



Vina Groundwater Sustainability Agency
308 Nelson Avenue, Oroville, CA 95965
(530) 552-3592
VinaGSA@gmail.com

Vina Groundwater Sustainability Agency (GSA) Stakeholder Advisory Committee (SHAC) Meeting

Date: Wednesday, April 22, 2026

Time: 9:00 AM -12:00 PM

Location: Chico City Council Chamber, Conference Room #1, 421 Main Street, Chico, CA.

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

Meeting ID: 814 0243 0033

Join via phone: +1 669 900 6833

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MEETING AGENDA

April 22, 2026

1. **Call to Order and Roll Call**
2. **Business from the Floor**

The public and Stakeholder Advisory Committee (SHAC) members will have an opportunity to comment on items not on the agenda and that are relevant to the SHAC. Committee members and Management Committee staff are not required to respond to any issues raised during the public comment period. Commenters are asked to respect differing perspectives and to keep remarks within three minutes.

3. ***Review and Approval of 3/25/2026 SHAC Meeting Minutes**

Requested Action: Approve the 3/25/2025 meeting minutes.

4. **Update on the Status and Anticipated Timeline for the Vina Groundwater Sustainability Plan (GSP) Periodic Evaluation**

Staff will provide an update on the anticipated topics and timelines over the next several months related to the Periodic Evaluation. (**Verbal Report – Christina Buck, Asst. Director Butte County Water and Resource Conservation**)

Requested Action: Information only.

5. **Review of Sustainable Groundwater Management (SGM) Grant-Funded Projects - Status and Next Steps**

Staff will provide an overview of the status of each SGM grant-funded project and the process for public to submit comments on any of the reports produced by the grant-funded work. (**Verbal Report – Christina Buck, Asst. Director Butte County Water and Resource Conservation and Becky Fairbanks, GSA Project Manager**)

Requested Action: Information only.

6. ***Consideration of a Well Mitigation Program in the Vina Subbasin**

Presentation and discussion of options, considerations, and SHAC input to inform the Vina GSA's approach and timing for a Well Mitigation Program, including whether to describe an active program or a trigger-based standby framework as part of the Periodic Evaluation. **(Report – Christina Buck, Asst. Director Butte County Water and Resource Conservation)**

Requested Action: Possible recommendation for Board consideration on what type of program (active, trigger-based, or other) and potential schedule for program development that would be reflected in the Periodic Evaluation.

7. **GSA Program Manager Update** *(Verbal Report – Dillon McGregor, GSA Program Manager)*

8. **SHAC Future Agenda Requests** – SHAC members may verbally request an item to be agendized at a future meeting. After stating what the item would be, a majority vote of the SHAC is needed in order for the Management Committee to agendize the item. SHAC members may also submit requests in writing to the GSA Program Manager to bring forward to the SHAC for consideration on a future agenda.

9. **ADJOURNMENT:**

The Committee will adjourn to their next meeting, **Wednesday, May 27, 2026.**

*Materials included in agenda packet



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Vina Groundwater Sustainability Agency (GSA) Stakeholder Advisory Committee (SHAC) Meeting Minutes

Date: Wednesday, March 25, 2026

Time: 9:00 AM -12:00 PM

Location: Butte County Library, Chico Branch, 1108 Sherman Avenue, Chico, CA 95926

MEETING MINUTES

March 25, 2026

1. **Call to Order and Roll Call** - meeting called to order at 9:04 AM

Committee Members Present: Greg Sohnrey, Joanne Parsley, Anne Dawson, Susan Schrader, Patrick Riley, Evan Markey, and Todd Greene

RCRD Representative Present: Bruce McGowen

Committee Members Absent: Samantha Lewis and Holly Swan

Staff Present: Kamie Loeser - Director, Butte County Water & Resource Conservation, Christina Buck – Assistant Director, Butte County Water & Resource Conservation

a. Election of Chair and Vice Chair.

Public Comment: None

Motion: Greg Sohnrey made a motion to elect Samantha Lewis as Committee Chair. Joanne Parsley seconded that motion.

The motion passed unanimously.

Motion: Anne Dawson made a motion to elect Greg Sohnrey as Vice Chair. Joanne Parsley seconded that motion.

The motion passed unanimously.

2. **Business from the Floor**

The public and Stakeholder Advisory Committee (SHAC) members had an opportunity to comment on items not on the agenda and that are relevant to the SHAC.

Public Comment:

Jim Brobeck

3. ***Review and Approval of 12/3/2025 SHAC Meeting Minutes**

Public Comment: None

Motion: Evan Markey made a motion to approve the 12/3/25 SHAC meeting minutes. Todd Greene seconded that motion.

The motion passed unanimously.

4. ***Annual Status of the Vina Subbasin Brochure**

The SHAC received a presentation on the Annual Status of the Vina Subbasin brochure for the 2025 water year which highlights information contained in the 2025 Annual Report developed per Sustainable Groundwater Management (SGMA) requirements. (**Report – Eddy Teasdale, Luhdorff & Scalmanini, Consulting Engineers**)

Public Comment:

Greg Brislan

Jim Brobeck

Action: Accepted as information. Committee member Parsley requested additional SubStats to hand out to the community.

