



Vina Groundwater Sustainability Agency
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Vina Groundwater Sustainability Agency Board Meeting Agenda

Date: Wednesday, November 13, 2024

Time: 5:30 PM

Location: Chico City Council Chamber, 421 Main Street, Chico CA

Or [Join the Vina GSA Board Meeting via Zoom](#)

Meeting ID: 869 8360 0705

Join via phone: +1 669 900 6833

No public comments or questions will be taken online.

BOARD MEMBERS:

- Evan Tuchinsky, Chair
- Jeff Rohwer, Vice Chair
- Matt Doyle
- Tod Kimmelshue
- Kasey Reynolds

PUBLIC COMMENT INFORMATION:

Public comment will be accepted in-person at the meeting or may be submitted by email prior to the meeting to VINAGSAPUBLICCOMMENTS@CHICOCA.GOV. If you would like to address the Board at this meeting, you are requested to complete a speaker card and hand it to the Board Clerk prior to the conclusion of the staff presentation for that item. A time limit of three (3) minutes per speaker on all items and an overall time limit of thirty minutes for agenda items has been established. If more than 10 speaker cards are submitted for agenda items, the time limitation may be reduced to one and a half minutes per speaker.

When submitting public comments via email, please indicate the item number your comment corresponds to in the subject line. Comments submitted will be sent to the full GSA Board members electronically prior to the start of the meeting. Email comments will be acknowledged and read into the record by name only during the public comment period for each agenda item. Emailed comments received prior to the end of the meeting will be made part of the written record but not acknowledged at the meeting.

**VINA GROUNDWATER SUSTAINABILITY AGENCY REGULAR
BOARD MEETING AGENDA**

November 13, 2024

1. VINA GROUNDWATER SUSTAINABILITY AGENCY (GSA) REGULAR BOARD MEETING

1.1. Call To Order

1.2. Roll Call

2. CONSENT AGENDA:

2.1. APPROVAL OF THE 9/11/24 VINA GSA BOARD MEETING MINUTES.

Action: Approve the Vina GSA meeting minutes.

3. ITEMS REMOVED FROM CONSENT – IF ANY

4. PUBLIC COMMENTS

Members of the public may address the Board at this time on any matter not already listed on the agenda; comments are limited to three minutes. The Board cannot take any action at this meeting on requests made under this section of the agenda.

5. REGULAR AGENDA

5.1. PRESENTATION AND DISCUSSION OF DRAFT PROPOSED NEW MONITORING NETWORK LOCATIONS

The Board will receive a presentation on the DRAFT proposed new monitoring locations in the Vina Subbasin, along with an overview of the California Stream Gage Improvement Program (CalSIP) to support network expansion. The Board will discuss the proposed locations and consider whether to pursue CalSIP funding to enhance the GSA's monitoring efforts. *(Report – Ryan Fulton, Larry Walker & Associates & Dillon Raney, GSA Program Manager)*

REQUESTED ACTION: Provide direction to staff.

6. COMMUNICATIONS AND REPORTS

6.1. GSA Program Manager's Report *(Verbal Report – Dillon Raney, GSA Program Manager)*

6.2. Update on SGM Grant Projects *(Information Only)*

6.3. Butte County Public Health Department Quarterly Well Permit Summary *(Information Only)*

7. ADJOURNMENT:

The Vina GSA Meeting will adjourn to a Vina GSA Board Meeting on December 11, 2024, at 5:30 p.m. at the Chico City Council Chamber Building at 421 Main Street., Chico, CA and online via Zoom for viewing only.

MINUTES OF THE VINA GROUNDWATER SUSTAINABILITY AGENCY **SPECIAL BOARD MEETING**

Meeting of **September 11, 2024, 5:30 p.m.**
Chico City Council Chamber Building, 421 Main Street, Chico CA
IN-PERSON AND ONLINE VIA ZOOM (viewing/listening only)

1. Vina Groundwater Sustainability Agency (GSA) Regular Board Meeting

1.1 Call to Order

The Vina GSA meeting was called to order by Chair Tuchinsky at 5:32 p.m.

1.2 Roll Call

Board Members Present:

Evan Tuchinsky
Jeffrey Rohwer
Matt Doyle
Todd Kimmelshue

Board Members Absent: Kasey Reynolds

Management Committee Members Present:

Christina Buck, Becky Fairbanks, and Kamie Loeser (Butte County Department of Water & Resource Conservation (BCDWRC), Linda Herman (City of Chico), and Valerie Kincaid (Legal Counsel).

1.3 August 7, 2024 Special Closed Session Meeting Announcement

Chair Tuchinsky announced the results of the 8-7-24 Vina GSA Special Closed Session meeting in which the Board discussed the following:

Item 3.1. CONFERENCE WITH LEGAL COUNSEL – ANTICIPATED LITIGATION: Initiation of Litigation pursuant to Gov. Code Sec. 54956.9(d)(4)

The Vina GSA Board met in a Special Closed Session on 8/7/24 at 5:30 p.m. with the Management Committee and legal Counsel regarding anticipated litigation. All Board members were present, with Alternate Tami Ritter sitting in for Board member Kimmelshue. Direction was given and no final action was taken.

2 CONSENT AGENDA:

2.1 APPROVAL OF THE 06/26/24 VINA GSA BOARD MEETING MINUTES

Action: Approve the Vina GSA meeting minutes.

2.2 APPROVAL OF FINANCIAL STATUS REPORT

Action: Approve the Vina GSA Financial Status Report as of 09/11/2024.

2.3 CONSIDERATION OF APPOINTMENT OF VINA GSA PROGRAM MANAGER AS VINA GSA ADMINISTRATOR AND GROUNDWATER SUSTAINABILITY PLAN (GSP) MANAGER

Action: Approve the appointment of the GSA Program Manager as the GSA Administrator and Plan Manager.

Action: Approve the appointment of the GSA Program Manager as the GSA Administrator and Plan Manager.

Vice Chair Rowher motioned to approve the Consent Agenda. The motion was seconded by Board Member Kimmelshue.

The motion carried as follows:

AYES: Board Members Kimmelshue, Doyle, Vice Chair Rohwer, and Chair Tuchinsky
NOES: None

ABSENT: Board Member Reynolds

ABSTAIN: None

2.4 APPROVAL OF THE 06/26/24 VINA GSA BOARD MEETING MINUTES

Action: Approve the Vina GSA meeting minutes.

2.5 APPROVAL OF FINANCIAL STATUS REPORT

Action: Approve the Vina GSA Financial Status Report as of 09/11/2024.

2.6 CONSIDERATION OF APPOINTMENT OF VINA GSA PROGRAM MANAGER AS VINA GSA ADMINISTRATOR AND GROUNDWATER SUSTAINABILITY PLAN (GSP) MANAGER

Action: Approve the appointment of the GSA Program Manager as the GSA Administrator and Plan Manager.

Board Member Reynolds motioned to approve the Consent Agenda with the correction in the minutes to correct public speaking member Claudia Rawlin's last name. The motion was seconded by Vice-Chair Rohwer

The motion carried as follows:

AYES: Board Members Kimmelshue, Doyle and Reynolds, Vice Chair Rohwer, and Chair Tuchinsky
NOES: None

ABSENT: None

ABSTAIN: None

3 ITEMS REMOVED FROM CONSENT – none

4 PUBLIC COMMENTS

Members of the public may address the Board at this time on any matter not already listed on the agenda; comments are limited to three minutes. The Board cannot take any action at this meeting on requests made under this section of the agenda.

There were no public comments.

5 REGULAR AGENDA

5.1 PRESENTATION ON SUSTAINABLE GROUNDWATER MANAGEMENT (SGM) GRANT PROJECTS PROGRESS

The Board will receive a presentation on the progress of the SGM Grant Projects. This update will cover the status of ongoing projects, key milestones achieved, and any challenges or adjustments that have arisen. The presentation aims to keep the Board informed on the implementation and management of these projects, ensuring they align with the goals and objectives of the Vina GSA. (*Report – Becky Fairbanks, Christina Buck, and Tovey Giezentanner, SGM Grant Project Managers*)

REQUESTED ACTION: Accept as information.

Jim Brobeck and Greg Brislain provided comments on this item.

The Board provided comments and accepted the report. No direction was given.

5.2 INTRODUCTION TO BUTTE COUNTY DROUGHT RESILIENCE PLAN / SB 552

The Board will receive a presentation on the initiation of the County's Drought Resilience Plan per Senate Bill 552, Drought Planning for Small Water Suppliers and Rural Communities. **Report – Kamie Loeser, Director, Butte County Water & Resource Conservation**

REQUESTED ACTION: Accept as information

No action was taken by the Board as this was an information only item.

6 COMMUNICATIONS & REPORTS

Management Committee Members Loeser and Buck provided updates on the following items:

- 6.1** Program Manager Report (Verbal Report – Dillon Raney, GSA Program Manager)
- 6.2** Independent Auditors' Audit (**Information only**)
- 6.3** Butte County Public Health Department Quarterly Well Permit Summary (**Information only**)

The Program Manager was unable to attend the meeting, so Item 6.1 was not reported.

Anne Dawson provided comments on Item 6.3

There was no action or direction given by the Board on these items.

7. REGULAR MEETING ADJOURNMENT:

The Vina GSA Regular Board meeting adjourned at 6:34 p.m. to a Vina GSA Closed Session in Conference Room 2 in the Chico Council Chamber Building.

1. CLOSED SESSION PUBLIC COMMENTS OR BOARD DISQUALIFICATIONS:

Members of the public may address the board at this time on the closed session item only; comments are limited to three minutes, or time limit as determined by the chair.

2. ADJOURN TO CLOSED SESSION:

3. CLOSED SESSION

3.1 Call to Order

Chair Tuchinsky called the Closed Session to order.

4. CLOSED SESSION AGENDA

- 4.1 PURSUANT TO GOVERNMENT CODE SECTION 54956.9(d)(4) - CONFERENCE WITH LEGAL COUNSEL – ANTICIPATED LITIGATION**
- 4.2 PURSUANT TO GOVERNMENT CODE SECTION 54956.9(d)(1) - CONFERENCE WITH LEGAL COUNSEL – EXISTING LITIGATION – Butte County Superior Court #23CV02789.**
- 4.3 PURSUANT TO GOVERNMENT CODE SECTION 54956.9(d)(1) - CONFERENCE WITH LEGAL COUNSEL – EXISTING LITIGATION – Butte County Superior Court #22CV00321.**

5. CLOSED SESSION ANNOUNCEMENT:

Chair Tuchinsky reported all Board Members, except Board Member Reynolds, were present at the Closed Session. No action was taken on the above items and direction was given to legal counsel on Closed Session item 4.1.

6. CLOSED SESSION ADJOURNMENT:

The Vina GSA Closed Session adjourned at 7:03 p.m. to a Vina GSA Regular Board Meeting on November 13, 2024, at 5:30 p.m. at the Chico City Council Chamber Building at 421 Main Street., Chico, CA and online via Zoom for viewing only.



**Vina
Groundwater Sustainability Agency
Agenda Transmittal**

Agenda Item: 5.1

Subject: Draft Proposed New Monitoring Network Locations

Contact: Becky Fairbanks

Phone: 530-552-3587

Meeting Date: 11/13/2024

Regular Agenda

Department Summary:

The Vina Groundwater Sustainability Agency (GSA) is enhancing its groundwater monitoring network with funding from the Sustainable Groundwater Management (SGM) Grant Program. This project aims to improve groundwater level monitoring for interconnected surface waters (ISWs), groundwater-dependent ecosystems (GDEs), and various users within the Vina Subbasin. The planned upgrades include the installation of nine new shallow wells, one multi-completion well, and three new stream gages, along with monitoring selected domestic wells. In collaboration with Dr. Todd Greene of CSU Chico, the GSA has developed a two-layer monitoring approach for observing both upper and lower aquifer conditions, enabling better analysis of aquifer interactions. Site selection for new installations considers data gaps, land access, and proximity to existing infrastructure, while also integrating with other sustainability projects in the area.

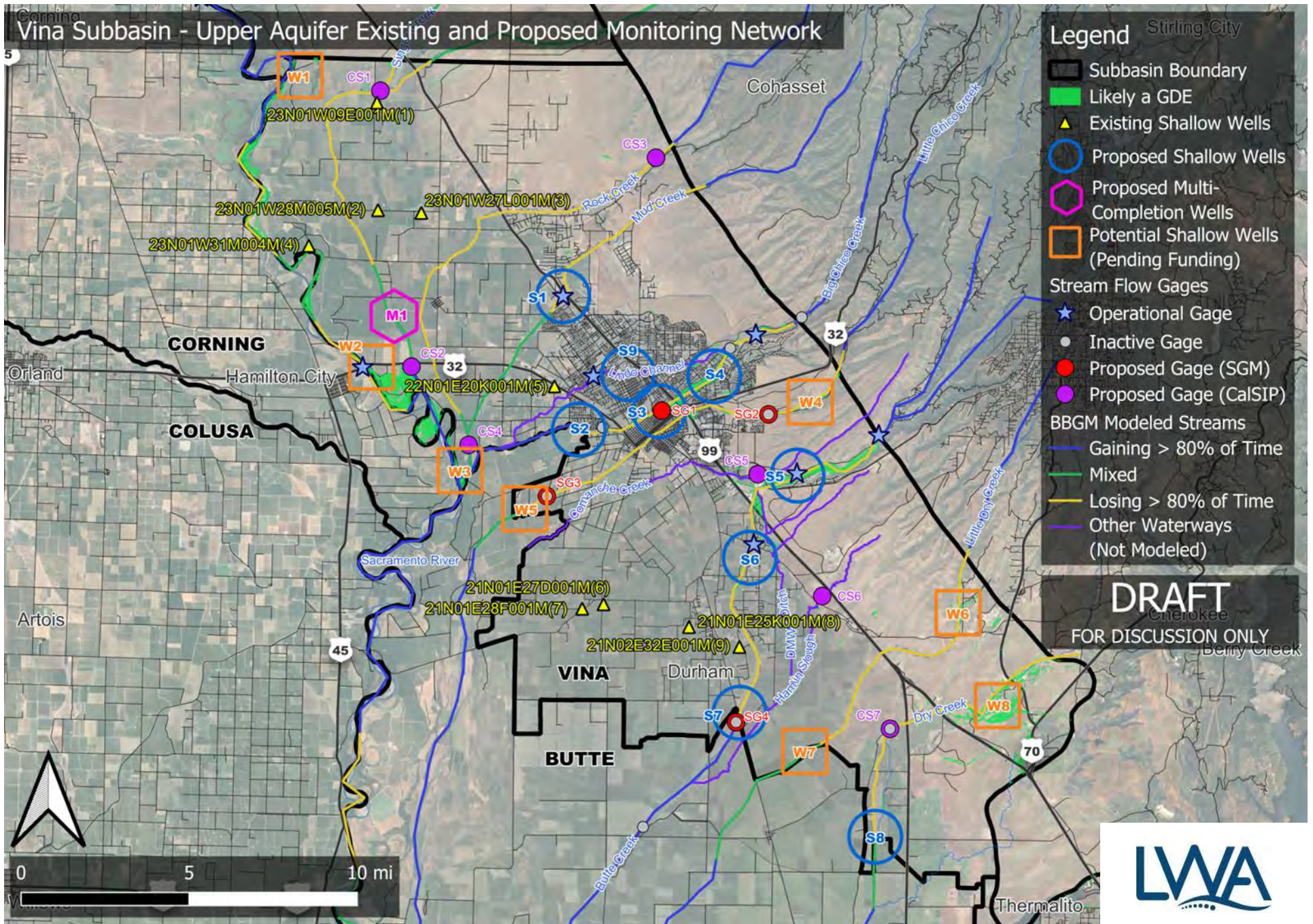
The project timeline includes stakeholder consultations, with installation work expected to start by December 2024 and new well completions targeted by June 2025. Funding for installation will be provided by the SGM grant, but the GSA will assume responsibility for ongoing operation and maintenance costs. This enhanced monitoring network aims to support long-term water sustainability and improve data access through an online portal.

The Board will receive a presentation of the Draft proposed new monitoring locations in the Vina Subbasin, along with an overview of the California Stream Gage Improvement Program (CalSIP) to support network expansion. The Board will discuss the proposed locations and consider whether to pursue CalSIP funding to enhance the GSA's monitoring efforts.

