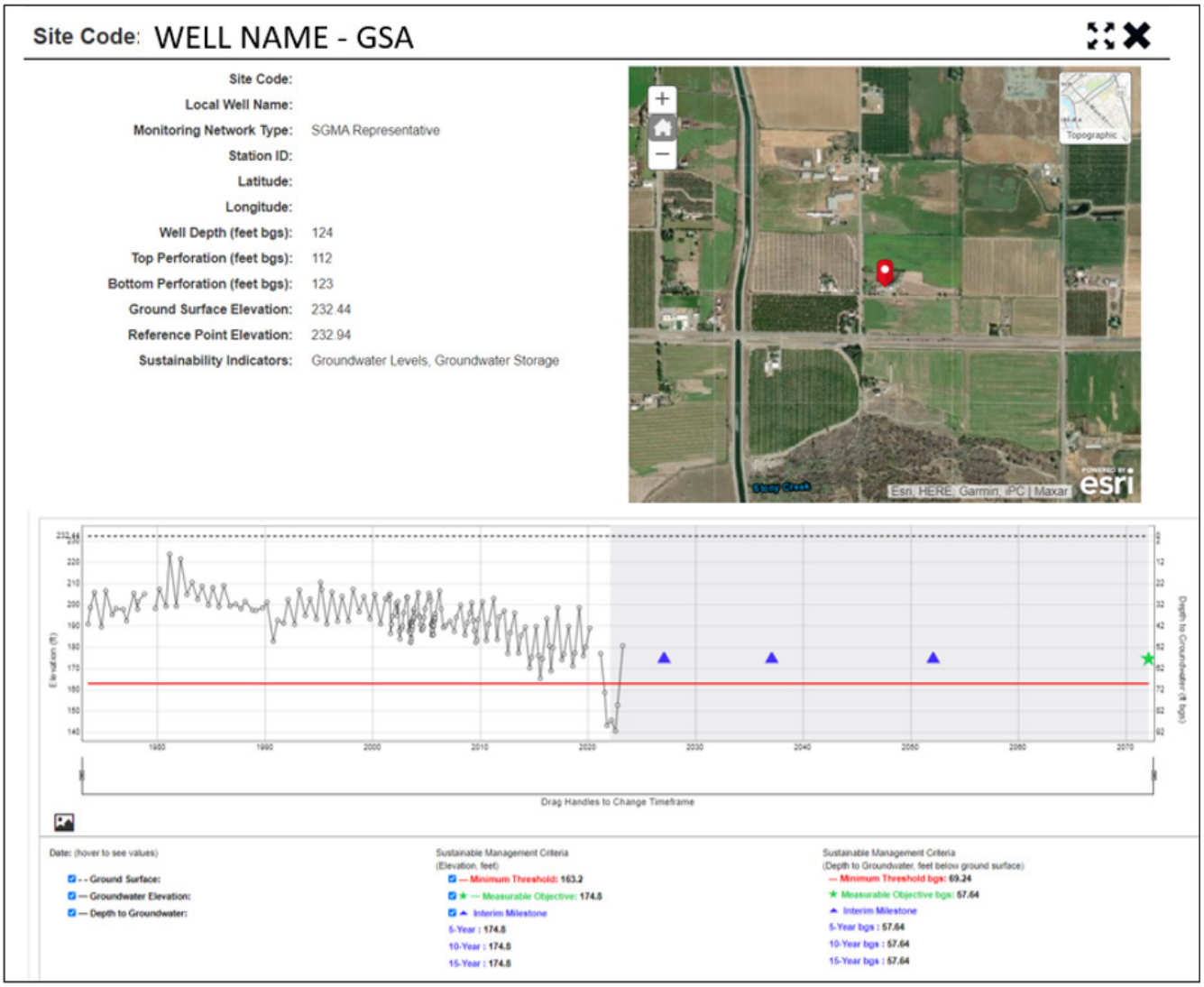

Figure 3. Example Representative Monitoring Well Hydrograph Compiled from SGMA Data Viewer

Groundwater Extraction

A summary of groundwater extraction data for the preceding water year must be accompanied by the measurement method(s), whether direct measurement or estimate, the rationale for those methods, method accuracy, and discussion of any new or improved measurement methods (e.g., metering, estimating evapotranspiration).[10] *The groundwater extraction data should be described for the various water use sectors (e.g., urban, industrial, agricultural, managed wetland, managed recharge, and native vegetation). Other water use sectors that*

10 23 CCR § 356.2(b)(2).

might be applicable in some basins should also be reported, including remediation using groundwater extraction and treatment systems and de minimis pumping for domestic or small water systems. The report should discuss how the reported groundwater extraction volumes for each principal aquifer compare to the sustainable yield volumes for the Basin defined in the GSP.

Maps should be generated showing locations and volumes of groundwater extraction. The maps may be broken out by water use sectors and may show where the water was applied. Tables should present the total groundwater extraction volumes, the water use sector associated with those extraction volumes, measurement methods, and accuracy or uncertainty associated with the measurements (Table 1 and Table 2).

Groundwater Extraction Sector	Water Use (Acre-feet)
Urban	
Industrial	
Agricultural	
Managed Wetland	
Managed Recharge	
Native Vegetation	
Other	
TOTAL	

Table 1. Example Groundwater Extraction by Sector Table

Groundwater Extraction Volume (acre-feet)	Measurement Type	Method Description	Accuracy	Accuracy Description

Table 2. Example Groundwater Extraction Volume Measurement Methods and Accuracy Table

Surface Water Supply

Surface water supplies used, or available for use, for groundwater recharge or in-lieu use in the basin must be described and tabulated. The Annual Report should include a detailed description and graphical representation of the basin's surface water supply, for the preceding water year, associated with managed recharge or in-lieu recharge.[11] *The tabulated data should include the volume of surface water from each water source type*[12] *and a description of the methods used to quantify the volume of surface water (Table 3).*

The Annual Report should include a discussion related to the volume and sources of surface water supplies that the GSAs used to recharge groundwater (e.g., existing and new recharge projects, Flood-MAR activities, and other processes).

11 23 CCR § 356.2 (b)(3)
12 23 CCR § 351 (ak)

Surface Water Supply Sector	Water Use (Acre-feet)	Methods Used to Determine
Central Valley Project		
State Water Project		
Colorado River Project		
Managed Local Supplies		
Local Imported Supplies		
Recycled Water		
Desalination		
Other		
TOTAL		

Table 3. Example Surface Water Supply by Sector Table

Total Water Use

Total water use in the basin, by water use sector and water source type, must be described, tabulated, and graphed. Total water use data must be collected using the best available measurement methods. The Annual Report should include a detailed description and graphical representation of the basin's total water use by water use sector and water source type, separately. The Annual Report should include graphical representations of the volume of total water use by water use sector and water source type for the preceding water year. However, GSAs may consider including graphical representations of total water use over time to demonstrate water use trends in the basin. The tabulated data should include the volume of total water use from each water use sector and water source type[13] and a description of the methods used to quantify the volume of surface water (Table 4 and Table 5). For the tabulated data, the GSAs should use the managed recharge water use sector to provide the total volume of water GSA used for groundwater recharge in the basin for the preceding water year (Table 5).

Water Source Type	Water Use (Acre-feet)	Methods Used to Determine
Groundwater		
Surface Water		
Recycled Water		
Reused Water		
Other		
TOTAL		

Table 4. Example Total Water Use by Source Type Table

13 23 CCR § 351 (ak)

Water Use Sector	Water Use (Acre-feet)	Methods Used to Determine
Urban		
Industrial		
Agricultural		
Managed Wetlands		
Managed Recharge		
Native Vegetation		
Other		
Total		

Table 5. Example Total Water Use by Sector Table

Change in Storage

The magnitude of the change of groundwater in storage during the preceding water year must be described for each principal aquifer and in total for the basin.[14] *A graph(s) showing annual change of groundwater in storage, water year type, cumulative change of groundwater in storage, and groundwater extraction in the basin from at least 2015, should be provided (Table 6). Maps showing the change of groundwater in storage geographically for each principal aquifer should also be provided. The GSA boundaries and representative monitoring wells may be shown on the maps, as necessary. The section should include a narrative assessment and interpretation of the tabulated, graphical, and mapped data. Change of groundwater in storage related to previous water years should be discussed, including an assessment of why those changes may have been realized. Although tabular change in storage data is not required for the Annual Report submittal by regulation, the SGMA Portal requires tabular change in storage data for each principal aquifer with Annual Report submittal (Table 6).*

Principal Aquifer Name	Change in Storage (acre-feet)	Calculation Method
TOTAL		

Table 6. Example Change of Groundwater in Storage Table

PROGRESS TOWARD IMPLEMENTATION

The Annual Report must include a description of progress on GSP implementation during the preceding water year, including comparison of current conditions to sustainable management criteria of each sustainability indicator, updates on projects and management actions, and progress on addressing recommended corrective actions for approved Plans.[15]

Current Conditions for Each Sustainability Indicator

The GSA should describe, tabulate, and provide graphical representation of how current sustainability indicator conditions compare to minimum thresholds, interim milestones, and measurable objectives identified in the Plan. The Annual Report should present current

14 23 CCR § 356.2(b)(5).
15 23 CCR § 356.2(c).

information for each sustainability indicator applicable to the basin. The GSA should evaluate whether minimum threshold exceedances have occurred and determine if those exceedances constitute an undesirable result in the basin, for each applicable sustainability indicator. It would be useful to include the definition of what constitutes an undesirable result in the basin for each sustainability indicator.

In particular, the following information should be provided for each sustainability indicator with applicable monitoring and data collected during the previous water year (GSAs may consider providing this information in a tabular format or some other organized format that works best for their data reporting):

- *Definition of significant and unreasonable conditions*
- *Description of sustainable management criteria (minimum threshold, measurable objective and interim milestones, undesirable results)*
- *Representative monitoring site information (e.g., name and location of well or subsidence InSAR mapping data)*
- *Measurement information and monitoring methods*
- *Comparison of measurement to sustainable management criteria*
- *Discussion of results and potential causes of observed conditions*

The GSA should consider assessing whether impacts to beneficial users from changes in groundwater conditions have occurred during the preceding water year such as:

- *Dry wells*
- *Subsidence-related infrastructure damage*
- *Groundwater dependent ecosystem health*
- *Emergency water shortages*
- *Changes in water quality*
- *Extent of seawater intrusion*

The GSA should provide updates in the Annual Report on implemented, planned, or proposed actions to address observed impacts.

The current conditions for each sustainability indicator section should also include a description of efforts to fill data gaps during the preceding water year and how new data and information are being applied to improve basin understanding and reduce management uncertainty identified in the Plan. New information obtained from existing wells in the monitoring network during the preceding water year, such as well video surveys, reference elevation surveys, and geophysical data can also be described and used to update the understanding of the basin and the SGMA Portal Monitoring Network Module.

Projects and Management Actions

Progress toward implementing projects and management actions should be described and summarized. GSAs may choose to provide this information in tabular format. The description and table(s) should include the status of the various projects proposed in the GSP (e.g., active, pre planning, conceptual, inactive), the benefits observed from active projects and management

actions, expected schedule for projects and management actions in planning stages, and descriptions of anticipated benefits to occur within the next water year, to be reported on in the next Annual Report. The section could include an assessment of projects and management actions necessary to respond to hydrologic or climate conditions and the response of those activities on achieving the sustainability goal for the basin. The projects and management actions section should also provide a brief evaluation of whether the implementation of projects and management actions are resulting in adverse impacts to the various sustainability indicators, adjacent groundwater basins, or beneficial uses and users. Additionally, the GSA should describe the methods and processes that occurred during the water year to publicly notice and engage interested parties concerning the status and implementation of projects and management actions.

Progress Made on Addressing Recommended Corrective Actions in the Department's GSP Determination (for approved Plans)

Per the GSP determinations, it is expected that the Department's recommended corrective actions be reconciled or progressed by the Plan's first Periodic Evaluation. The Annual Report should describe what actions have been taken during the preceding water year to address recommended corrective actions. The Annual Report should also provide proposed plans and an updated schedule for addressing recommended corrective actions.

