UKIAH VALLEY BASIN
GROUNDWATER SUSTAINABILITY AGENCY
TECHNICAL ADVISORY COMMITTEE

Regular Meeting

AGENDA

County of Mendocino Conference Room B
501 Low Gap Road ♦ Ukiah, CA 95482

To participate or view the virtual meeting, go to the following link: https://us06web.zoom.us/j/84136430721

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.

March 5, 2025 - 1:00 PM

1. CALL TO ORDER AND ROLL CALL

2. AUDIENCE COMMENTS ON NON-AGENDA ITEMS

The Ukiah Valley Basin Groundwater Sustainability Agency Technical Advisory Committee welcomes input from the audience. If there is a matter of business on the agenda that you are interested in, you may address the Committee 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 Technical Advisory Committee, 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.

3. APPROVAL OF MINUTES

3.a. Approval of the Minutes for the December 11, 2024, TAC Meeting.

Recommended Action: Approve the Minutes for the December 11, 2024, TAC Meeting.

Attachments:
1. 2024-12-11 Draft UVBGSA TAC Minutes

4. NEW BUSINESS

4.a. Discussion and Adoption Regarding Order of Agenda.

Recommended Action: Hold discussion and take action with possible additions or deletions of agenda sections; followed by approving by roll call vote the order of the agenda.

4.b. Presentation Regarding the United States Bureau of Reclamation (USBR) WaterSmart Grant-funded Ukiah Valley Basin (UVB) Project Entitled, "Creating Long-Term Water Supply Resiliency for Ukiah Valley and Upper Russian River".

4.c. Discussion Regarding the Request for Proposal (RFP) Process for Solicitation in Support of the Upper Russion River Groundwater Dependent Ecosystem and Interconnected Surface Water.

5. UNFINISHED BUSINESS

5.a. Annual Report on Water Year 2024 Ukiah Valley Basin Annual Report and Update on Well-Monitoring Study.

6. MEMBER ANNOUNCEMENTS AND REPORTS

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 County of Mendocino Conference Room B at 501 Low Gap Rd., Ukiah, CA 95482, at 1:00 p.m.

Recommended Action: Discuss and get consensus to hold the next meeting on May 7, 2025, or another day of the Members' choosing.

8. ADJOURNMENT

Please be advised that the Ukiah Valley Basin Groundwater Sustainability Agency (GSA) Technical Advisory Committee (TAC) 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. GSA TAC 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 TAC 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 Road, Ukiah, CA 95482; not less than 72 hours prior to the meeting set forth on this agenda.

Kristine Lawler, CMC/CPMC
Dated: 2/28/25

UKIAH VALLEY BASIN GROUNDWATER SUSTAINABILITY AGENCY
340 Lake Mendocino Drive ♦ Ukiah ♦ California 95482 ♦ (707)463-4363 ♦ fax (707)463-5474

Technical Advisory Committee (TAC)

Draft Meeting Summary

December 11, 2024

1. **Call to Order and Roll Call**
   Chair Salomone called the meeting to order 9:32.

   TAC Members Present: Elizabeth Salomone (RRFC), Laurel Marcus (CLSI), Ken Todd (URRWA), Amber Fisette (County of Mendocino), Adam Gaska (Agricultural Representative) Sean White, City of Ukiah; and Joe Scriven, Mendocino County RCD member, Chris Watts (RRFC)

   TAC Members Absent: None

   Others Present: Harry Starkey and Sarah Faraola from West Yost; Audra Bardsley, Camille L. and Laura Foglia of Larry Walker & Associates (LWA); Laurel Marcus (CLSI), Marlyana Bourbonnais Duley (County of Mendocino), Monico Nieto (EPA), Madeline Cline (Board of Supervisors)

2. **Approval of Agenda**
   Chair Salomone reviewed the day's agenda and covered the meeting protocol. Member Gaska moved to approve the agenda with no revisions, Member Todd seconded. None opposed.

3. **Public Comment on Items Not on the Agenda**
   No public comment.

4. **Representative Monitoring Network**

   During the meeting, Audra (LWA) provided an update on groundwater level (GWL) monitoring. The board approved funding for five representative monitoring points (RMPs) with identified sustainable management criteria (SMCs). Water level sensors and telemetry instruments were installed at three wells (UV-1, UV-32, UV-27 replacement) to improve basin characterization and reduce the need for in-person monitoring. The status of other wells was discussed: UV-36 is integrated into Ukiah's SCADA network, while the Redwood Valley DWR site is pending. Sarah Faraola emphasized that communication with landowners should be handled by DWR, and Adam volunteered to contact the Redwood Valley landowner.

   Audra outlined the next steps, including identifying a non-RMP well to add to the network. GSA Administrator Starkey inquired about the long-term vision for the monitoring network, and Laura Foglia explained the need to analyze data from the seven monitored wells over 4-5 years to develop sustainable management criteria. Sean White suggested using publicly owned sites to avoid future landowner issues, though Amber Fisette noted that initial outreach to schools for monitoring did not receive feedback. Laura mentioned that LWA is developing an automated QA/QC process for state data. Audra also updated on the network's status, noting that some wells were no longer responding to

telemetry systems, prompting LWA to install new telemetry and integrate it into their sensor network. DWR will take over four sites and coordinate with LWA.

5. Russian River Telemetry Project

Audra (LWA) provided an update on a project that falls outside the scope of the work being conducted for the GSA. LWA was approached to offer input on this project, and they reviewed the draft recommendation document, providing comments. They clarified that the GSA is only interested in groundwater levels, not pumping data, and emphasized the importance of accurately representing the monitoring network. Laurel Marcus then outlined the potential objectives of the telemetry project, which include regulating water rights. She also highlighted a lack of understanding from the project team regarding the level of effort required for quality assurance and quality control (QA/QC).

6. Interconnected Surface Water Study

Audra (LWA) provided an update on the newly awarded CDFW grant. The ISW-GDE study will identify areas within the basin to address data gaps and understand the timing and interconnectivity between surface water and groundwater. The full requested amount of the grant was received from CDFW. The scope of work includes tracking spatial and temporal trends and preparing for the 2027 Periodic Evaluation.

Chair Solomone led a discussion on forming an ad hoc committee within the TAC to develop recommendations for the RFP criteria. GSA Administrator Starkey noted that West Yost has not started developing the RFP and will begin after the CDFW grant agreement is approved at the January 11, 2025, Board meeting via resolution. Sean White suggested forming an ad hoc committee to review the RFP and advise West Yost's GSA staff. Sean, Adam, and Amber will form the ad hoc committee and provide comments on the draft RFP developed by West Yost.

7. TAC Business

Chair Solomone states that the TAC will return to a more formal setting, similar to pre-COVID times, to create a more effective 'working group' meeting environment. There will be a discussion on the necessary frequency of meetings to advise LWA, GSA Staff, or the Board, with potential dates including mid to late February, late spring, and autumn. Additionally, the meeting will cover the potential transition of GSA administration from West Yost to the City of Ukiah, with the intent to streamline roles and responsibilities for future operations. The City has provided a draft contract to the County, and the only anticipated impact is on the scheduling of meetings.

8. Consent Items

Meeting minutes from the March meeting will be approved at the next TAC meeting.

9. Information Items

Chair Salomone provided an update on the SGMA 10-year anniversary and DWR Facilitation Services, which will include updates to the UVBGSA JPA and ByLaws. GSA Administrator Starkey commented on the JPA update, noting the disbanding of URRWA, with Sean White clarifying that this will occur in late spring. Amber mentioned that several items need to be transitioned from the County of Mendocino to the City of Ukiah. Audra provided background on the DWR updates on the PMA Module Spreadsheet, highlighting

areas where all projects and management actions that have been completed need updating. She noted that there are other aspects of projects where LWA does not have the most updated information. LWA worked with the TAC Chair to collaborate with TAC members to update and/or reach out to a point of contact to update the status of projects. There was also a discussion on assigning various PMA topics.

10. Future TAC Meeting Topics

The next TAC meeting will be in August and include the FY 2025 TAC meeting schedule, status of GAS fee along with next steps, and FY 2025 GSA implementation.

11. Adjournment

Chair Salomone adjourned the meeting at 10:58 a.m.

ORDER OF AGENDA – SAMPLE ITEMS

1. Call to Order and Roll Call
2. Audience Comments on Non-Agenda Items
3. Approval of Minutes
4. New Business
5. Unfinished Business
6. Member Announcements and Reports
7. Future Agenda Items and Set Next Meeting Date
8. Adjournment

Creating Long-Term Water Supply Resiliency for Ukiah Valley and Upper Russian River

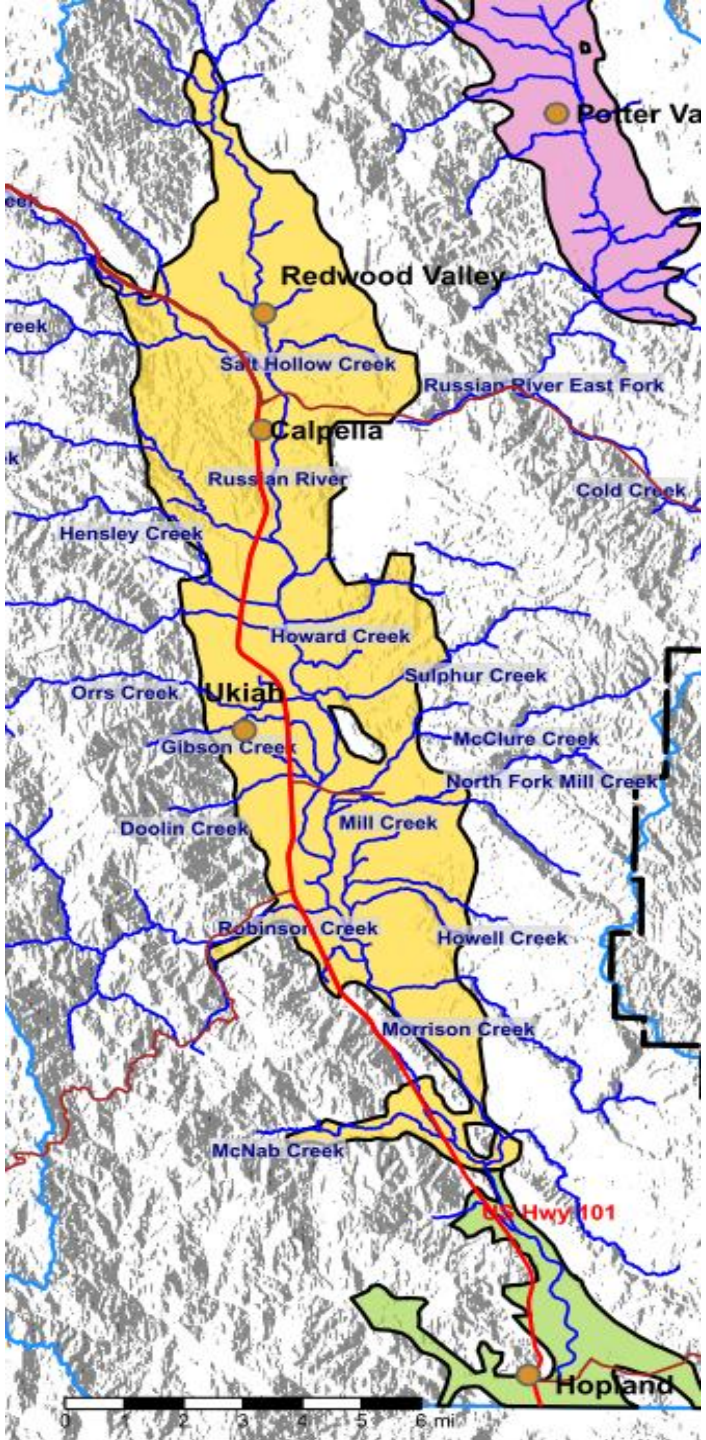
Laurel Marcus and Chelsea Jimenez
Ca. Land Stewardship Institute

BUREAU OF RECLAMATION
WATERSMART PROGRAM

California Land Stewardship Institute

LWA
LARRY WALKER ASSOCIATES
science | policy | solutions

Area of project is Ukiah Valley groundwater basin Diversions and flows along the Main stem Russian River below Lake Mendocino to the Hopland Gage are being modeled



This grant provides four major outcomes:

- **Partially funds a new well for the City of Ukiah. During the curtailments of surface water the City had to pump all their wells 24/7. A mechanical problem would mean a lack of drinking water. The new backup well will solve this issue. The City is providing all the matching funds for the grant**

- **Installation of continuous recorders in 3 wells**

- **Funds a needed study of the interaction of groundwater use with surface water flows in the Russian River. The current study will provide the modeling and data needed to demonstrate relationships between groundwater use in terms of location in the basin, pumping rates, climatic conditions and flow levels in the Russian River.**

- **The creation of an online Decision Support Tool to improve information available to growers and water districts and improve water management decisions.**

Water Supply Resiliency Project Objectives

- We are assuming that the drastic reduction of dry season surface water from the Potter Valley Project (PVP) to fulfill appropriative water rights for agriculture and municipal uses will increase the use of groundwater and RRFC stored water and therefore we need to consider both surface and groundwater use in this project.
  - Interim period reduction (~2025-2035) & elimination (after 2035 or maybe sooner?) of dry season Eel River water transfers via the PVP
  - Future climate conditions including prolonged drought and intensified rainfall
  - Consider future conjunctive use options and strategies like off stream storage ponds filled by winter time PVP transfers and varying pumping rates during the dry season

Regulatory and Management Context Data Sources

- Model considers current, future management conditions that will impact water use in Upper Russian River and Ukiah Valley Basin
- Incorporates data from:
  - State Water Board QAQC'd Water Use Reporting from the Water Sharing Program and the priority of right list (Exhibit B/C)
  - Russian River Flood Control District water use reporting
  - State Water Rights data base
  - Water Demand Management Program Frost Protection Reporting
  - CLSI/ Mendocino Farm Bureau Agricultural Pond Project
  - Potter Valley Project Draft Final License Surrender Application

Reported Agricultural Water Diversions along Mainstem Russian River by Water Right Type for May-October				
WATER RIGHT TYPE	**2017**	**2018**	**2019**	**AVERAGE**
APPROPRIATIVE	3659.5	3158.3	2535.1	3117.6
CONTRACT (RRFC)	2011.8	1736	1467.4	1738.4
OTHER (STOCK POND)	1.2	3.1	3.1	2.5
RIPARIAN	684.4	543.3	687.1	638.3
TOTAL	6356.9	5440.7	4692.7	5496.7

Agricultural diversion data have been limited to the boundary of the Ukiah valley Groundwater Basin but the municipal diversion data are being corrected currently

Reported Municipal Water River Diversions for May-October for City of Ukiah, Millview, Willow, Rogina, RR Estates, RRFC, no stored water included				
MONTH	**2017**	**2018**	**2019**	**AVG**
MAY	522.99	534.37	423.48	493.61
JUNE	823.15	870.11	641.49	778.25
JULY	1037.13	1089.05	900.34	1008.84
AUGUST	1191.39	1131.97	902.85	1075.40
SEPTEMBER	649.45	944.49	702.69	765.54
OCTOBER	638.91	519.01	536.20	564.71
TOTAL	6880.02	7106.99	6126.05	**6704.35**

Exhibit B/C Curtailment by priority of right from Water Sharing program

	Sum of JUN MEAN_DIV	Sum of JUL MEAN_DIV	Sum of AUG MEAN DIV	Sum of SEP MEAN DIV	Sum of OCT MEAN DIV
Upper	4,707.7	5,771.0	5,819.3	4,311.7	3,235.7
Post-1949	3,897.6	4,666.1	4,632.5	3,346.7	2,627.6
1950-1952	281.1	208.8	209.3	163.8	48.6
1953-1954	344.5	374.6	299.9	259.3	135.7
1955-1956	274.7	256.2	252.6	231.0	127.0
1957-1959	181.4	85.2	78.5	66.3	41.7
1960-1970	257.0	323.0	267.1	182.5	106.1
1971-1990	419.0	474.1	271.8	210.3	133.1
1991-present	3.9	4.7	5.6	4.2	6.6
Pre-1949 + 1949	146.4	176.1	207.1	150.1	89.2
pre-1914	312.2	407.3	400.9	356.2	309.1
Pre-1949 + 1949	22.0	44.6	46.0	25.9	18.0
Riparian	475.9	653.0	739.8	582.9	281.1

In the modeling scenarios we will include several levels of curtailments based on surface water availability including:

No curtailments

50% curtailments

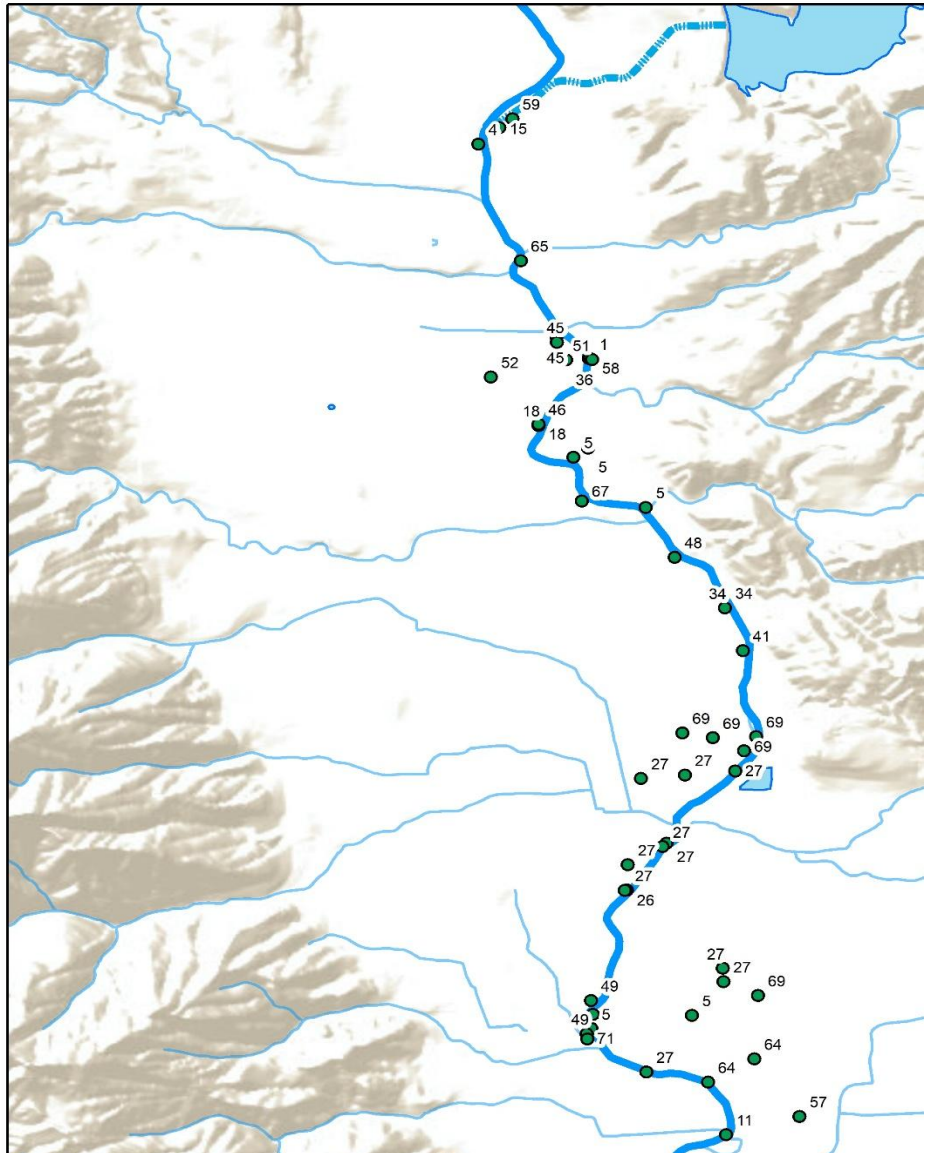
100% curtailments.