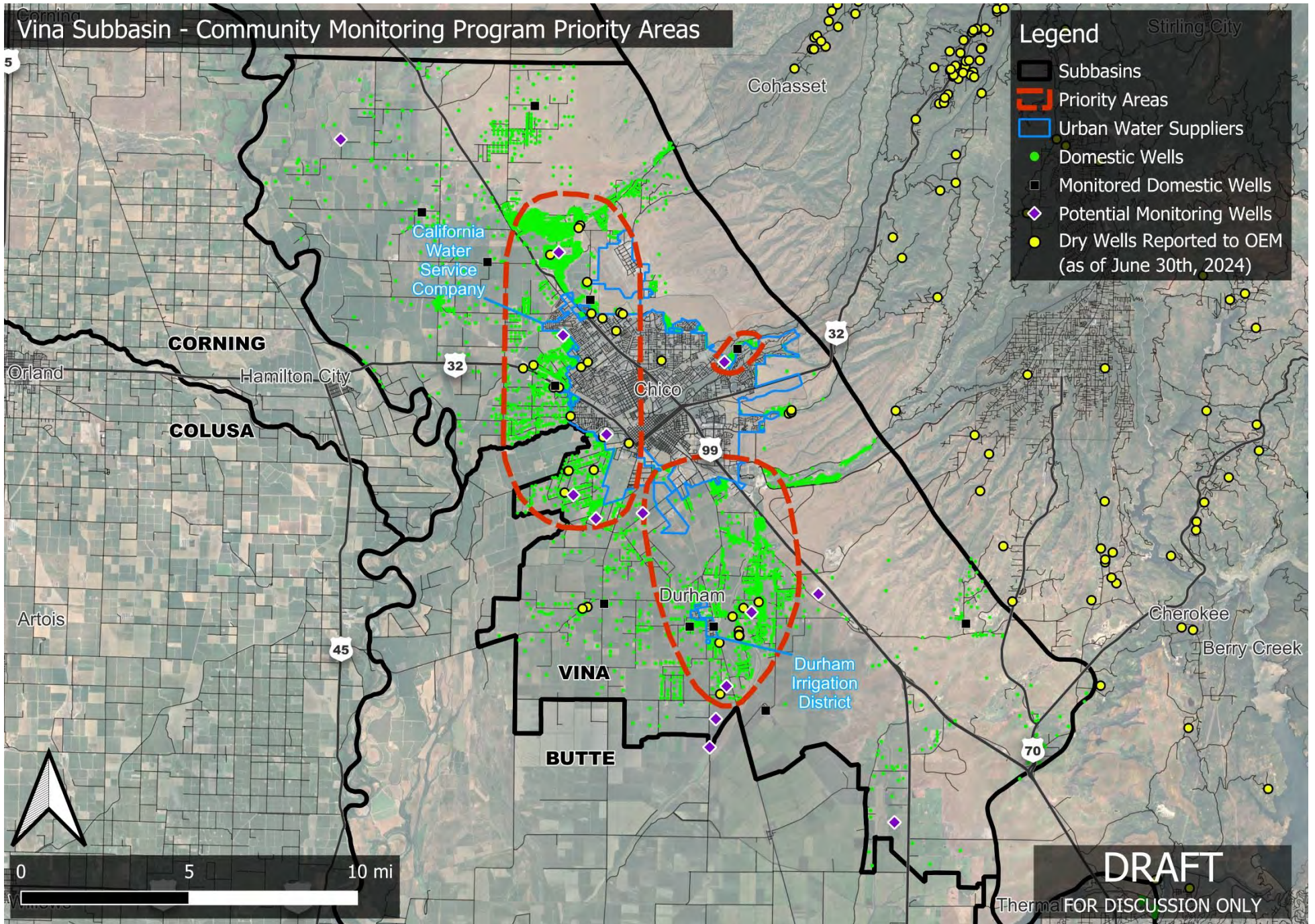
Fiscal Impact: None, this is an item for discussion.

Staff Recommendations:

Vina Subbasin - Upper Aquifer Existing and Proposed Monitoring Network



Vina Subbasin - Community Program Priority Areas



Vina Subbasin Update on Proposed Monitoring Network Enhancements

Prepared by

The LWA Team in coordination with the Vina GSA

Funding provided by the California Department of Water Resources

November 2024



**Luhdorff &
Scalmanini**
Consulting Engineers



CALIFORNIA
STATE UNIVERSITY, CHICO



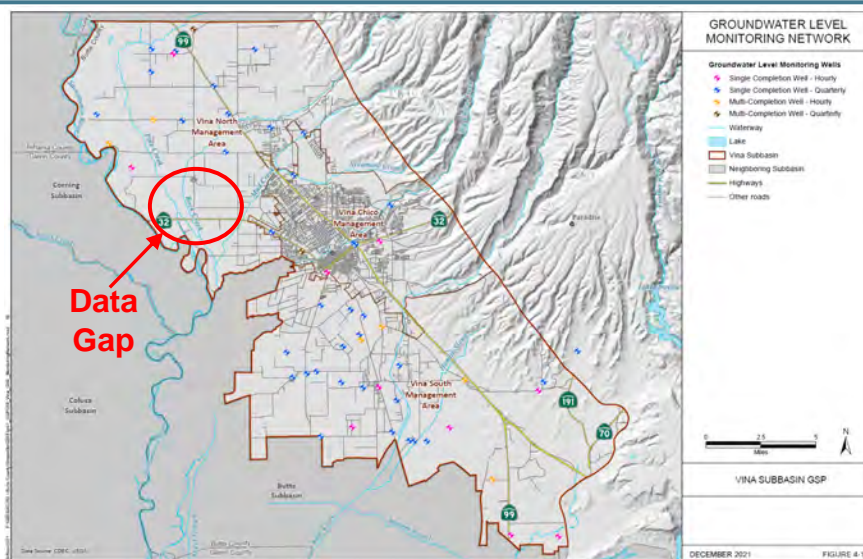
Outline

- Project Objectives
- Overview Existing Groundwater Level Monitoring Network
- ISW/GDE Monitoring Network Development Process
- Monitoring Network Proposed Enhancements
- Domestic Well Survey & Monitoring Plan
- Monitoring Costs
- Schedule/Next Steps

Objectives

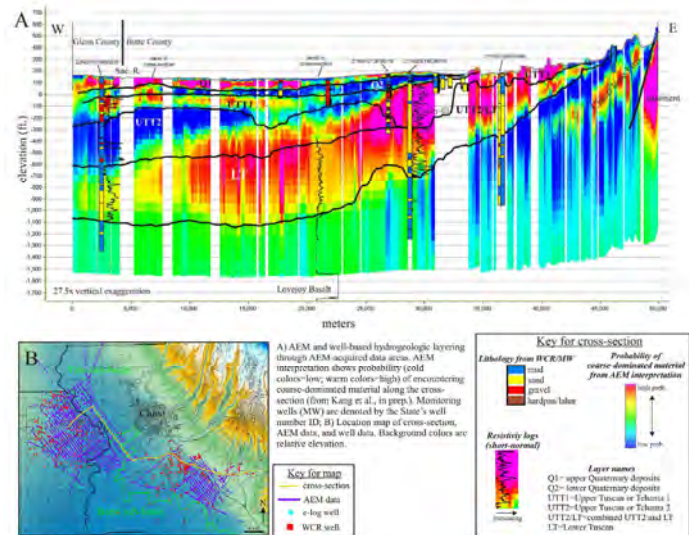
- Address data gaps identified in the Vina GSP & DWR's Determination Letter
- Monitor all beneficial uses and users of groundwater including:
 - ✓ Interconnected surface waters (ISWs),
 - ✓ Groundwater dependent ecosystems (GDEs),
 - ✓ Domestic well owners, and
 - ✓ Agricultural users
- Available funding to drill a minimum of nine (9) shallow wells and one (1) multi-completion well, install minimum of three (3) stream gages, and equip eight (8) domestic wells with monitoring equipment.

Existing Groundwater Level Monitoring Network



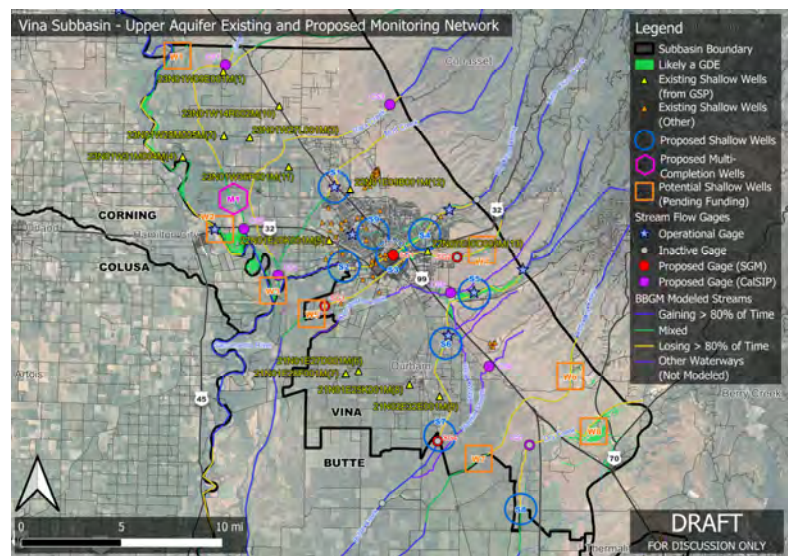
ISW / GDE Monitoring Network Development

- Partnered with Dr. Todd Greene, CSU Chico
- Identified existing shallow wells using DWR AEM Surveys
- Includes wells only screened in the upper and lower Quaternary deposits (Q1 & Q2)



Proposed Monitoring Network Enhancements

- Thirteen (13) existing shallow wells
- Install additional seventeen (17) shallow wells (pending funding and inventory of existing shallow wells not identified in the GSP)
- Install one (1) multi-completion well
- Install up to eleven (11) additional stream gages (pending funding)



CalSIP & Proposed Stream Gages

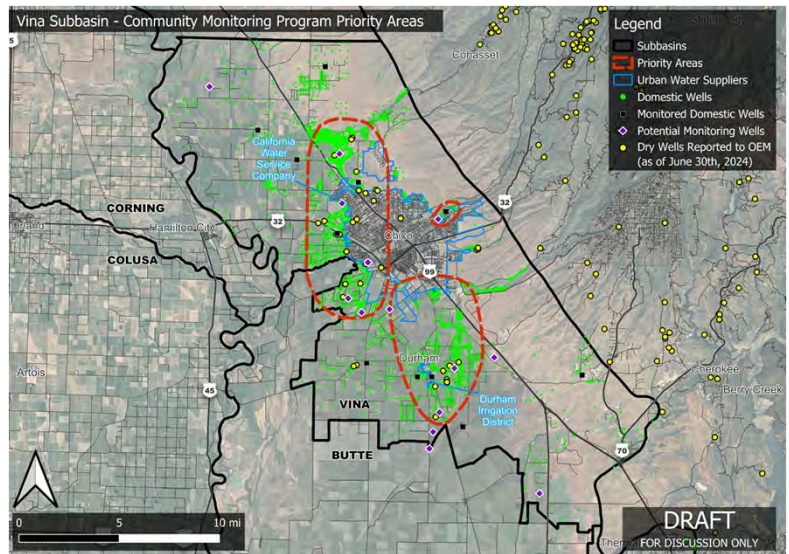
Stream Gage Site ID (from map)	Creek / Waterway	CalSIP Priority Watershed	Anticipated Benefit (Shaded Cells Indicate Benefit)		
			ISW / GDE Monitoring	Groundwater Recharge	Water Budget / BBGM Refinements
CS1	Pine (upper)	Yes			
CS2	Pine (lower)	Yes			
CS3	Rock (upper)	Yes			
CS4	Mud/Rock (lower)	Yes			
CS5	Camanchee	Yes			
CS6	Hamlin Slough	Yes			
CS7	Dry	Yes			
SG1	Big Chico (lower)	No			
SG2	Little Chico (upper)	No			
SG3	Little Chico (lower)	No			
SG4	Butte (lower)	No			

Notes:

- 1.) Site IDs starting with "SG" are tentatively to be installed under the SGM Round 2 grant.
- 2.) Site IDs starting with "CS" are tentatively to be installed under CalSIP funding.
- 3.) GDEs and ISWs stand for Groundwater Dependent Ecosystems and Interconnected Surface Waters, respectively.
- 4.) BBGM stands for the Butte Basin Groundwater Model.

Domestic Well Survey & Monitoring Plan

- ~ 1,340 domestic wells in the subbasin (based on parcel information)
- ~ 2,300 Well Completion Reports (WCRs) received since 1977
- Twelve (12) existing domestic wells monitored by DWR / Butte County
- Fourteen (14) additional domestic wells available for monitoring
- Budget to equip eight (8) domestic wells with continuous monitoring equipment



Continuous / Real-Time Monitoring

- Groundwater Level Monitoring Sites
 - Installation Cost: \$6,500 - \$11,000 per site
 - Annual on-going O&M Cost: \$1,000 - \$2,500 per site

- Stream Flow Gages
 - Installation Cost: up to \$35,000 per site
 - Annual on-going O&M Cost: \$4,000 - \$8,000 per site



Figure 1. Groundwater level monitoring site with ENO Scientific sensor.



Figure 2. In-Situ pressure transducer for measuring groundwater levels and stream stage.

Continuous / Real-Time Monitoring (continued)

Table 1. Installation and Annual O&M Cost for Real-Time Monitoring.

Locations	Number of Sites	Installation Cost	Average Annual O&M Cost
Domestic Wells	8	\$56,000	\$12,000
Shallow Wells	9	\$63,000	\$13,500
Multi-Completion	1	\$11,000	\$2,000
Stream Gages (SGM)	4	\$140,000	\$24,000
Stream Gages (CalSIP) - Optional	7	\$245,000	\$42,000
Total:	28	\$515,000	\$93,500
Total (excluding CalSIP gages):	21	\$270,000	\$51,500

Assumptions:

- 1.) Domestic and Shallow Well Installation Cost = \$7,000 per site; O&M Cost = \$1,500 per site.
- 2.) Multi-Completion Well Installation Cost = \$11,000 per site; O&M Cost = \$2,000 per site.
- 3.) Stream Gage Installation Cost = \$35,000 per site; O&M Cost = \$6,000 per site.
- 4.) Sites will be maintained indefinitely (e.g., replace sensors, dataloggers, etc. as needed). Routine site maintenance (e.g., clean solar panel, replace desiccant, etc.) completed by lower cost employee (e.g., intern).
- 5.) Stream gages calibrated annually to ensure accuracy of stage-discharge relationship.
- 6.) Continuous / real-time monitoring planned only at new monitoring locations; additional installations on other monitoring sites may be considered as grant funding allows.
- 7.) GSA is responsible for ongoing site maintenance beyond grant terms.

Schedule

SHAC/Board Input Process:

- SHAC Meeting → October 23, 2024 (Monitoring Network Update)
- Vina GSA Board Meeting → November 13, 2024 (Monitoring Network Update)
- SHAC Meeting → November 20, 2024 (Recommendation to Board)
- Vina GSA Board Meeting → December 11, 2024 (Final Board Approval)

Next Steps:

- Access agreements, final designs, & bid documents complete January 2025
- Well contractors notice to proceed by February 2025
- New wells installed by June 2025
- Stream gage installations start December 2024
- Apply for CalSIP funding as directed by December 31, 2024

Questions?

TECHNICAL MEMORANDUM

Date: November 1, 2024
To: Vina Groundwater Sustainability Agency (GSA)
From: Larry Walker Associates
Subject: Groundwater Monitoring Network Enhancements



1. BACKGROUND

The Vina Groundwater Sustainability Agency (GSA) groundwater level monitoring network is critical for understanding conditions for all beneficial users and uses of groundwater including interconnected surface waters (ISWs), groundwater dependent ecosystems (GDEs), domestic well users, and agricultural users. The Vina GSA was awarded funding through DWR's Sustainable Groundwater Management (SGM) Grant Program to fund monitoring network enhancements as identified in the Vina Groundwater Sustainability Plan (GSP) and DWR's Determination Letter.¹ The scope of this grant includes (1) a thorough review of the existing monitoring network and (2) the design and installation of a minimum of nine new shallow wells, one new multi-completion well, a minimum of three new stream gages, and monitoring of eight domestic wells.

2. METHODS AND PROCEDURES

The Vina GSP, Section 4.2, identifies seventy-eight (78) existing wells within the Vina Subbasin groundwater level monitoring network (Figure 1). This network of monitoring wells was used for observing groundwater levels and calculating flow directions and hydraulic gradients in the principal aquifer during GSP development and annual reporting. The actual aquifer layers these wells represented based on screen intervals / well depths were not identified in the GSP. After meeting with the Butte County Technical Advisory Committee and neighboring subbasins, it was recommended to develop a separate monitoring network for the upper groundwater aquifer layer, to monitor ISWs and GDEs, and the lower aquifer layer, to monitor impacts from pumping. The two-layer approach allows for assessing the vertical connectivity between aquifer zones.

Vina GSA partnered with Dr. Todd Greene with CSU Chico to provide stratigraphic context for the screened intervals in the Vina Subbasin monitoring wells. This information was then used to help guide the location and screen intervals for future monitoring well sites for the upper and lower aquifer layers. A thorough breakdown of the data, methodology, and results of this investigation are detailed in a technical memorandum developed by Sub-Terra Heritage Resource Investigations (Greene, 2024).