In particular, the following information should be provided for each recommended corrective action to show progress to the Department:

- *A summary of the recommended corrective action and what portion of the GSP it refers to (e.g., data collection and filling data gaps, sustainable management criteria, stakeholder outreach, etc.)*
- *The GSA's approach for addressing each recommended corrective action*
- *A status update on progress to address recommended corrective actions and a timeline to evaluate or complete the approach*

Other Information on Implementation Progress

The GSA should summarize any agency outreach and engagement during the preceding water year to inform the public of the status of GSP implementation, such as committee meetings, stakeholder engagement, public outreach events, coordination efforts with state and federal agencies, local well permitting and land use planning agencies, and neighboring GSAs. The GSA should also summarize any public comments, feedback, or concerns the GSA has received related to plan implementation over the previous water year, in writing or during public meetings, and how the GSA has considered those comments. The GSA should also provide any additional information or accomplishments related to implementation efforts that it is using to achieve the sustainability goal for the basin, such as obtaining additional funding. Finally, the GSA should outline anticipated implementation activities and efforts to occur in the upcoming water year, such as planned data gap filling efforts or project and management action implementation.

Reporting Monitoring Data as Appendices

It is important that the GSAs provide all monitoring data for each sustainability indicator applicable to the basin for adequate reporting and review of the Annual Report information. Some of the monitoring data may be extensive and can be incorporated into the Annual Report as appendices. For example, all annual groundwater quality data collected for each constituent of concern at each

GSP water quality monitoring network site should be included in the Annual Report; however, these monitoring data could be provided as an appendix to the Annual Report and summarized in the report. The Department encourages the use of SGMA Portal data export functions, as they become available, to generate content for Annual Reports.

2.4 Annual Report Submittal Requirements

The Annual Report must be submitted to the Department by an authorized Plan representative via the SGMA Portal online submittal platform by April 1 of each year. The following steps should be taken to upload the Annual Report to SGMA Portal:

1. Upload a PDF of the Annual Report with filename using the Basin Number_Water Year format (Ex. #-###_WY_20XX).
2. Upload the Annual Report Elements Guide.
3. Upload required data in the templates provided by the Department on the SGMA Portal.

GSP Regulations § 354.40. Reporting Monitoring Data to the Department

Monitoring data shall be stored in the data management system developed pursuant to Section 352.6. A copy of the monitoring data shall be included in the Annual Report and submitted electronically on forms provided by the Department.

During Annual Report submittal the GSA should verify that for each monitoring well a minimum of two groundwater level measurements during the preceding water year have been submitted to the monitoring network module. In addition, the GSA should verify that other monitoring network data for the other applicable sustainability indicators are measured and reported in sufficient frequency, as determined in the GSP, and are current and accurate. The GSA should verify that all general site data (e.g., subsidence elevation station, extensometers, streamflow gages) are submitted to the monitoring network module annually. The GSA should also confirm that existing sites are still found at links provided in the monitoring network module and that a copy of monitoring data collected from existing sites is provided in the Annual Report.

2.5 Review by Department

The GSP Regulations describe the Department's responsibilities related to submitted Annual Reports.[16] The Department will confirm receipt of Annual Reports and check completeness of information provided. The Department will review the Annual Reports each year and if it is determined additional information is required, the Department will provide a written response to plan managers. The Department will also utilize the Annual Reports when it conducts the Periodic Review of Plans[17] as further described in Section 3.5 of this document.

The Department may conduct a Periodic Review of a GSP and associated reporting materials at any time to determine whether the Plan is consistent with the objectives of SGMA and continues to be in substantial compliance with the GSP Regulations. The Department may rely on information it has received at that time, including the Annual Reports, and may request any information it deems necessary to evaluate the GSA's progress towards achieving the basin's sustainability goal. During a Periodic Review, the Department is required to determine if a Plan should remain approved, or if the Plan should be considered incomplete or inadequate.

16 23 CCR § 355.8.
17 23 CCR § 355.6.

GSP Regulations § 355.8. Department Review of Annual Reports
The Department shall review annual reports as follows:

a) The Department shall acknowledge the receipt of annual reports by written notice and post the report and related materials on the Department's website within 20 days of receipt.
b) The Department shall provide written notice to the Agency if additional information is required.
c) The Department shall review information contained in the annual report to determine whether the Plan is being implemented in a manner that will likely achieve the sustainability goal for the basin, pursuant to Section 355.6.

SECTION 3: PERIODIC EVALUATION GUIDANCE

The Periodic Evaluation is a GSA's written assessment of its GSP implementation. The assessment is meant to evaluate whether their groundwater sustainability program is meeting the basin's sustainability goal and continues to meet the requirements of SGMA and the GSP Regulations. This guidance section provides GSAs with the following information:

- A summary of requirements described in SGMA and the GSP Regulations
- An overview of what a Periodic Evaluation is
- An example annotated outline to assist in the development of a Periodic Evaluation
- Information and context the Department recommends be included
- Instructions on how to submit the Periodic Evaluation
- Insight into the Department's Periodic Review process

3.1 GSA Requirements

A key component of demonstrating the GSA's implementation of their GSP is through the Periodic Evaluation of their Plan. SGMA requires GSAs to provide a written assessment evaluating their basin's GSP at least every five years. The written assessment is submitted to the Department for review. Water Code Section 10728.2 identifies the criteria that GSAs should consider when conducting their GSP evaluation and Section 356.4 of the GSP Regulations further details the components of a Periodic Evaluation, including Section 357.4 for basins with multiple GSPs.

Water Code § 10728.2.
A groundwater sustainability agency shall periodically evaluate its groundwater sustainability plan, assess changing conditions in the basin that may warrant modification of the plan or management objectives, and may adjust components in the plan. An evaluation of the plan shall focus on determining whether the actions under the plan are meeting the plan's management objectives and whether those objectives are meeting the sustainability goal in the basin.

GSP Regulations § 356.4. Periodic Evaluation by Agency.
Each Agency shall evaluate its Plan at least every five years and whenever the Plan is amended, and provide a written assessment to the Department. The assessment shall describe whether the Plan implementation, including implementation of projects and management actions, are meeting the sustainability goal in the basin.

a) A description of current groundwater conditions for each applicable sustainability indicator relative to measurable objectives, interim milestones and minimum thresholds.
b) A description of the implementation of any projects or management actions, and the effect on groundwater conditions resulting from those projects or management actions.
c) Elements of the Plan, including the basin setting, management areas, or the identification of undesirable results and the setting of minimum thresholds and measurable objectives, shall be reconsidered and revisions proposed, if necessary.
d) An evaluation of the basin setting in light of significant new information or changes in water use, and an explanation of any significant changes. If the Agency's evaluation shows that the basin is experiencing overdraft conditions, the Agency shall include an assessment of measures to mitigate that overdraft.
e) A description of the monitoring network within the basin, including whether data gaps exist, or any areas within the basin are represented by data that does not satisfy the requirements of Sections 352.4 and 354.34(c). The description shall include the following:

   1) An assessment of monitoring network function with an analysis of data collected to date, identification of data gaps, and the actions necessary to improve the monitoring network, consistent with the requirements of Section 354.38.
   2) If the Agency identifies data gaps, the Plan shall describe a program for the acquisition of additional data sources, including an estimate of the timing of that acquisition, and for incorporation of newly obtained information into the Plan.
   3) The Plan shall prioritize the installation of new data collection facilities and analysis of new data based on the needs of the basin.

f) A description of significant new information that has been made available since Plan adoption or Amendment, or the last five-year assessment. The description shall also include whether new information warrants changes to any aspect of the Plan, including the evaluation of the basin setting, measurable objectives, minimum thresholds, or the criteria defining undesirable results.
g) A description of relevant actions taken by the Agency, including a summary of regulations or ordinances related to the Plan.
h) Information describing any enforcement or legal actions taken by the Agency in furtherance of the sustainability goal for the basin.
i) A description of completed or proposed Plan Amendments.
j) Where appropriate, a summary of coordination that occurred between multiple Agencies in a single basin, Agencies in hydrologically connected basins, and land use agencies.
k) Other information the Agency deems appropriate, along with any information required by the Department to conduct a periodic review as required by Water Code Section 10733.

GSP Regulations § 357.4 Coordination Agreement (For Basins with Multiple GSPs)

i) Coordination agreements shall be reviewed as part of the five-year assessment, revised as necessary, dated, and signed by all parties.

3.2 Periodic Evaluation Document Overview

A Periodic Evaluation is an opportunity for GSAs with an approved GSP[18] to convey to the Department, interested parties, and the public progress on GSP implementation. The Periodic Evaluation should provide the status of groundwater conditions and progress toward meeting interim milestones and measurable objectives. The Periodic Evaluation should also describe the advancement of projects and management actions over the evaluation cycle including the associated quantified cumulative benefits. The Periodic Evaluation should explain how those cumulative benefits are contributing to the basin achieving its sustainability goal and operating within its sustainable yield. Conversely, the Periodic Evaluation should describe any unforeseen challenges encountered with the development or implementation of certain projects and management actions and the outcome of responding to those challenges. With the requirement that a GSA conduct a Periodic Evaluation at least every five years from the initial GSP submittal, the GSA's written assessment is a reflection on GSP implementation and adaptive management for that particular evaluation cycle. The GSA should utilize the Periodic Evaluation to explain trends seen in data collected for previously submitted Annual Reports.

REMINDER:
The cover letter of the Department's GSP determination includes the date that initiates the first Periodic Review of the Plan by the Department and the effective due date of the first Periodic Evaluation by the GSA (i.e., 5 years from the submittal of the initial GSP – this date can be found on the SGMA Portal). Periodic Evaluations will be due every five years thereafter.

The Periodic Evaluation also acts as the document where a GSA articulates whether a Plan Amendment is needed. The Periodic Evaluation will be part of the GSP record and will be included in a determination from the Department during the Periodic Review. Additionally, if a GSA submits a Plan Amendment at any time, a Periodic Evaluation must accompany that submittal. The Periodic Evaluation should be used to provide a high-level description of the amended sections of the Plan, including an explanation of the rational for the Amendment, which is further described in the suggested Periodic Evaluation annotated outline section below. Amended sections of a Plan should not be copied and pasted into a Periodic Evaluation; however, providing redline strikethrough text highlighting where changes were made in the Amended Plan may be appropriate. If a GSA intends to amend their Plan, it may be beneficial to coordinate the Amendment with a Periodic Evaluation cycle.

REMINDER – Recommended Corrective Actions:
GSAs are expected to provide a detailed discussion of how the recommended corrective actions are being addressed or were addressed for each of the Plan elements and sections below, as applicable. When the recommended corrective actions warrant a Plan Amendment the Periodic Evaluation should describe the amended components of the Plan.

18 Periodic Evaluations are not required for a GSP that the Department has determined to be Inadequate and has referred to the State Water Resources Control Board. The Department does not conduct a Periodic Review of an Inadequate GSP or any revisions or amendments to an Inadequate GSP unless the State Water Resources Control Board formally relinquishes responsibility for the Basin to the Department or requests additional assessment of the Plan under Water Code § 10735.2(b).

The Periodic Evaluation should be the GSAs' honest and detailed interpretation of how implementation is taking place, what successes and challenges have been encountered, and how the challenges have been, or are proposed to be, overcome. The more details and feedback provided to the Department in the Periodic Evaluation, the better the Department can assist GSAs with their implementation efforts. Ultimately, the goal of the Periodic Evaluation is for GSAs to assess how Plan implementation is progressing and to provide an explanation and proposed management adjustments if implementation is not achieving the goals and milestones as originally anticipated.

The suggested Periodic Evaluation annotated outline has been developed to provide GSAs with an example of a written assessment approach. The annotated outline is based on the GSP Regulations requirements and provides a consistent format for developing written assessments for the GSAs. The annotated outline is intended to be a guide, and use of the outline does not guarantee a continued approval determination from the Department. As GSAs prepare their Periodic Evaluations, it is important to clearly articulate changes made to the Plan, the justification and explanation for decisions, and the evidence that supports implementation is achieving the sustainability goal for the basin. GSAs are encouraged to review Attachment 1 of this document for Department answers to frequently asked questions regarding Periodic Evaluations.