The volume of water removed from use will be determined using this table from the State Water Board water sharing program moving from the most junior rights towards the senior rights. We will work with the Board staff to determine available water to share by climate year

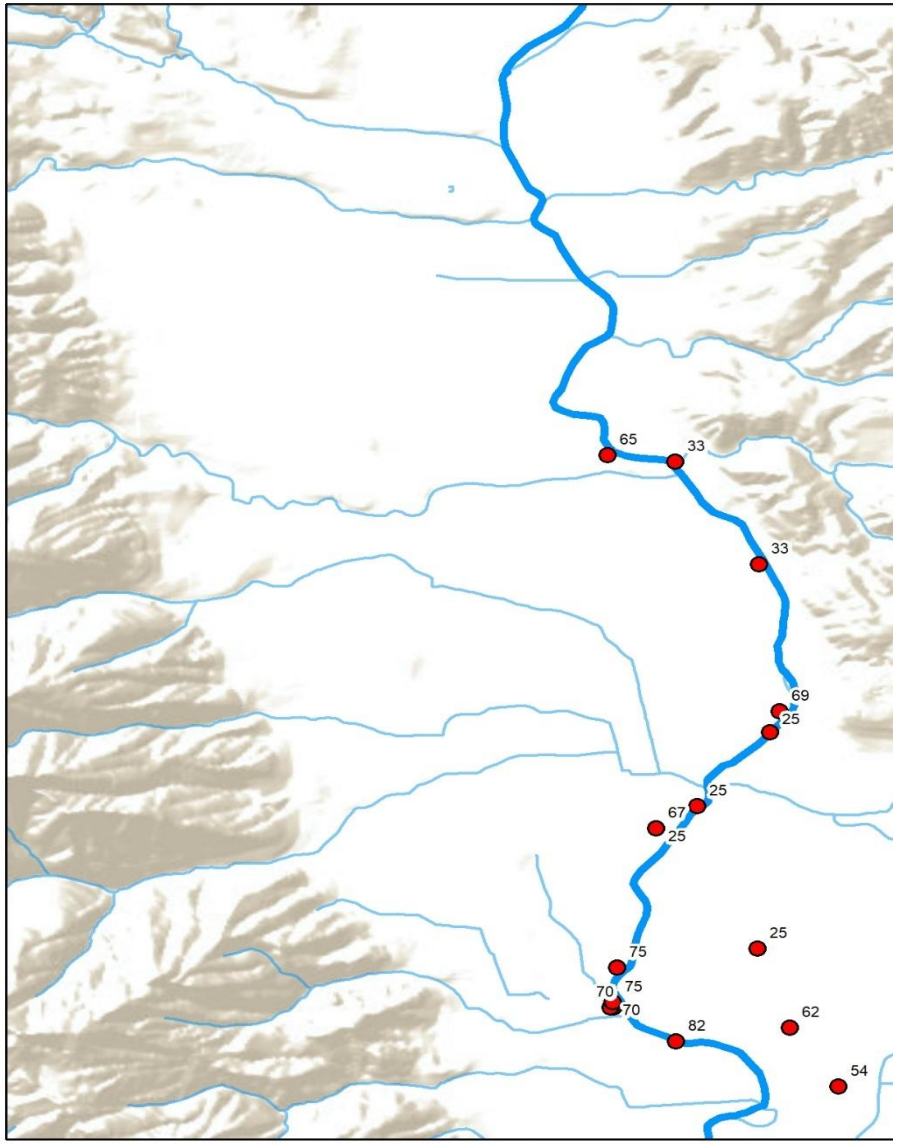
In the model riparian rights will be removed from use between April and July depending on the climate year. Curtailments will focus on appropriative rights

New diversion to replace the current PVP will only divert water during winter and maybe high flows in spring. Growers and possibly water districts will have to have storage ponds to make use of this water. Outside of RRFC customers there will not be adequate summer flow for any appropriative or riparian diversions likely after July 1 most years.

CLSI and the Mendocino Farm Bureau are working together to determine where new off stream ponds are needed or need to be enlarged to hold winter PVP diversions.



Appropriative rights on northern section of Russian River



Appropriative rights on northern section of Russian River without storage ponds

Reported diversion volumes with and without storage ponds				
	Reported Volume Diverted			
Water Right Type	2017	2018	2019	average
Appropriative				
Storage Pond	1478.7	1368.9	1258.0	1368.5
No Storage Pond	2180.8	1789.4	1277.1	1749.1
Contract RRFC				
Storage Pond	1305.3	1437.1	1141.1	1294.5
No Storage Pond	706.5	298.9	308.1	437.8

CLSI and the Mendo Farm Bureau are completing surveys with growers to determine how they manage their ponds including how many time they refill the pond during the dry season. and to ascertain interest in building ponds for those growers that do not have a pond

	Critically dry water year	Dry water year	Normal water year	
Parameter				**Notes**
Occurrence of Spring (March-May) rain	no	yes and amount or no	yes and amount or no	coordinate with State Board on amounts
Dry season PVP releases				
interim period 2025-2035	5 cfs	20 cfs	35 cfs	current system
long term	0	0	0	
Lake Mendocino dry season releases for instream flows				Measured at Healdsburg gage compliance point
2025-2035	25 cfs	75 cfs	185 cfs	2024 TUCP
long term	**?**	**?**	**?**	**working with Sonoma Water**
Surface water diversions				
Riparian agricultural diversions - March to June when natural flow is available	0% 0 AF	with spring rain 50% 394 AF, without spring rain 0% 0 AF	with spring rain 100% 787 AF, without spring rain 50% 394 AF	average reported water use May-Oct 2017-2019 + average reported frost water use March-April = 787 AF
Appropriative rights agricultural diversions	0% 0 AF	with spring rain 50% 1559 AF, without spring rain 30% 935 AF	70% use with spring rain 2183 AF, 50% with no spring rain 1559 AF	average reported water use May - Oct 2017-2019
Russian River flood district (RRFC) stored water	50% of contract water 869 AF-4000	with spring rain 100% of contract water used, 1738 average - 8000 AF maximum, without spring rain 50% of contract water 869 AF-4000	100% of contract water used, 1738 average - 8000 AF maximum	average reported water use May- Oct 2017-2019

	Critically dry water year	Dry water year	Normal water year	
Parameter				**Notes**
Occurrence of Spring (March-May) rain	no	yes and amount or no	yes and amount or no	coordinate with State Board on amounts
Municipal surface water use	5028 AF	5028 AF	6704 AF	average reported water use May- Oct 2017-2019, 25% conservation required in dry and critically dry years
State Water Board Curtailments of appropriative rights/water sharing program				affect riparian and appropriative rights, no effect on municipal rights and no effect on stored water except in critically dry years
no curtailments				
50% curtailments (by priority of right)				By priority of right
100% curtailments				By priority of right
Conservation 75% for lowest priority rights, 25% for senior and highest priority rights	25-75% conservation all rights, senior to junior	25-75% conservation all rights, senior to junior	25% conservation, in effect for averages used	
Future changes to surface water diversions				
Winter time PVP releases and off stream storage	2663-4850 AF	2663-4850 AF	5326-9700AF	possible diversion from wintertime into off stream ponds (see pond tab), normal year has all existing ponds and potential ponds filled twice. Critically dry and dry have all existing ponds and potential ponds filled once
increased municipal demand	0	0	0	

Data Gaps

Coordination with State Water Board staff on curtailment volumes for each climate year

Changes to Municipal Diversion numbers to just reflect Ukiah Valley Groundwater Basin

Estimated increases in municipal water use over next 50 years

Water availability from RRFC and method of determining

Estimated releases from Lake Mendocino after the interim period by climate year. Releases are listed by flow at Healdsburg gage compliance point. We will need the actual release from the Lake needed to meet the compliance flow

Modeling Approach and Planned Scenarios

Ukiah Valley Integrated Hydrological Model

Surface Water Model

PRMS: USGS Precipitation-Runoff Modeling System

Precipitation, runoff, soil moisture, land use, etc.

Agricultural Water Demand Model

IDC: DWR Integrated Demand Calculator

Crop type and ET, soil type, weather conditions, etc.

Groundwater Model

MODFLOW: USGS Modular Groundwater Flow Model

Subsurface geology, groundwater elevations, percolation, pumping, etc.

Climate Projections

- DWR has offered pre-publication use of revised climate projections for UVB/URR study area
- Cascade of model impacts driven by changing climate, could include
  - Changes to computed agricultural water demand (IDC)
    - ET, precipitation
    - Need for heat and frost protection
  - Changes to natural water availability (PRMS)
    - Groundwater recharge
    - Streamflow generation from watershed
- Management Actions also driven by climate projections
  - Implementation of curtailments; conservation
  - Increased use of groundwater due to lack of surface water

Management Actions

- **Surface water diversions** revised by
  - Natural flow availability
  - Change in transfers from Potter Valley Project
  - Curtailments and conservation
    - Level of curtailments and conservation determined by climate year and priority of right
  - Use of off-stream storage ponds filled during high winter flows
- **Changes to Lake Mendocino releases** influenced by
  - Minimum flow requirements
  - Change in transfers from Potter Valley Project and natural inflow
- **Location, timing, rate of groundwater pumping** influenced by
  - Reductions in surface water availability and corresponding increases in groundwater pumping
  - Conservation as determined by precip. conditions

Scenario Construction

Adjusted Total Water Demand

- Sum of agricultural & domestic demand
- Reduced by conservation based on water year type

−

Surface Water Availability

- Availability reduced based on water year type, occurrence of spring rain and resulting impacts on diverters, curtailments

=

Groundwater Pumping

- Determine based on difference between adjusted demand and surface water availability
- Increases if insufficient SW to meet adjusted total water demand

- Less surface water availability could put increased pressure on groundwater basin
- Characterizing climate conditions, Lake Mendocino releases, surface water diversions, groundwater pumping in the integrated model will reveal corresponding impacts on river flow and groundwater levels

Scenario Examples

2A. Dry year with *spring rain* during interim period 2025-2035	
	with interim PVP flow of 20 cfs
	instream flow release of **75 cfs** from Lake Mendo
	50% of riparian rights used
	50% of appropriative rights used
	all RRFC rights used
	50% of appropriative rights curtailed
	25-75% conservation all rights, senior to junior
	groundwater makes up rest of water demand

2B. Dry year with *no spring rain* during interim period 2025-2035	
	with interim PVP flow of 20 cfs
	instream flow release of **25 cfs** from Lake Mendo
	0% of riparian rights used
	30% of appropriative rights used
	50% of RRFC rights used
	70% of appropriative rights curtailed
	25-75% conservation all rights, senior to junior
	groundwater makes up rest of water demand

- Scenario 2B has same conservation as 2A, but less surface water available to meet demand
- This will likely result in greater reliance on GW pumping in 2B compared to 2A
- Modeling will reveal the resulting impact on GW levels and river flow for 2B vs. 2A

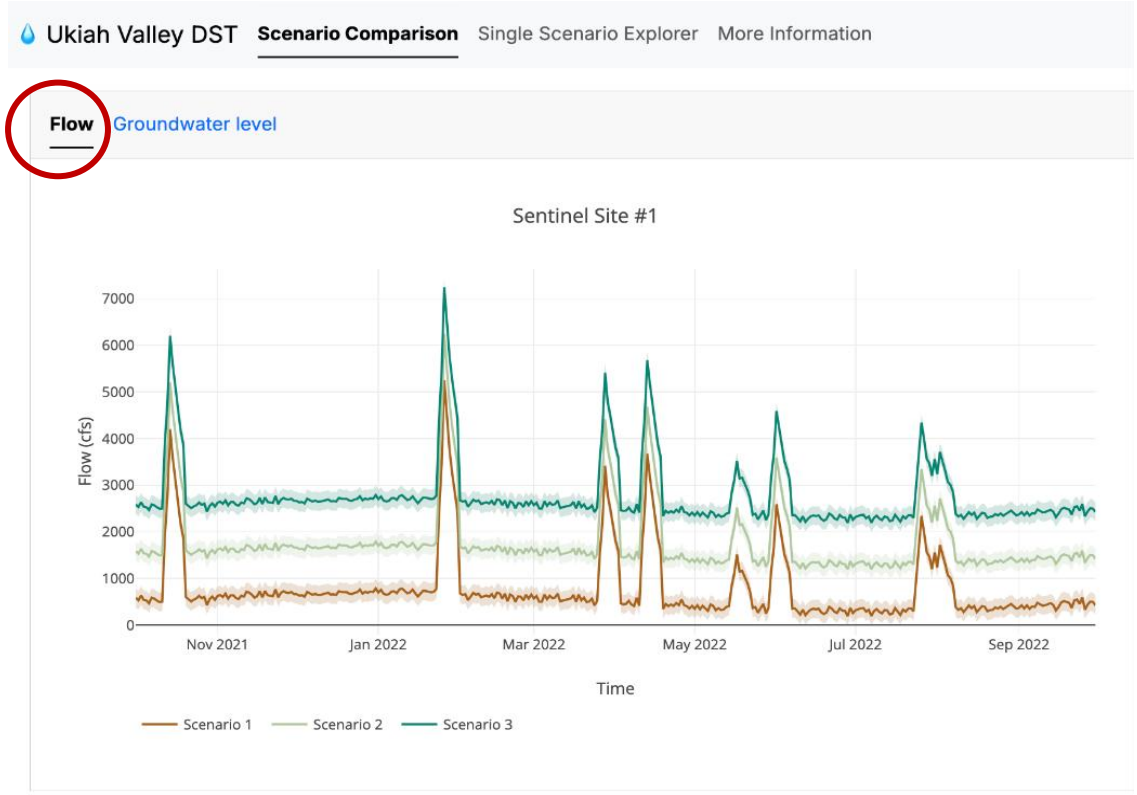
Scenario Implementation

- Build up to realistic scenarios that incorporate climate projections and interrelated management actions
- Start with model response assessment
  - Run ‘book ends’ or two extreme examples for each variable
  - Gauge the impact each variable individually has on the system compared to the status quo of WY 2024
  - Determine which variables appear to be the most impactful, to better inform management
- Finalize and implement combined variable scenarios
  - Results will be visualized and summarized in the Decision Support Tool

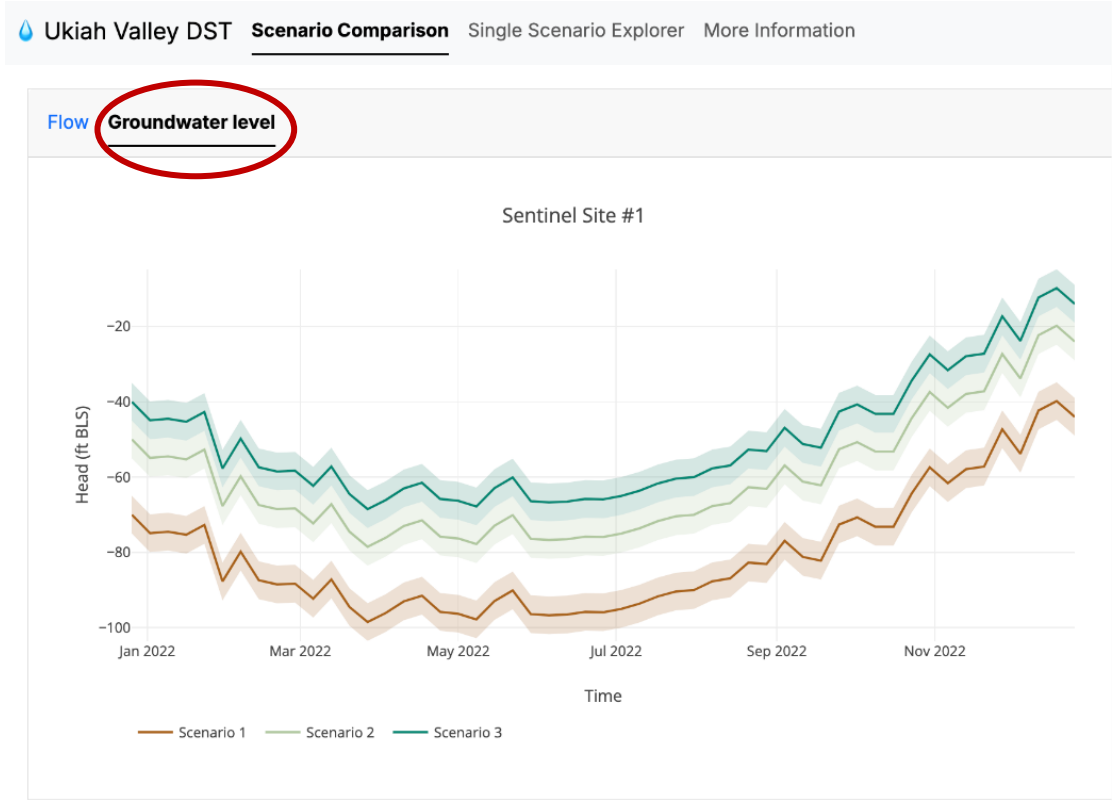
Decision Support Tool (DST)

- Develop an online Decision Support Tool (DST)
  - Easy to navigate and interpret dashboard
  - Summarize key takeaways from modeling of various climate and management scenarios
  - Displays real time streamflow data, groundwater levels, rainfall totals and other data with recommended water management actions related to each type of water right (riparian, appropriative, groundwater) based on current conditions
  - Empowers local users (growers, water districts) to make more informed water management decisions

Wireframes: Model Scenario Comparison

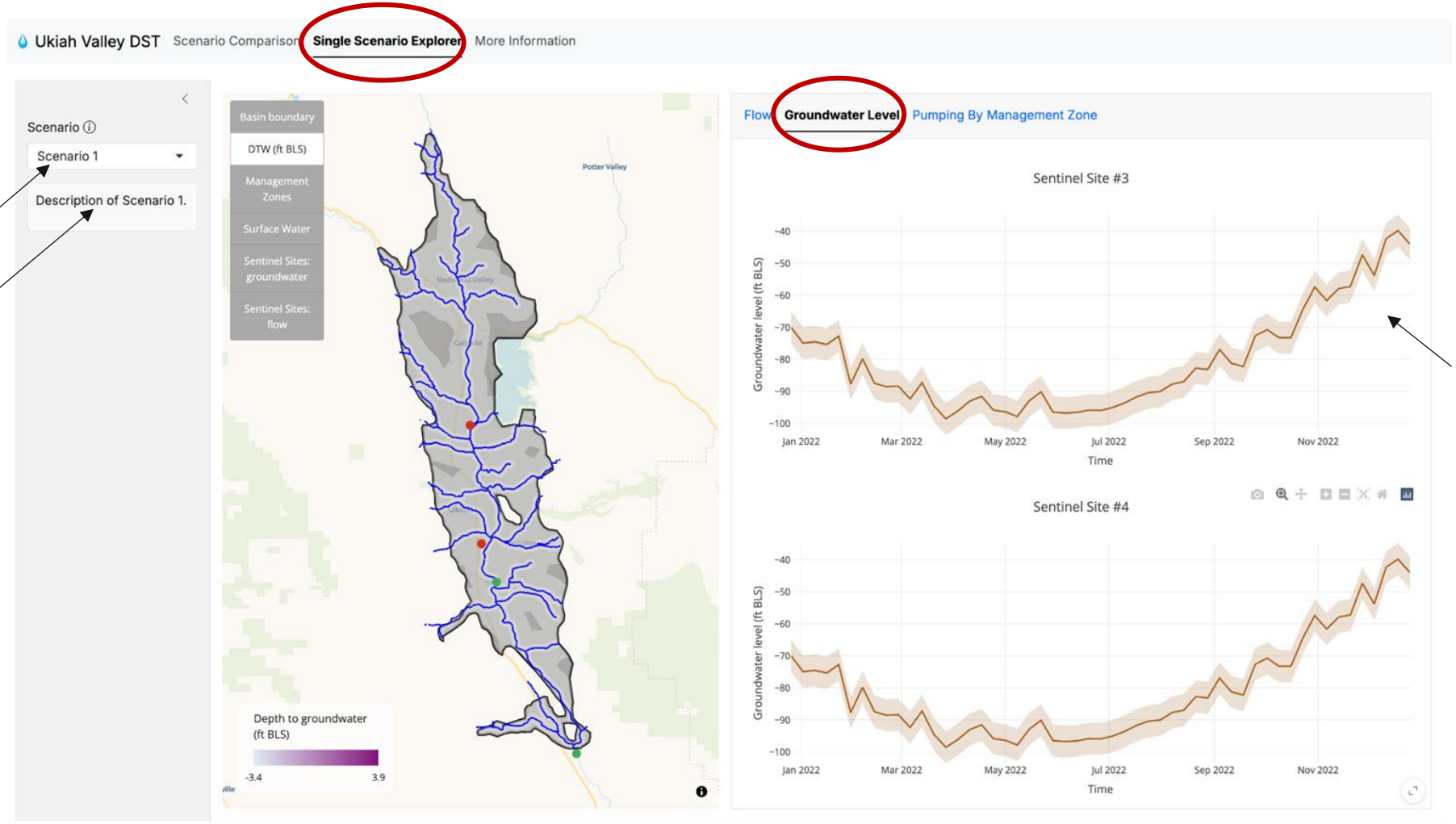


Compare different model scenarios at sentinel sites for flow and groundwater level.