¹ Vina GSP and Determination Letter available here: <https://sgma.water.ca.gov/portal/gsp/preview/86>

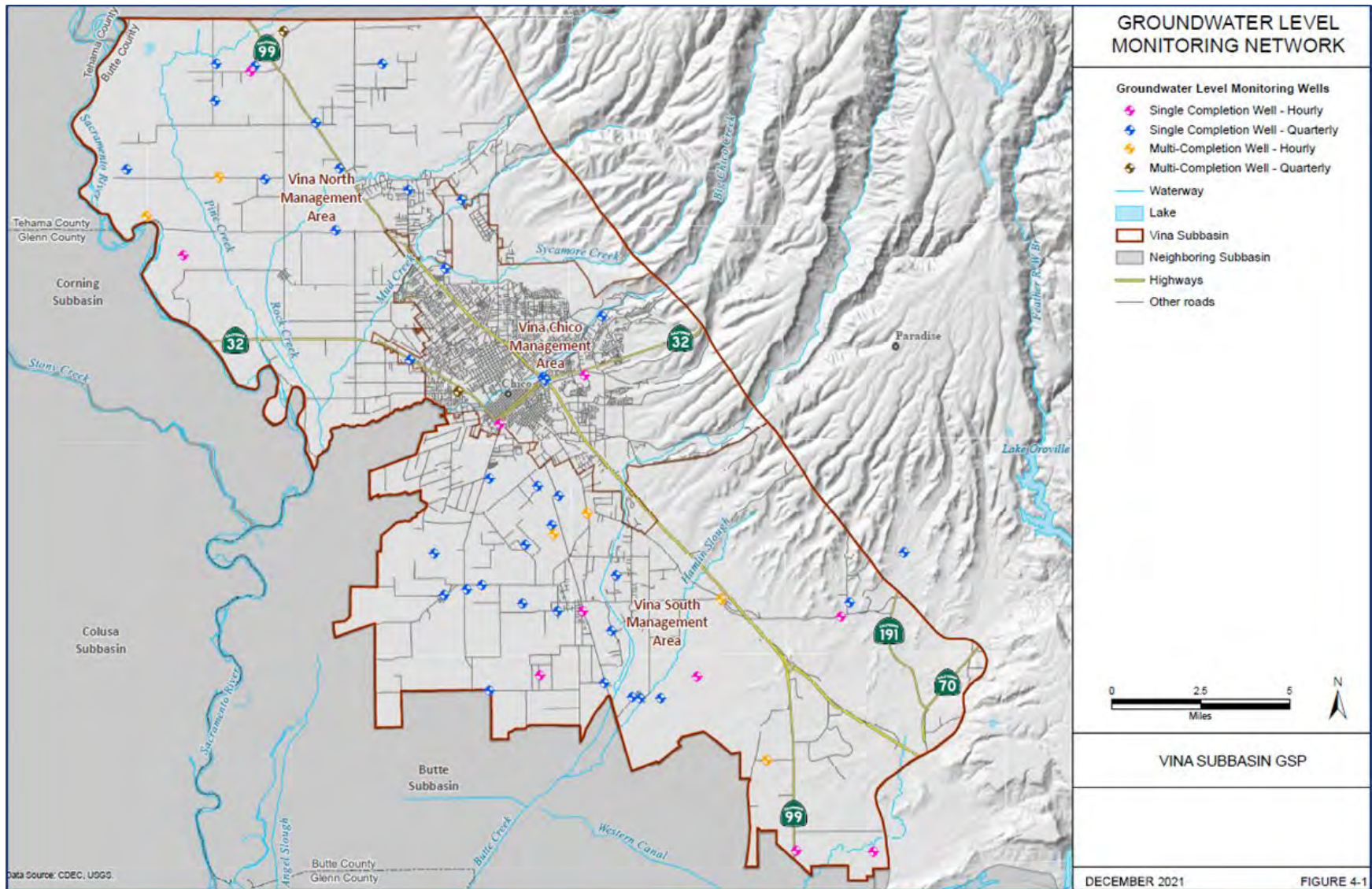


Figure 1. Map of existing groundwater level monitoring network (Vina Groundwater Subbasin GSP, Figure 4-1, page 165).

2.1. Monitoring Network Enhancements

To refine the site selection process for new wells and stream gages in the groundwater monitoring network, LWA in coordination with GSA staff have established the following site selection criteria:

1. **Data Gaps** – Prioritize locations that will help address data gaps identified in the GSP and DWR’s Determination Letter which includes ISWs and GDEs. The Butte Basin Groundwater Model was used to identify potential ISWs. Potential GDEs were identified using the Natural Communities Commonly Associated with Groundwater dataset developed by DWR, the California Department of Fish and Wildlife (CDFW), and The Nature Conservancy (TNC).
2. **Land Access** – The GSA will locate new sites along County and City easements when feasible or establish landowner agreements as needed.
3. **Existing Infrastructure** – Prioritize utilizing existing infrastructure to avoid unnecessary drilling and well construction expenses, when possible. For stream gages, locating and reactivating inactive sites will generally be more cost-effective than establishing new gaging sites.
4. **SGMA Projects** – Prioritize sites that could benefit other SGMA projects. For example, the Lindo Channel Recharge Project will require shallow wells to help quantify recharge. Installing both shallow wells in the area could help analyze benefits provided by such a project in the short term, while also serving as long-term monitoring sites for ISWs/GDEs.
5. **Water Quality** – To the extent possible, new wells will support subbasin groundwater quality monitoring efforts and fill gaps in the water quality monitoring network.
6. **Priority Watersheds** – While most wells and stream gages will be placed in accordance with the criteria listed above, the GSA may have the opportunity to install additional stream gages under the Stream Gage Improvement Program (CalSIP) in “Priority Watersheds” as described in the 2022 California Stream Gaging Prioritization Plan.² The CalSIP Priority Watersheds in Vina Subbasin include Singer Creek, Pine Creek, Rock Creek, Commanche Creek, Hamlin Slough, and Dry Creek.

2.2. Domestic Well Survey

A desktop survey was performed to locate parcels with domestic wells using the County Assessor’s Office parcel use codes. The goal of this survey was to refine the GSA’s existing domestic well dataset and to identify areas with a high density of domestic wells at risk of going dry (deemed “Priority Areas”). In the desktop survey, parcels within Cal Water and Durham Irrigation District service areas were excluded from the analysis due to being served by a public water supply system. Parcels zoned for agriculture were only included if they had a building with a known address.

The GSA will hold outreach events to solicit interest from community members in Priority Areas in preparation for the launch of the Community Monitoring Program to monitor domestic wells throughout the Subbasin.

² Plan available here: https://www.waterboards.ca.gov/waterrights/water_issues/programs/stream_gaging_plan/

3. RESULTS

3.1. Monitoring Network Enhancements

A map of the proposed monitoring network for the Vina Subbasin is shown in Figure 2. Of the seventy-eight (78) existing wells included in the groundwater level monitoring network (see GSP Section 4.2), Dr. Todd Greene’s analysis identified thirteen (13) as shallow. Shallow wells are screened in the upper and lower Quaternary deposits. These sites are summarized in Table 1 with hydrographs provided in Appendix A.

Table 1. Existing representative monitoring wells measuring groundwater levels in the upper aquifer. Continuous sites are equipped with sensors. Monthly sites are measured each month, if feasible, by DWR or Butte County.

SWN / Map Label	Monitoring Frequency	Well Type	Collecting Agency
23N01W09E001M (1)	Monthly	Irrigation	Butte County / DWR
23N01W28M005M (2)	Continuous / Monthly	Observation	Butte County / DWR
23N01W27L001M (3)	Monthly	Residential	Butte County / DWR
23N01W31M004M (4)	Continuous / Monthly	Observation	Butte County / DWR
22N01E20K001M (5)	Monthly	Residential	Butte County / DWR
21N01E27D001M (6)	Monthly	Residential	Butte County / DWR
21N01E28F001M (7)	Monthly	Irrigation	Butte County / DWR
21N01E25K001M (8)	Monthly	Residential	Butte County / DWR
21N02E32E001M (9)	Monthly	Irrigation	Butte County / DWR
23N01W14R002M (10)	Monthly	Irrigation	Butte County / DWR
23N01W36P001M (11)	Monthly	Residential	Butte County / DWR
22N01E09B001M (12)	Monthly	Residential	Butte County / DWR
22N02E30C002M (13)	Continuous / Monthly	Observation	Butte County / DWR

As illustrated on Figure 2, the long-term goal for the shallow monitoring network is to install wells near streams and potential GDEs in areas delineated with blue circles, indicating high priority locations, and orange squares, indicating lower priority locations. The high priority monitoring sites are located along Big Chico Creek, Butte Creek, Mud Creek, and Lindo Channel. A shallow well will be installed at the nine (9) high priority locations under the SGM Grant pending review of other existing shallow monitoring wells in the area (e.g., City of Chico nitrate monitoring wells) that may be used instead of drilling a new well. Additional shallow wells will be installed in areas identified by the orange squares as funding allows.

A multi-completion well is proposed at site labeled M1 as illustrated on Figure 2. This location is not covered by an existing monitoring well, located along a section of Pine Creek that transitions from a gaining and losing stream according to the Butte Basin Groundwater Model,

surrounded by agricultural pumping, and located to the west of an area with a significant number of domestic wells.

It is recommended to install three stream gages along Big Chico, Little Chico, and Butte Creeks with SGM grant funding. Additional stream gages along Pine, Rock, Camanche, and Dry Creeks and Hamlin Slough may be installed with CalSIP funding (see purple circles on Figure 2). A long-term goal is to measure near ISWs and GDEs and water entering and leaving the Subbasin through streams.

DRAFT

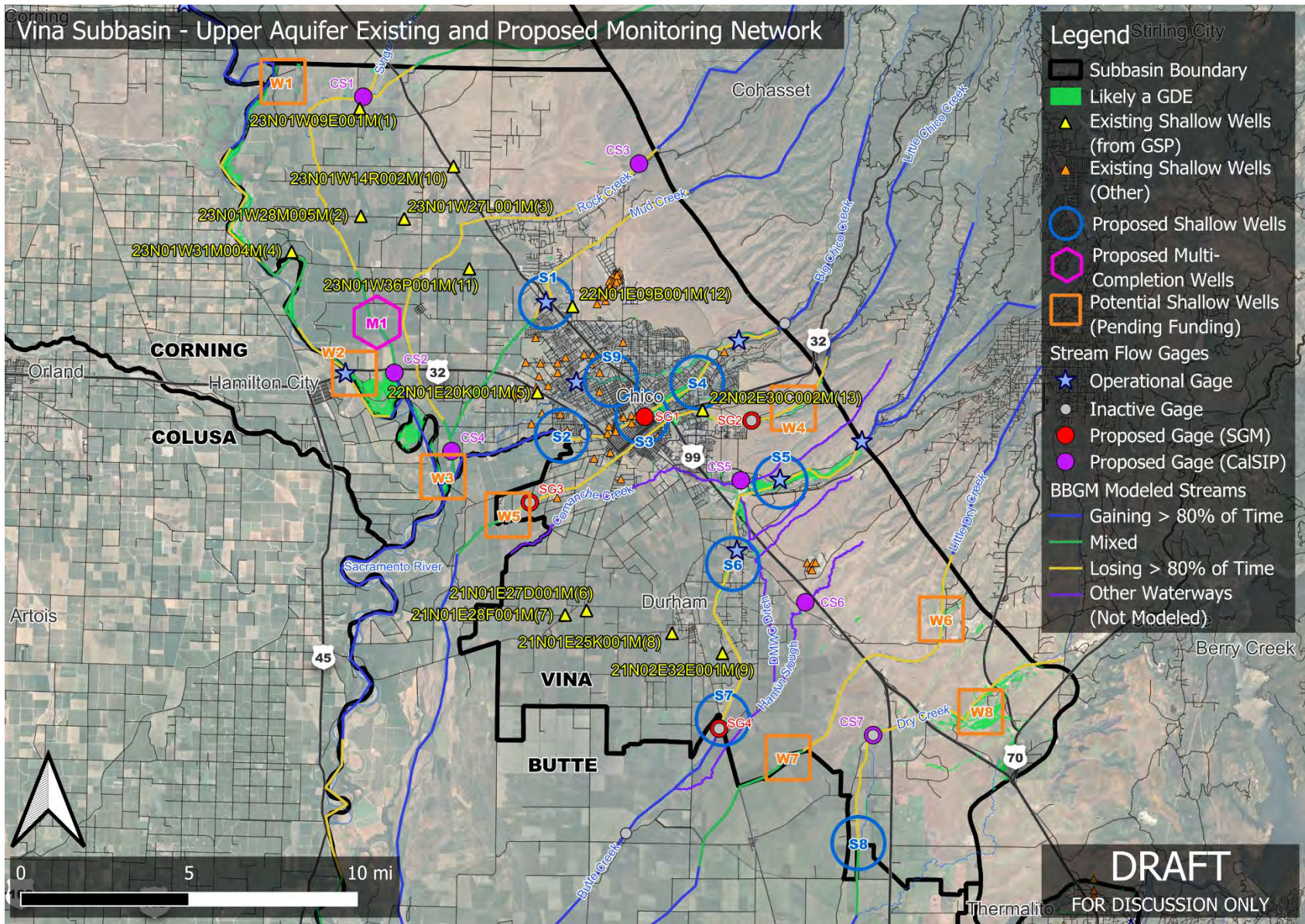


Figure 2. Map depicting existing, planned, and potential shallow monitoring wells within the Vina Subbasin.

3.3. Domestic Well Survey Preliminary Results

The domestic well survey based on parcel information identified 1,342 domestic wells within the Vina Subbasin. A map of the domestic well survey results with delineated Priority Areas are shown in Figure 3. For comparison, DWR estimates approximately 2,300 domestic wells within the Vina Subbasin based on the number of well completion reports (WCRs) received since 1977.³ The parcel-based approach may be a better representation of the actual number of wells in the Subbasin as some domestic wells have likely been replaced over time. Further coordination with Cal Water is recommended to identify parcels within their service area without service.

Approximately fourteen well owners have volunteered their domestic wells to be monitored under the Community Monitoring Program (see purple points on Figure 3). These wells will be further evaluated to assess the suitability to participate and be monitored through the Program. The GSA has funding to install monitoring equipment on eight domestic wells.

³ California's Groundwater Live website link: <https://sgma.water.ca.gov/CalGWLive/#wells>

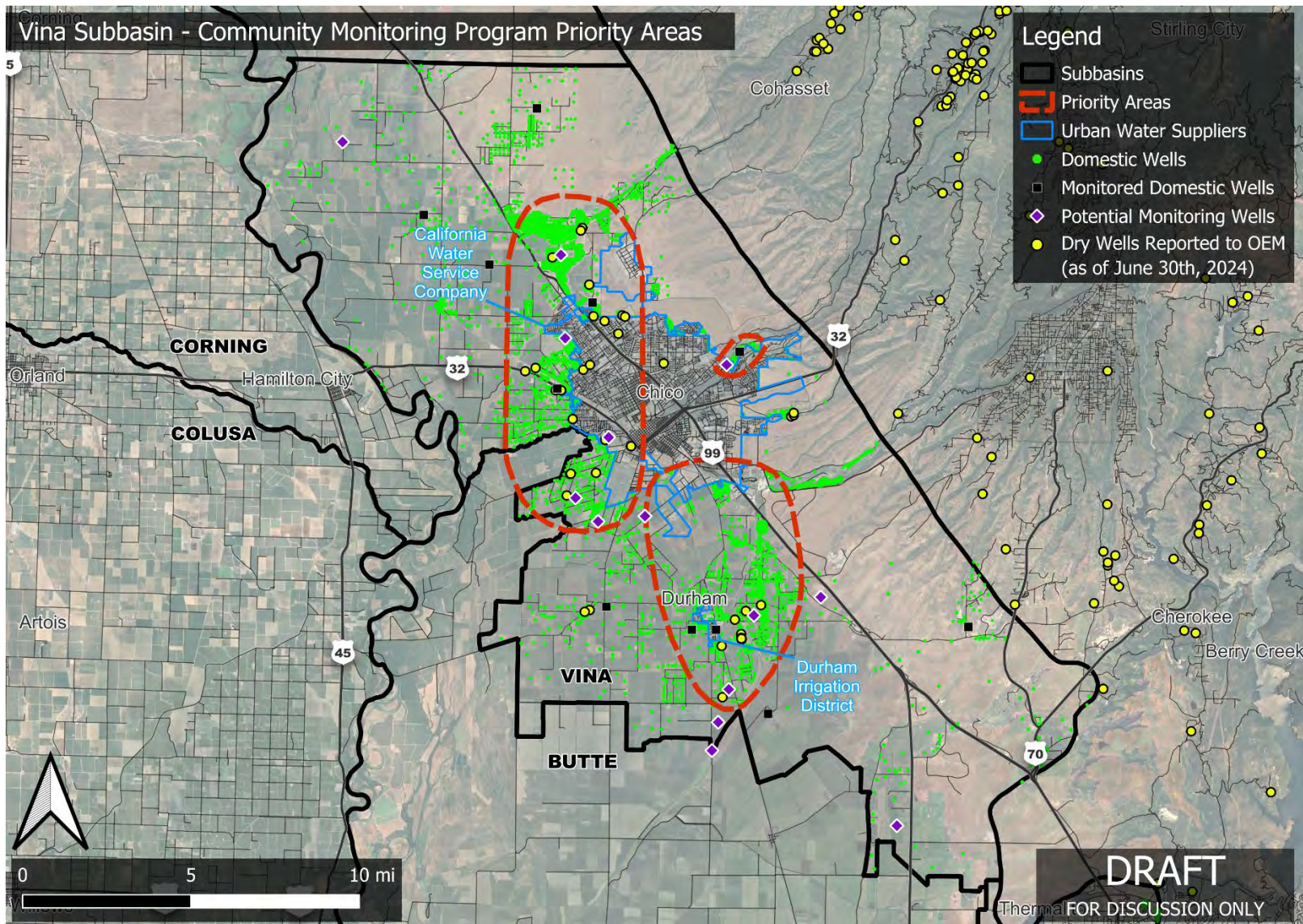


Figure 3. Map depicting results of the domestic well survey. Priority areas were delineated from the domestic well survey results and the dry wells reported to Butte County OEM through June 30, 2024.

4. NEXT STEPS

The LWA Team in coordination with GSA staff are actively soliciting input on the proposed enhanced monitoring network from local stakeholders. To date, we have engaged the following groups for input:

- Members of Butte County Technical Advisory Committee,
- Agricultural Groundwater Users of Butte County,
- Friends of Butte Creek,
- The Nature Conservancy, and
- Other GSA/County technical consultants.

The LWA Team will continue to request input from stakeholders over the next two months. The schedule to request input from the Vina GSA Stakeholder Advisory Committee (SHAC) and the Board of Directors is summarized in Table 2. Updates will be provided to the SHAC and Board of Directors at their October and November meetings, respectively. Final recommendation and approval from the SHAC and Board of Directors is tentatively scheduled for November 20, 2024, and December 11, 2024; respectively.

Table 2. Proposed SHAC and Board of Directors input process schedule.