The following questions can help with the organization and development of the written assessment. In particular, GSAs should provide the following information for each key GSP section discussed below:

- What new information has been collected?
- What is the status of the components of this section? Describe any changes.
- Was there a recommended corrective action associated with this section? Explain how it was addressed.
- How have actions taken in this section informed changes in basin management?
- Is there a need to change a section of the GSP that would lead to a Plan Amendment? Which section has or will be revised in the Plan Amendment?

3.3 Suggested Periodic Evaluation Annotated Outline

EXECUTIVE SUMMARY

The executive summary of the Periodic Evaluation's written assessment is intended to provide a high-level overview of GSP implementation activities, address whether implementation is on track for reaching the basin's sustainability goal and provide an overview of significant new information received and included in the assessment.

Content to consider for inclusion in the executive summary:

- *Period of time the Periodic Evaluation covers (evaluation cycle).*
- *Is the Periodic Evaluation accompanied by an amended Plan? If yes, identify the month and year the Plan was amended (e.g., January 2025) and describe the Plan re-adoption process, if applicable.*
- *Updated GSA information:*
  - *Modifications to GSAs and their member agencies.*
  - *Changes to governance structure.*

- *If there were recommended corrective actions provided by the Department in the most recent determination of the Plan, summarize what they were, whether they were addressed and whether they led to a Plan Amendment.*
- *Describe the basin's sustainability goal and whether the implementation of the GSP is on track to meet the basin's sustainability goal.*
- *Include a general statement on how GSA activities are progressing within the basin, which should be supported by the content presented in the written assessment.*
- *Summarize any significant new information and data that were acquired during the evaluation cycle and present how that information or those data were used in preparing the Periodic Evaluation.*
- *Describe the efforts taken to engage with interested parties. Provide a high-level summary of public comments received during GSP implementation or while preparing the Periodic Evaluation*

NEW INFORMATION COLLECTED[19]

The Periodic Evaluation should provide a description of any new information, including significant new data, that the GSA has acquired during the evaluation cycle. The discussion should include whether new information warrants changes to any aspect of the Plan, including the evaluation of the basin setting, measurable objectives, minimum thresholds, or the criteria defining undesirable results. Additionally, this section should evaluate whether those changes associated with the new information led to a Plan Amendment.

Table 7 below provides an example of a method of summarizing the types of significant new information collected and how to reference that information in the applicable sections. Table 7 is meant to summarize information that has become available since the last Periodic Evaluation (or Plan Adoption or Plan Amendment) which has informed the GSA's decisions and approaches to implement its GSP. Table 7 should indicate whether the new information warrants changes to any aspect of the Plan.

Significant New Information (e.g., new monitoring data, reports, coordination with other agencies, data provided by the Department)	Description	Aspects of Plan Affected (e.g., Basin Setting, Sustainable Management Criteria, Projects and Management Actions, Monitoring Network, Coordination Agreement)	Warrant Change to Any Aspects of the Plan (Yes/No) If yes, include section of the Plan

Note: GSAs will need to fill in the blanks for information they consider significant new information.

Table 7. Summary of New Information Since Periodic Evaluation

GROUNDWATER CONDITIONS RELATIVE TO SUSTAINABLE MANAGEMENT CRITERIA[20]

This section sets the stage for evaluating the GSAs' progress towards achieving groundwater sustainability in their basin. The GSA should evaluate current groundwater conditions for each applicable sustainability indicator relative to sustainable management criteria established in the GSP (i.e., measurable objectives, interim milestones, minimum thresholds, and undesirable results) and

19 23 CCR § 356.4. (f)
20 23 CCR § 356.4. (a)

describe, with supporting data, whether implementation of the GSP is effective. If the evaluation indicates that GSP implementation has not been effective in making progress toward achieving the sustainability goal, this section should include an explanation of the potential reasons and provide a description of how the GSA intends to get the basin back on track to achieving sustainability. The written assessment should also forecast the likelihood of achieving interim milestones or measurable objectives within the next evaluation cycle. This section may include discussion of hydrologic or climatic extremes and how the associated conditions and/or emergencies have impacted GSP implementation, as well as the adaptive management strategies used to keep the basin on track, or to get the basin back on track, to achieving sustainability.

If the Department provided recommended corrective actions related to sustainable management criteria, the GSA should include a discussion of how those were addressed. If the recommended corrective actions were addressed with a Plan Amendment, the GSA should provide that explanation and indicate where the changes can be found in the amended GSP.

*For **each applicable sustainability indicator**, consider the following discussion points:*

- *Did the previous determination of the Plan by the Department include a recommended corrective action related to this sustainability indicator? How was it resolved?*
- *Describe current conditions relative to the minimum thresholds, interim milestones, and measurable objectives.*
- *Are the current conditions in the basin achieving the interim milestones?*
- *Describe if undesirable results are occurring or have occurred over the evaluation cycle. Were there minimum threshold exceedances that did not constitute undesirable results as quantitatively defined in the GSP?*
- *Evaluate progress made (including challenges encountered, if applicable), describe any adaptive management approaches employed to address minimum threshold exceedances, whether GSP implementation is effective thus far, and any other pertinent information related to progress towards achieving sustainability.*
- *Have basin conditions and GSP implementation affected beneficial uses and users? For example, were there any reported dry wells during the evaluation cycle?*
- *Are other sustainability indicators being impacted?*
- *If significant new information is leading to a change in sustainable management criteria, describe these changes and compare the previous sustainable management criteria to the adjusted management criteria.*
- *If changes are made, did they warrant a Plan Amendment?*

STATUS OF PROJECTS AND MANAGEMENT ACTIONS[21]

The purpose of this section is to summarize the GSA implementation activities related to projects and management actions that took place over the course of the evaluation cycle. The summary should include descriptions of ongoing projects that have carried over during the evaluation cycle and projects that broke ground but have not become operational. In addition, significant new information should be discussed, such as whether a GSP project was considered no longer necessary and was dropped, a new project was added, or a project has been delayed. New information that affects project development, such as hydrologic changes relative to a drought or wet year should

21 23 CCR § 356.4. (b) & (f).

be described. The description should include anticipated projects to be developed over the next evaluation cycle(s). The discussion of the projects should include evaluations and reporting on the quantified benefits of each project and anticipated benefits of the projects that broke ground or were completed during the evaluation cycle.

A GSA should summarize how it is tracking and administering the various projects and management actions within its basin. The summary should describe interactions with the project proponents and member agencies implementing the projects. Table 8 shows an example of this summary.

Project or Management Action Name	Project or Management Action Description	Targeted Sustainability Indicator	Project Status	Expected Schedule	Benefits Observed to Date or Anticipated Benefits	Estimated Accrued Benefits at Completion

Table 8. Example Project and Management Action Summary Table

A GSA should assess the projects and management actions outlined in the original GSP and explain whether those are still relevant and feasible, including estimates of cost and potential funding sources and whether permitting and CEQA requirements need to be met. The Periodic Evaluation should describe if there is a need to revisit or re-evaluate the priority of certain projects. Additionally, for the various projects and management actions outlined in the GSP, the GSA should describe the process for public notice and engagement of interested parties.

For projects and management actions that are currently ongoing or have already been completed, the Periodic Evaluation should provide an evaluation and status update including realized benefits, expected benefits, and benefits and impacts to beneficial uses and users. The description should include how these projects and management actions are helping the basin achieve sustainability through the assessment of the groundwater conditions in relation to the measurable objectives for the relevant sustainability indicators. A description of the monitoring network and data related to projects and management actions that are showing progress toward sustainability, and documentation that the project is not impacting nearby beneficial users, should be included.

For projects and management actions that have yet to begin or are still conceptual, assess the need for those based on the current conditions and expected outcomes of the existing projects and management actions. Describe the potential timeline to get those projects and management actions implemented or what may be needed to take them from the conceptual or as-needed phase to the "shovel ready" phase.

The GSA should describe the challenges or setbacks that have prevented or delayed implementation of projects and management actions. If a planned project is not going to be implemented, the GSA should consider re-evaluating projected water budgets and groundwater conditions without the project.

BASIN SETTING BASED ON NEW INFORMATION OR CHANGES IN WATER USE[22]

This section provides an evaluation of the basin setting based on new information or changes in basin water use. GSAs should explain the major cause of any significant new changes in the understanding of the basin setting, such as changes attributed to water use and supply, climate variations, successes and failures of projects and management actions, or significant new information and data that causes changes in model assumptions and results. A suggested outline to discuss the basin setting is provided below:

- *Hydrogeologic Conceptual Model*
  - *Summarize any new applicable data and analysis and how it informs a revised understanding of the basin's hydrogeologic conceptual model (e.g., Airborne Electromagnetic surveys and other basin characterization and data gap filling actions)*
  - *If the previously identified data gaps were not filled, discuss why or what prevented these from being filled and discuss what is required to fill these data gaps*

- *Groundwater Conditions*
  - *Indicate new understanding of regional groundwater conditions based on new sources, applications, or tools such as California Groundwater Live, InSAR, Dry Well Reporting System, etc.*
  - *Include new information that affects evaluation of groundwater quality such as:*
    - *Changes to regulatory water quality standards affecting sustainable management criteria*
    - *New constituents of concern or emerging contaminants that may become apparent in the basin*
  - *Include new information on interconnected surface water and groundwater dependent ecosystems.*

- *Water Use Changes and Associated Water Budget*
  - *Describe water use for the evaluation cycle, compared to historical, current, and projected water budgets in GSP.*
  - *Describe changes to land use or cropping patterns that could affect water use.*
  - *Describe whether changes to surface water supply reliability will affect water budget assumptions.*
  - *Provide updated current and projected water budgets.*
  - *Describe updates to the sustainable yield and changes in storage.*
  - *If basin is experiencing overdraft, describe the evaluation and quantification of those conditions. Provide an assessment of measures to mitigate the overdraft including how the projects and management actions described in the Periodic Evaluation may affect overdraft.*

- *Model Updates*
  - *Briefly describe if and how the model was updated for the water budget development.*
  - *How has GSP implementation informed model revisions, if any?*
  - *Note that model updates may indicate where more monitoring is needed, and the quality of the existing monitoring informs the model revisions.*

22 23 CCR § 356.4(d).

MONITORING NETWORKS[23]

The purpose of this section is to provide an assessment of the GSP's monitoring network for each applicable sustainability indicator. GSAs submitting an amended GSP with their Periodic Evaluation should include any discussions related to the assessment and improvement of the GSP's monitoring network in the amended GSP. GSAs should reference the sections of the amended GSP in the Periodic Evaluation rather than replicating the same information in the Periodic Evaluation.

As a reminder, the requirements of the GSP Regulations (23 CCR § 354.38) are provided below:

GSP Regulations § 354.38. Assessment and Improvement of Monitoring Network

- **a)** *Each Agency shall review the monitoring network and include an evaluation in the Plan and each five-year assessment, including a determination of uncertainty and whether there are data gaps that could affect the ability of the Plan to achieve the sustainability goal for the basin.*
- **b)** *Each Agency shall identify data gaps wherever the basin does not contain a sufficient number of monitoring sites, does not monitor sites at a sufficient frequency, or utilizes monitoring sites that are unreliable, including those that do not satisfy minimum standards of the monitoring network adopted by the Agency.*
- **c)** *If the monitoring network contains data gaps, the Plan shall include a description of the following:*
    1. *The location and reason for data gaps in the monitoring network.*
    2. *Local issues and circumstances that limit or prevent monitoring.*
- **d)** *Each Agency shall describe steps that will be taken to fill data gaps before the next five-year assessment, including the location and purpose of newly added or installed monitoring sites.*
- **e)** *Each Agency shall adjust the monitoring frequency and density of monitoring sites to provide an adequate level of detail about site-specific surface water and groundwater conditions and to assess the effectiveness of management actions under circumstances that include the following:*
    1. *Minimum threshold exceedances*
    2. *Highly variable spatial or temporal conditions*
    3. *Adverse impacts to beneficial uses and users of groundwater*
    4. *The potential to adversely affect the ability of an adjacent basin to implement its Plan or impede achievement of sustainability goals in an adjacent basin*

23 23 CCR § 356.4(e).