Show influence of water year type on results with a shaded envelope.

Wireframes: Single Model Scenario Explorer

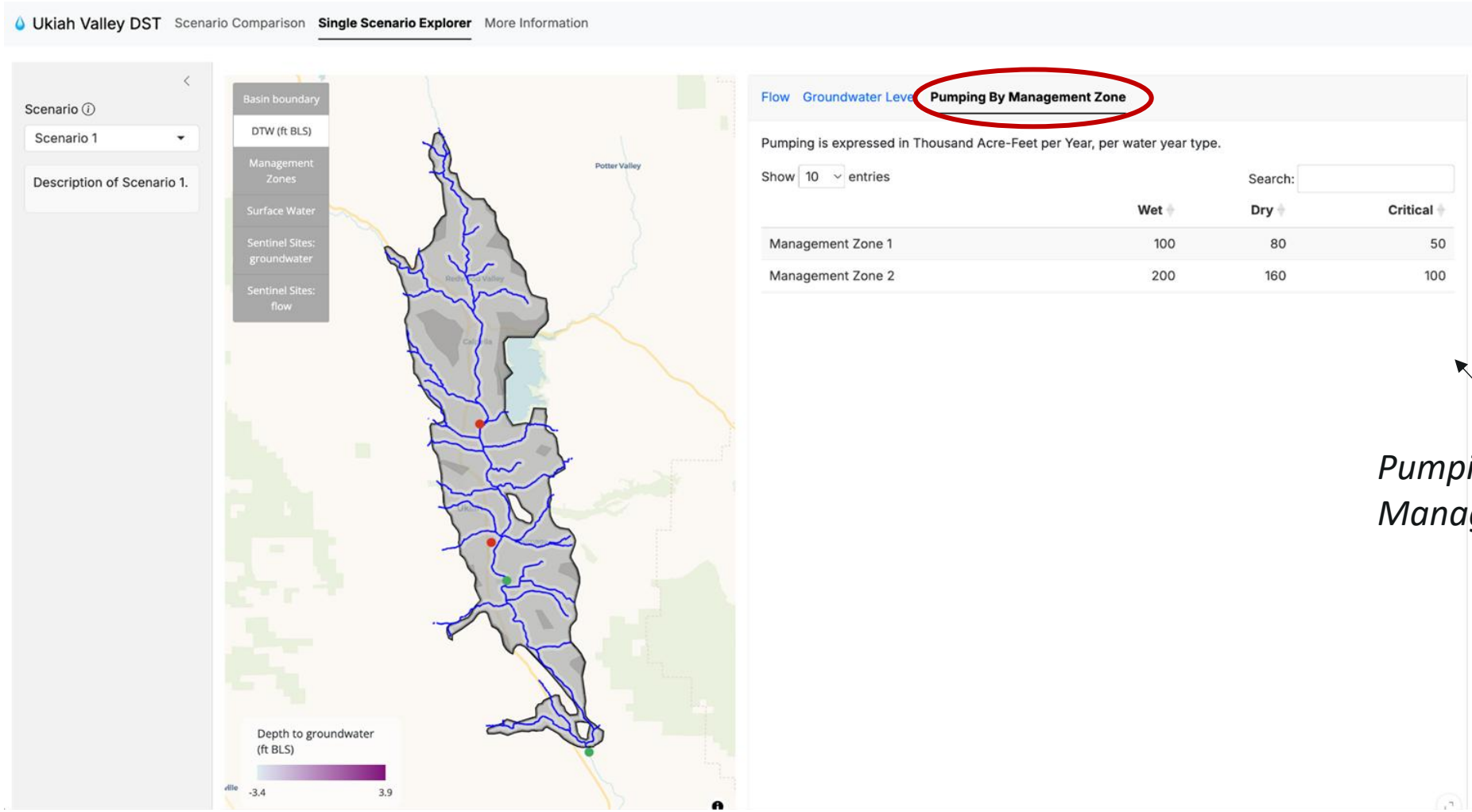


Scenario list

Scenario description

Flow and sentinel sites for a single scenario

Wireframes: Single Model Scenario Explorer



Pumping by Management Zone

Data Integration & Information Gathering

What external, near-real time data sources are valuable to stakeholders?

- Sentinel sites for flow:
  - West Fork Russian River gage: shows when low or dry riparian diversions on the mainstem are disallowed
- Sentinel sites for groundwater:
  - SGMA RMPs, 1-2 per management zone: shows local groundwater conditions and SMC (i.e., MTs, MOs)*
- Reservoir supply:
  - Lake Mendocino releases (CDEC CDM gage): shows when riparian diversion and appropriative rights (not flood control contracts) are no longer available
- ET:
  - Sanel Valley CIMIS: shows nearby ET
- RRFC: any limitations on this water source based on lake storage or other parameters
- SWRCB curtailments: when climate year is dry or critically dry, curtailments may take place; list conservation required (link to conservation BMPs) and info on signing up for water sharing programs

*Will ensure well owners are aware of and approve level of data sharing

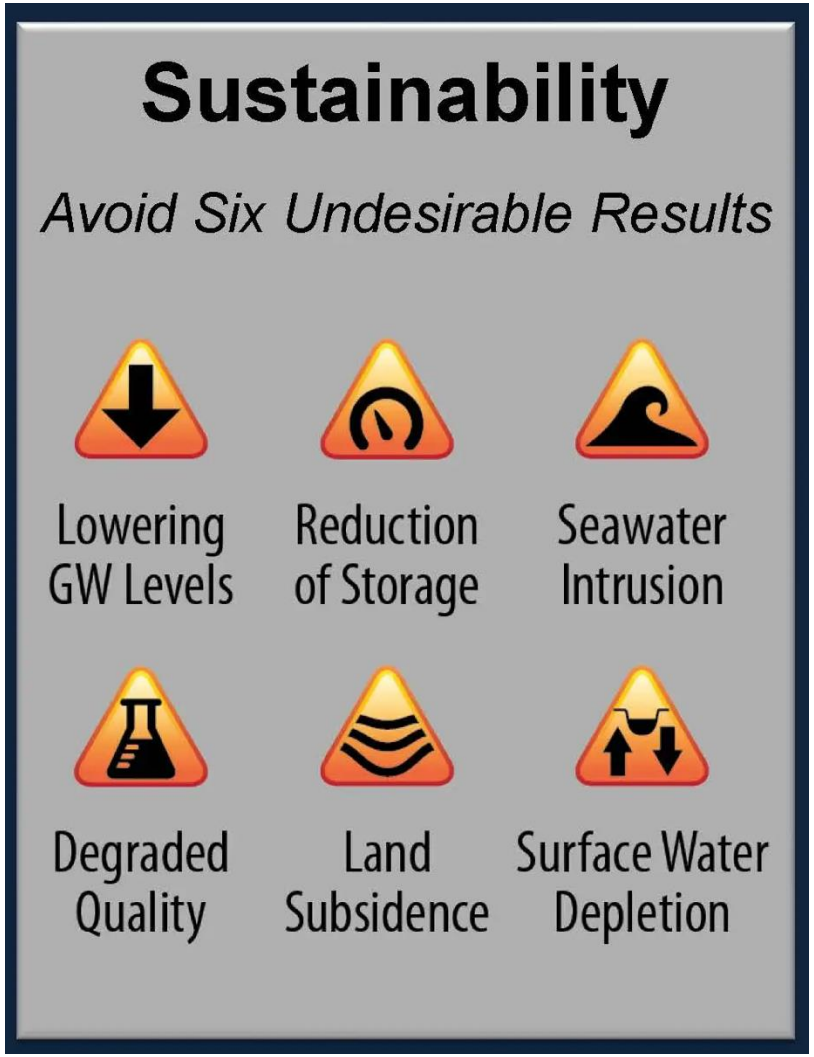
UVBGSA TECHNICAL ADVISORY COMMITTEE MEETING

Water Year 2024 GSP Annual Report

LARRY WALKER ASSOCIATES
science | policy | solutions

Groundwater Sustainability Plan (GSP) Annual Report Overview

- Fourth Annual Report to be submitted by April 1st
  - Water Year 2024: October 1, 2023 – September 30, 2024
- 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

GSP Annual Report Overview – Data Needs

- Each year data are gathered to evaluate conditions in UVB
- Data collected from UVB GSA's monitoring networks:
  - Groundwater elevations, interconnected surface water depletion, water quality
- Data obtained from partner and other public agencies:
  - Groundwater pumping and managed recharge, surface water diversions, recycled water production, water quality, precipitation
- Calculated or modeled data:
  - Agricultural water demand using IDC Model*, change in aquifer storage

*DWR's Integrated Water Flow Model Demand Calculator

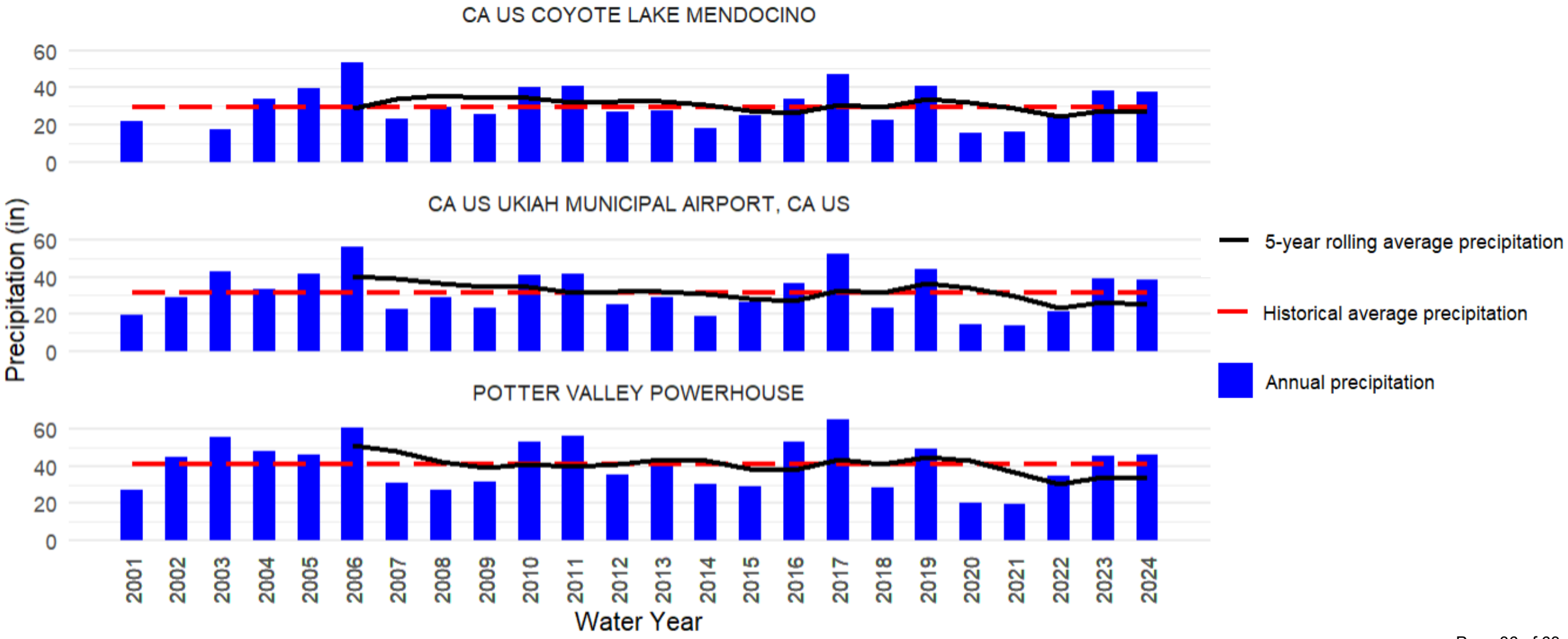
UVB WY 2024 Annual Report Timeline

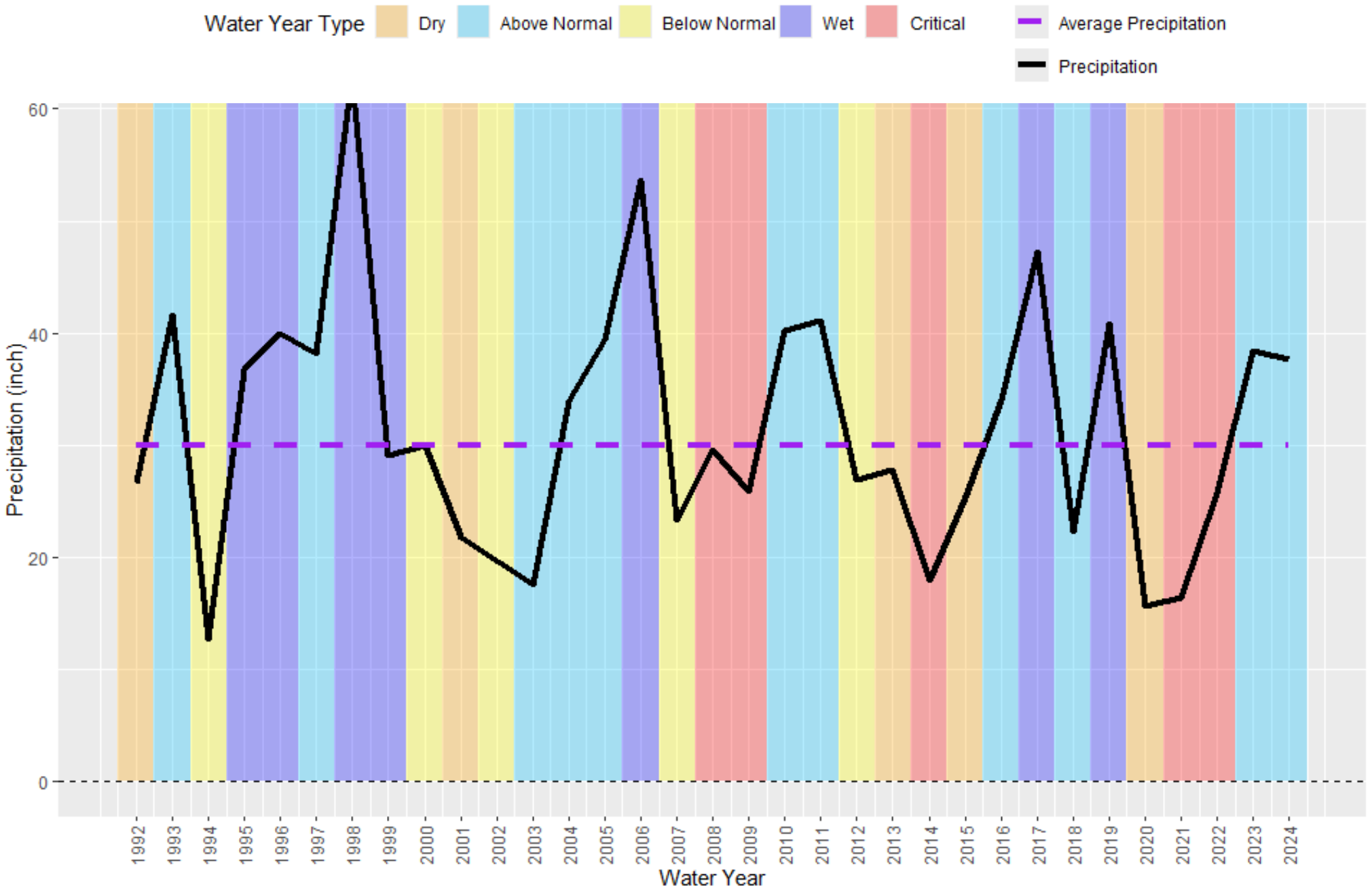
- [x] **November – December 2024**
  - Data acquisition, compilation, QAQC
  - Annual report code updates and improvements
- [x] **January – February 2025**
  - Wrap up data acquisition, compilation, QAQC
  - Update Annual Report figures and text
  - Submit Draft Annual Report to GSA Staff and TAC by Monday February 24th
    - Review ahead of Wednesday March 5th TAC meeting
- [ ] **March 2025**
  - Revise Annual Report in response to GSA Staff and TAC feedback
- [ ] **April 2025**
  - Submit Annual Report to DWR by April 1st

Water Year 2024 Annual Report Highlights

- Water Year 2024 Conditions
- Review results for key sustainability indicators
  - Groundwater Elevation – including changes to the Representative Monitoring Point Network
  - Interconnected Surface Water Depletion
  - Water Quality