Group	Meeting Date	Purpose
SHAC	October 23, 2024	Monitoring Network Update
Board of Directors	November 13, 2024	Monitoring Network Update
SHAC	November 20, 2024	Recommendation to Board
Board of Directors	December 11, 2024	Final Board Approval

The LWA Team in coordination with GSA staff will continue to advance activities to ensure installation of the monitoring network remains on schedule. Landowner access agreements (as applicable), final monitoring well designs and specifications, and bid documents will be completed by January 2025. Well contractors will be given notice to proceed by February 2025 with all new wells installed by June 2025. Stream gage installations will start in December 2024 once final approval is granted by the Vina GSA Board of Directors.

Table 3 summarizes installation and annual operating and maintenance (O&M) costs for groundwater level monitoring sites and stream gages. Installation costs will be covered by the grant. The GSA will be responsible for funding ongoing O & M of monitoring sites. Costs assume sites will be equipped with telemetry to automatically view data online in near real-time via an online stakeholder portal. Monitoring equipment will be installed once wells are drilled, and domestic wells and stream gage locations are selected for monitoring.

Table 3. Installation and O&M costs for groundwater level monitoring sites and stream gages.

Site Type	Installation Costs (\$/site)	Annual O&M Cost (\$/site)
Groundwater Level ¹	\$6,500 - \$11,000	\$1,000 - \$2,500
Stream Gage ²	Up to \$35,000	\$4,000 to \$8,000

Notes:

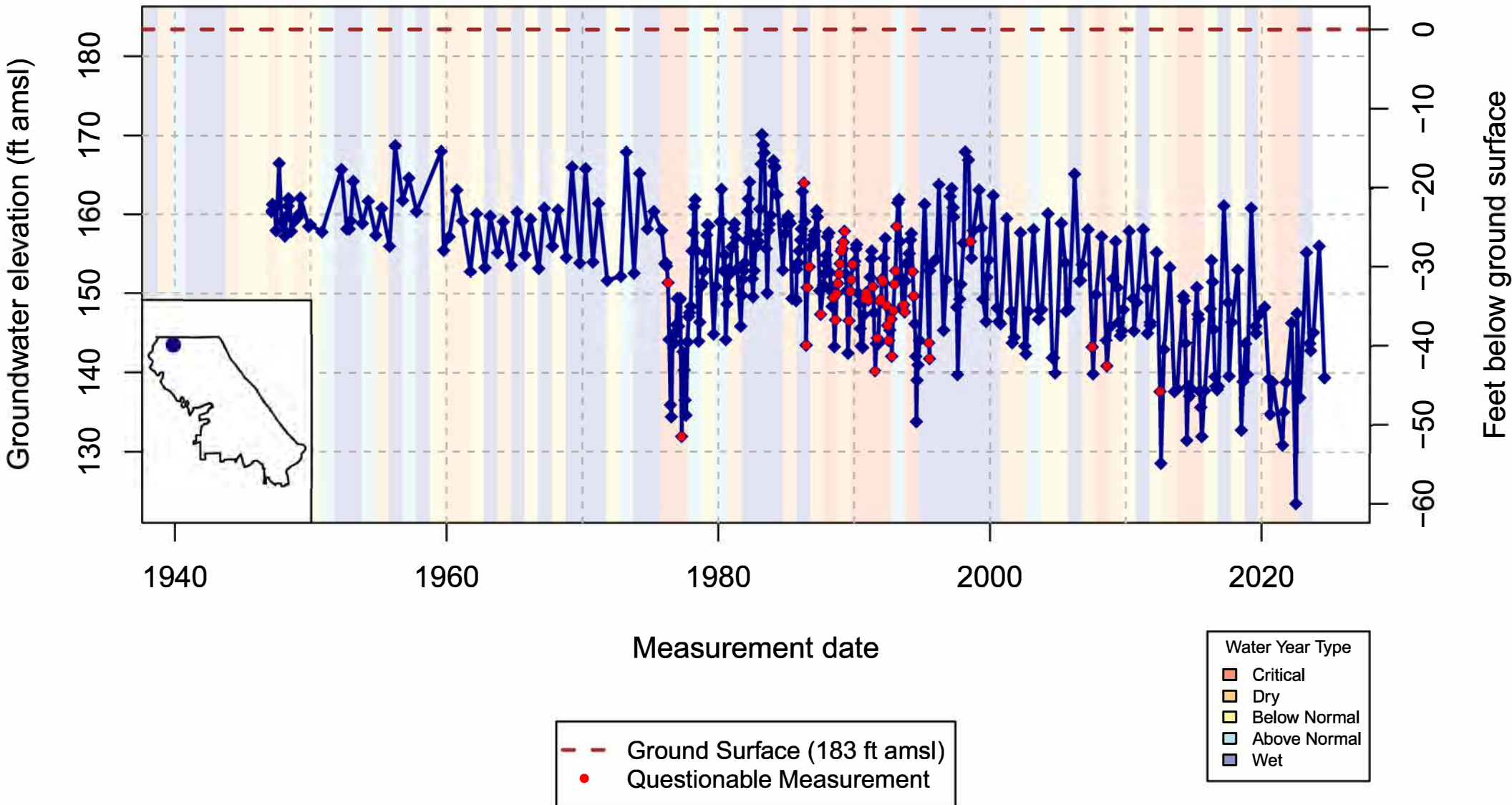
- 1.) Costs vary based on the following factors: type of sensor (e.g., sonar vs submersible), number of well completions, well casing diameter, and depth to groundwater.
- 2.) Costs vary based on site flow conditions and ease of access. Assumes a minimum of three stream measurements at low, medium, and high flow are conducted to develop stage – discharge curve and at least one measurement is taken every year to validate stage-discharge curve.

DRAFT

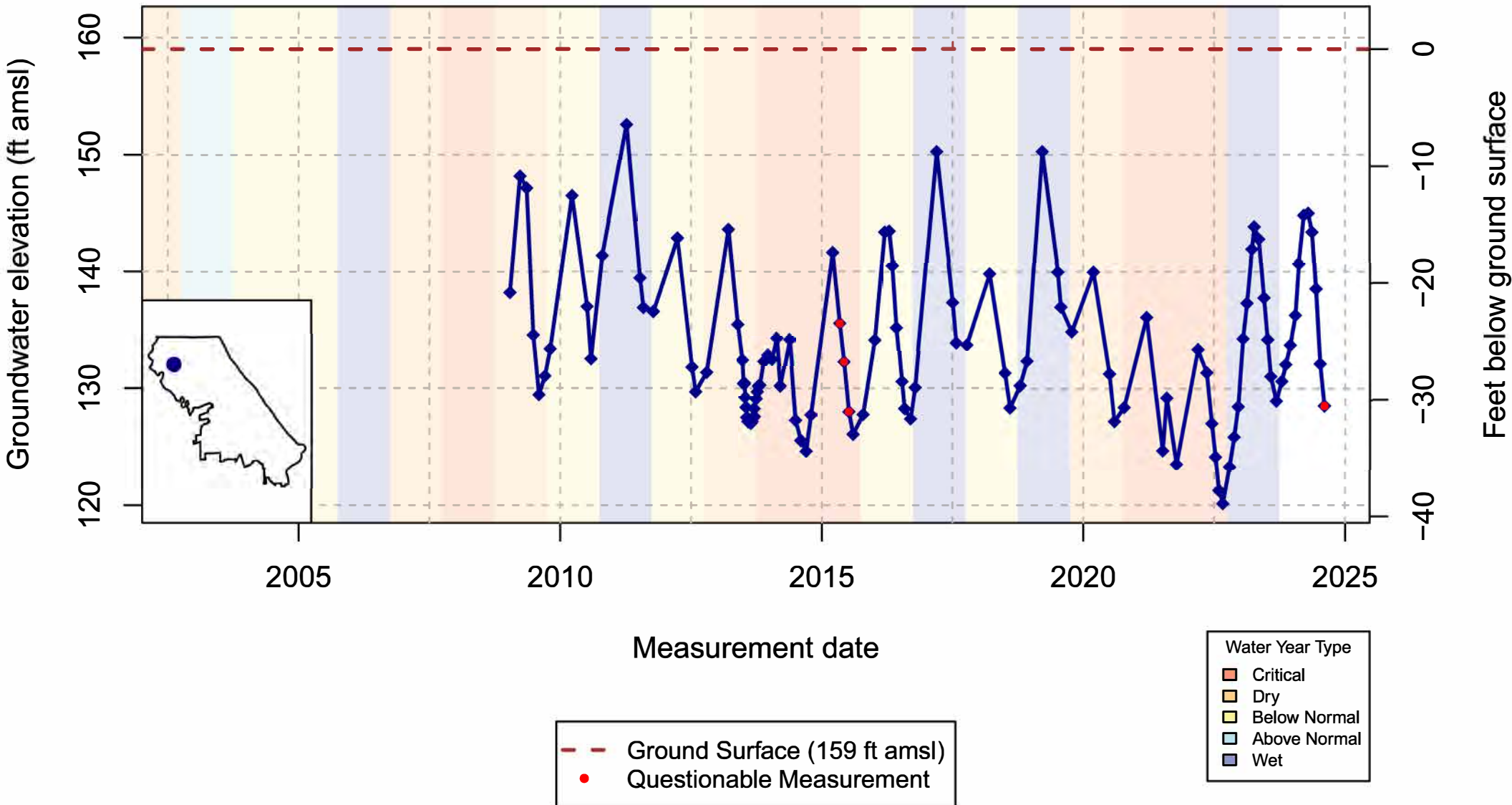
APPENDIX A

**Vina Subbasin Groundwater Hydrographs for Existing Shallow Wells
(Identified Through Dr. Todd Greene's Analysis)**

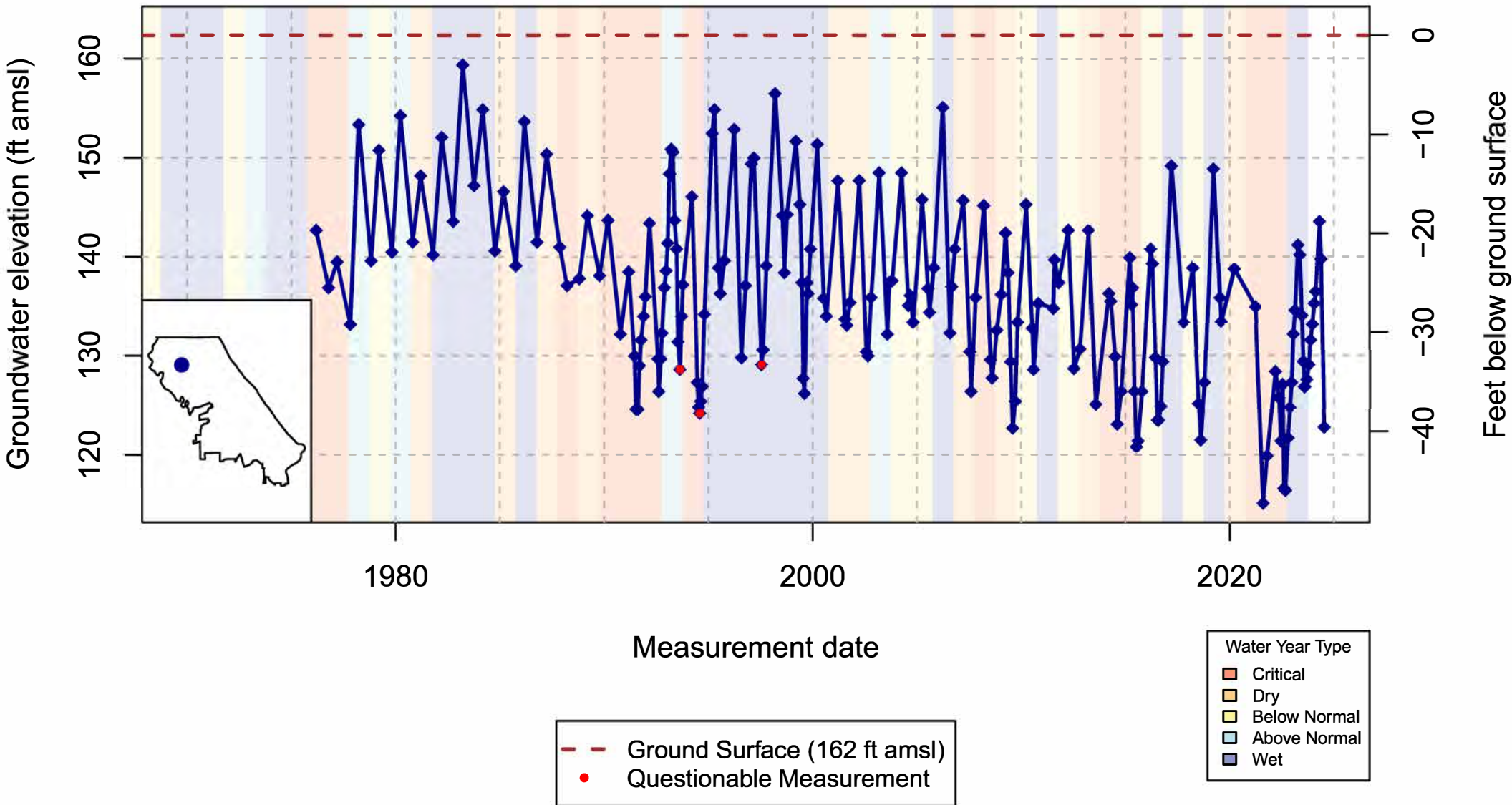
Vina Subbasin – State Well Number (SWN): 23N01W09E001M(1) – Upper Aquifer



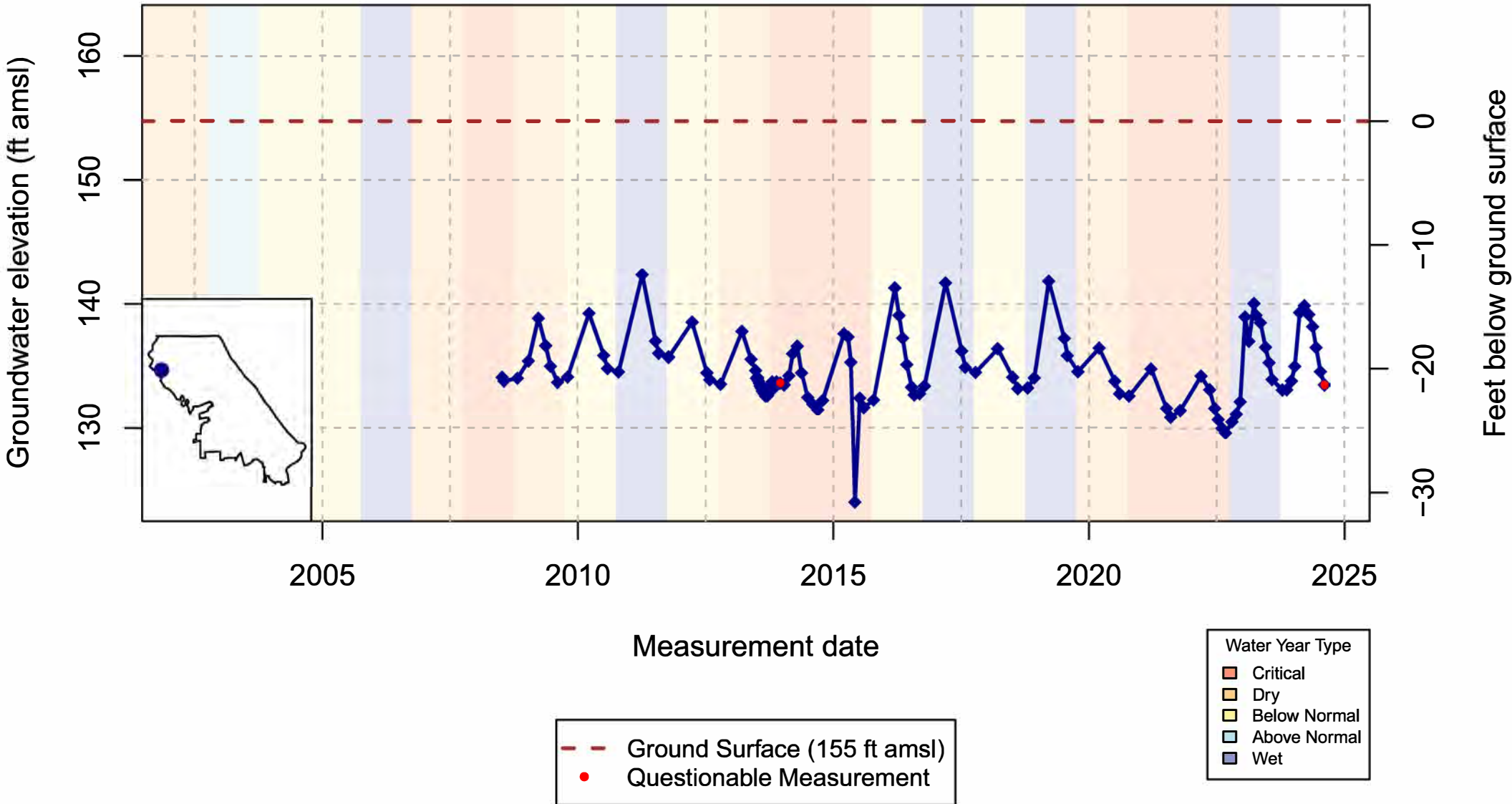
Vina Subbasin – State Well Number (SWN): 23N01W28M005M(2) – Upper Aquifer