This section should include the GSA's findings from the evaluation of the GSP's monitoring networks for each sustainability indicator. It is suggested that this section includes the following topics, information, and data:

- *Provide an overall summary of changes to monitoring networks since the last GSP or Periodic Evaluation.*
- *Describe whether identified monitoring network data gaps have been filled. If the previously identified data gaps were not filled, explain why or what prevented these from being filled and discuss what is required to fill these data gaps.*
- *Discuss any new data gaps that have been identified since the previous GSP.*
- *Assess the functionality of the water level monitoring network and whether any existing GSP monitoring network locations are no longer viable. The following information should be included and referred to in this section of the evaluation:*
  - *Identify each monitoring location on a map including the wells used to monitor each specific principal aquifer.*
  - *If a well is damaged or dry, determine whether the site is necessary to evaluate basin conditions, and if so, propose a plan to replace it.*
  - *Review sustainable management criteria relative to well construction, and if the monitoring point is not capable of measuring the sustainable management criteria (i.e., is not deep enough), propose an alternative monitoring approach or well replacement plan.*
- *For other sustainability indicators, perform a similar monitoring network functionality assessment in light or appropriateness of location of sites, accessibility and viability of sites, and any corrections needed.*
- *Describe remaining actions necessary to improve the monitoring networks.*
- *Summarize any adjustments made to monitoring frequency and density of monitoring sites.*
- *Summarize any changes to the GSP's monitoring network as highlighted in the Periodic Evaluation or Plan Amendment.*
- *Verify that any updates to the GSP's monitoring network are reflected in the Monitoring Network Module*[24]

GSA AUTHORITIES AND ENFORCEMENT ACTIONS[25]

The Periodic Evaluation should describe any new authorities the basin's GSAs have gained, established, or exercised since the last GSP submittal and summarize what has been implemented to advance groundwater sustainability. Authorities could pertain to relevant actions related to regulations and ordinances applicable to the Plan. In addition, GSAs should provide information describing any enforcement or legal actions taken in the basin to further the sustainability goal. This could include any new significant information such as funding and fee actions, installing volumetric measuring devices on wells (i.e., flow meters), or collecting other data related to allocation programs and pumping reductions. Demonstrating how these components of GSP implementation will help GSAs reach sustainability is important.

24 During the evaluation cycle and while preparing a Periodic Evaluation, GSAs should visit the Department's SGMA Portal resources page to understand any changes and improvements to the Portal, including the Monitoring Network Module. https://sgma.water.ca.gov/portal/resources

25 23 CCR § 356.4. (g) and (h)

Some considerations for this section are listed below:

- *Provide a summary of GSA regulations or ordinances related to the Plan [Water Code 10725, 10726, 10730, and 10731].*
- *Describe GSA enforcement or legal actions [Water Code 10725.4, 10730, and 10732].*
- *Describe activities advancing other regulations and orders outside of SGMA that are related to SGMA implementation, if applicable (e.g., legislation such as Senate Bill 552[26] [Drought Planning for Small Water Suppliers and Rural Communities], well moratoriums, and land use zoning).*
- *Describe how Plan implementation has been affected by external regulatory requirements or executive orders issued by the Governor, if applicable.*

OUTREACH, ENGAGEMENT, AND COORDINATION WITH OTHER AGENCIES[27]

During GSP implementation it is important to continue to build on the outreach, engagement, and communication efforts established during initial Plan development across multiple entities. GSAs should notice and engage the public on the draft Periodic Evaluation in a manner similar to initial Plan adoption. This section should describe, as appropriate, the coordination efforts and activities that occurred between multiple GSAs in a single basin, GSAs in hydrologically connected basins, and land use agencies, as well as federal, state, and local agency coordination that was related to SGMA implementation. Specifically, GSAs should consider the various audiences they need to communicate and interact with during GSP implementation activities.

Outreach and Engagement

GSAs are responsible for engaging interested parties, the public, and beneficial users to provide updates on basin conditions during annual reporting, regularly share groundwater management information, solicit feedback on projects and management actions prior to and during implementation, and collect public comments during Periodic Evaluation and Plan Amendment drafting. GSAs should demonstrate these responsibilities in the following ways:

- *Provide an assessment of public comments submitted to the GSA after the initial Plan submittal or during evaluation cycle. The assessment should include a discussion of how the GSA responded to the comments and implemented relevant changes (i.e., incorporating components into the Periodic Evaluation or Plan Amendment).*
- *Describe public engagement efforts including activities that help the implementation of project and management actions, such as project siting and construction, water conservation, and participation in recharge, recycled water use, land repurposing, or domestic well monitoring and reporting programs. Identify and describe how the GSA will address potential impacts on beneficial users documented through these public engagement efforts.*
- *Evaluate and verify that the methods described in the Plan for outreach and engagement activities are relevant to implementation and are being maintained and updated.*

Responsibilities of GSA Boards

Keeping GSA board members engaged and ensuring they understand GSA responsibilities for Periodic Evaluation development and decisions on Plan Amendment needs is crucial to ensure a

26 https://water.ca.gov/Programs/Water-Use-And-Efficiency/SB-552
27 23 CCR § 356.4. (j)

successful implementation program. The Periodic Evaluation should provide a summary of GSA board, technical advisory committee, and other related meetings since the last Periodic Evaluation, including notifications to the list of interested persons [23 CCR § 351(p); Water Code § 10723.4, 10723.2, 10723.8, and 10727.8].

Coordination with Other Agencies

Multiple layers of inter-agency coordination are needed periodically during GSP implementation, such as:

- *Coordinating with other agencies in the same basin or county during implementation efforts that have land use, well permitting and water management responsibilities (e.g., neighboring GSAs in same basin).*
- *Coordinating with GSAs in hydrologically connected basins to understand implementation activities and potential effects across basin boundaries, and to share data.*
- *Reaching out to tribal, federal, state, and other local agencies, as needed, to facilitate implementation activities.*
- *Indicate if any new inter-agency agreements and efforts are under way.*
- *Provide a summary of inter-agency coordination efforts, coordination with local well permitting and land use planning agencies, state and federal agencies, and non-governmental organizations (e.g., coordination efforts related to impacts to drinking water wells, mitigating subsidence before infrastructure damage, or water quality impairment). Document if any changes were made to the GSP in response to new local requirements by these agencies.*
- *Discuss any changes to the GSA Coordination Agreement (for basins with multiple GSPs)*
  - *Review the initial Coordination Agreement to ensure the agreement is still applicable or if the agreement needs to be updated or revisited.*
  - *If changes are made, summarize those changes.*

OTHER INFORMATION[28]

GSAs may decide to include any additional information in the Periodic Evaluation that helps describe progress made toward achieving the sustainability goal for the basin. The Department also has the authority to request supplemental information from a GSA to conduct the Periodic Review, as necessary. A list of potential additional information is provided below.

Consideration of Adjacent Basins

The GSP Regulations require the Department to review the potential impacts a Plan may have on adjacent basins (23 CCR § 355.4(b)(7)). Other sections in the GSP Regulations request this information from the GSAs (23 § CCR 354.38). Therefore, it is important to provide that information in the Periodic Evaluation to give the Department a complete overview, such as:

- *Describe relevant interbasin coordination efforts.*
- *Discuss how the proposed management of the Basin (including minimum thresholds and measurable objectives) aligns with the management of adjacent basins.*
- *Describe potential impacts from adjacent basins and/or to adjacent basins due to Plan implementation.*
- *Assess whether Plan implementation is affecting the ability of an adjacent basin to achieve its sustainability goal.*

28 23 CCR § 356.4(k).

Challenges Not Previously Discussed

The Periodic Evaluation process provides the GSAs with an important opportunity to highlight technical and financial challenges the Department should be aware of. Allowing the Department to understand these challenges may inform future assistance and services. Below are a few example items that could be added to the Periodic Evaluation:

- *Identify the most significant challenges and assistance needs for the GSA and Plan implementation.*
- *Assess how the Plan or amended Plan may affect relevant city and county general plans related to water resources management or other natural resources and land use planning programs.*[29]
- *Other general considerations include technical and financial resource limitations, Proposition 218 and other funding stream efforts, shifts in Joint Powers Authority agreements or other aspects of basin governance.*

Legal Challenges

GSAs should consider providing a discussion on legal matters, especially if GSP implementation is affected or may be affected by any legal challenge or adjudication.

SUMMARY OF PROPOSED OR COMPLETED REVISIONS TO PLAN ELEMENTS[30]

This section summarizes the key take-aways from the Periodic Evaluation. In addition, this section should end with a brief overview of next steps and how the GSAs intend to use this evaluation to continue moving the basin towards their sustainability goal.

Proposed Revisions to Plan Elements[31]

If the GSA decides a Plan Amendment is necessary, the GSA should describe proposed revisions to relevant Plan elements. This section should also provide the rationale for developing a Plan Amendment and the necessary actions the GSA will take to complete the amendment, including outreach and engagement to interested parties.

REMINDER:

For Periodic Evaluations that accompany a Plan Amendment, GSAs must ensure the Periodic Evaluation is not:

- A copy/paste of the GSP sections that were revised or amended.
- A simple: "See Section X."

The Periodic Evaluation must provide specific explanations of what was amended, why, and the effects of those amendments on the implementation of the Plan (e.g., adapting the management program, adjusting projects and management actions).

29 Water Code § 10727.2(g); Water Code § 10727.4(k)(l).
30 23 CCR § 356.4. (c) and (i)
31 23 CCR § 356.4. (i)

3.4 Periodic Evaluation Submittal Requirements

The Periodic Evaluation of approved GSPs shall be submitted to the Department by an authorized Plan representative via the SGMA Portal online submittal platform at a minimum every five years following the initial GSP submittal and whenever the Plan is amended. The following steps should be taken to upload the Periodic Evaluation to the SGMA Portal:

1. Upload a PDF of the Periodic Evaluation with filename using the Basin Number_Periodic_ Evaluation_Year format (Ex. #-###_Periodic_Evaluation_WY_20XX)
2. Upload the Periodic Evaluation Elements Guide

3.5 Periodic Review by the Department

The Department's Periodic Review will occur at least every five years with the first Periodic Review being initiated five years after submittal of the initial GSP. The Periodic Review involves evaluating the Plan, Annual Reports, and Periodic Evaluations. The Periodic Review will result in the Department providing an assessment of the basin's GSP implementation progress and issuing a determination of approved, incomplete, or inadequate. Note that the approval of a previously submitted GSP does not guarantee continued approval by the Department during the implementation period.

REMINDER:
The Department will use Annual Reports and Periodic Evaluations submitted by the GSAs for their Periodic Review and assessment of progress made toward achieving sustainability in each basin.

Water Code § 10733.

a) The department shall periodically review the groundwater sustainability plans developed by groundwater sustainability agencies pursuant to this part to evaluate whether a plan conforms with Sections 10727.2 and 10727.4 and is likely to achieve the sustainability goal for the basin covered by the groundwater sustainability plan.
b) If a groundwater sustainability agency develops multiple groundwater sustainability plans for a basin, the department shall evaluate whether the plans conform with Sections 10727.2, 10727.4, and 10727.6 and are together likely to achieve the sustainability goal for the basin covered by the groundwater sustainability plans.
c) The department shall evaluate whether a groundwater sustainability plan adversely affects the ability of an adjacent basin to implement their groundwater sustainability plan or impedes achievement of sustainability goals in an adjacent basin.

Water Code § 10733.8.

At least every five years after initial submission of a plan pursuant to Section 10733.4, the department shall review any available groundwater sustainability plan or alternative submitted in accordance with Section 10733.6, and the implementation of the corresponding groundwater sustainability program for consistency with this part, including achieving the sustainability goal. The department shall issue an assessment for each basin for which a plan or alternative has been submitted in accordance with this chapter, with an emphasis on assessing progress in achieving the sustainability goal within the basin. The assessment may include recommended corrective actions to address any deficiencies identified by the department.