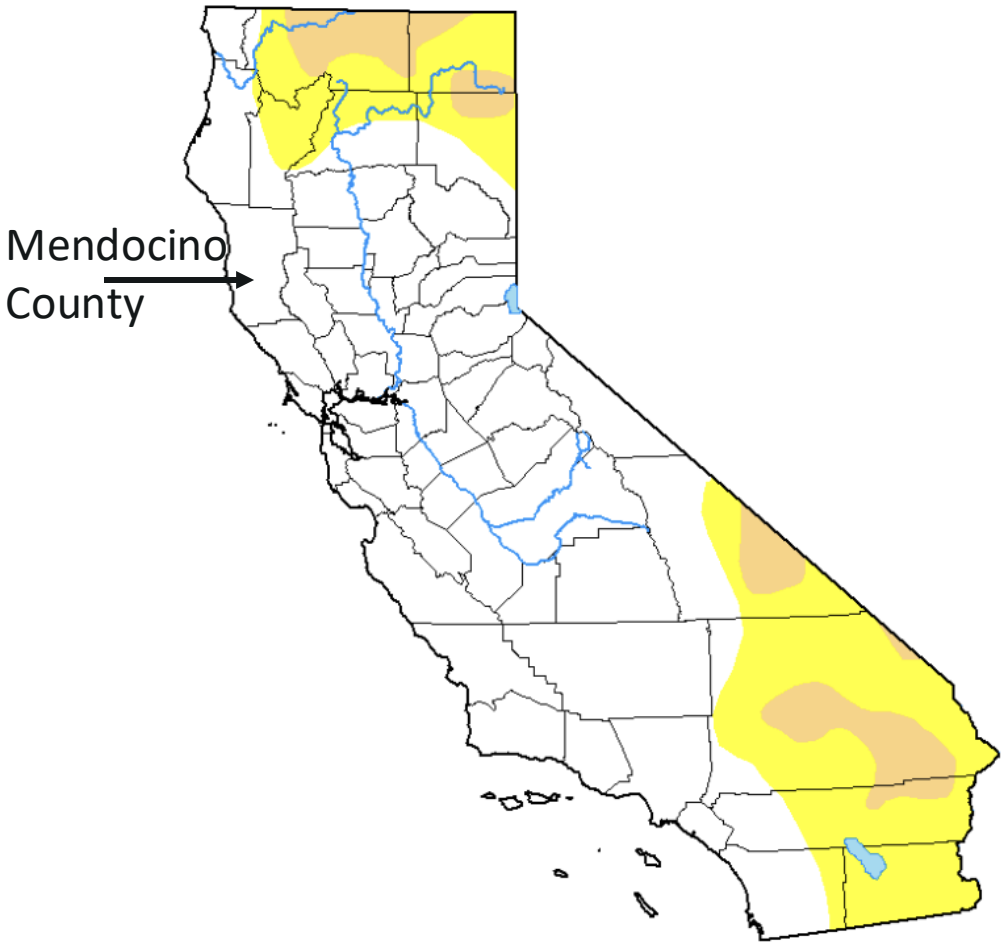
Precipitation – Another Above Average Year




Water Year Type
Dry
Above Normal
Below Normal
Wet
Critical
Average Precipitation
Precipitation
60
40
20
0
Precipitation (inch)
1992
1993
1994
1995
1996
1997
1998
1999
2000
2001
2002
2003
2004
2005
2006
2007
2008
2009
2010
2011
2012
2013
2014
2015
2016
2017
2018
2019
2020
2021
2022
2023
2024
Water Year

Update on Drought Conditions

April 25, 2023



U.S. Drought Monitor

California

Intensity:

- None
- D0 Abnormally Dry
- D1 Moderate Drought
- D2 Severe Drought
- D3 Extreme Drought
- D4 Exceptional Drought

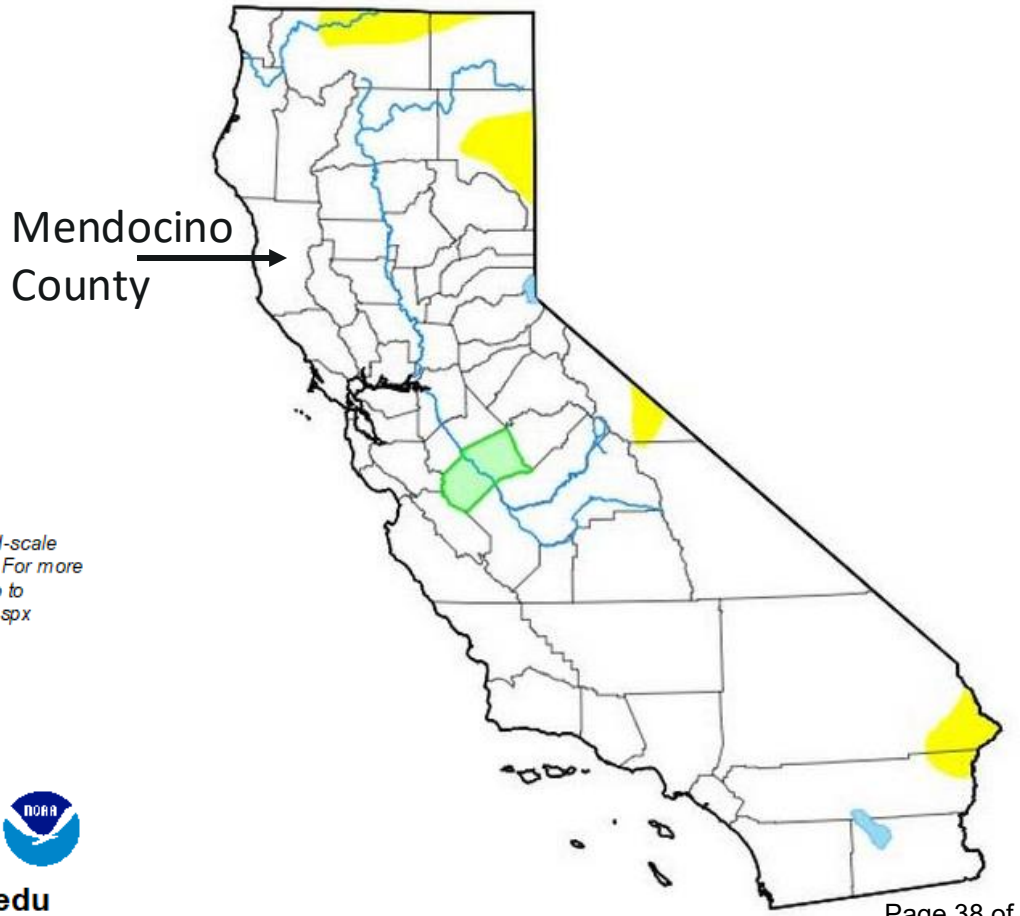
The Drought Monitor focuses on broad-scale conditions. Local conditions may vary. For more information on the Drought Monitor, go to https://droughtmonitor.unl.edu/About.aspx

Author:

Brad Rippey
U.S. Department of Agriculture

droughtmonitor.unl.edu

April 4, 2024



SGMA* Sustainability Indicators

Metrics used to evaluate the sustainability progress of Ukiah Valley Basin

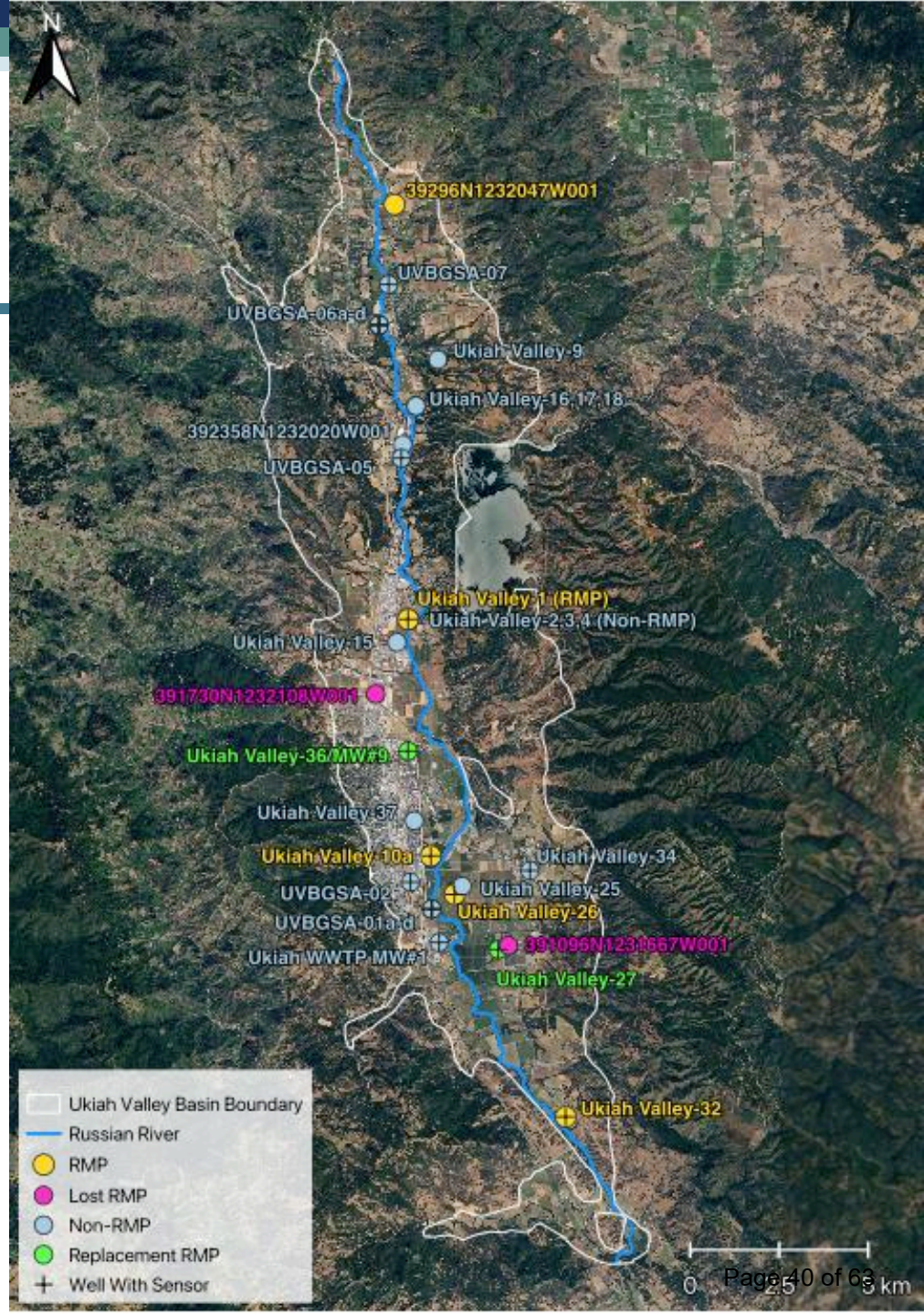
1. **Groundwater elevation (higher priority)**
2. Groundwater storage
3. **Interconnected surface water depletion (higher priority)**
4. **Groundwater quality (higher priority)**
5. Land subsidence (not high priority)
6. Seawater intrusion (not applicable to UVB)

*Sustainable Groundwater Management Act

Groundwater Elevation

Monitoring Network *

- 7 Representative Monitoring Point (RMPs)
- 14 non-RMP wells

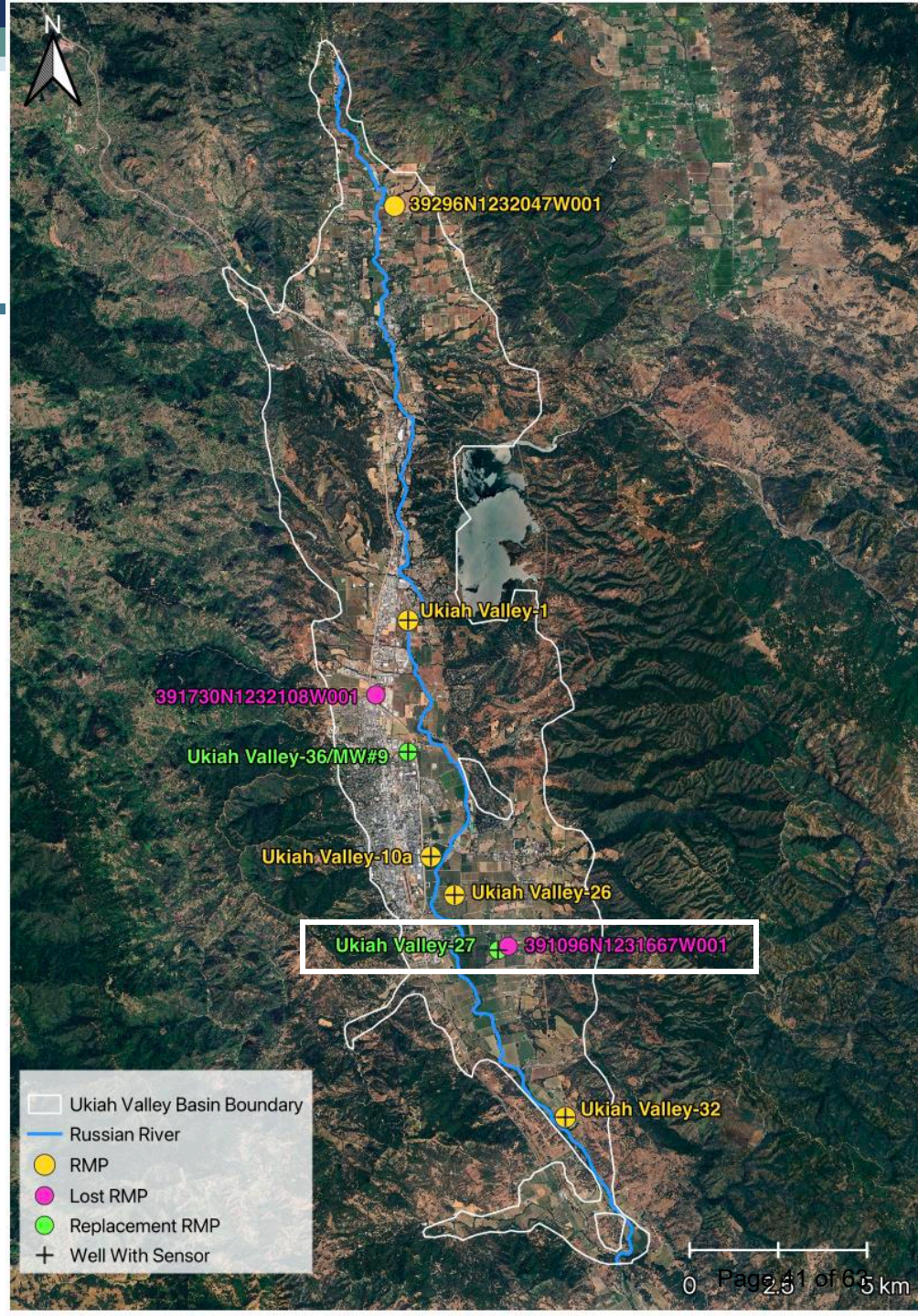


*Some are nested wells; not all monitored by Mendocino County RCD

Groundwater Elevation

Updates to Monitoring Network

- Ukiah Valley-27 selected as replacement for RMP well lost from network in August 2024
  - Ukiah Valley-27 previously monitored 2015-2021
  - Located ~1000 ft away from lost DWR site, completed to similar depth, cooperative landowner



RMP Comparison to Sustainable Management Criteria

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 the GSA should take notice

RMP Comparison to Sustainable Management Criteria

Three indicators developed using historical conditions for each well

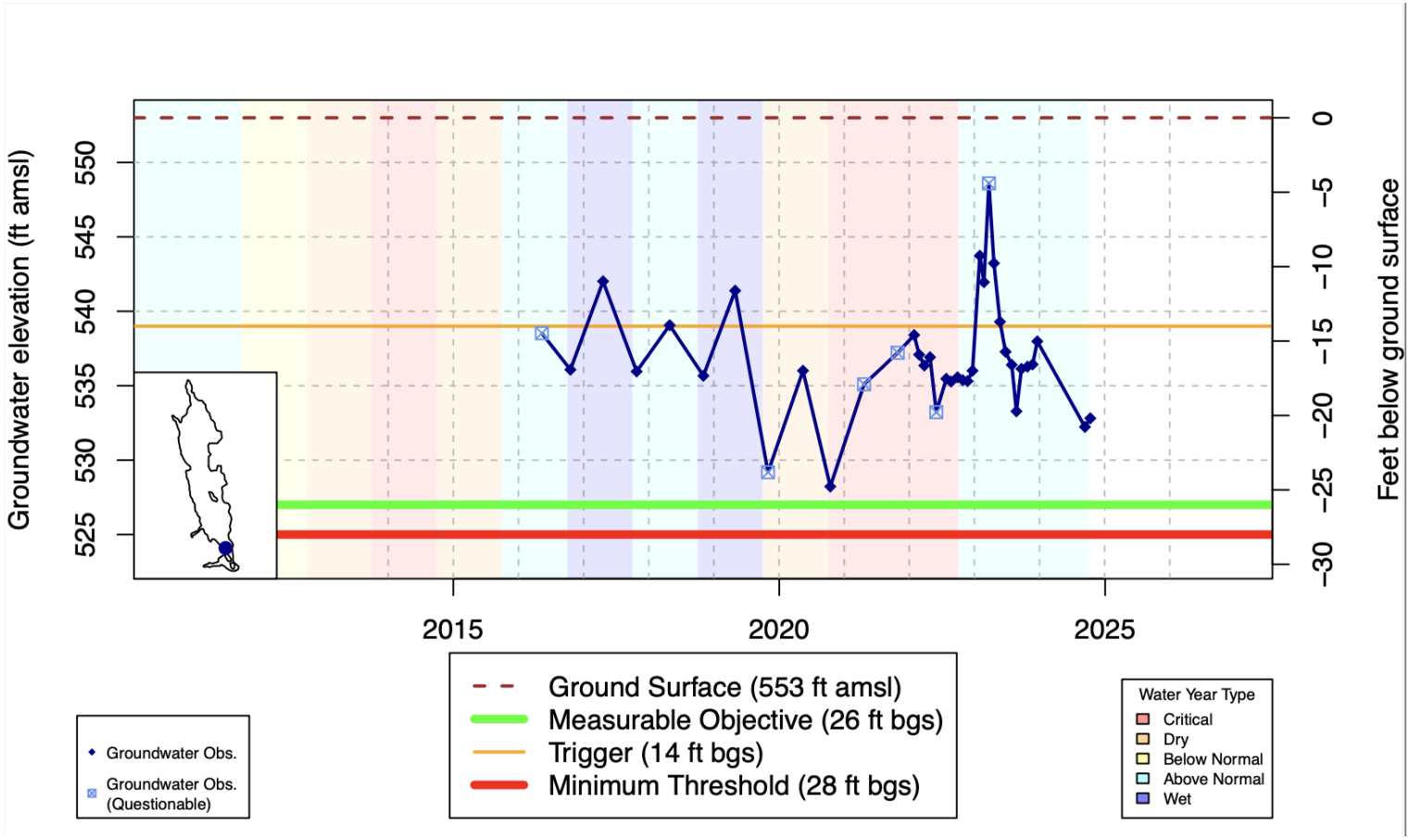
- **Trigger Level**: Non-regulatory warning value for evaluating spring elevation
  - How are things looking after winter recharge?
- **Measurable Objective**: Value above which RMP is on track to achieve groundwater sustainability within 20 years
- **Minimum Threshold**: Value below which action must be taken to achieve sustainability goals