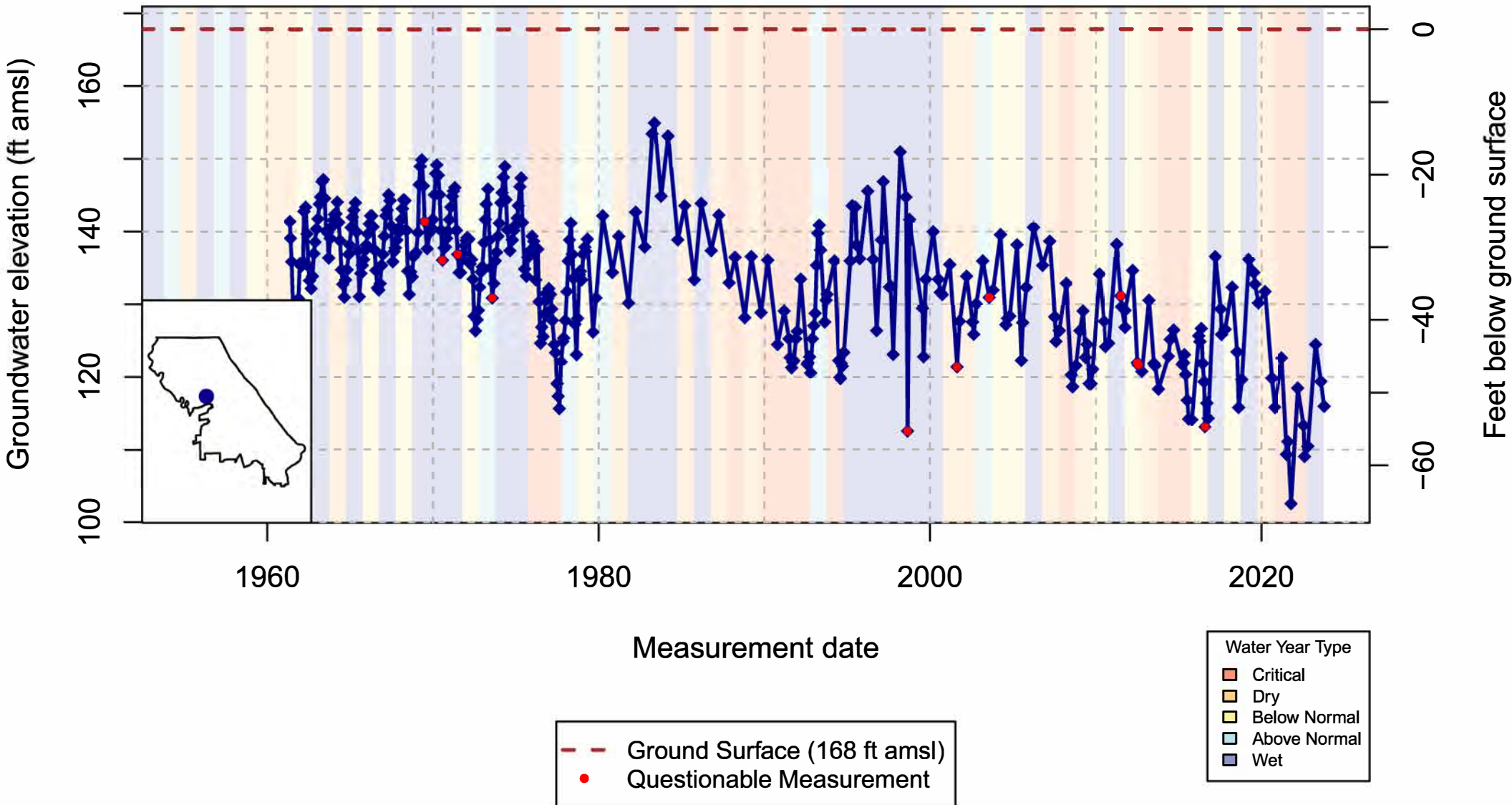
Vina Subbasin – State Well Number (SWN): 23N01W27L001M(3) – Upper Aquifer



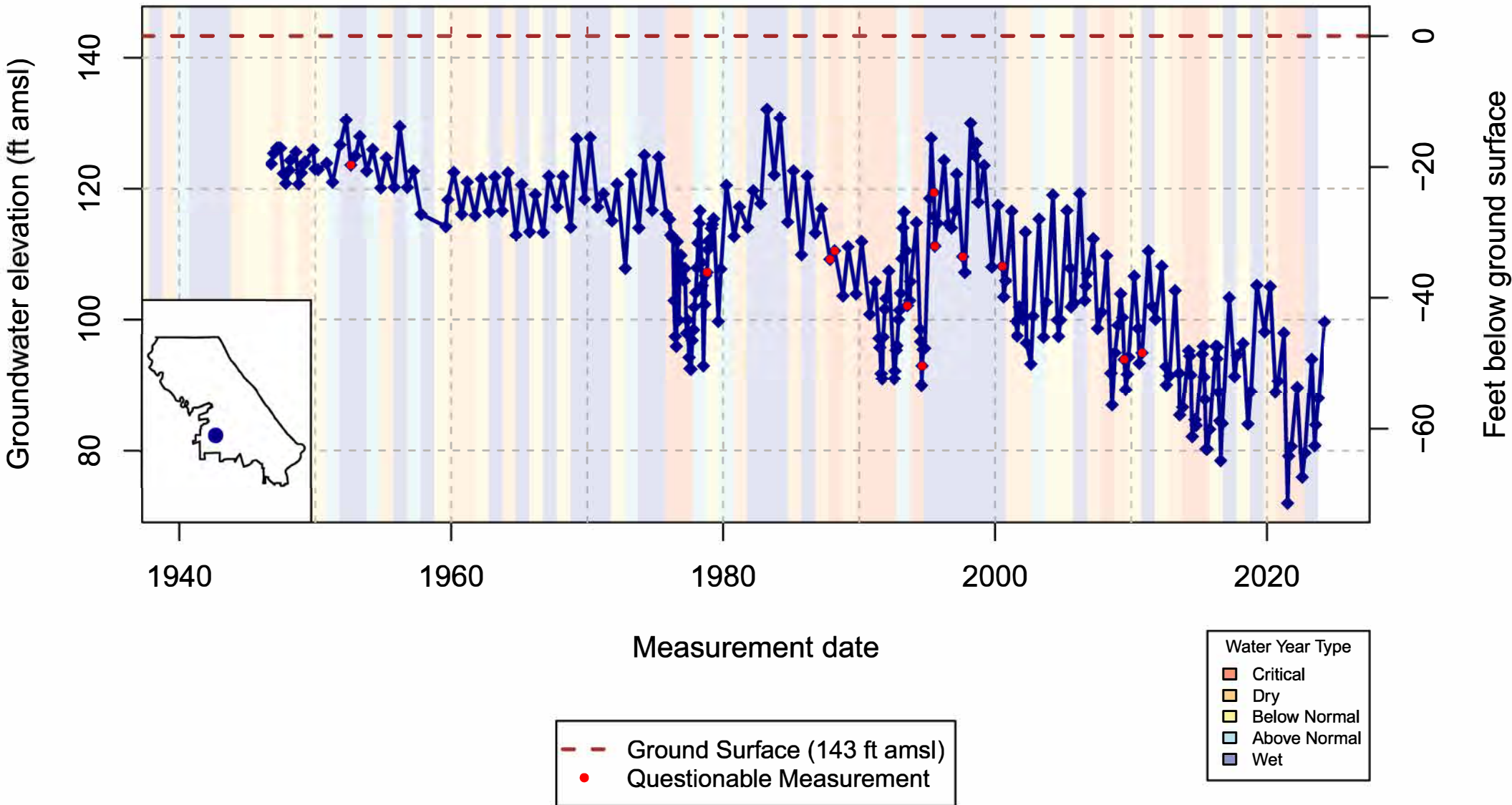
Vina Subbasin – State Well Number (SWN): 23N01W31M004M(4) – Upper Aquifer



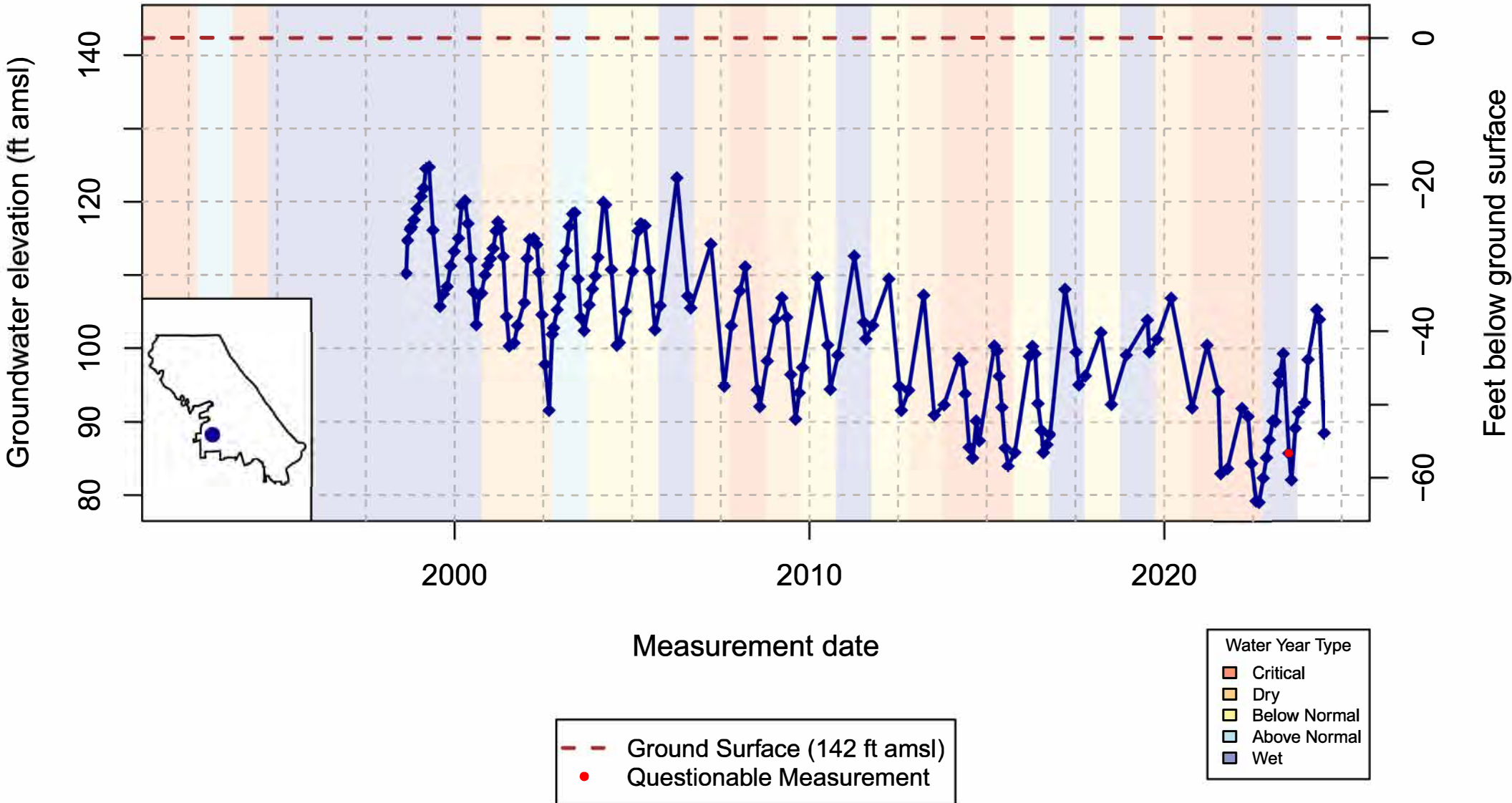
Vina Subbasin – State Well Number (SWN): 22N01E20K001M(5) – Upper Aquifer



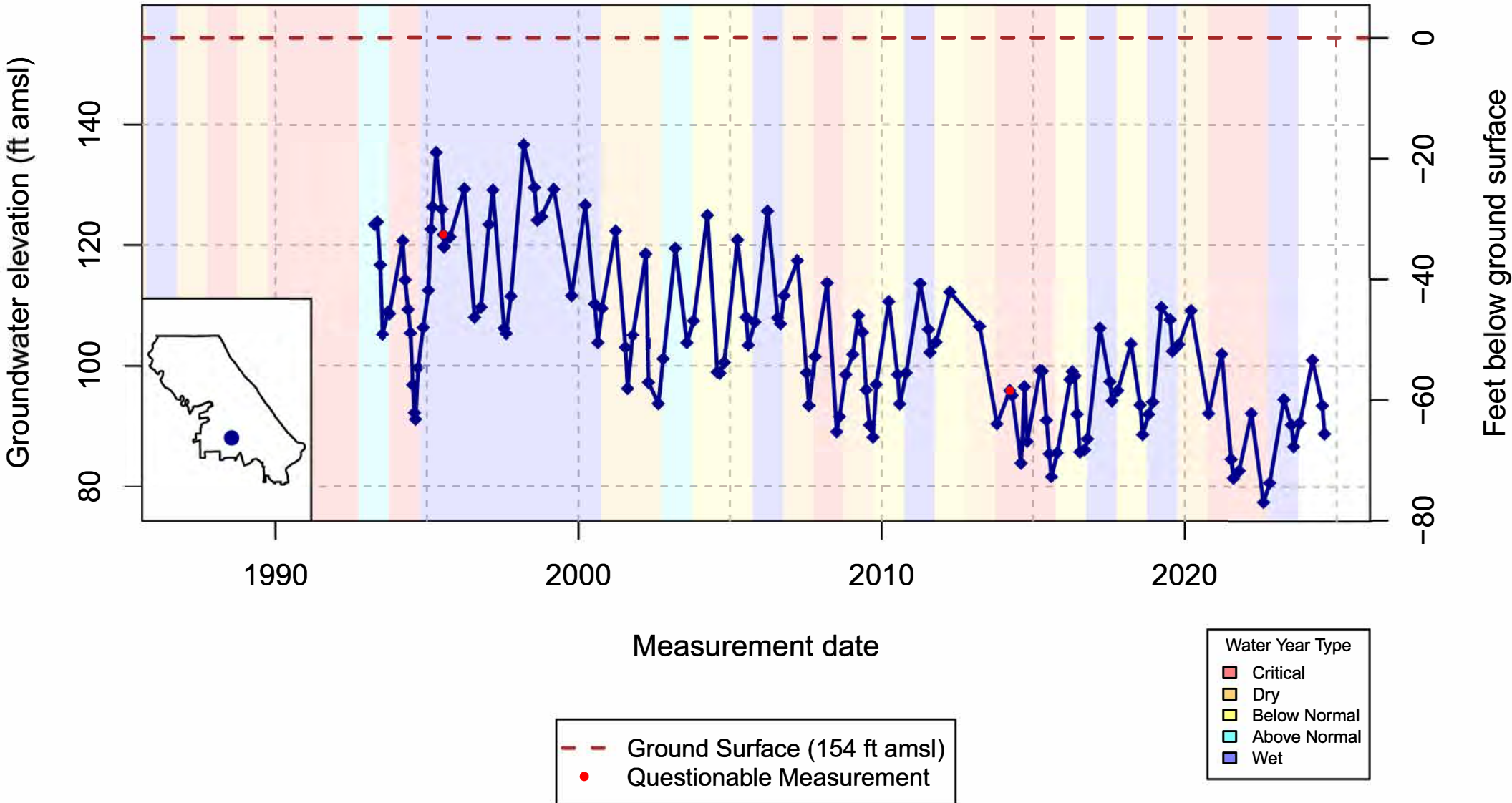
Vina Subbasin – State Well Number (SWN): 21N01E27D001M(6) – Upper Aquifer



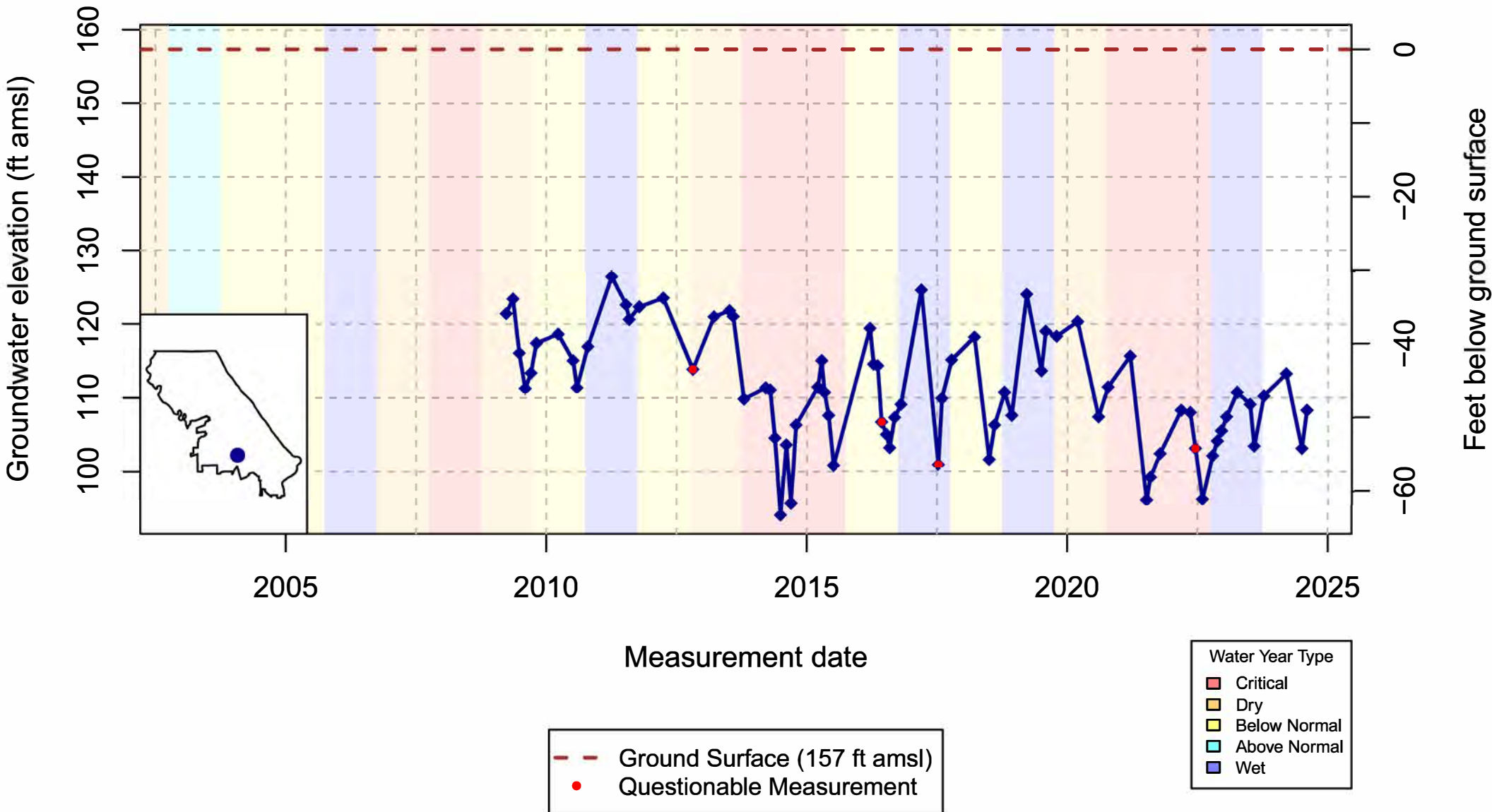
Vina Subbasin – State Well Number (SWN): 21N01E28F001M(7) – Upper Aquifer