GSP Regulations § 355.6. Periodic Review of Plan by Department

a) The Department shall periodically review an approved Plan to ensure the Plan, as implemented, remains consistent with the Act and in substantial compliance with this Subchapter, and is being implemented in a manner that will likely achieve the sustainability goal for the basin.

b) The Department shall evaluate approved Plans and issue an assessment at least every five years. The Department review shall be based on information provided in the annual reports and the periodic evaluation of the Plan prepared and submitted by the Agency.

c) The Department shall consider the following in determining whether a Plan and its implementation remain consistent with the Act:

- **1.** Whether the exceedances of any minimum thresholds or failure to meet any interim milestones are likely to affect the ability of the Agency to achieve the sustainability goal for the basin
- **2.** Whether the Agency is implementing projects and management actions consistent with the Plan, or that the Agency has demonstrated that actions described in the Plan have been rendered unnecessary based on changing basin conditions or an improved understanding of basin conditions.
- **3.** Whether the Agency is addressing data gaps and reducing the levels of uncertainty identified in the Plan.
- **4.** Whether the Plan continues to satisfy the criteria described in Section 355.4.[Criteria for Plan Evaluation]

d) The Department shall issue a written assessment of the review of the Plan, which shall be posted on the Department's website. The assessment shall include a determination of the status of the Plan, as follows:

- **1.** Approved. The Department shall approve the implementation of a Plan that remains in conformance with the requirements of the Act and is in substantial compliance with this Subchapter, based on the criteria described in this Section.
- **2.** Incomplete. The Department has determined that the Plan as implemented has one or more deficiencies that preclude approval, but which may be capable of being corrected by the Agency in a timely manner. An incomplete Plan may be completed and resubmitted to the Department for evaluation as follows:
  - **A)** The Department shall identify deficiencies in the Plan as implemented, and may recommend corrective actions to address those deficiencies.
  - **B)** The Department may consult with the Agency to determine the amount of time needed by the Agency to propose projects or management actions to address any deficiencies, not to exceed 180 days from the date the Department issues its assessment.
- **3.** Inadequate. The Department shall disapprove the implementation of a Plan if the Department, after consultation with the board, determines that a Plan is inadequate in accordance with Section 355.2.

e) The Department may request from the Agency any information the Department deems necessary to evaluate the progress toward achieving the sustainability goal and the potential for adverse effects on adjacent basins.

f) The Department may evaluate the implementation of a Plan at any time to determine whether the Plan is consistent with the objectives of the Act and in substantial compliance with this Subchapter.

SECTION 4: PLAN AMENDMENT GUIDANCE

Plan Amendments allow for GSAs to formalize changes to a GSP, ensure a GSP is up to date with the basin's latest groundwater sustainability program, and continue to engage interested parties on the implementation of the GSP. This guidance considers factors that support amending a Plan, provides a roadmap for developing a Plan Amendment that complies with SGMA and GSP Regulations, and outlines Amendment submittal instructions and the Department's role in Amendment review.

4.1 Requirements of a Plan Amendment

While SGMA and the GSP Regulations do not mandate when or how a GSP is amended, it is likely that many GSPs will eventually be amended. Should a GSA elect to amend its GSP, it is important to be aware of the requirements for Plan Amendments.

Water Code § 10728.4.
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.

GSP Regulations § 353.10. Withdrawal or Amendment of Plan.
An Agency may withdraw a Plan at any time by providing written notice to the Department, and may amend a Plan at any time pursuant to the requirements of Section 355.10.

GSP Regulations § 356.4. Periodic Evaluation by Agency.
Each Agency shall evaluate its Plan at least every five years and whenever the Plan is amended, and provide a written assessment to the Department. (see Section 3.1 of this guidance document for the remainder of 356.4)

When considering the development of a Plan Amendment, all requirements of the GSP Regulations (Article 5 – Plan Contents) apply. In addition, the following actions apply to a Plan Amendment:

- Outreach and engagement, including notification to the list of interested persons.
- Proper public notice (90 days) and address comments and requests for consultation.
- Adoption by a governing board (proof of adoption needs to be submitted).

For further guidance on general GSP information, GSAs may refer to the GSP Regulations and previously developed guidance by the Department, such as the Preparation Checklist for GSP Submittal which is also listed in Attachment 2 – Available Resources.

REMINDER:
Plan Amendments are not required per the GSP Regulations or SGMA and are at the discretion of the GSAs and their governing boards.

However, when a GSP Amendment is planned and prepared, regulatory requirements must be followed, as described in this section. The regulatory requirements include submitting a Periodic Evaluation with the amended Plan.

4.2 Plan Amendment Considerations

Plan Amendments are completed at the discretion of the GSAs. SGMA and the GSP Regulations do not establish when an amendment is required, nor do they describe what components of the Plan should be amended. In general, however, the more significant or material a change to a GSP or its implementation, the more likely a Plan Amendment is warranted. Furthermore, a GSA may determine to amend a Plan to incorporate changes or additions that are desirable or necessary to comply with public disclosure and stakeholder engagement requirements or policies. A GSA may also amend a Plan to ensure the Plan describes adequate funding, enforcement, or implementation of GSA activities including projects and management actions that may allow the GSA to potentially qualify for grants, loans, permit streamlining, or other benefits available for adopted GSPs. If requested, Department staff may assist GSAs in considering factors regarding Plan Amendments. Regardless of whether a GSA ultimately decides to formally amend its Plan, the GSA should ensure that it has in some form documented any changes to a Plan or its implementation and alerted the Department to those changes. Below, the Department provides general considerations of components of the Plan that, if significant or material changes were made, may warrant a Plan Amendment; however, the Department recommends a GSA thoroughly evaluate and discuss the potential need for an amendment with their legal counsel and stakeholders. Elements of the GSP that may warrant a Plan Amendment if significant or material changes were made:

- Changes made to the overall management of the basin, including sustainable management criteria, sustainability goal, addition or removal of management areas, or wholesale modifications to the representative monitoring sites network.
- Revisions made to projects and management actions, including addition or removal of projects or management actions that could affect the projected water budget, sustainable yield, or achievement of measurable objectives, or impact the ability to mitigate overdraft.
- Modifications made to the administrative management of the basin, including addition or removal of GSAs, or the addition or removal of a GSP from a basin, etc.

In summary, to determine whether a Plan Amendment is warranted or justified, the Department suggests GSAs conduct a thorough review of any proposed modifications to GSPs or their implementation, including the details of the specific changes, how those changes affect the broader Plan, to what extent the changes may require public disclosure, notice, and engagement, and other factors relevant to the desirability or need to have specific changes explicitly identified and made part of the GSP itself.

REMINDER:
Plan Amendments are only to be submitted for approved GSPs. An amendment cannot be submitted to the Department for inadequate GSPs or while a basin is subject to State Intervention.[32]

4.3 Plan Amendment Submittal Requirements

GSAs must submit Plan Amendments via the SGMA Portal. When preparing for a submittal, GSAs should confirm the following:

- The person submitting the Amendment has permission to upload the files via the SGMA Portal.
  - To verify, log into the SGMA Portal, and if you have questions, contact gspsubmittal@water.ca.gov.
- Validation of GSP re-adoption is ready to upload.
- The Periodic Evaluation, which is required to accompany the Plan Amendment, has been completed.
- The basin's monitoring network has been updated to reconcile the information in the SGMA Portal with that of the amended GSP.

REMINDER:
A Periodic Evaluation must be submitted at least every 5 years, with or without a Plan Amendment. A Plan Amendment, when submitted, always needs to be accompanied by a Periodic Evaluation.

4.4 Review by Department

The GSP Regulations establish criteria for the Department when reviewing amended GSPs. In particular, the Department will focus its review on the portions of the amended GSP that have been revised (and as described in the accompanying Periodic Evaluation written assessment), rather than invariably reviewing the Plan in its entirety. To expediate the review process, the Department requests that GSAs submit both a clean version and a redline strikethrough version of the amended GSP. For the redline strikethrough version, the GSAs may submit only the portions of the GSP that were revised rather than the GSP in its entirety.

The review of a Plan Amendment will focus on the components of the Plan that were amended and assess whether those amended components are substantially compliant with the relevant sections of the GSP Regulations. In comparison, the Periodic Review conducted by the Department at least every five years provides a determination on whether the Plan and Plan implementation are still on a path to achieve the sustainability goal for the basin. While the Department is reviewing the Plan Amendment, GSAs should continue implementing their GSPs, submitting Annual Reports, and conducting outreach and engagement activities. The Department will review the amended portions of the Plan within two years of submittal and respond to the Plan Manager in writing indicating whether the proposed Plan Amendment is approved or if additional information is needed.

32 Water Code § 10735

GSP Regulations § 355.10. Plan Amendments

a) Any amendment to a Plan shall be evaluated by the Department for consistency with the requirements of the Act and of this Subchapter.

b) An Agency may amend a Plan at any time, and submit the amended Plan to the Department for evaluation pursuant to the requirements of this Subchapter.

c) The Department shall evaluate the amended portions of the Plan and any new information that is relevant to the amendments or other Plan elements. Portions of the Plan that have not been amended will not be evaluated unless the Department determines the proposed amendment may result in changed conditions to other areas or to other aspects of the Plan.

d) An amendment to a Plan shall be evaluated by the Department as follows:

1. An amended Plan that has been submitted, but not yet approved by the Department, shall be evaluated during the initial evaluation period, in accordance with Sections 355.2 and 355.4.
2. An amended Plan that has been approved by the Department, but determined to be incomplete or inadequate as a result of a periodic assessment pursuant to Section 355.6, shall be evaluated in accordance with Sections 355.2 and 355.4.
3. An amendment to a Plan that has been approved by the Department shall be evaluated in accordance with Section 355.6, except that if the Department does not approve the amendment, the Agency may revise and resubmit another amendment at any time, provided that the status of the Plan remains unchanged.

Attachments

Frequently Asked Questions and Available Resources

ATTACHMENT 1: FREQUENTLY ASKED QUESTIONS FOR ANNUAL REPORTS, PERIODIC EVALUATIONS, AND PLAN AMENDMENTS

This attachment provides commonly asked questions and answers about Annual Reports, Periodic Evaluations, and Groundwater Sustainability Plan (GSP or Plan) Amendments, to help guide groundwater sustainability agencies (GSAs or Agencies) during implementation of their GSPs consistent with the Sustainable Groundwater Management Act (SGMA) and GSP Regulations.

1. What is an Annual Report, a Periodic Evaluation, a Plan Amendment, and a Periodic Review?

An **Annual Report** is a report prepared and submitted to the Department of Water Resources (Department) by April 1 of every year, for all basins with a GSP or Alternative. The report acts as a yearly status update and presents data gathered over the previous water year for each applicable sustainability indicator and provides an analysis of that data in relation to the sustainable management criteria established in the GSP. The report also identifies any issues or data gaps that still exist in the basin and provides an implementation status update on all the projects and management actions identified in the GSP. Additionally, data associated with the Annual Report are required to be submitted via the SGMA Portal Monitoring Network Module; (see Water Code § 10728 and 23 CCR § 356.2). Also, refer to SECTION 2 of the Guide to Annual Reports, Periodic Evaluations, and Plan Amendments for additional information about Annual Reports.

A **Periodic Evaluation** is an evaluation of the implementation of an approved GSP performed by the GSA, which is described in a written assessment submitted to the Department. The periodic evaluation represents a progress report for each evaluation cycle (i.e., at least every five years after initial GSP submission). It summarizes basin conditions in relation to sustainable management criteria established in the GSP, the implementation of projects and management actions, and other information as specified in SGMA (Water Code § 10728.2) and the GSP Regulations (23 CCR § 356.4), and describes whether GSP implementation is meeting interim milestones and is on track to meeting measurable objectives and the sustainability goal for the basin. The Periodic Evaluation is a GSP implementation evaluation tool. Refer to SECTION 3 of the Guide to Annual Reports, Periodic Evaluations, and Plan Amendments for additional information about a Periodic Evaluation.

A **Plan Amendment** is a revision made by a GSA to its previously adopted GSP, often to make warranted changes to ensure the GSP reflects the most current groundwater management approaches. A GSA must submit the amended GSP to the Department, along with a Periodic Evaluation that explains and justifies the GSP Amendment. Prior to adopting the amended GSP, the GSA must hold a public hearing to adopt the amended GSP, at least 90 days after providing notice to cities and counties within the area of the proposed GSP Amendment. The GSA must review and consider comments from any city or county that receives notice and must consult with a city or county that requests consultation within 30 days of receipt of the notice. Refer to SECTION 4 of the Guide to Annual Reports, Periodic Evaluations, and Plan Amendments for additional information.