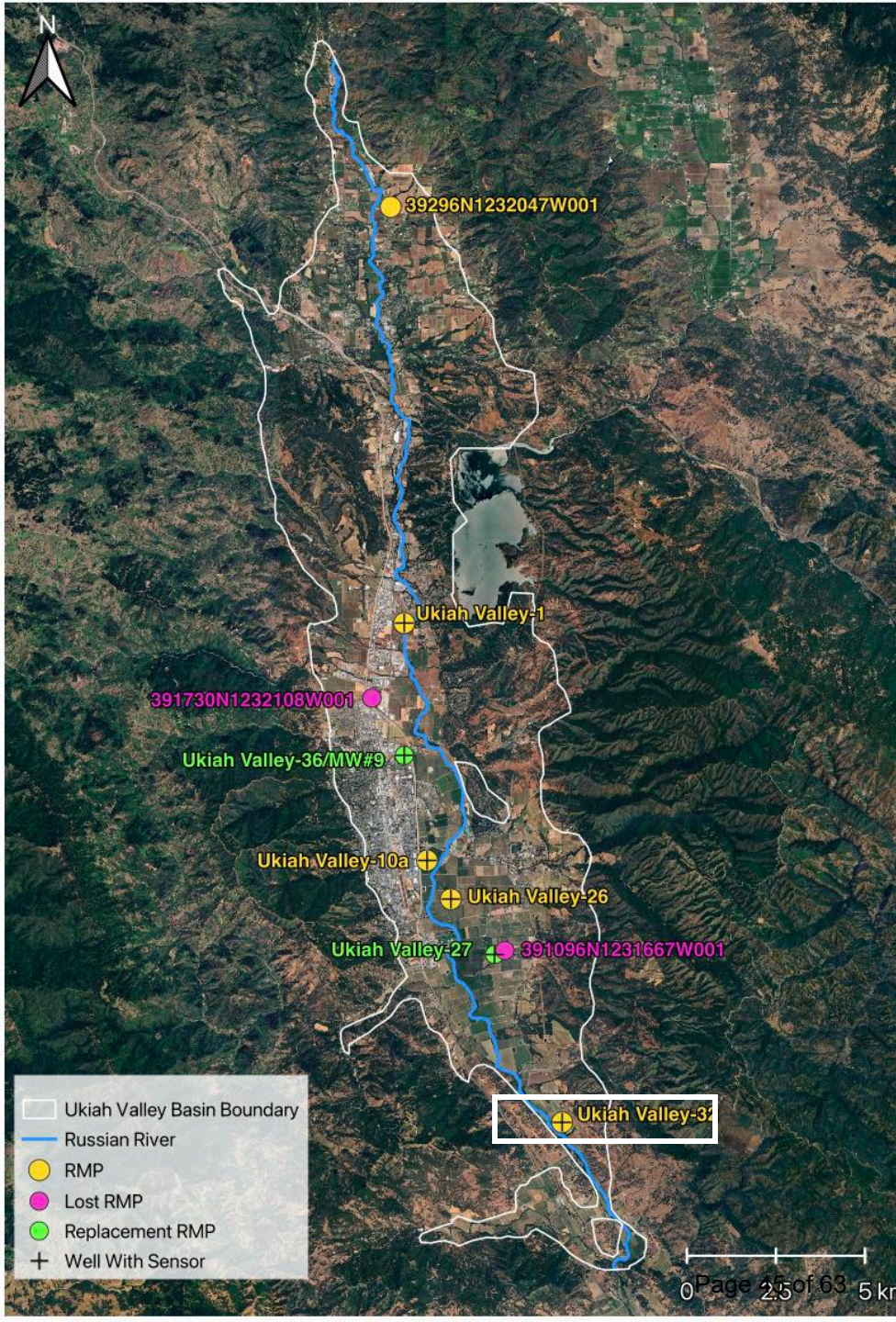
"An undesirable result would occur if the groundwater level observations in the Fall season[…] in ***more than one third of the RMPs in the Basin fall below their respective minimum thresholds for two consecutive years****." (UVBGSA GSP, 2021)*

Detailed RMP Hydrographs

- Display of groundwater level field measurements across monitoring record
  - Records for long-monitored sites displayed for 2000 – present
- Comparison against unique sustainable management criteria for each well

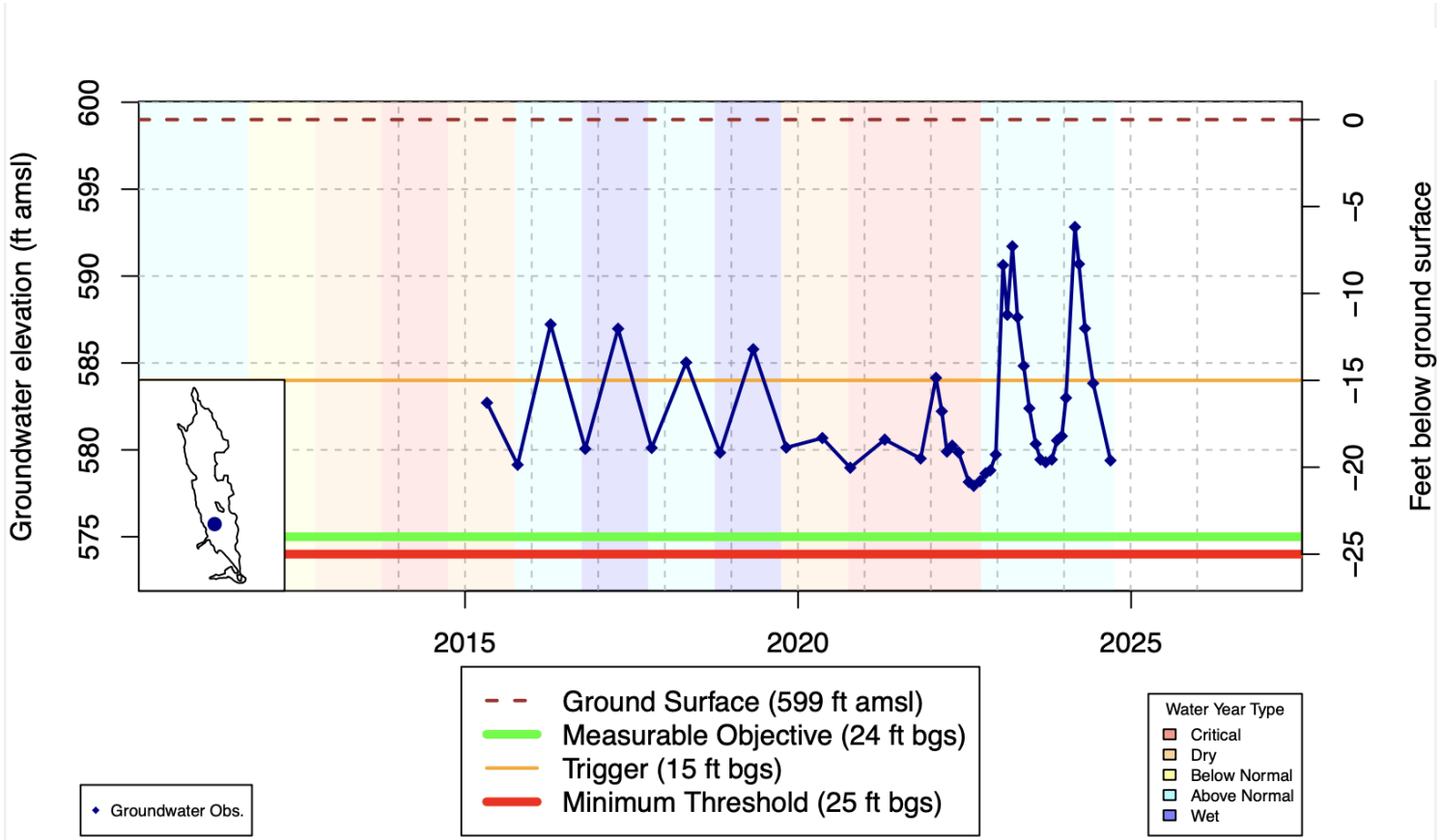
Aquifer I Ukiah Valley-32

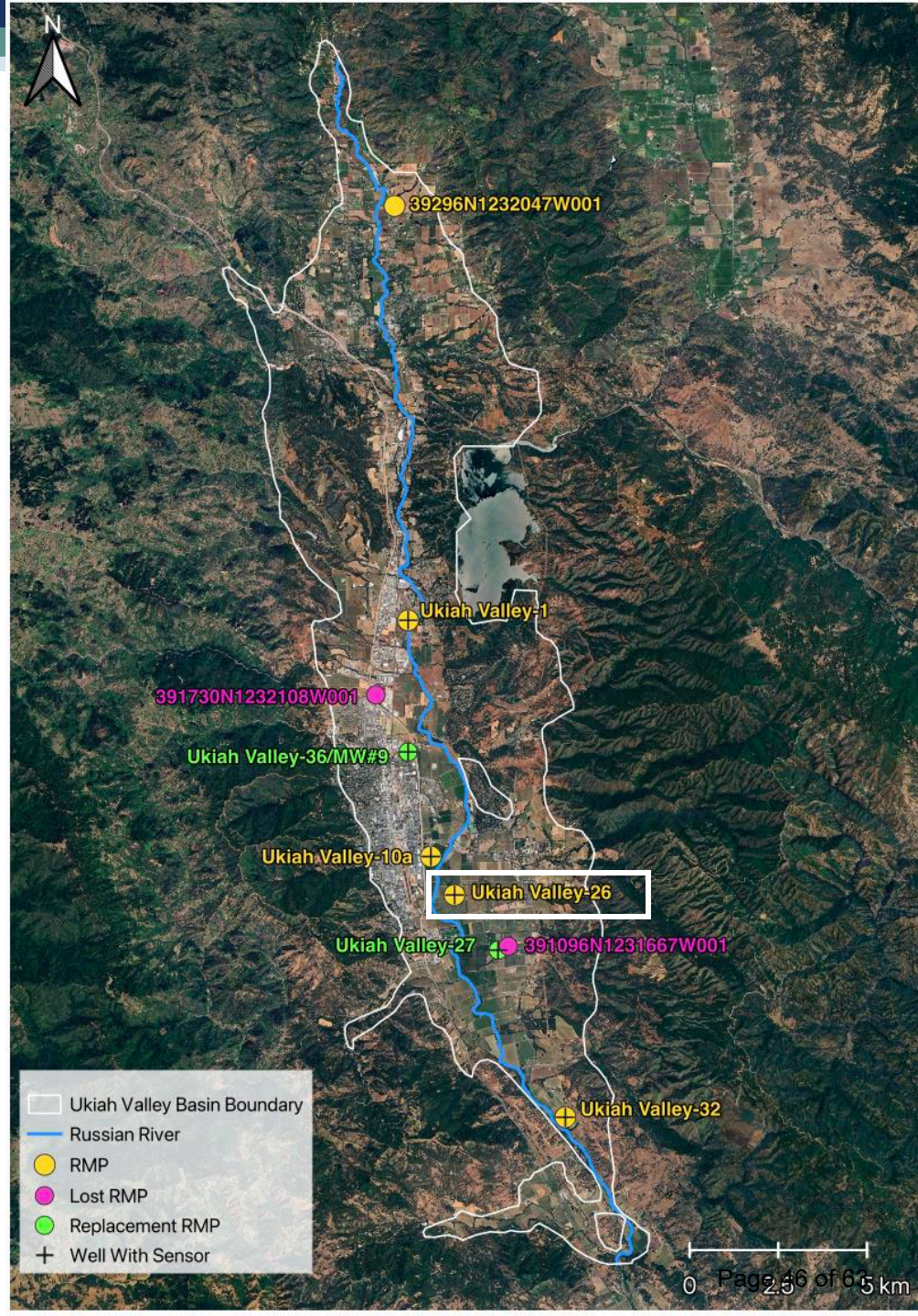




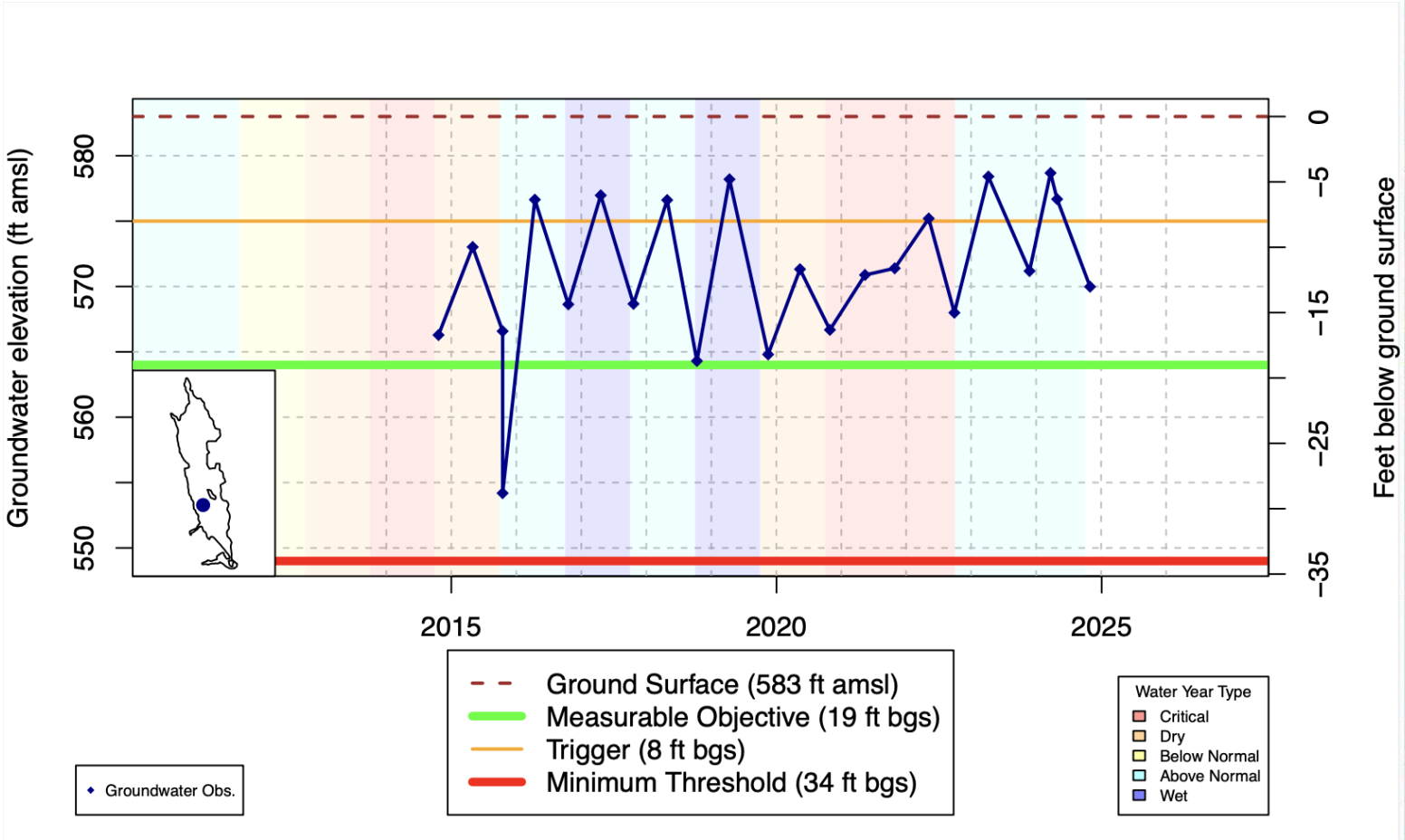
Note: Some data including Spring high measurement missing due to change in property owner and delays in obtaining access agreement