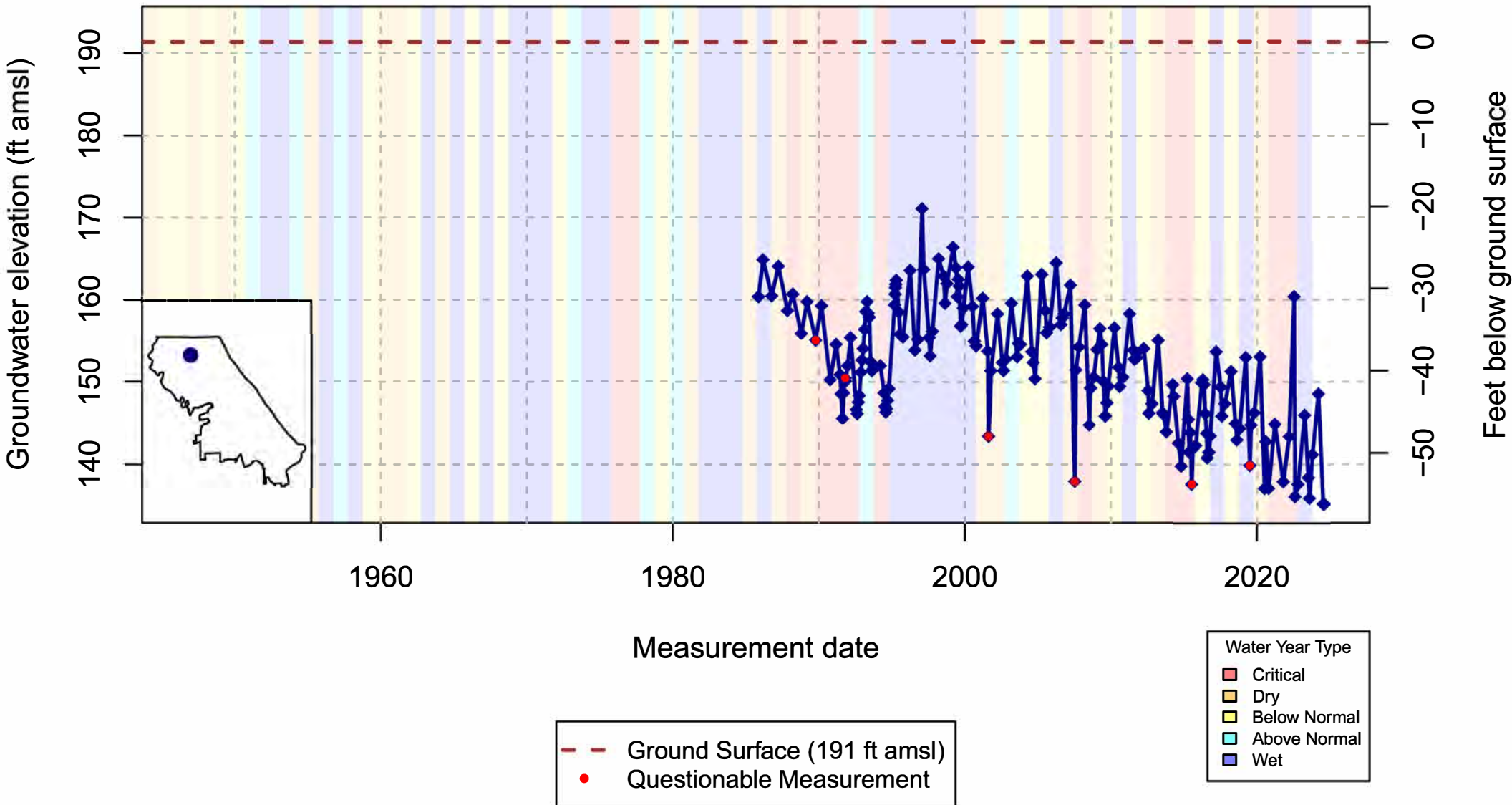
Vina Subbasin – State Well Number (SWN): 21N01E25K001M(8) – Upper Aquifer



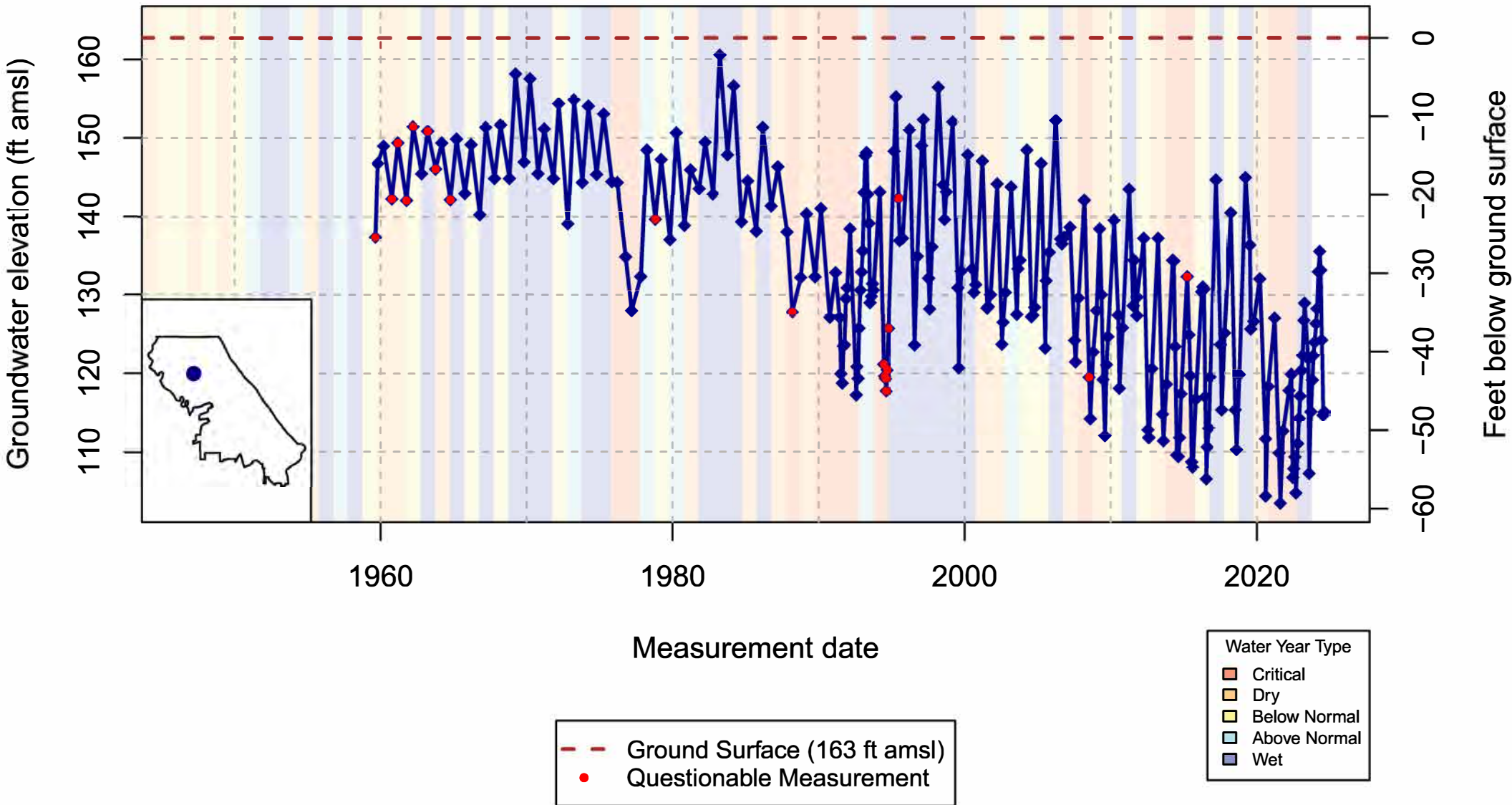
Vina Subbasin – State Well Number (SWN): 21N02E32E001M(9) – Upper Aquifer



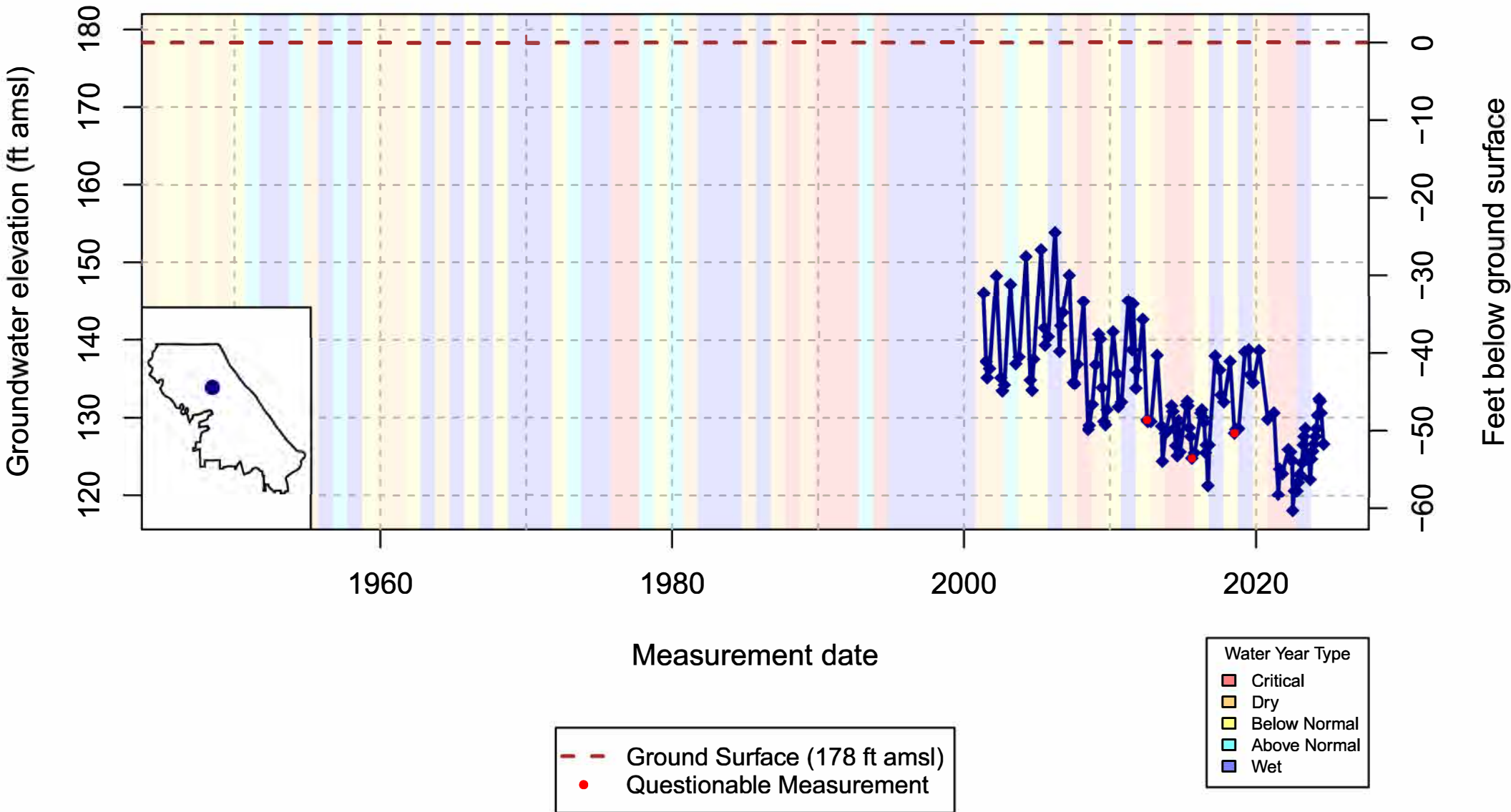
Vina Subbasin – State Well Number (SWN): 23N01W14R002M(10) – Upper Aquifer



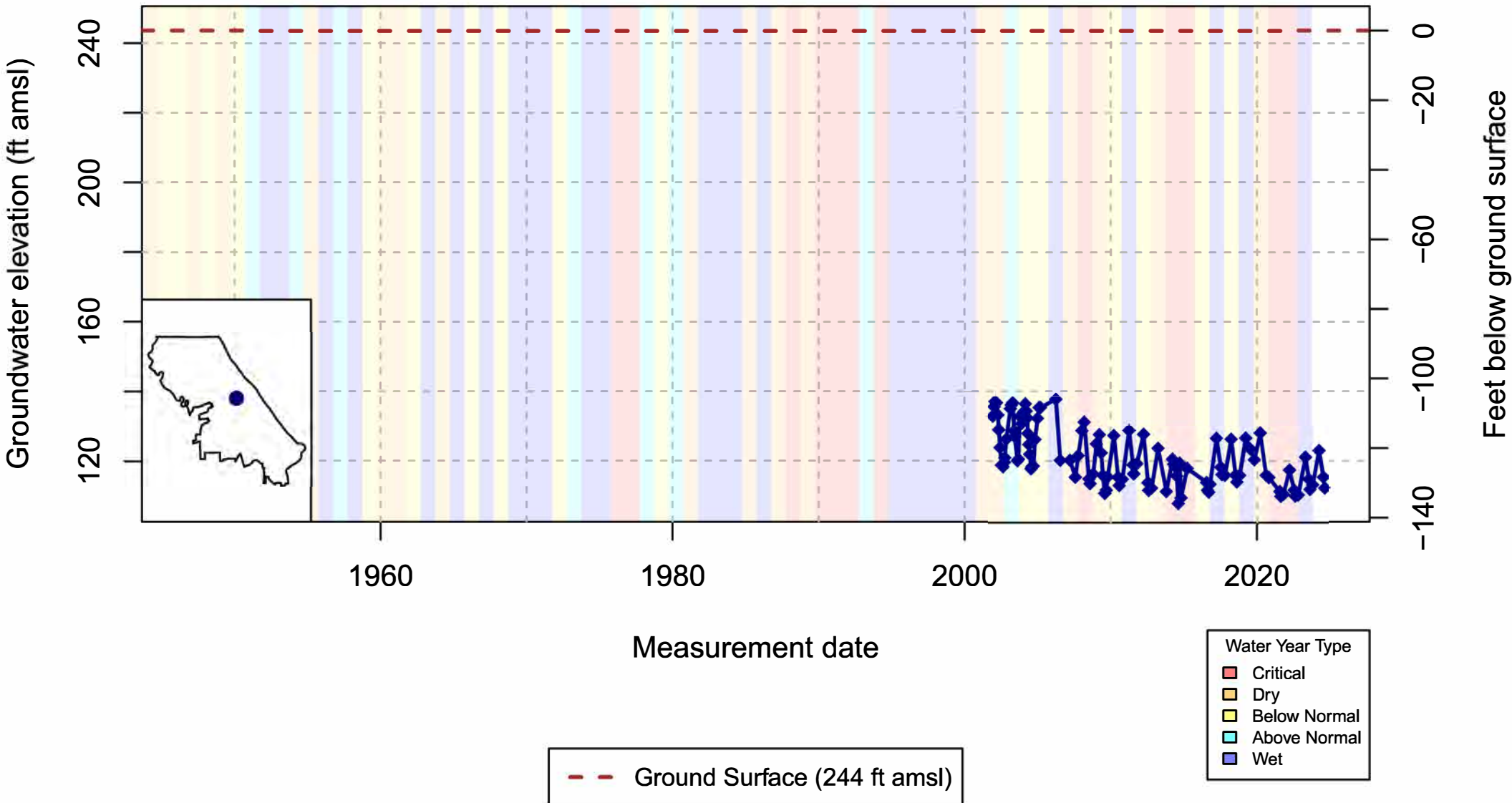
Vina Subbasin – State Well Number (SWN): 23N01W36P001M(11) – Upper Aquifer



Vina Subbasin – State Well Number (SWN): 22N01E09B001M(12) – Upper Aquifer



Vina Subbasin – State Well Number (SWN): 22N02E30C002M(13) – Upper Aquifer





CalSIP

FUNDING AVAILABLE

The California Stream Gage Improvement Program (CalSIP) is a unique opportunity to bolster the state's stream gage network for all water managers and the public. With the goal of providing critical data that can inform important water management decisions, DWR is seeking to fund local entities to install new, or upgrade, reactivate, and share data from existing stream gage stations as well as provide maintenance. This effort will expand California's ability to access critical data that can inform important water management decisions during both flood and drought conditions.