A **Periodic Review** of a GSP is an evaluation and assessment of an approved GSP performed by the Department at least every five years. When performing a Periodic Review, the Department ensures the GSP, as implemented, remains compliant with SGMA, in substantial compliance with the GSP

Regulations, and is being implemented in a manner that will likely achieve the sustainability goal. The Department may rely on Annual Reports and Periodic Evaluations prepared and submitted by the GSA as well as other available information when performing Periodic Reviews. The Department will issue a written assessment reporting the results of its Periodic Reviews, which includes a determination of the status of the GSP and its implementation (i.e., Approved, Incomplete, or Inadequate). Refer to Section 3.5 of the Guide to Annual Reports, Periodic Evaluations, and Plan Amendments for additional information (and Water Code § 10733.8 and 23 CCR § 355.6).

2. What is a GSP Update, Five-Year Update, Periodic Update, and GSP Assessment?

GSP Update, Five-Year Update, and Periodic Update are terms that the Department realizes have been used, sometimes interchangeably, to refer to a Periodic Evaluation and/or Amendment of a GSP. To be consistent with the GSP Regulations, the terms Periodic Evaluation and Amendment should be used instead and as appropriate. Descriptions of a Periodic Evaluation and an Amendment and GSAs' roles in relation to these efforts, are provided in SECTION 3 and SECTION 4, respectively, of the Guide to Annual Reports, Periodic Evaluations, and Plan Amendments.

GSP Assessment – the Department is required to evaluate and assess adopted GSPs and amended GSPs submitted by GSAs and issue written assessments that include a determination of the status of the GSP or amended GSP and its implementation if applicable, as Approved, Incomplete, or Inadequate. For an Approved GSP, both the GSA and the Department are required to periodically evaluate and assess the GSP; the GSA's evaluation and assessment of its approved GSP is referred to as a Periodic Evaluation and the Department's evaluation and assessment of an approved GSP is referred to as a Periodic Review. The Department does not conduct a Periodic Review of a GSP that it has determined to be Inadequate and has referred to the State Water Resources Control Board unless additional assessment of an Inadequate GSP is requested by the State Water Resources Control Board under Water Code § 10735.2(b).

3. Must GSAs submit an Annual Report the same year that the Periodic Evaluation is due?

Yes. Annual Reports serve a different purpose than Periodic Evaluations (see FAQ #1, including SECTION 2 and SECTION 3 of the Guide to Annual Reports, Periodic Evaluations, and Plan Amendments); (also see Water Code § 10728 and 23 CCR § 356.2 for Annual Reports; and Water Code § 10728.2 and 23 CCR § 356.4 for Periodic Evaluations).

4. How frequently should a Periodic Evaluation of a GSP be performed?

A Periodic Evaluation should be performed by a GSA at least every five years, and whenever the GSA amends its GSP (see 23 CCR § 356.4). Below are some common scenarios:

Scenario 1: If the Department has determined a GSP to be Inadequate, is the GSA required to submit a Periodic Evaluation?

No. If the Department has declared a Plan to be Inadequate, evaluation of SGMA compliance for that Plan shifts to the State Water Resources Control Board. As a result, Periodic Evaluations are not required for GSPs the Department has determined to be Inadequate; **Periodic Evaluations are required only for GSPs the Department has previously approved**. GSAs with Inadequate GSPs

should coordinate with the State Water Resources Control Board on steps necessary to retain local control and avoid state intervention; in the meantime, however, the GSA must continue to submit Annual Reports and associated data for the basin/subbasin to the Department for review.

Scenario 2: If a GSA revised and resubmitted its GSP in response to the Department's Incomplete determination on the initial GSP and the revised GSP received an Approved determination, when is the first Periodic Evaluation due?

A Periodic Evaluation is due for an Approved plan at least every five years from the date the Plan was initially submitted which can be found on the Department's SGMA Portal. That deadline remains unchanged by modifications to the Plan to address deficiencies that render the Plan incomplete. Also note that the 'due by date' for the first Periodic Evaluation and associated Periodic Review by the Department will be indicated on the cover letter accompanying the Department's Approved determination. For this scenario, the Periodic Evaluation will be due by a specific date in the year 2025 (for a critically overdrafted basin), or by a specific date in the year 2027 (for a non-critically overdrafted basin).

Scenario 3: If a GSA amends its GSP a few months after submitting a Periodic Evaluation, should the GSA still submit another Periodic Evaluation along with the amended GSP?

Yes, the GSP Regulations (23 CCR § 356.4) require a GSA to evaluate its GSP whenever the GSP is amended and provide a written assessment to the Department. The Periodic Evaluation should indicate the components of the Plan that were amended. The Department does not have the authority to waive the requirement for submitting a Periodic Evaluation when a GSP is amended, even if a GSA amends its GSP shortly after submitting a Periodic Evaluation. Accordingly, and in the interests of efficiency, GSAs may want to consider timing GSP Amendments to align with the **due date of their Periodic Evaluations.**

5. If a GSA amends its GSP, can it be considered a Periodic Evaluation?

No, a GSP Amendment is not a Periodic Evaluation. However, a Periodic Evaluation must be performed by a GSA whenever it amends its GSP. The Periodic Evaluation must be submitted to the Department along with the amended GSP. For additional information about a Periodic Evaluation and GSP Amendment, refer to SECTION 3 and SECTION 4, respectively, of the Guide to Annual Reports, Periodic Evaluations, and Plan Amendments.

6. Does a Periodic Evaluation need to be submitted for each subbasin?

Each subbasin that has an approved GSP or approved Alternative to a GSP (see FAQ #7) is required to submit a Periodic Evaluation at least every five years, and whenever an approved Plan is amended.

7. Is a basin with an approved Alternative to a GSP required to perform a Periodic Evaluation?

Yes, a basin with an approved Alternative is required to resubmit the Alternative every five years to the Department as specified by Water Code §10733.6(c) and 23 CCR § 358.2(b), which essentially serves as the functional equivalent of a Periodic Evaluation. The Department will conduct Periodic Reviews of approved Alternatives in order to determine if implementation is still likely to achieve basin sustainability goals on SGMA timelines and whether recommended corrective actions are being addressed.

8. Will the Department evaluate and assess the Periodic Evaluation? Will the Department issue a determination and recommended corrective actions on submitted GSP Periodic Evaluations?

The Department is required to periodically review an approved GSP and issue an assessment at least every five years. During this process, the Department relies on information and data provided in Annual Reports and Periodic Evaluations prepared and submitted by a GSA, and other available information. As part of its Periodic Review, the Department will issue a written assessment that includes a determination of the status of the GSP (i.e., Approved, Incomplete, or Inadequate). The Department's Periodic Reviews may also issue recommended corrective actions to ensure that GSP implementation remains likely to achieve basin sustainability goals on SGMA timelines. Also see SECTION 3.5 of the Guide to Annual Reports, Periodic Evaluations, and Plan Amendments (including Water Code §§ 10733(a), 10733.8; and 23 CCR § 355.6).

9. Will the Department evaluate and assess the amendments made to a GSP? Will the Department issue a determination and recommended corrective actions on an amended GSP?

Yes, the Department will evaluate the amended portions of an Approved GSP, the accompanying Periodic Evaluation prepared by the GSA, and any new information that is relevant to the amendments or other Plan elements. The Department will issue a written assessment that includes a determination of the status of the amended GSP as Approved, Incomplete, or Inadequate (see 23 CCR 23 § 355.10). For GSPs that the Department has previously found inadequate and have therefore been referred to the State Water Resources Control Board, the Department will conduct assessments of subsequent GSP amendments only when requested by the State Water Resources Control Board under Water Code § 10735.2(b).

10. For a basin/subbasin with multiple GSPs, should multiple Periodic Evaluations be submitted to the Department? Does a coordination agreement need to be resubmitted?

GSAs in a basin/subbasin with multiple GSPs may submit a Periodic Evaluation for each respective GSP or a single Periodic Evaluation for the entire basin/subbasin. Coordination agreements should be reviewed as part of the Periodic Evaluation, revised as necessary, signed by all parties (if revised), and submitted to the Department. The Department will issue one written assessment for the entire basin/subbasin in its Periodic Review.

11. How do GSAs submit their Periodic Evaluations? Are data submissions required in addition to the written assessment?

The GSA's appointed plan manager should submit the Periodic Evaluation via the SGMA Portal (see SECTION 3.4 of the Guide to Annual Reports, Periodic Evaluations, and Plan Amendments for additional information). At this time, no additional data or information is required to be included with the written assessment. However, the Department may request GSAs to provide additional information that it believes may be necessary to evaluate the progress toward achieving the sustainability goal or the potential for adverse effects on adjacent basins (23 CCR § 355.6(e)). For example, the Department may request agencies to provide additional information related to the development and implementation of projects and management actions. It should be noted that Annual Reports largely act as the basis for submitting data to the Department.

12. How do GSAs submit a GSP Amendment?

The GSA's appointed plan manager should submit a GSP Amendment via the SGMA Portal (see SECTION 4.3 of the Guide to Annual Reports, Periodic Evaluations, and Plan Amendments for additional information), accompanied by a written Periodic Evaluation assessment.

13. Can a GSA submit a combined Periodic Evaluation and Plan Amendment (i.e., as a single document)?

No, a GSP Amendment and Periodic Evaluation are separate documents that serve different purposes and therefore, should be submitted as separate documents (also see SECTION 3 and SECTION 4 of the Guide to Annual Reports, Periodic Evaluations, and Plan Amendments for additional information).

14. Do any new data, descriptions, evaluations, and/or elements in the written assessment of the GSP Periodic Evaluation warrant doing a GSP Amendment, or at what point is an Amendment warranted?

GSP Amendments are made at the discretion of the GSA. The GSA assesses and determines whether the new information or data it provides in the written assessment of its Periodic Evaluation warrants a GSP Amendment. As part of the GSP Periodic Evaluation, the GSP Regulations require GSAs to provide descriptions of significant new information that have been made available since the GSP was adopted (or amended, or since the last Periodic Evaluation), which should include the GSAs' assessment of whether the new information warrants amendments to their GSP. Refer to SECTION 4 of the Guide to Annual Reports, Periodic Evaluations, and Plan Amendments for additional information on GSP Amendments.

15. Does a GSP Amendment need to update and reproduce the full GSP, or can an Amendment only reproduce the parts of the GSP that are updated?

An amended GSP should be a stand-alone document that meets the requirements of SGMA and the GSP Regulations, and should therefore, be a full GSP containing both the amended portions and the portions from the original GSP that have not been amended. The Department will evaluate the amended portions of the GSP and any new information that is relevant to the Amendment or other Plan elements. Portions of the Plan that have not been amended will not be evaluated unless the Department determines the proposed Amendment may result in changes to other areas or to other aspects of the Plan. The Periodic Evaluation that accompanies an amendment should clearly describe the portions of the Plan that were amended and the rationale for the changes. To expediate review of the changes made in the Plan, the Department requests that GSAs submit both a clean version and a redline strikethrough version of the amended Plan. For the redline strikethrough version, the GSA may submit only the portions of the GSP that were revised rather than the GSP in its entirety.

16. Does a GSA need to amend the GSP to identify a new representative monitoring site or establish sustainable management criteria for new monitoring points, if it will be using the same approach for the new sites as the GSP describes for existing sites?

A GSA may not need to amend its GSP if the only change is to identify a new representative monitoring site or establish sustainable management criteria for new monitoring sites using a consistent approach already used for the other sites. However, the GSA should clearly document any such changes in a Periodic Evaluation and Annual Report submitted to the Department for review. Ultimately, the decision to amend a GSP is at the discretion of the GSA and must be explained and justified. Also see SECTION 4.2 of the Guide to Annual Reports, Periodic Evaluations, and Plan Amendments for additional information.

17. What is the Department's expectation for information to be included in the first Periodic Evaluation relating to depletions of interconnected surface water due to groundwater extractions?

The Department expects that by the first Periodic Evaluation (i.e., in years 2025 or 2027), GSAs would have improved their overall understanding of depletions of interconnected surface water as more information and improved methodologies have become available, including any guidance the Department may issue. At a minimum, the Department expects the first Periodic Evaluation to discuss progress made toward addressing recommended corrective actions including how data gaps have been filled or are planned to be filled, describe method(s) that will be used or have been used to quantify the rate, timing, and volume of depletions of interconnected surface water due to groundwater extractions, and include revised sustainable manage criteria as appropriate.