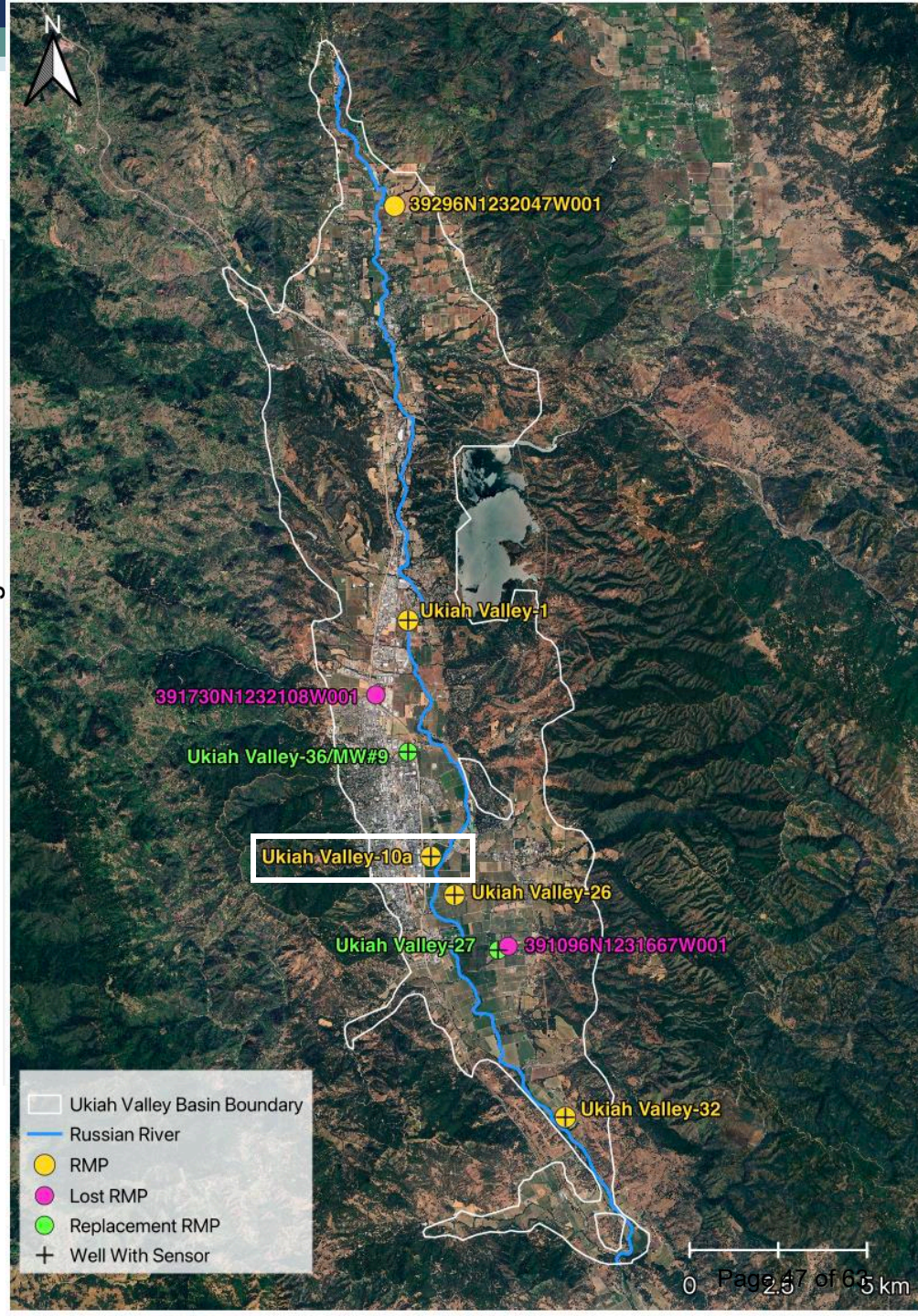
Aquifer I Ukiah Valley-26



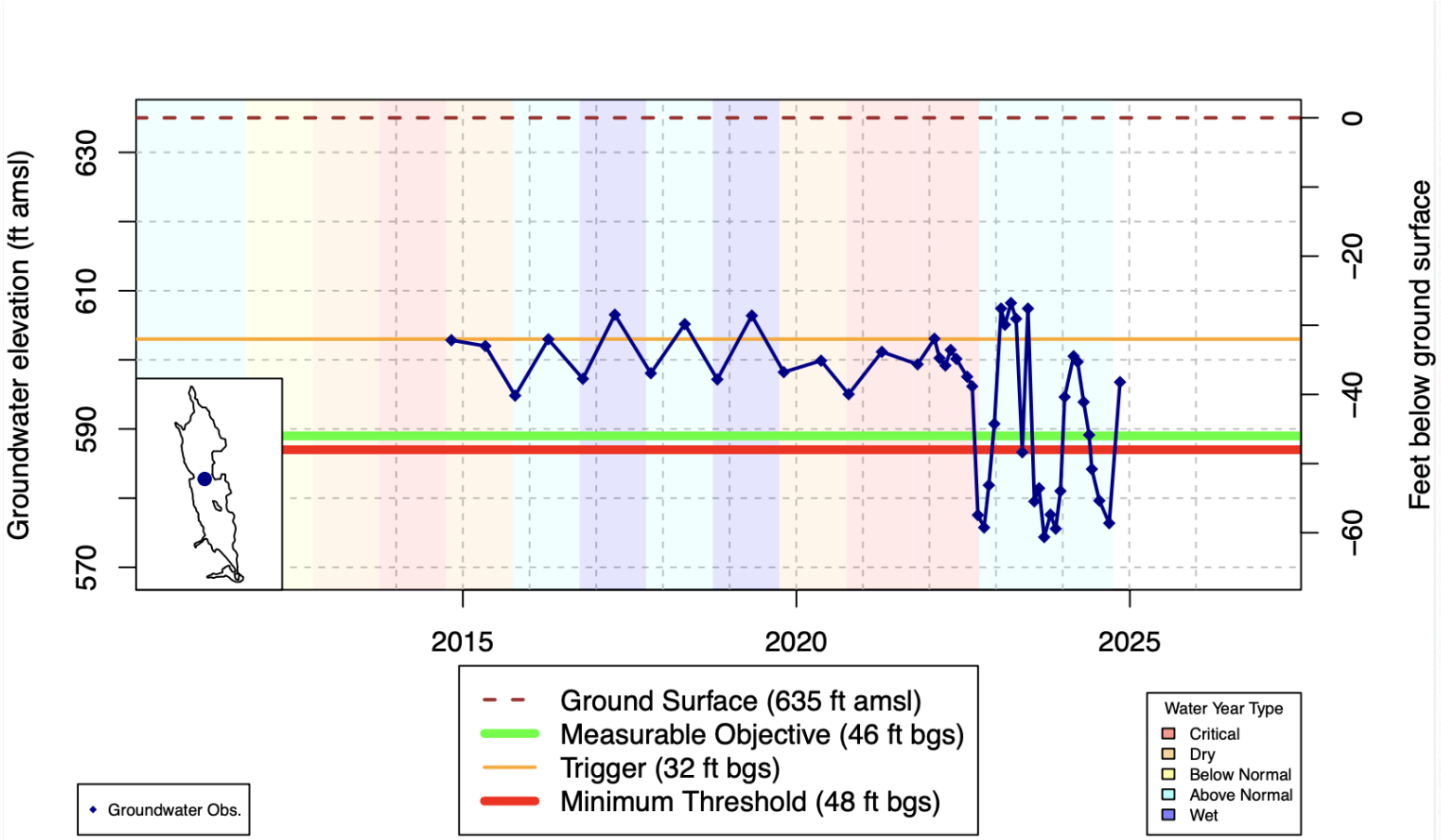


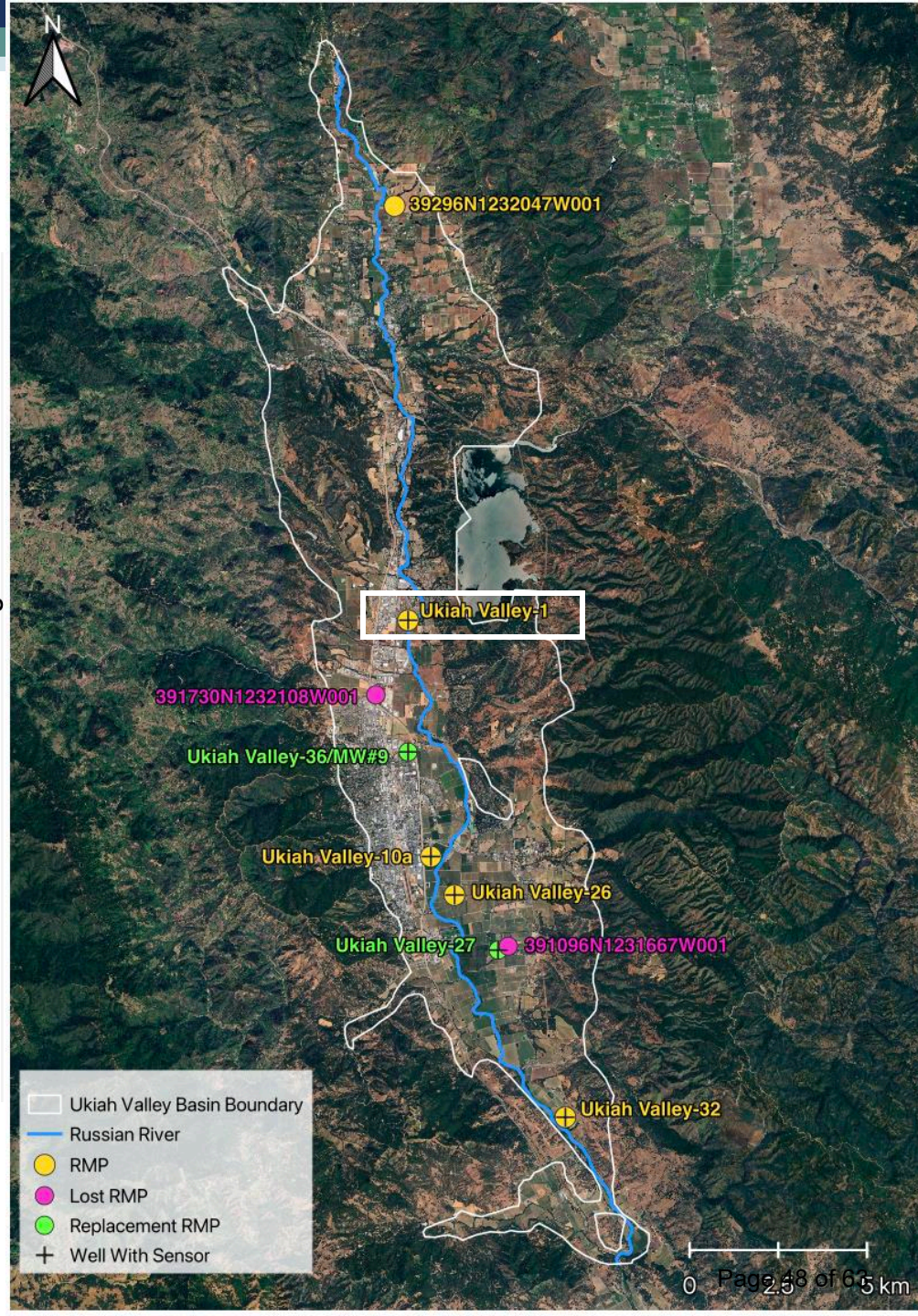
Aquifer I Ukiah Valley-10a





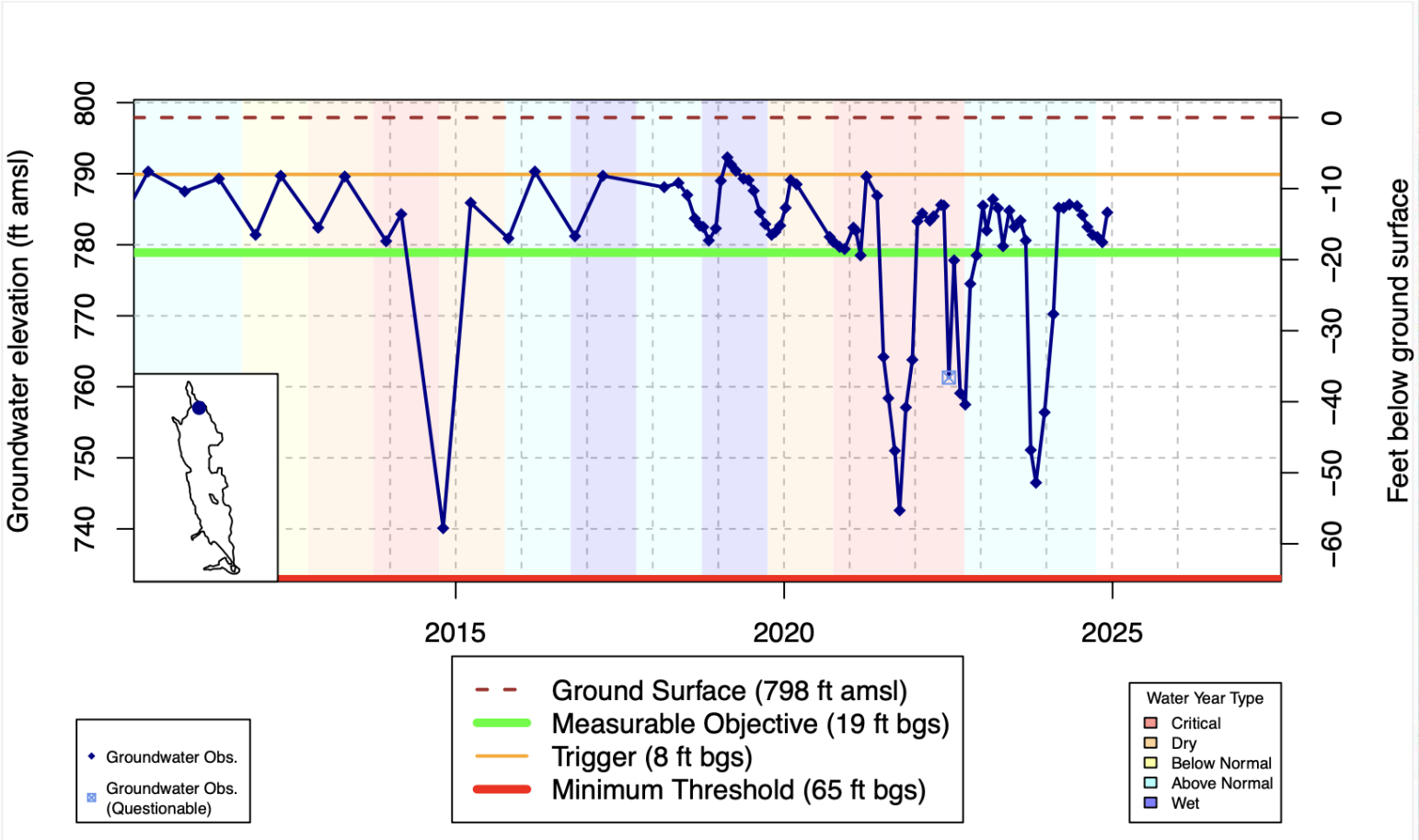
Aquifer I Ukiah Valley-1

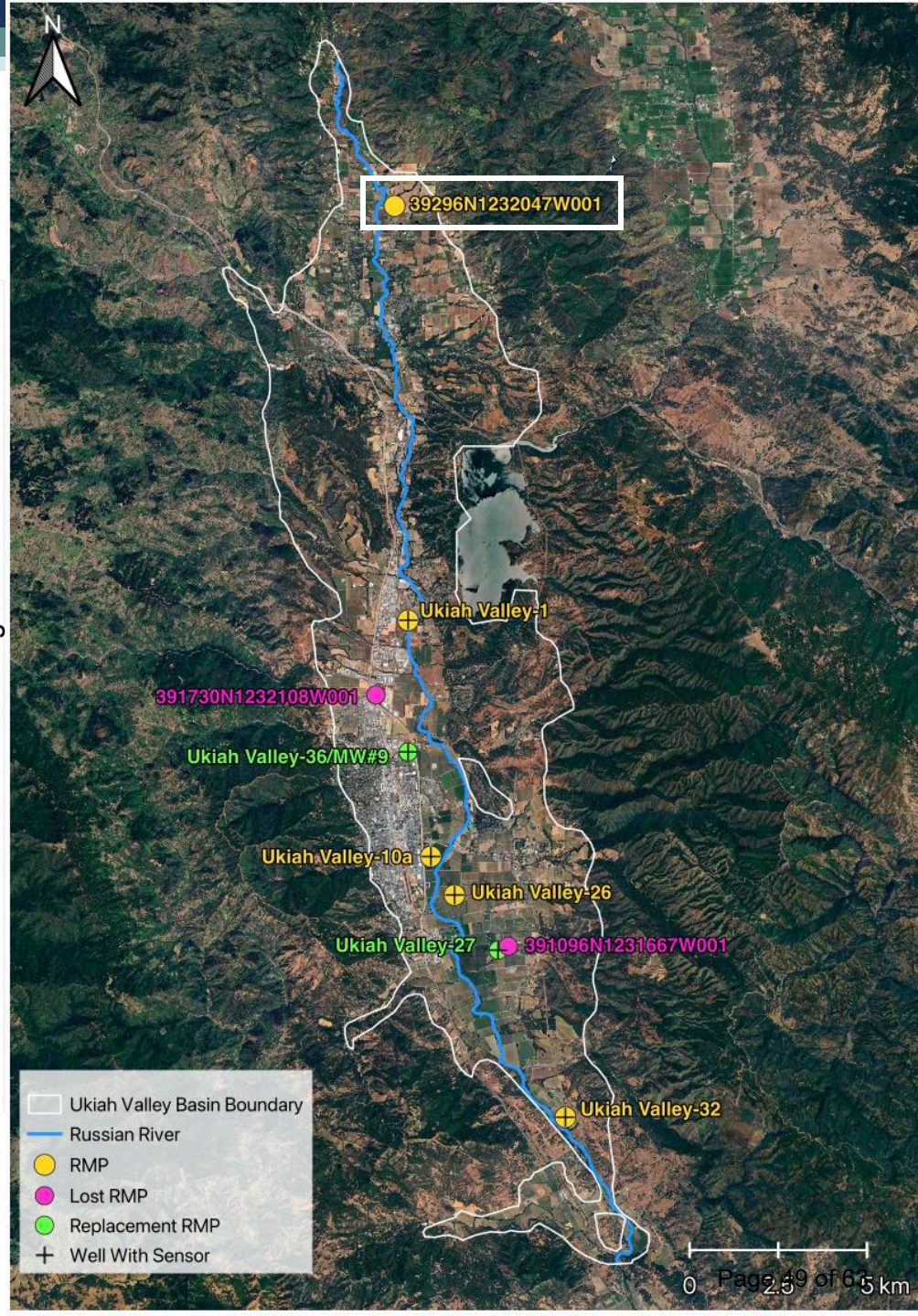




Note: A nearby water district well is very likely influencing dry season water level declines; a sensor and telemetry have been installed.

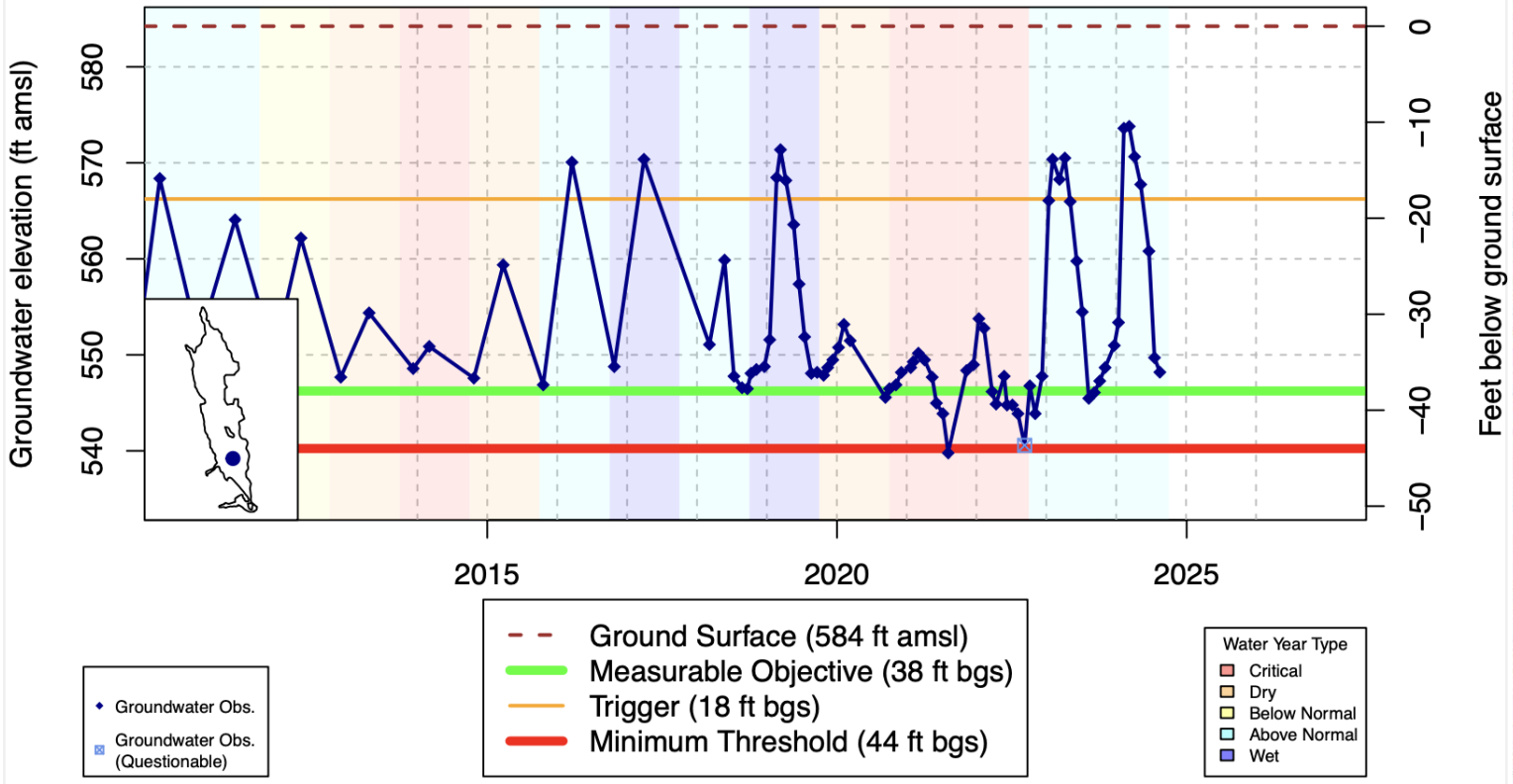
Aquifer II 392962N1232047W001

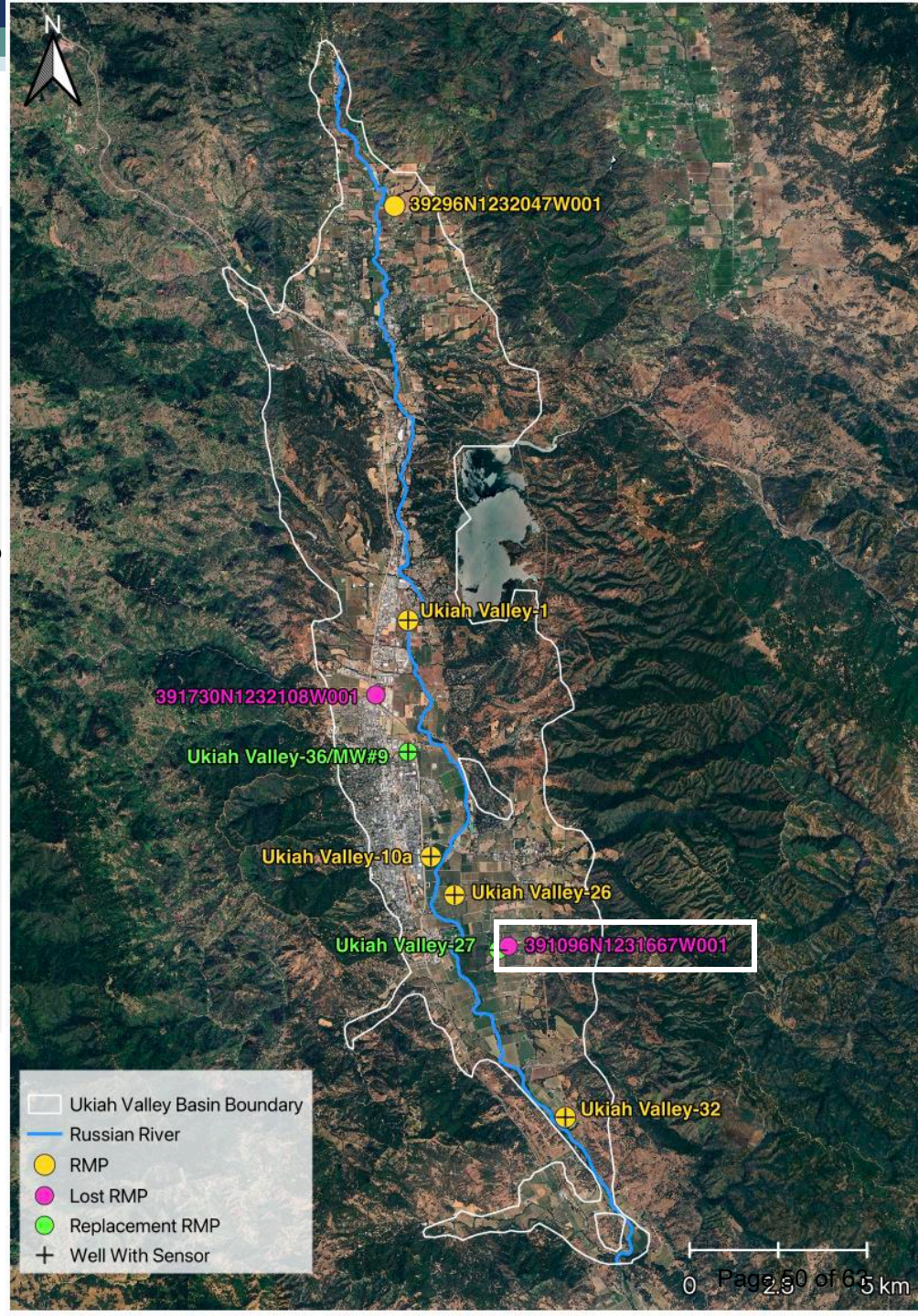




Note: At this DWR-monitored site, Ground Surface Elevation (GSE) and Reference Point Elevation (RPE) changed during WY 2024. LWA used consistent GSE/RPE for the entire record and has contact DWR to clarify the situation.