Water resource managers and the public rely on the essential information these gages provide for multiple purposes including:

- Planning, forecasting, and warning about floods and drought conditions
- Managing and informing reservoir operations
- Monitoring environmental conditions to protect aquatic habitats
- Planning for safe and enjoyable recreational activities on streams and rivers
- Monitoring stream flow impacts due to long-term changes in weather patterns



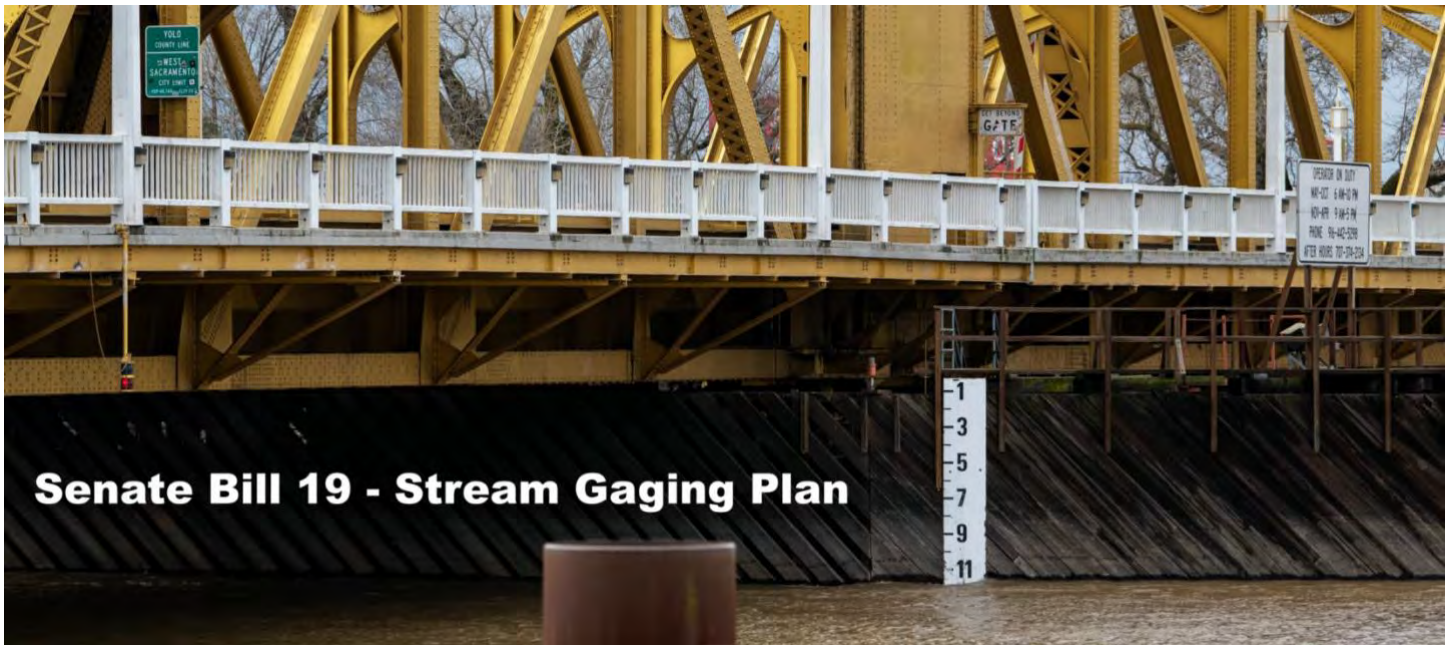
Those eligible to receive technical assistance through the CalSIP program include public agencies such as flood control districts, Groundwater Sustainability Agencies, reclamation districts, irrigation districts, water districts, cities, counties, as well as colleges,

With the launch of this program, DWR is now accepting interest forms which will be reviewed and evaluated monthly to identify eligible projects through December 31, 2024.

universities, and federally recognized Tribes. This funding will be provided to approved entities to purchase and install stream gaging equipment and the operation and maintenance of the station through June 30, 2027.

Where to apply: water.ca.gov/CalSIP

For more information:
calsip_generalquestions@water.ca.gov



Senate Bill 19 - Stream Gaging Plan

Figure 1. A river gauge marker located beside the Tower Bridge in Sacramento, California, measures the water level on the Sacramento River.



[Senate Bill No. 19 \(SB 19\)](#) (Statutes of 2019, Chapter 361, Dodd) enacts Water Code section 144, which directs the Department of Water Resources and the State Water Resources Control Board to develop a plan to address gaging information gaps through the deployment of a network of prioritized stream gages in consultation with the California Department of Fish and Wildlife, Department of Conservation, the Central Valley Flood Protection Board, and interested stakeholders.

Why are stream gages important?

It is the state's responsibility to manage and protect California's water while also protecting, restoring, and enhancing the natural and human environment. A stream gage is a structure installed beside a river or stream containing equipment that measures and records the water level of the stream. Stream flow is then computed. In winter and spring, the total flow is essential in calculating potential downstream flooding and allows emergency managers to provide early flood warning. A robust stream gage network is essential for effective water management, especially during times of extreme water shortage or flooding. Additionally, an improved stream gage network will promote best practices in water management and help protect fish and wildlife.

Gaging information allows agencies to:

- use the best available scientific data to increase their understanding of the functions that flows provide to native species
- manage flows for the greatest benefit to native species and other beneficial uses of water
- assess risks to public safety, property, infrastructure, and the environment from debris flows, landslides, erosion, and sedimentation.

The Plan

Per SB 19, the stream gaging plan will include a determination of funding needs and opportunities for modernizing and reactivating existing gages and deploying new gages in priority locations across hydrologic regions in the state.

Other criteria to be considered in prioritization and developing the plan include:

- Opportunities for local agencies to enter cost-share arrangements
- Ease of integrating the stream gage into the existing network
- Availability of historic gage data
- Availability of temperature data
- Water quality and flow impacts related to cannabis cultivation
- Integration with the Open and Transparent Water Data Act (Part 4.9 (commencing with Section 12400) of Division 6)
- Ability to provide data to assist with groundwater management



Figure 2. Several staff gauges have been installed on the inside walls of the newly constructed Lake Oroville main spillway in Butte County.



Figure 3. A view of the station house for the newly installed North Honcut Stream Gage on Honcut Creek in Butte County.

Tasks

Development of the plan will include tasks related to researching the existing stream gaging network (locations, costs, funding mechanisms, operational conditions), identifying gaps in stream gaging network, consultation with agencies, outreach with other stakeholders, identifying funding needs for future stream gaging, identification of partnership mechanisms and opportunities for partnering, and development of a draft and final plan.

It should be noted that the plan will identify priority stream gage locations and funding needs to improve the existing stream gage network, but additional funding to install and operate stream gages was not included in the State's Budget to implement SB 19.

Have Questions or Want More Information?

Visit the [Stream Gaging Plan webpage](#) and stay up to date on our efforts by signing up for email updates. If you have questions or comments, email us at: StreamGagingPlan@WaterBoards.ca.gov



Vina Groundwater Sustainability Agency

SGM Grant Projects Progress Report

Background: The Department of Water Resources awarded the Vina GSA \$5.5 million to complete specified activities including: 1) required tasks such as annual reporting, responding to DWR input on the Plan, continued stakeholder outreach, groundwater model updates, financing strategies, and filling data gaps; 2) improving the monitoring network and developing a domestic well inventory; and 3) implementation of pilot projects for recharge, agriculture irrigation efficiency, and reduced groundwater demand. For information and updates, visit <https://www.vinagsa.org/sustainable-groundwater-management-grant-funded-projects>

Project Highlights:

Lindo Channel Recharge Feasibility Study

- On October 23, 2024, SHAC received a project update on the Lindo Channel Recharge Feasibility Study. The SHAC and public had feedback wanting more information on how the monitoring locations were chosen.
- The first public engagement meeting was held on November 13, 2024. Consultants shared their research thus far, then the meeting moved into workshop sessions for small-group discussions. Informational handouts for the meeting are available at: [Lindo Channel Feasibility Study](#); and [TM++1123++Lindo+Creek+Statistical+Flow+Analysis.pdf](#)

Data Gap Identification and Data Improvement

- Draft Proposed Monitoring Network Map was introduced to the SHAC on October 23, 2024 and released for a Public Comment period: November 1-November 30, 2024
- The SHAC will discuss and consider a recommendation to the Board on November 20, 2024
- The Board will consider approval of locations for installation of new wells at their December meeting: December 11, 2024.
- Information available at: <https://www.vinagsa.org/public-review-period-groundwater-monitoring-network-enhancements>

Demand Reduction Strategies

- Extend Orchard Replacement (EOR) guidelines were released for public review and comment on October 24, 2024. Comments are requested to be received by November 22, 2024.
- The consultant team held a public webinar on November 7, 2024 to explain the project and answer questions.
- The SHAC will discuss and consider a recommendation to the Board on November 20, 2024
- The Board will consider approval of the program guidelines at their December meeting.
- Information available at: <https://www.vinagsa.org/public-review-and-comments-on-draft-eor-pilot-program-guidelines>

Inter-basin Coordination Analysis and Modeling (Butte County implemented project)

- The Butte County Technical Advisory Committee will receive an update on and discuss proposed refinements to the Butte Basin Groundwater Model and initial work completed by the consultant team regarding Joint Evaluation of Groundwater Sustainability Plans along the Northern Sacramento River Corridor. They meet November 19, 2024 2:30-4:30 PM.
- Information available at: <https://www.vinagsa.org/inter-basin-coordination-analysis-and-modeling-project-implemented-by-butte-county>
- Contact Christina Buck, cbuck@buttecounty.net with questions.



Butte County Public Health Department
Environmental Health Division

Well Permit Summary

Quarter 4 (July 1, 2024 – September 30, 2024) of Water Year 2024

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Definitions

Permits Issued – Number of new water well permits issued as new construction. This excludes repairs, destructions, abandonments.

Permits Finaled – Number of water well permits that have been finaled (i.e. final construction completed and well is operational). This excludes repairs, destructions, abandonments.

Small Diameter Wells - A well with an eight-inch or smaller diameter well casing.

Large Diameter Wells - A well with larger than eight-inch diameter well casing.

Repair – Well repair; this includes but is not limited to casing replacement, re-lining or perforation.

Deepening – Well deepening; increasing the depth of an existing well.

Well Destruction – Well is destroyed (sealed off) by an approved method.

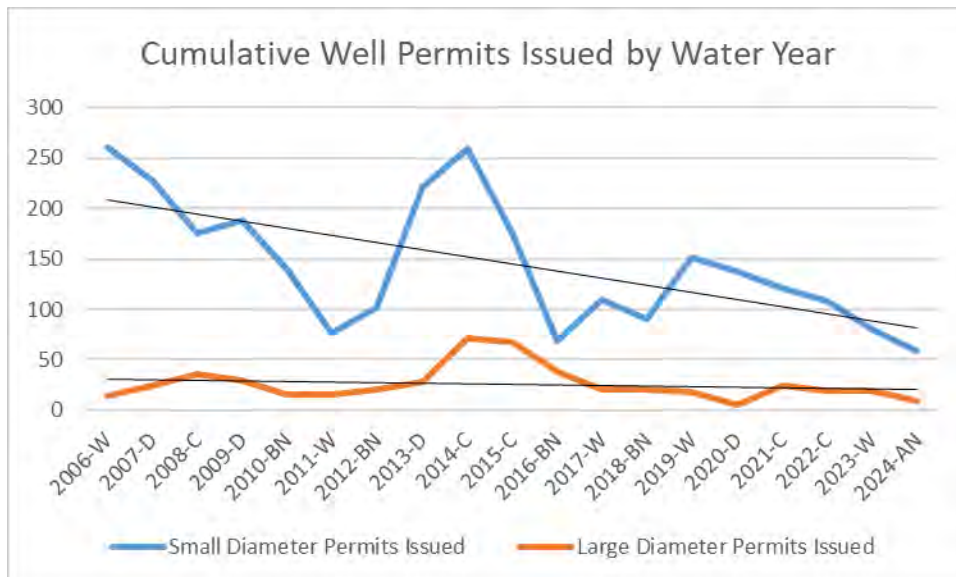
Dry Well – Well that is no longer producing water or has reduced production to a point where it can no longer sustain a residence (< 1 gpm).

Water Year - A water year is a 12-month period that extends from October 1st to September 30th. Water year can be classified into Wet (W), Above Normal (AN), Below Normal (BN), Dry (D) or Critical (C).

Executive Order N-7-22 – Effective March 28, 2022 and impacting permits that have not been issued to date. Implements increased drought response and established requirements for water well permit reviews to include Groundwater Sustainability Agencies (GSAs) and ground water impact considerations prior to permit issuance.

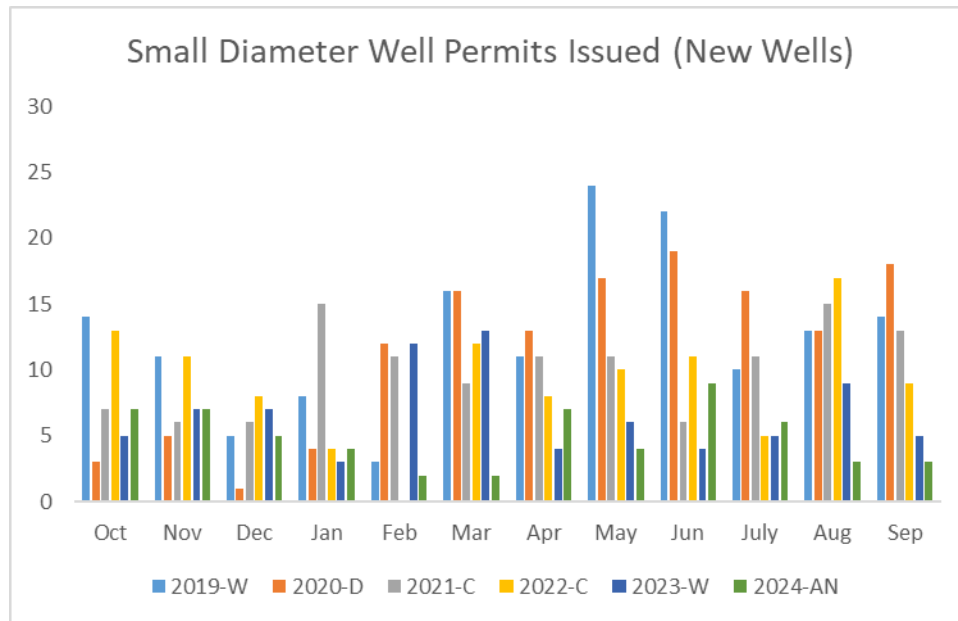
Cumulative Well Permit Data

Cumulative (WY) Well Permits Issued		
Water Year	Small Diameter Permits Issued	Large Diameter Permits Issued
2006-W	260	14
2007-D	228	24
2008-C	176	36
2009-D	188	29
2010-BN	140	16
2011-W	77	16
2012-BN	102	21
2013-D	221	28
2014-C	259	71
2015-C	175	68
2016-BN	69	38
2017-W	109	21
2018-BN	91	20
2019-W	151	18
2020-D	137	5
2021-C	121	24
2022-C	108	19
2023-W	80	19
2024-AN	59	9



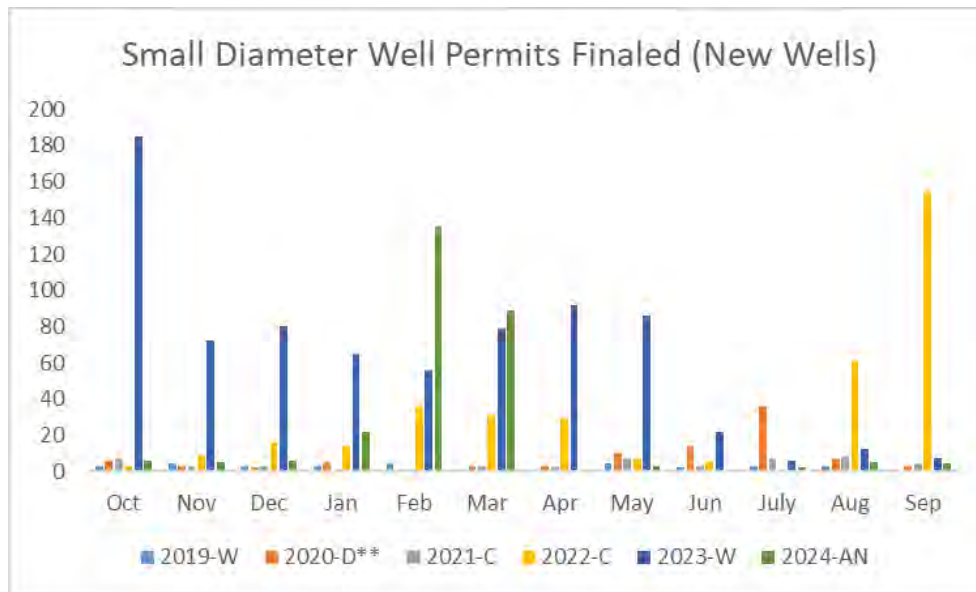
Small Diameter Well Permit Data - Issued

Water Year	Small Diameter Well Permits Issued (New Wells)													Total
	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	July	Aug	Sep		
2015-C	18	7	6	15	11	22	27	15	13	18	17	6	175	
2016-BN	4	5	7	6	8	17	9	12	16	14	12	3	113	
2017-W	7	7	5	2	8	19	19	17	17	5	2	1	109	
2018-BN	6	3	2	3	6	4	10	13	12	10	13	9	91	
2019-W	14	11	5	8	3	16	11	24	22	10	13	14	151	
2020-D	3	5	1	4	12	16	13	17	19	16	13	18	137	
2021-C	7	6	6	15	11	9	11	11	6	11	15	13	121	
2022-C	13	11	8	4	0	12	8	10	11	5	17	9	108	
2023-W	5	7	7	3	12	13	4	6	4	5	9	5	80	
2024-AN	7	7	5	4	2	2	7	4	9	6	3	3	59	