18. Is a GSA required to review and respond to public comments received on or prior to developing Periodic Evaluations?

While the GSP Regulations do not have specific requirements with respect to public comments on Periodic Evaluations, a GSA may want to respond to public comments to address and resolve public questions or concerns pertaining to GSP implementation activities. In general, the Department interprets SGMA to foster and, in specific instances, require GSAs to consider all interested parties including the interests of all beneficial uses and users of groundwater in the establishment and operation of the GSA and the development and implementation of the agency's GSP (see e.g., Water Code § 10723.2, 10723.8(a)(4)). If a GSA elects to respond to public comments, the Department suggests that copies of those responses be provided to the Department so that they may be available for consideration by the Department, along with the comments themselves, during review of the Periodic Evaluation.

19. Will the Department hold a public comment period after GSAs submit a Periodic Evaluation or Amendment?

The GSP Regulations do not have specific requirements with respect to public comments on a Periodic Evaluation. However, the GSP Amendment process is subject to the same requirements as the initially submitted GSP (under Water Code 10733.4 and 23 CCR § 353.8). Therefore, the Department will provide a public comment period for a GSP Amendment.
public drinking water systems.

ATTACHMENT 2: AVAILABLE RESOURCES

1. **News, Updates, and Upcoming Events**
   - water.ca.gov/
2. **SGMA Webpage**
   - water.ca.gov/Programs/Groundwater-Management/SGMA-Groundwater-Management
3. **Best Management Practices for Sustainable Groundwater Management**
   - Monitoring Protocols, Standards, and Sites
   - Monitoring Networks and Identification of Data Gaps
   - Hydrogeologic Conceptual Model
   - Water Budget
   - Modeling
   - Sustainable Management Criteria
4. **Guidance Documents for Sustainable Groundwater Management**
   - Drinking Water Well Impact Guidance
   - Stakeholder Communication and Engagement
   - Engagement with Tribal Governments
   - GSP Annotated Outline
   - Resource Guide for Climate Change Data and Guidance
5. **Data and Tools**
   - SGMA Portal
     - Monitoring Sites
     - GSPs
     - Annual Reports
     - Periodic Evaluations
     - Alternative Plans
     - Resources
   - California's Groundwater Live
     - Current Conditions
     - Groundwater Levels
     - Well Infrastructure Information
     - Land Subsidence
   - SGMA Data Viewer
   - Groundwater Monitoring (CASGEM)
   - Online System for Well Completion Reports (OSWCR)
   - Dry Well Reporting System
6. **Assistance and Engagement**
   - Communication and Engagement
   - Technical Support Services (TSS)
   - Facilitation Support Services (FSS)
   - Written Translation Services (WTS)
   - Sustainable Groundwater Management Grant Program

Agenda Item No: 4.d.

MEETING DATE/TIME: 12/15/2025

ITEM NO: 2025-1400

UKIAH VALLEY BASIN
GROUNDWATER SUSTAINABILITY AGENCY (GSA)

STAFF REPORT

SUBJECT: Possible Approval of Cost-Sharing Agreement with the Small Groundwater Sustainability Agency Coalition.

PREPARED BY: Blake Adams, Chief Resiliency Officer
PRESENTER: Blake Adams, General Manager

ATTACHMENTS:

1. Proposed Small GSA Cost Share Agreement
2. Scope of Work Advocacy and Admin

Summary: Consider approval of a proposed Cost-Sharing Agreement with the Small Groundwater Sustainability Agency Coalition, for joint legislative advocacy and Coalition management, effective January 1, 2026. This item would also authorize the Chair/Administrator to sign the Cost-Sharing Agreement.

Background: In 2022, several GSAs that manage basins that on average pump under 10,000-acre feet of groundwater annually begin meeting to discuss common issues of concern and funding strategies. The agencies informally created the Small GSA Coalition (Coalition) with the goal of seeking state funding to assist with the costs of GSA administration, implementation of groundwater water sustainability plans (GSPs) and compliance with SGMA reporting requirement. A more recent goal of the Coalition is to lower compliance costs by working with the California Department of Water Resources (DWR) to identify duplicative or unnecessary reporting requirements and compliance tasks.

From those initial meetings of approximately five GSAs, the Coalition has grown to include more than 15 GSAs. Since 2022, the Sonoma County Water Agency (Sonoma Water) has provided staffing and advocacy support to the Coalition through its Community and Government Affairs Manager, Ann DuBay (who is now retired and works as a consultant for Sonoma Water to assist the Coalition), and its contract lobbyist, Pacific Policy Group (Mark Fenstermaker). In 2024, Sonoma Water notified the Coalition that it would end this support on December 31, 2025. The Coalition meets monthly for one hour and receives a legislative update and discusses relevant issues, such as fee studies, monitoring questions, compliance reports and technical issues. In addition, the Coalition meets with key members of the Legislature and legislative staff to discuss funding needs and has established regular meetings with DWR to identify duplicative or unnecessary compliance tasks.

In Spring 2025, the Coalition held its first legislative day to specifically discuss with Legislators and staff a request for $3.5 million in Proposition 4 (climate bond) funds to help pay for five-year GSP evaluations. The Coalition's request was included in the budget trailer bill, SB 105, and was signed by the Governor on September 17, 2025. The Coalition has begun discussions with DWR about how the funds will be allocated. The expected fiscal impact of joining in on this agreement is between $3,000 and $6,000 and dependent on the total number of cosignees.

Discussion: Staff propose that the Ukiah Valley Basin Groundwater Sustainability Agency enter into a Cost-Sharing Agreement starting January 1, 2026, to equally share the annual costs of Coalition advocacy and management through Pacific Policy Group (PPG) and its subcontractor Ann DuBay.

Recommended Action: Receive and consider Staff's recommendation to enter into a cost-sharing agreement with the Small Groundwater Sustainability Agency Coalition.

COST SHARING AGREEMENT

This Cost Sharing Agreement ("**Agreement**") is made and entered into by and between the undersigned Groundwater Sustainability Agencies ("**GSAs**"), individually referred to as a "**Party**" and collectively referred to as the "**Parties,**" subject to the following understanding:

RECITALS

1. The Sustainable Groundwater Management Act ("**SGMA**"), codified at California Water Code section 10720 et seq., became effective on January 1, 2015.

2. SGMA requires GSAs for medium and high priority groundwater basins (as designated by the California Department of Water Resources ("**DWR**") to achieve groundwater sustainability through the adoption and implementation of Groundwater Sustainability Plans ("**GSPs**") or approved alternative plans.

3. Many GSAs managing basins or sub-basins with an average annual groundwater extraction of less than 10,000 acre-feet per year ("**Small GSAs**") face disproportionate administrative and compliance costs relative to their size and groundwater usage.

4. The Parties, through their respective staff members and representatives ("**Party Representatives**"), desire to cooperatively fund and manage shared interests and efforts that benefit Small GSAs under SGMA, while retaining their independent local authority. Therefore, in consideration of the mutual promises, covenants and conditions herein set forth, the Parties agree as follows:

AGREEMENT

1. PURPOSE.

The purpose of this Agreement is to establish the cost-sharing and administrative framework for the Party Representatives to coordinate advocacy efforts regarding SGMA implementation challenges unique to Small GSAs.

2. COST SHARING.

a) **Equal Shares.** Each Party shall contribute an equal share to the total cost of retaining (i) an Advocacy Administrator; and (b) an Advocate. Each Party shall contribute an equal portion of the total cost, with payments made in accordance with subsection 2(b) of this Agreement, below.

b) **Annual Budget and Payment Thereof.** The Parties' cost-sharing obligations shall be based on and limited by an annual budget for the Fiscal Year beginning on July 1 and ending on June 30, as follows:

i) On or before March 1 of each year, the Administrator shall prepare and distribute a draft budget for review by the Party Representatives

ii) On or before April 1 of each year, the Administrator shall prepare and distribute a revised budget for final review and approval by at least three-fourths of the Parties on or before May 1.

iii) On or before July 1 of each year, the Administrator shall invoice each Party their respective share of the approved final budget. Payment shall be due within 60 days of receipt such invoice.

iv) For the last six months of Fiscal Year 2025-2026, the Parties costs for advocacy and management will total $30,000. The Administrator shall issue invoices for January 1, 2026 through June 30, 2026 on or before by January 1, 2026 and payments shall be due within 60 days of receipt of such invoice.

c) **Deferment of Payment.** Any Party with a fiscal year other than July 1 to June 30 may defer payment to October 1, provided however that the Party provide written notice of such fact to the Administrator on or before July 1.

d) **Nonpayment**. Failure to submit payment within 60 days after receipt of an invoice from the Administrator shall constitute a default of this Agreement and result in that Party's removal and termination of this Agreement with respect to the defaulting party. In addition, the remaining Parties hereby reserve the right to pursue recovery of any unpaid obligations from the delinquent Party.

3. RETENTION OF INDEPENDENT CONTRACTORS.

a) **The Administrator.** The Party Representatives may appoint by majority vote (with one Party Representative voting on behalf of its GSA), an Administrator as an independent contractor to act as the custodian of the funds and maintain accurate accounting records, in accordance with subsection 3(d) of this Agreement and in an amount not to exceed the amount set forth in the annual budget. The Administrator may be a Party, a private individual, or an entity. The initial Administrator of the Coalition shall be Ann DuBay.

b) **The Advocate.** The Party Representatives may appoint by majority vote (with one Party Representative voting on behalf of its GSA) an Advocate as an independent contractor to represent the Parties' interests before the State Legislature, State agencies, and other stakeholders as determined by the Parties, in accordance with subsection 3(c) of this Agreement and in an amount not to exceed the amount set forth in the annual budget. The Advocate may be a private individual or an entity.

c) **Contract for Services.** The Scope of Work for the Administrator and Advocate shall be approved by a majority of the Parties' General Managers or contracting officers (collectively, the "**Contracting Officers**"). The Contracting Officers are authorized to designate one or more Contracting Officers to execute an engagement letter or agreement for the services of the Administrator and Advocate.

d) **Representation.** The Administrator and the Advocate will consider their client to be all of the parties funding and participating in this Agreement, and will take direction from a majority vote of the Party Representatives (with one Party Representative voting on behalf of its GSA).

e) **Oversight.** The Party Representatives may meet in person or virtually as needed to review work product, costs, or other matters related to or associated with the Administrator and/or Advocate. These meetings may be held virtually or in person, as determined by the Party Representatives.

4. ADMISSION, WITHDRAWAL, AND TERMINATION

a) **Admission.** Any Small GSA may become party to this Agreement upon written consent by majority vote of the Party Representatives (with one Party Representative voting on behalf of its GSA) and execution of an amendment to this Agreement by the additional party.

b) **Withdrawal.** Any Party may withdraw from this Agreement upon 30 days' advance written notice to the Administrator. Upon receipt of such notice, the Administrator shall immediately provide notice to all other Parties of the anticipated withdraw. Withdrawal shall not affect, alleviate, or otherwise terminate any financial obligations of the withdrawing Party's incurred or otherwise existing prior to the date of notice of withdrawal nor shall withdraw entitle the withdrawing Party to a refund for any portion of any contributed portion of the budget.

c) **Termination.** This Agreement shall remain in effect so long as at least five Parties remain party to this Agreement.

5. INDEMNIFICATION.

Each Party shall indemnify, defend, and hold harmless the other Parties, their officers, employees, and agents from and against any and all claims liabilities, and expenses ("**Claims**") arising out of or in connection with this Agreement except to the extent any such Claims arise out of that Party's negligent acts or omissions in connection with this Agreement.

6. RELATIONSHIP OF THE PARTIES.

Each Party is an independent public agency collaborating voluntarily on a common issue. Nothing in this Agreement shall create a joint venture, partnership, or agency relationship among the Parties.

7. DISPUTE RESOLUTION; CHOICE OF LAW.

Any dispute arising under this Agreement shall first be addressed through good-faith negotiations. If unresolved within 30 days, the dispute shall proceed to mediation, and if necessary, binding arbitration under California Code of Civil Procedure Part III, Title 9. Venue for all proceedings shall be Sacramento County, California. This Agreement shall be governed by and construed in accordance with the laws of the State of California.