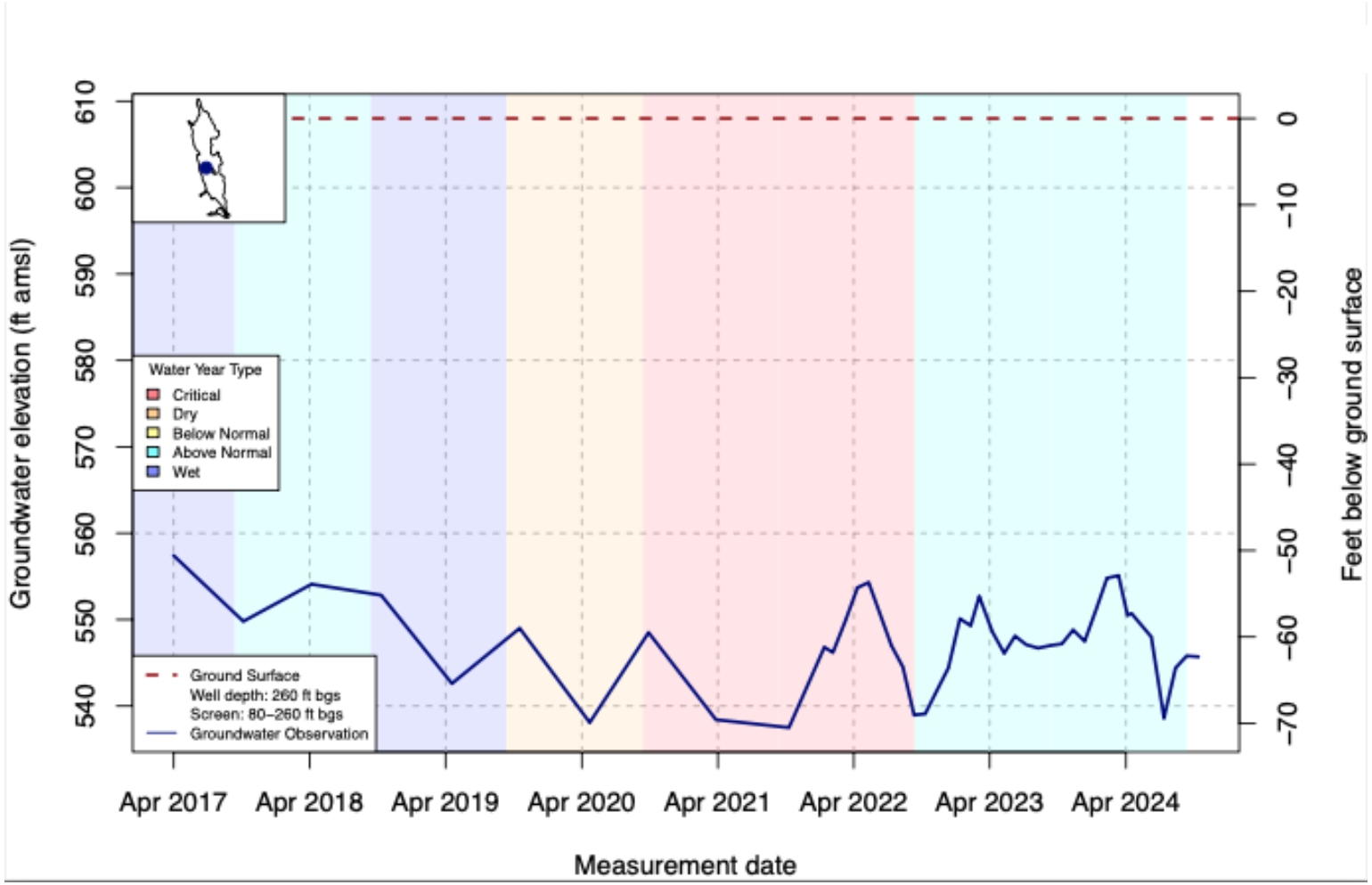
Aquifer II 391096N1231677W001

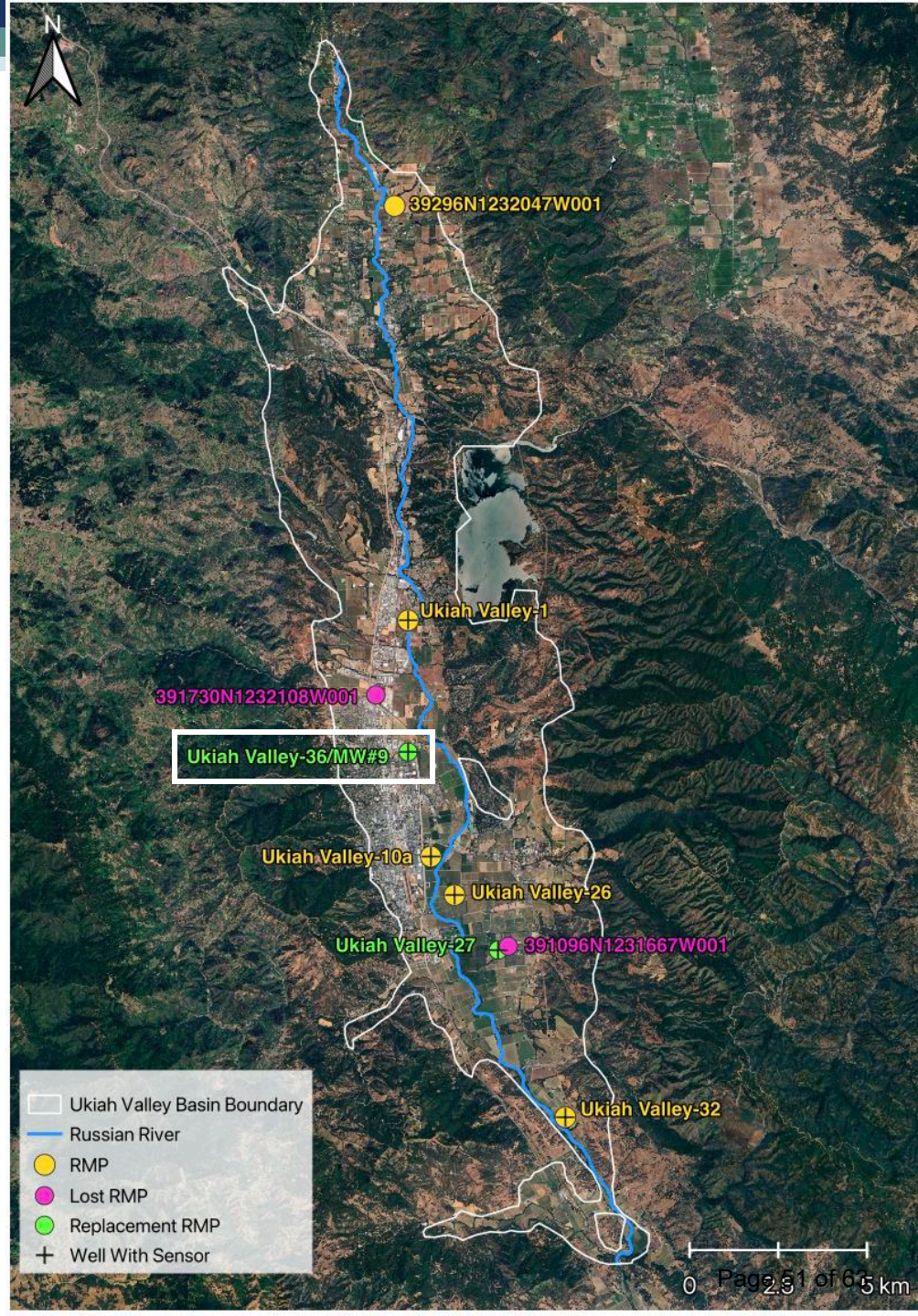




Note: Site access has been revoked, last measurement was taken by DWR in August 2024. Ukiah Valley-27 has been identified as a suitable replacement.

Aquifer II Ukiah Valley-36 (replacement RMP)





Note: SMC development planned for 2027 Periodic Evaluation

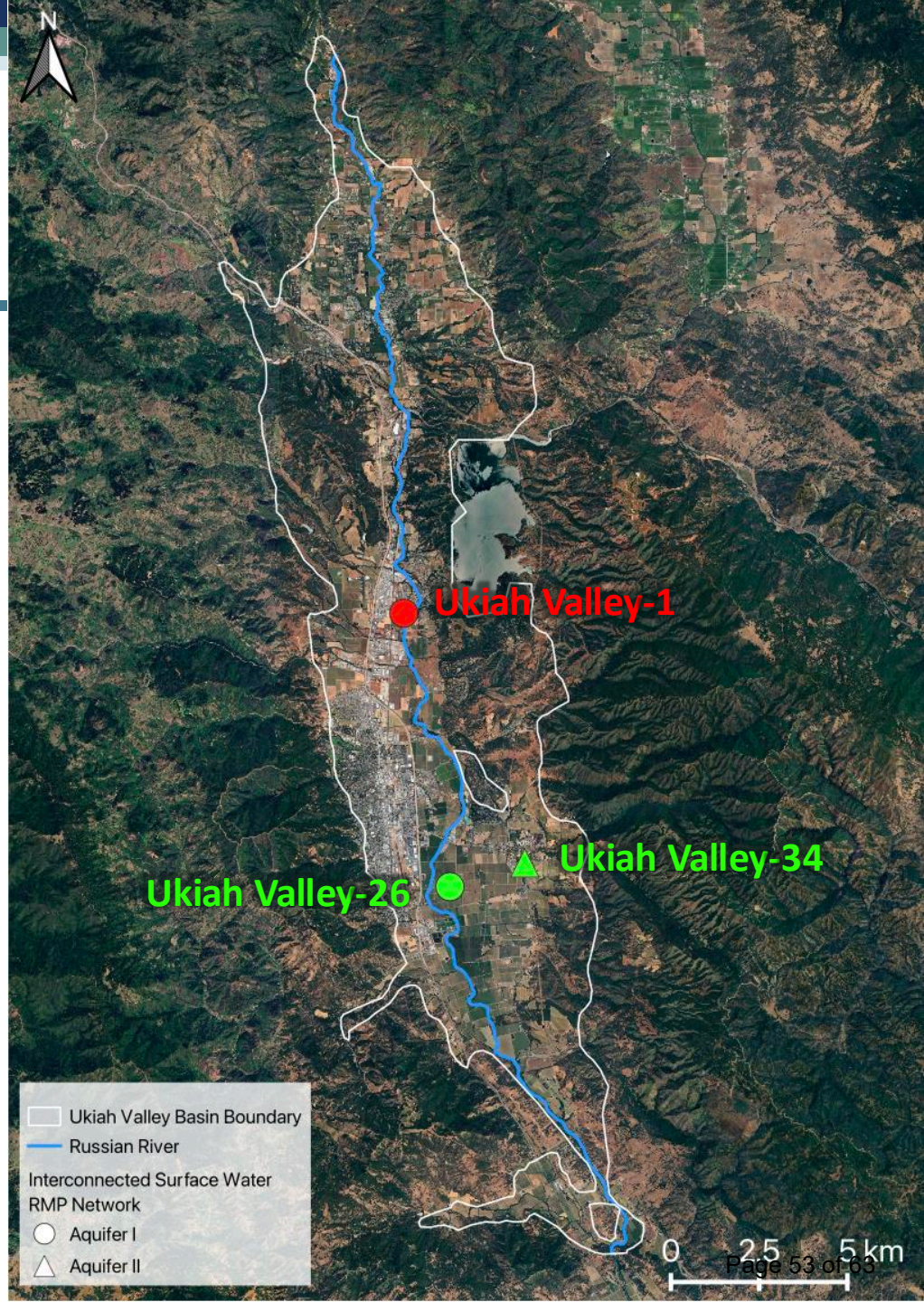
Snapshot of RMP GW Elevation Fall 2024 Conditions

- Water level status:
  - GREEN – near or above measurable objective
  - YELLOW – within central operational range
  - ORANGE – near minimum threshold
  - RED – at or below minimum threshold
- Ukiah Valley-1
  - SMCs to be reassessed in 2027 periodic update
  - Influenced from nearby water district well
  - Detailed hydrograph shows wet season recovery
- **No** undesirable result for WY 2024

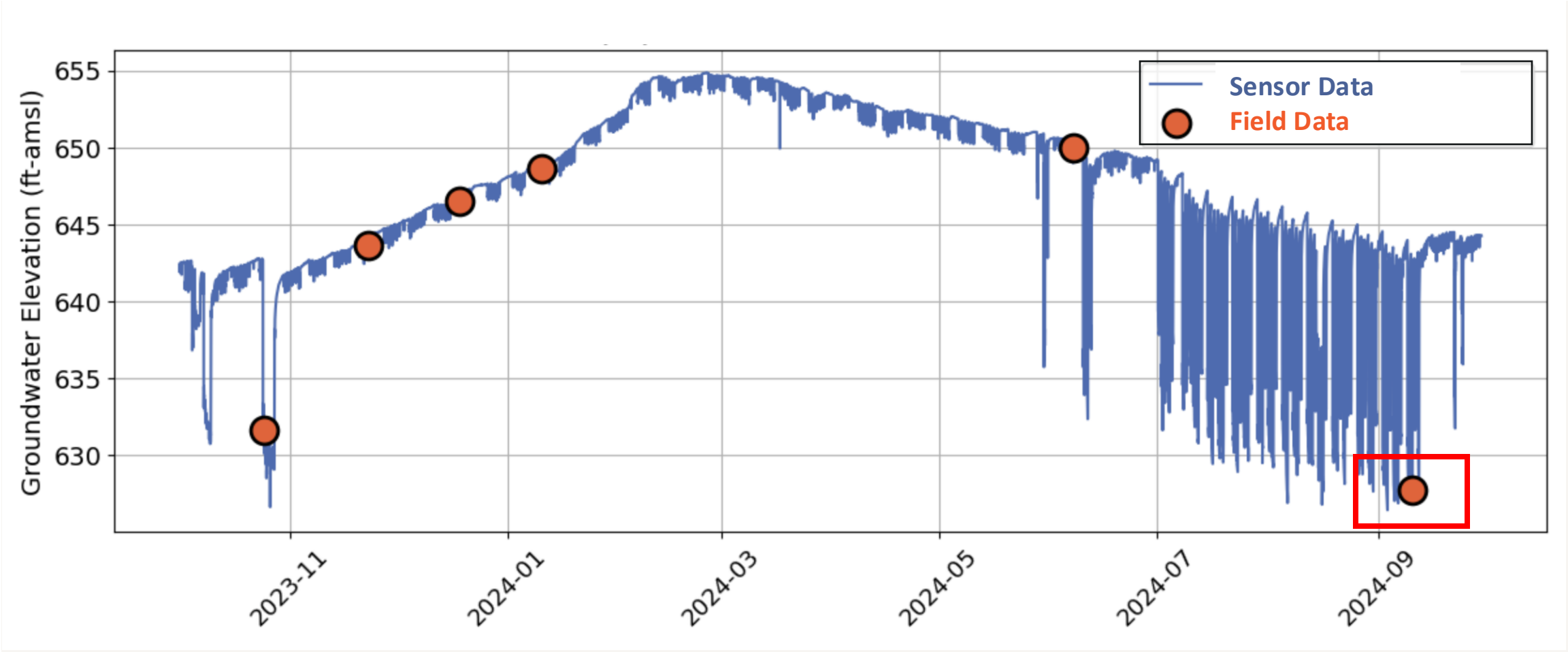
*Last measurement at DWR Howell Creek was in August 2024

Depletion of Interconnected Surface Water

- Status estimated using GW level at three wells as a proxy
- Ukiah Valley-1 below dipped MT
- **No** undesirable result for WY 2024
  - "…more than one third of the RMPs in the Basin fall below their respective minimum thresholds for two consecutive years." (UVBGSA GSP, 2021)
- Sensor data at Ukiah Valley-34 provided important static GW level info