Small Diameter Well Permit Data - Finaled

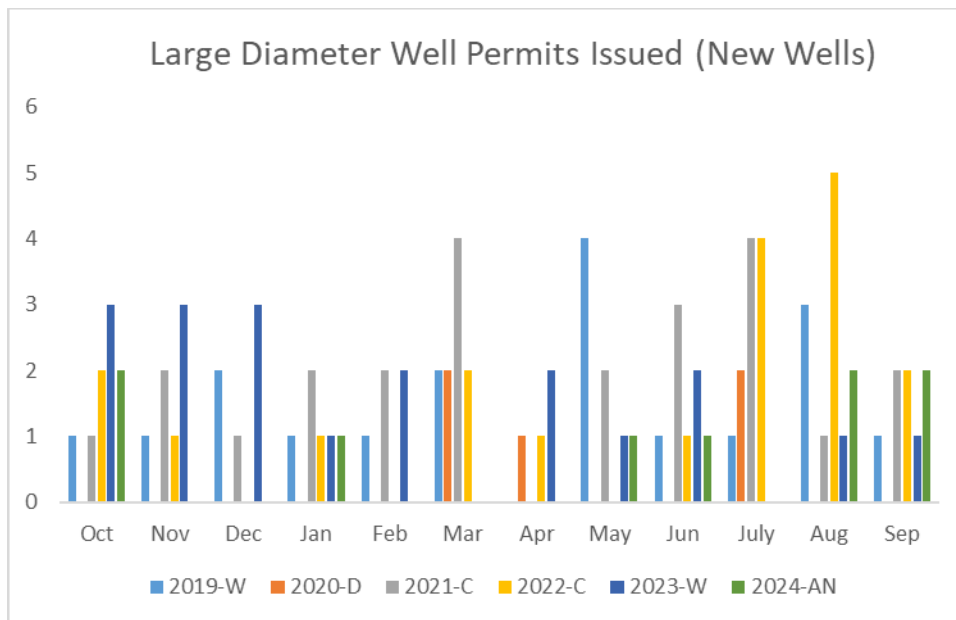
Water Year	Small Diameter Well Permits Finaled (New Wells)												Total
	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	July	Aug	Sep	
2016-BN	7	4	3	4	3	1	1	4	5	1	3	0	36
2017-W	3	2	2	3	3	3	1	1	1	0	5	0	24
2018-BN	1	4	3	1	1	4	2	4	6	1	5	3	35
2019-W	3	4	3	3	4	0	0	4	2	3	3	1	30
2020-D**	6	3	2	5	1	3	3	10	14	36	7	3	93
2021-C	7	3	3	1	1	3	2	7	3	7	8	4	49
2022-C	3	9	16	14	36	31	29	7	5	1	61	155	367
2023-W	185	72	80	65	56	79	92	86	22	6	12	7	762
2024-AN	6	5	6	22	135	89	1	3	0	2	5	4	278



**Water Year 2020 and forward - Implemented improvements to the well permit process and working on backlog status updates.

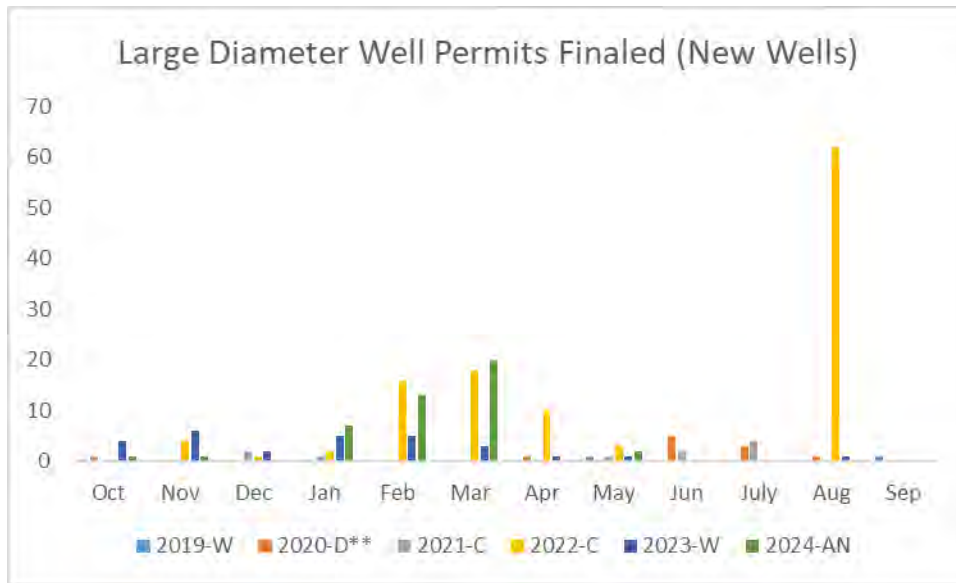
Large Diameter Well Permit Data - Issued

Water Year	Large Diameter Well Permits Issued (New Wells)												
	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	July	Aug	Sep	Total
2015-C	5	7	4	1	4	7	6	1	5	14	11	3	68
2016-BN	5	5	5	5	4	2	2	3	1	1	2	3	38
2017-W	1	0	1	2	2	3	3	2	2	0	5	0	21
2018-BN	1	3	0	0	0	3	1	2	1	4	2	3	20
2019-W	1	1	2	1	1	2	0	4	1	1	3	1	18
2020-D	0	0	0	0	0	2	1	0	0	2	0	0	5
2021-C	1	2	1	2	2	4	0	2	3	4	1	2	24
2022-C	2	1	0	1	0	2	1	0	1	4	5	2	19
2023-W	3	3	3	1	2	0	2	1	2	0	1	1	19
2024-AN	2	0	0	1	0	0	0	1	1	0	2	2	9



Large Diameter Well Permit Data – Finaled

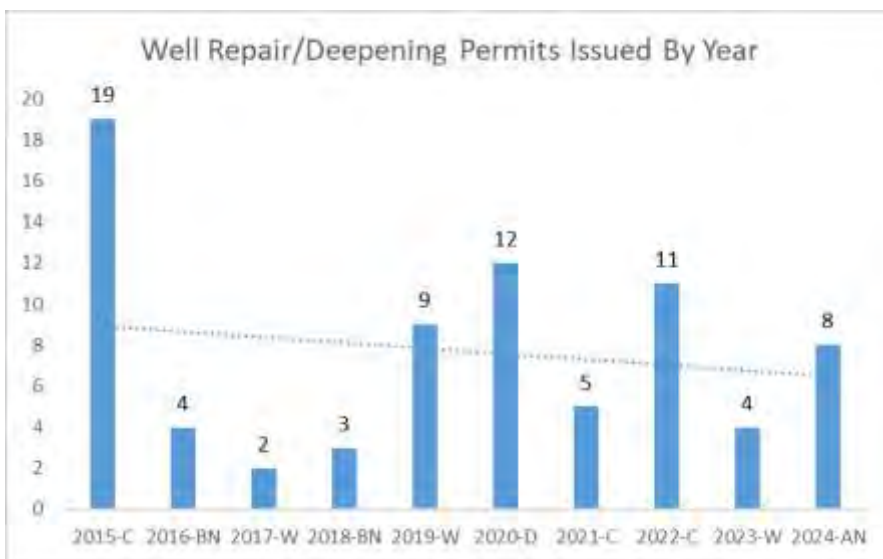
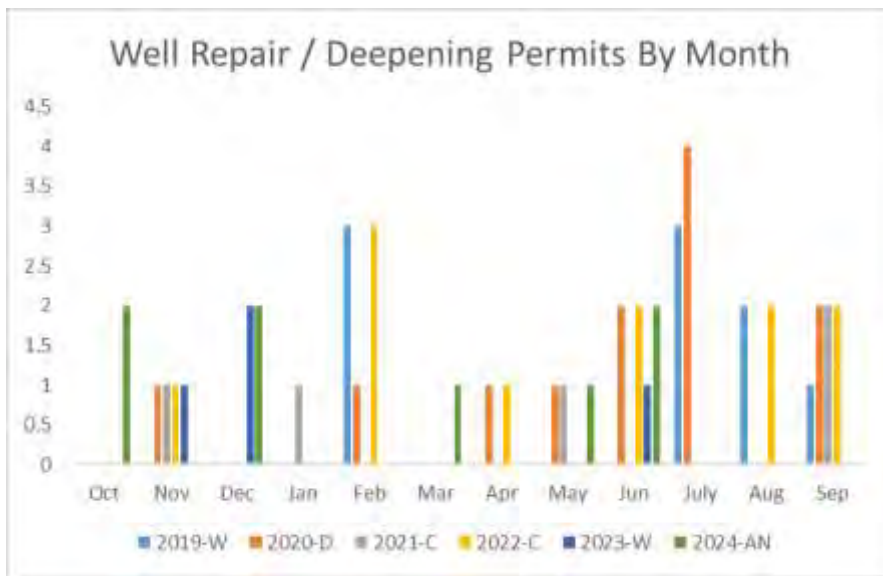
Water Year	Large Diameter Well Permits Finaled (New Wells)												
	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	July	Aug	Sep	Total
2016-BN	2	0	0	0	0	0	0	0	1	0	0	0	3
2017-W	0	0	0	0	0	0	0	0	2	0	0	0	2
2018-BN	0	0	0	1	0	0	1	0	1	0	4	0	7
2019-W	0	0	0	0	0	0	0	1	0	0	0	1	2
2020-D**	1	0	0	0	0	0	1	0	5	3	1	0	11
2021-C	0	0	2	1	0	0	0	1	2	4	0	0	10
2022-C	0	4	1	2	16	18	10	3	0	0	62	0	116
2023-W	4	6	2	5	5	3	1	1	0	0	1	0	28
2024-AN	1	1	0	7	13	20	0	2	0				44



**Water Year 2020 and forward - Implemented improvements to the well permit process and working on backlog status updates.

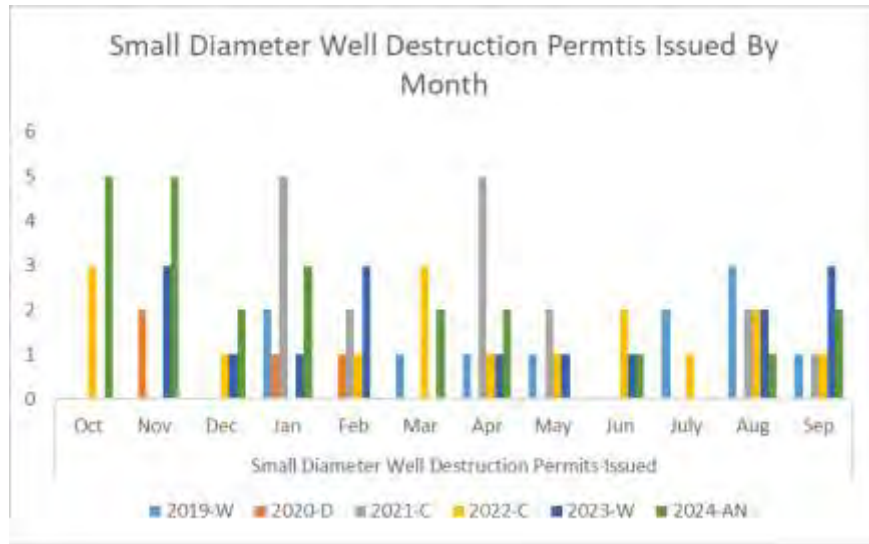
Well Repair and Deepening Data

Water Year	Well Repair/Deepening Permits Issued												Total
	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	July	Aug	Sep	
2015-C	1	0	1	0	1	3	2	1	1	3	4	2	19
2016-BN	2	1	0	0	0	0	0	0	0	1	4	1	4
2017-W	0	1	0	0	0	0	0	0	0	0	1	0	2
2018-BN	0	1	0	0	0	0	0	0	0	0	2	0	3
2019-W	0	0	0	0	3	0	0	0	0	3	2	1	9
2020-D	0	1	0	0	1	0	1	1	2	4	0	2	12
2021-C	0	1	0	1	0	0	0	1	0	0	0	2	5
2022-C	0	1	0	0	3	0	1	0	2	0	2	2	11
2023-W	0	1	2	0	0	0	0	0	1	0	0	0	4
2024-AN	2	0	2	0	0	1	0	1	2	0	0	0	8



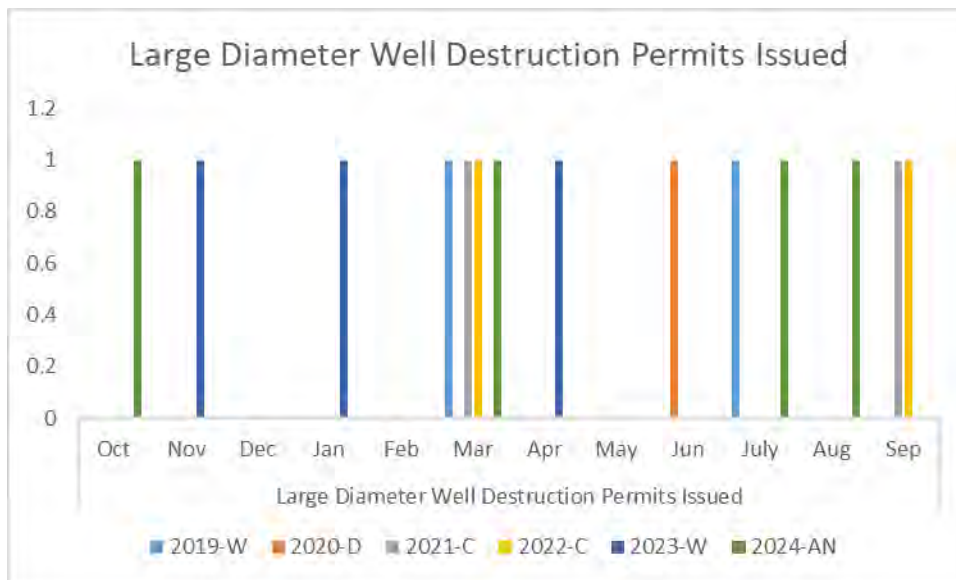
Well Destruction Data – Small Diameter Wells

Water Year	Small Diameter Well Destruction Permits Issued												Total
	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	July	Aug	Sep	
2017-W	0	2	0	0	0	0	1	0	0	4	1	0	8
2018-BN	0	0	3	0	0	0	0	0	0	1	1	0	5
2019-W	0	0	0	2	0	1	1	1	0	2	3	1	11
2020-D	0	2	0	1	1	0	0	0	0	0	0	0	4
2021-C	0	0	0	5	2	0	5	2	0	0	2	1	17
2022-C	3	0	1	0	1	3	1	1	2	1	2	1	16
2023-W	0	3	1	1	3	0	1	1	1	0	2	3	16
2024-AN	5	5	2	3	0	2	2	0	1	0	1	2	23



Well Destruction Data – Large Diameter Wells

Water Year	Large Diameter Well Destruction Permits Issued												Total
	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	July	Aug	Sep	
2017-W	1	1	0	0	0	1	0	0	0	0	1	0	4
2018-BN	0	0	0	0	0	0	0	0	0	0	1	0	1
2019-W	0	0	0	0	0	1	0	0	0	1	0	0	2
2020-D	0	0	0	0	0	0	0	0	1	0	0	0	1
2021-C	0	0	0	0	0	1	0	0	0	0	0	1	2
2022-C	0	0	0	0	0	1	0	0	0	0	0	1	2
2023-W	0	1	0	1	0	0	1	0	0	0	0	0	3
2024-AN	1	0	0	0	0	1	0	0	0	1	1	0	4



Dry Well Data

Water Year	Dry Small Diameter Wells												Total	
	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	July	Aug	Sep		
2021-C												11	7	18
2022-C	1	0	1	0	1	0	0	0	2	3	4	2	14	
2023-W	2	2	0	0	3	0	0	1	0	2	1	1	12	
2024-AN	0	0	0	0	0	0	0	0	0	0	0	0	0	

Dry well data started being collected August 2021.

Water Year	Dry Large Diameter Wells												Total
	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	July	Aug	Sep	
2021-C											1	0	1
2022-C	0	0	0	0	0	0	0	0	0	0	0	0	0
2023-W	0	0	0	0	0	0	0	0	0	0	0	0	0
2024-AN	0	0	0	0	0	0	0	0	0	0	0	0	0

Dry well data started being collected August 2021.

Dry Well Reports to the Butte County Division of Environmental					
	Water Year			Total	Average
	2021	2022	2023		Depth of
Chico	15	5	3	23	109
Durham	4	6	1	11	--
Cohasset	1	0	1	3	121
Berry Creek	0	1	0	1	--
Oroville	0	1	3	4	95
Bangor	0	1	0	1	--
Forest Ranch	0	2	0	2	520
Palermo	0	1	0	1	--
Total	20	17	8	45	

Executive Order N-7-22 Data

Cumulative Number of Wells Under Executive Oder N-7-22			
By Subbasin	Small Diameter	Large Diameter	Totals
BUTTE	0	22	22
VINA	5	10	15
WYANDOTTE	1	11	12
			49
By GSA	Small Diameter	Large Diameter	Totals
Biggs-West Gridley Water District	0	6	6
Butte County	0	6	6
Butte Water District	0	4	4
Richvale Irrigation District	0	2	2
Reclamation District No. 2106	0	2	2
Rock Creek Reclamation District	0	1	1
Vina	5	10	15
Western Canal	0	1	1
Wyandotte Creek	1	11	12
			49