8. AMENDMENTS.

Except for admission of new Small GSAs a member to this Agreement, this Agreement may be amended upon written consent of all Parties.

9. EFFECTIVE DATE AND TERM.

This Agreement shall become effective on January 1, 2026, and shall remain in effect so long as at least five Parties remain party to this Agreement.

10. EXTENSIONS OF TIME.

Whenever the last day of any period described herein falls on a Saturday, Sunday, or holiday, the period shall be automatically extended to 11:59 p.m. of the next business day, Pacific Time. The time in which any act provided under this Agreement is to be done shall be computed by excluding the first day and including the last day, unless the last day is a Saturday, Sunday or legal holiday, and then it is also excluded.

11. NOTICES.

Any notice authorized or required to be given pursuant to this Agreement shall be made in writing and sent via electronic mail to the email address provided beneath the Party's signature, below, and shall be deemed to have been given when the e-mail is sent. Any notice sent to the Administrator shall be made in writing and sent via electronic mail to anndubay@sonic.net or any successor Administrator as appointed by the Party Representatives. Any Party or the Administrator may change their e-mail address for purpose of receiving notice by providing such information in accordance with the process set forth herein.

12. COUNTERPARTS AND ELECTRONIC SIGNATURES.

This Agreement may be executed in counterparts, including by electronic or digital signature, each of which shall be deemed an original and together constitute one instrument.

13. ENTIRE AGREEMENT.

This Agreement, including the Recitals which are a material part of the Agreement and are incorporated herein, constitute the full and complete understanding among the Parties concerning the subject matter herein and supersede all prior and contemporaneous agreements or memoranda of understanding relating to said subject matter.

IN WITNESS WHEREOF, the Parties have executed this Agreement as of the dates set forth below.

CARPINTERIA VALLEY GROUNDWATER SUSTAINABILITY AGENCY

By: _____
Name: _____
Title: _____
Email: _____
Date: _____

INDIO SUBBASIN GROUNDWATER SUSTAINABILITY AGENCY

By: _____
Name: _____
Title: _____
Email: _____
Date: _____

MONTECITO GROUNDWATER SUSTAINABILITY AGENCY

By: _____
Name: _____
Title: _____
Email: _____
Date: _____

MOUND BASON GROUNDWATER SUSTAINABILITY AGENCY

By: _____
Name: _____
Title: _____
Email: _____
Date: _____

OJAI BASIN GROUNDWATER MANAGEMENT AGENCY

By: _____
Name: _____
Title: _____
Email: _____
Date: _____

PETALUMA VALLEY GROUNDWATER SUSTAINABILITY AGENCY

By: _____
Name: _____
Title: _____
Email: _____
Date: _____

SALINAS VALLEY GROUNDWATER SUSTAINABILITY AGENCY, MONTEREY SUBBASIN

By: _____
Name: _____
Title: _____
Email: _____
Date: _____

SALINAS VALLEY GROUNDWATER SUSTAINABILITY AGENCY, LANGLEY AREA SUBBASIN

By: _____
Name: _____
Title: _____
Email: _____
Date: _____

SAN GORGONIO PASS GROUNDWATER SUSTAINABILITY AGENCY

By: _____
Name: _____
Title: _____
Email: _____
Date: _____

SANTA CRUZ MID-COUNTY GROUNDWATER SUSTAINABILITY AGENCY

By: _____
Name: _____
Title: _____
Email: _____
Date: _____

SANTA MARGARITA GROUNDWATER SUSTAINABILITY AGENCY

By: _____
Name: _____
Title: _____
Email: _____
Date: _____

SANTA YNEZ RIVER VALLEY GROUNDWATER BASIN CENTRAL MANAGEMENT AREA GROUNDWATER SUSTAINABILITY AGENCY

By: _____
Name: _____
Title: _____
Email: _____
Date: _____

SIERRA VALLEY GROUNDWATER SUSTAINABILITY AGENCY

By: _____
Name: _____
Title: _____
Email: _____
Date: _____

SISKIYOU GROUNDWATER SUSTAINABILITY AGENCY

By: _____
Name: _____
Title: _____
Email: _____
Date: _____

SPADRA BASIN GROUNDWATER SUSTAINABILITY AGENCY

By: _____
Name: _____
Title: _____
Email: _____
Date: _____

SONOMA VALLEY GROUNDWATER SUSTAINABILITY AGENCY

By: _____
Name: _____
Title: _____
Email: _____
Date: _____

UKIAH VALLEY GROUNDWATER SUSTAINABILITY AGENCY

By: _____
Name: _____
Title: _____
Email: _____
Date: _____

UPPER VENTURA RIVER GROUNDWATER AGENCY

By: _____
Name: _____
Title: _____
Email: _____
Date: _____

Scope of Work
Advocacy and Administration
Small Groundwater Sustainability Agencies Coalition

Advocacy. Consultant services may include but are not limited to the following:

- Communicating with key legislators, staff and relevant California agencies on issues facing small Groundwater Sustainability Agencies (GSAs).
- Facilitating meetings with Small GSAs and legislators, key staff and relevant California agencies, including one "Small GSA Coalition legislative day" every two-year legislative session.
- As directed by the Parties, advocating on behalf of the small GSAs on relevant issues, including but not limited to, state funding for small GSAs; inclusion of language in future ballot measures on behalf of small GSAs; and reducing unnecessary regulatory or statutory requirements in the Sustainable Groundwater Management Act (SGMA).
- Identifying and providing guidance on legislation that could affect small GSAs.
- Working with strategic partners to further goals.
- Developing letters and talking points.
- Reviewing and editing fact sheets and other materials.
- Attending monthly meetings.
- Filing quarterly Fair Political Practice Commission reports on behalf of the Parties.

Advocacy deliverables

- Quarterly FPPC reports
- Monthly legislative updates (verbal or written)
- Talking points, updated as needed
- Meetings with legislators, staff or agencies annually
- Biannual Legislative day strategy

Administration. Consultant services may include but are not limited to the following:

- Maintaining financial records and invoicing Parties for payment.
- Assisting with the development of the annual budget.
- Coordinating monthly meetings, including developing meeting agendas; sending out meeting notifications; meeting facilitation; drafting meeting summaries; and follow-up on action items.
- Planning and coordinating an annual strategy meeting.
- Developing and maintaining a roster and database.
- Developing fact sheets, presentations, and other written materials.
- Reviewing and editing letters and talking points.
- Assisting with legislative efforts.
- Working with strategic partners to further goals.
- Provide as-needed support for projects or initiatives, including meeting coordination and facilitation and materials development.

Administration Deliverables

- Annual invoices
- Annual draft budget and final budget
- Monthly meeting agendas
- Monthly meeting summaries
- Annual roster
- Fact sheet developed and revised semi-annually

UKIAH VALLEY BASIN GROUNDWATER SUSTAINABILITY AGENCY
Special Meeting

Mendocino County Board of Supervisors Chamber
501 Low Gap Road, Ukiah, CA 95482

Virtual Meeting Link: https://us06web.zoom.us/j/86074412428

Ukiah, CA 95482
August 28, 2025
9:00 a.m.

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1. CALL TO ORDER AND ROLL CALL

The Ukiah Valley Basin Groundwater Sustainability Agency (UVBGSA/GSA) met at a Special Meeting on August 28, 2025, having been legally noticed on August 25, 2025. The meeting was held in person and virtually at the following link: https://us06web.zoom.us/j/86074412428. Chair Cline called the meeting to order at 9:04 a.m. Roll was taken with the following **Directors Present:** John Bailey, Russian River Flood Control (RRFC) District; Douglas F. Crane, City of Ukiah; and Madeline Cline, County of Mendocino. **Directors Absent:** Adam Gaska, Ag Representative and Eddie Nevarez, Tribal Representative *(Note: Theresa McNerlin no longer serves on the UVBGSA due to the Upper Russian River Water Agency Representative (URRWA) having been disbanded).* **Staff Present:** Blake Adams, GSA General Manager and Kristine Lawler, Ukiah City Clerk. **Also Present:** Jonathan Weldon, GSA Legal Counsel - Kronick Moskovitz Tiedmann & Girard (KMTG).

CHAIR CLINE PRESIDING.

The Pledge of Allegiance was led by Director Bailey.

2. APPROVAL OF AGENDA

Presenter: Chair Cline.

Motion/Second: Bailey/Crane to approve the agenda. Motion **carried** by the following roll call votes: AYES: Bailey, Crane, and Cline. NOES: None. ABSENT: Gaska and Nevarez. ABSTAN: None.

3. AUDIENCE COMMENTS ON NON-AGENDA ITEMS

No public comments were received.

4. DISCUSSION AND POSSIBLE ACTION ITEMS

a. Facilitation Support Services Ad Hoc Committee Report.

Presenter: Blake Adams, UVBGSA General Manager.

Ad Hoc Committee Member Comment: Javier Silva, Sherwood Band of Pomo Indians.

No public comment was received.

Motion by Bailey, Seconded by Crane to establish an advisory committee for the Facilitation Support Services (FSS) comprised of the membership of the ad hoc.

The maker of the motion and the second agreed to amend the motion to add a provision that this standing committee, per bylaws, would go for the duration of the contract between the Department of Water Resources (DWR) and Stantec. The full motion reads as follows

Motion/Second: Bailey/Crane to establish an advisory committee for the Facilitation Support Services (FSS) comprised of the membership of the ad hoc to last for the duration of the contract between the Department of Water Resources (DWR) and Stantec. Motion **carried** by the following roll call votes: AYES: Bailey, Crane, and Cline. NOES: None. ABSENT: Gaska and Nevarez. ABSTAN: None.

b. Discuss Ukiah Valley Basin Groundwater Sustainability Agency Joint Powers Agreement & Bylaws Update.

Presenter: Blake Adams, UVBGSA General Manager.

Public Comment: Javier Silva, Sherwood Band of Pomo Indians.

Director Consensus to direct Staff to prioritize the following objectives:

- Revisit Bylaws:
  - Membership seats.
  - Flexibility and frequency of meetings.
- Schedule Member and Officer Assignments
- Update Conflict of Interest Code
- Facilitate and establish new tribal representative(s)
- Schedule special meetings for Board direction on the conclusion of the Inter-connected Groundwater Study *(aka: Upper Russian River Groundwater Dependent Eco-system and Interconnected Surface Water Study)* and other unfinished business.

5. CONSENT CALENDAR

a. Approval of the Minutes for the June 12, 2025, Regular Meeting.

General Manager Adams addressed questions regarding action taken on 5b of the June 12th minutes (also addressed under item 6a).

Motion/Second: Bailey/Crane to approve the Consent Calendar item 5a with the modification that the Clerk attest to the minutes and not a Secretary that hasn't been officially appointed. Motion **carried** by the following roll call votes: AYES: Bailey, Crane, and Cline. NOES: None. ABSENT: Gaska and Nevarez. ABSTAN: None.

6. STAFF AND PARTNER UPDATES

a. Updates from General Manager.

Presenter: Blake Adams, UVBGSA General Manager.

Note: *The General Manager stated that a resolution was received from the Mendocino County Russian River Flood Control and Water Conservation Improvement District (MCRRFC & WCID) reassigning John Bailey as the primary Representative to the GSA, and Chris Watt as the Representative to the Technical Advisory Committee (TAC).*

Board Directives *for the General Manager to bring back an update regarding concerns of last year's budget overages; and to add a balance sheet comparison from fiscal year to fiscal year as a standard practice.*

No public comment was received.

Updates were received.

b. Updates from GSA Legal Counsel.
Presenter: Jonathan Weldon, GSA Legal Counsel - Kronick Moskovitz Tiedmann & Girard (KMTG).

No public comment was received.

Updates were received.

7. FUTURE AGENDA ITEMS AND SET NEXT MEETING DATE

a. Discussion and Consideration of Future Agenda Items and Scheduling of Next Meeting Date with Meeting to be Held at the County of Mendocino, Board of Supervisors Chamber, 501 Low Gap Rd., Ukiah, CA 95482, at 1:00 p.m.
Presenter: Chair Cline

No public comment was received.

Director Consensus to have general manager poll members to schedule a better date.

8. ADJOURNMENT

There being no further business, the meeting adjourned at 10:16 a.m.

_____
Madeline Cline, Chair

ATTEST:

_____
Kristine Lawler, Clerk