Ukiah Valley-34 Field vs. Sensor Measurements



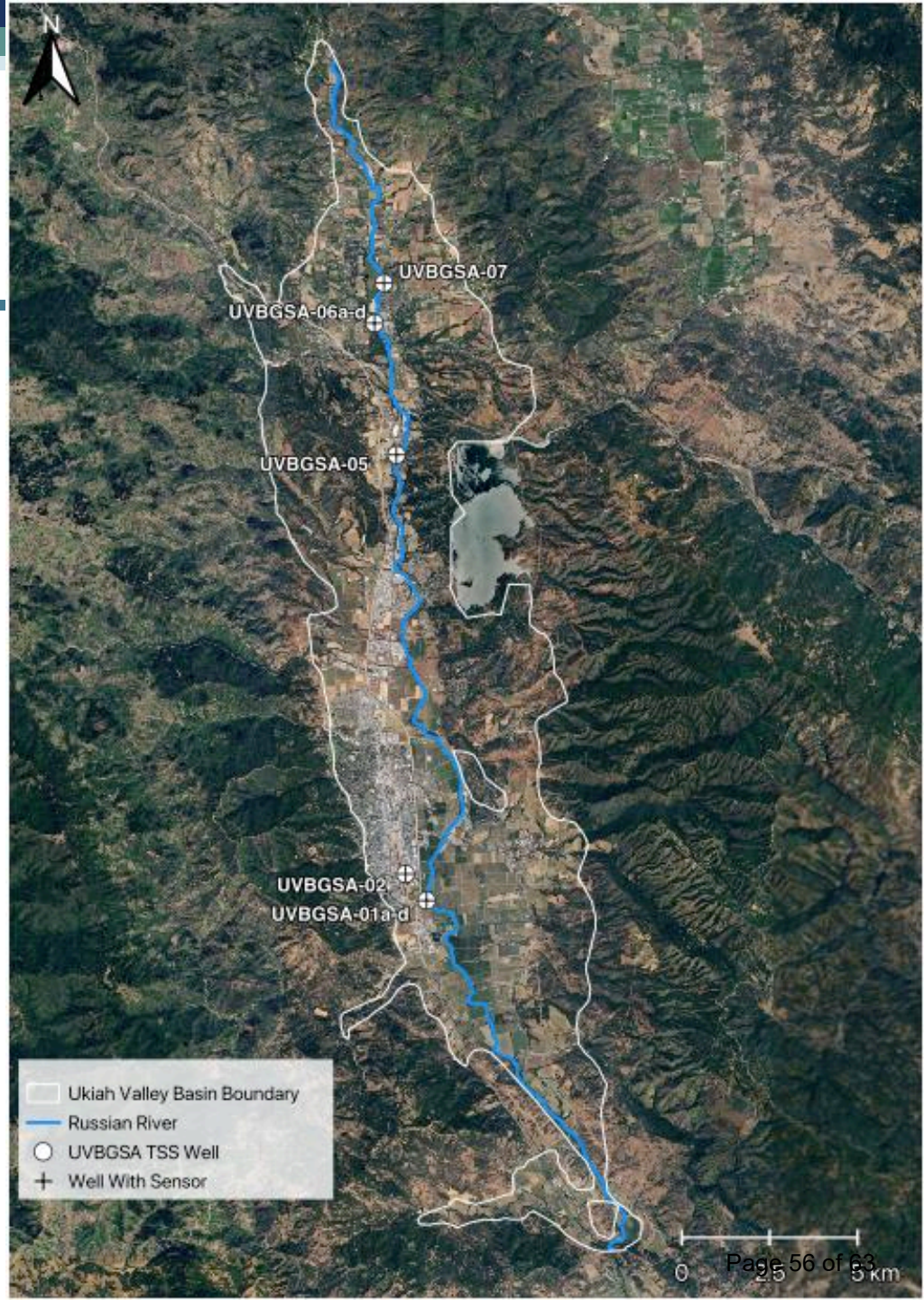
Groundwater Quality

- Nitrate, specific conductivity measured annually
  - Defined SMCs
  - 16 wells*: UVBGSA observation wells and municipal/small retailer wells
- Boron, manganese, iron measured every three years
  - Naturally occurring, so periodically monitor conditions
  - No SMC to compare against drinking water standards (MCLs, SMCLs)
  - 14 wells *: UVBGSA observation wells and municipal/small retailer wells
- **No** undesirable results for WY 2024
  - "Undesirable results are experienced if the **maximum thresholds are exceeded at 50% or more of the groundwater quality monitoring wells** sampled in the respective sampling period for any COIs with a defined maximum threshold." (UVBGSA GSP, 2021)

*Two wells in the network are multi-completion

Water Quality Monitoring for UVBGSA Wells

- MCRCD coordinates with Blaine Tech to collect water quality samples
- During WY 2024 samples collected in December 2023
- Most recent samples collected in January 2025



Results for UVBGSA Monitoring Wells

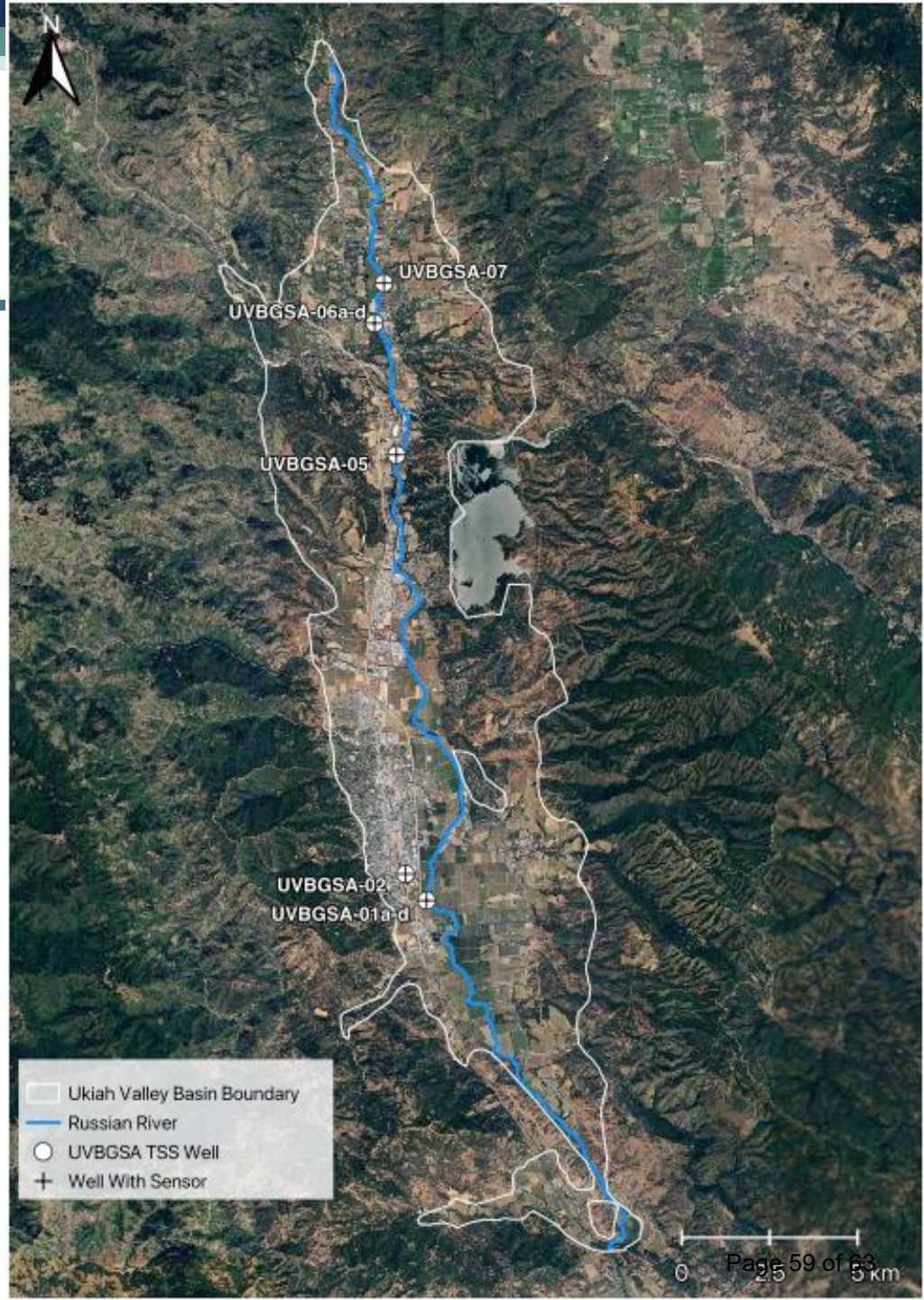
Well ID	Nitrate WY2024 Max (mg/L)	Status Nitrate	SC WY2024 Max (µ℧/cm)	Status SC
UVBGSA-01a	<1	Below MO	190	Below MO
UVBGSA-01b	<1	Below MO	210	Below MO
UVBGSA-01c	<1	Below MO	670	Below MO
UVBGSA-05	<1	Below MO	895	Below MT
UVBGSA-06a	26	Above MT	270	Below MO
UVBGSA-06b	14	Above MT	250	Below MO
UVBGSA-06c	<1	Below MO	560	Below MO
UVBGSA-06d	<1	Below MO	310	Below MO
UVBGSA-07	<1	Below MO	230	Below MO

Water Year 2024 Annual Report Summary

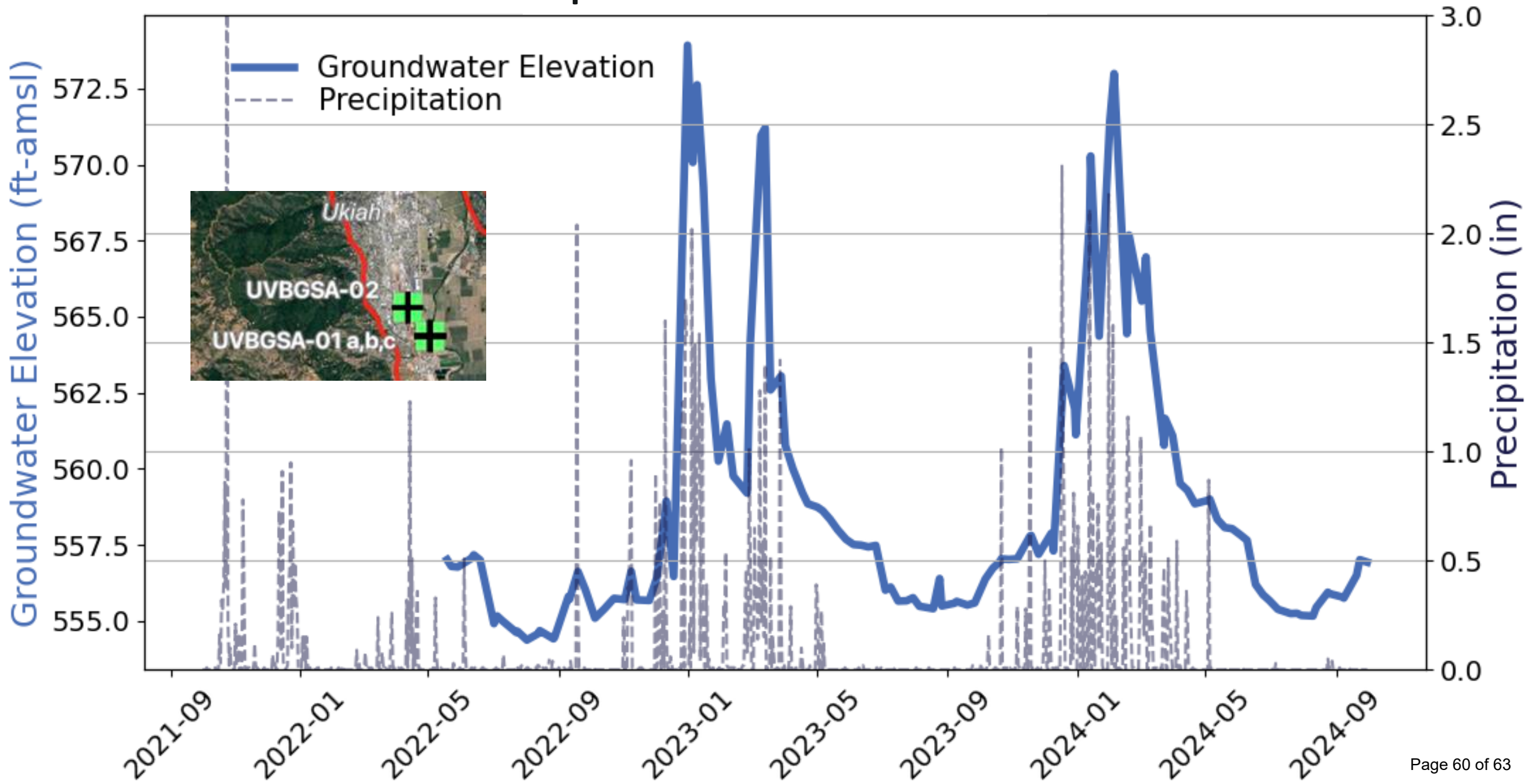
- Precipitation was above normal for a second year in a row
- No undesirable results observed for sustainability indicators
- Sensor data proves valuable for identifying field measurements influenced by pumping and characterizing static groundwater levels
- LWA will continue to coordinate with field measurement agencies (DWR, MCRCD) to understand conditions associated with field measurements

Bonus: Select Sensor and Precipitation Data

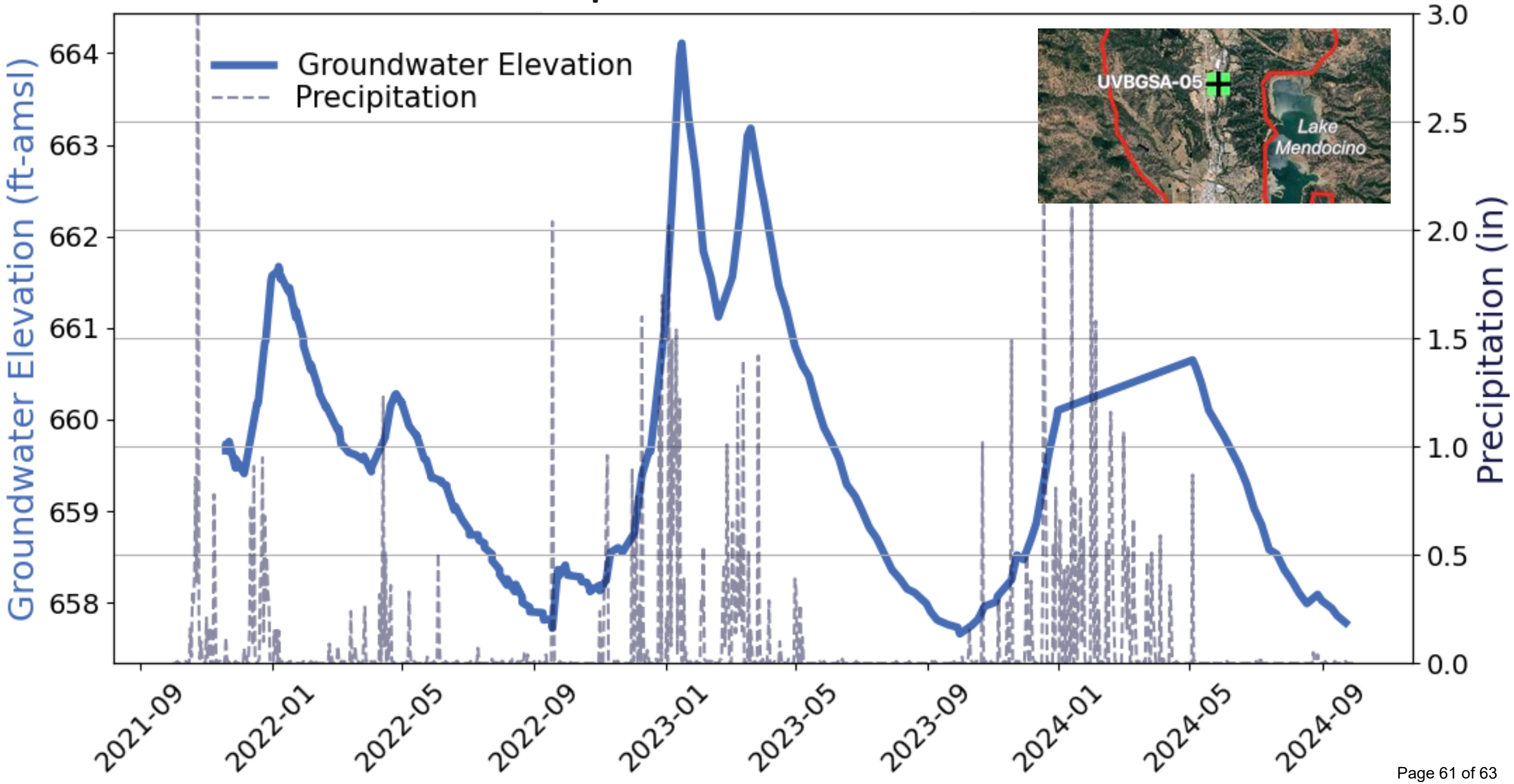
- Visualize the importance of precipitation on annual recharge in the Basin



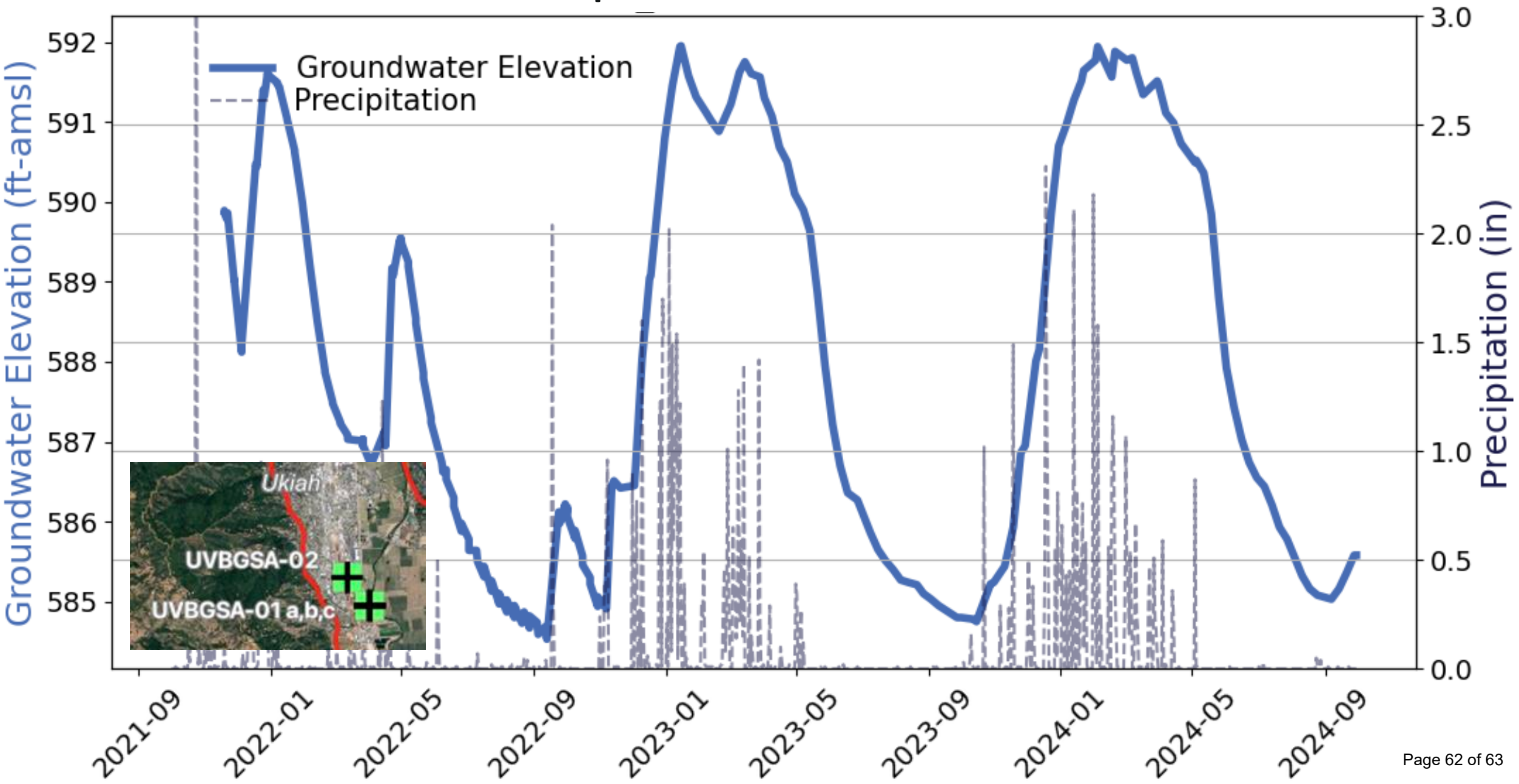
Aquifer I UVBGSA-01a



Aquifer I UVBGSA-05



Aquifer I UVBGSA-02



Thank You