5 ***Consideration of Approach to Projects and Management Actions for the GSP Periodic Evaluation**

The SHAC received a presentation on Projects and Management Actions (PMAs) as part of the Vina Groundwater Sustainability Plan (GSP) Periodic Evaluation work. The presentation reviewed the PMAs identified in the 2022 Vina GSP and introduce a proposed approach for categorizing PMAs to improve tracking and reporting in future Annual Reports and the Periodic Evaluation. The discussion focused on identifying projects that represent the GSA's Plan Implementation strategy and distinguishing them from other projects that may provide ancillary groundwater benefits. (**Report – Christina Buck, Butte County; Ryan Fulton, Larry Walker Associates**)

Public Comment: None

Action: Accepted as information.

6. **Sustainable Groundwater Management Grant Program Project Recap Presentations**

6.1 *Feasibility of Enhanced Recharge in the Lindo Channel - Project Recap

The SHAC received a final project update on the Lindo Channel Groundwater Recharge Alternative Feasibility Analysis, including field results, modeling, recharge potential, flow thresholds, and potential infrastructure, permitting, and operational considerations for future implementation. The study concludes March 31, 2026. (**Report – Becky Fairbanks, GSA Project Manager; Joe Turner, Geosyntec; David Jaffee, West Yost Associates**)

Public Comment:

Jim Brobeck

Action: Accepted as information.

6.2 *Demand Reduction Strategies Project Recap

The SHAC received a presentation of the main outcomes from the Demand Reduction Strategies two pilot projects: Extended Orchard Replacement and Precision Irrigation. The study concludes March 31, 2026. (**Report – Tovey Giezentanner, AGUBC Project Manager; Joel Kimmelshue, Land IQ**)

Public Comment:

Greg Brislain

Action: Accepted as information.

6.3 *Surface Water Supplies Feasibility Analysis Recap

The SHAC received a presentation on the main outcomes from the feasibility analysis of two water supply projects: 1. South Vina Extension - would utilize Western Canal Water District or Table A water to irrigate parcels in south Vina, 2. Ridge to Valley – would utilize Paradise Irrigation District water to irrigate parcels along Comanche Creek south of Chico. The report is available on the project [webpage](#).
(Report – Christina Buck, Butte County; Maddie Munson, Water and Land Solutions)

Public Comment: None

Action: Accepted as information.

6.4 *Inter-Basin Coordination Analysis Recap

The SHAC received a presentation on highlights from the Joint Groundwater Sustainability Plan (GSP) Evaluation for the North Sacramento River Corridor as reported in the finalized Technical Memo and webinar available online: [Inter-Basin Coordination Analysis and Modeling Project - Implemented by Butte County - Vina Groundwater Sustainability Agency](#). **(Report – Christina Buck, Butte County)**

Public Comment:

Jim Brobeck

Action: Accepted as information.

7. **GSA Program Manager Update** *(Verbal Report – Kamie Loeser, Management Committee on behalf of the Program Manager)*
8. **SHAC Future Agenda Requests** – SHAC members may verbally request an item to be agendaized at a future meeting. After stating what the item would be, a majority vote of the SHAC is needed in order for the Management Committee to agendaize the item. SHAC members may also submit requests in writing to the GSA Program Manager to bring forward to the SHAC for consideration on a future agenda.

No SHAC Future Agenda Requests

9. ADJOURNMENT:

The Committee adjourned to their next meeting, **Wednesday, April 22, 2026.**

*Materials included in agenda packet



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MEMORANDUM

To: Vina GSA Stakeholder Advisory Committee

From: Christina Buck, Asst. Director Butte County Dept. of Water and Resource Conservation

Date: April 15, 2026

Subject: Consideration of a Well Mitigation Program in the Vina Subbasin

Overview

The Vina Groundwater Sustainability Plan (GSP) was adopted in December 2021 by the Vina Groundwater Sustainability Agency (GSA) and Rock Creek Reclamation District GSA and subsequently reviewed and approved by the California Department of Water Resources (DWR) in July 2023. As part of its review, DWR provided recommended corrective actions (RCAs) in its Determination Letter identifying several areas for improvement with an expectation that the RCAs should be considered by the GSAs in the first periodic evaluation of the GSP. The Sustainable Groundwater Management Act (SGMA) requires the GSAs to submit the first Periodic Evaluation (PE) by January 2027. The PE is the GSA's written assessment of its GSP implementation. The Vina GSA received funding through the Sustainable Groundwater Management Round 2 grant program to support work to address data gaps identified in the plan and complete the Periodic Evaluation. Larry Walker and Associates (LWA) was competitively selected to complete this work.

Direction from the Vina GSA and RCRD GSA Boards

The GSAs have continued to receive feedback from stakeholders regarding the need to protect domestic wells from potential impacts associated with changes in groundwater levels. Adjacent groundwater subbasins have developed well mitigation programs in response to DWR's "inadequate" GSP determinations. The Vina Subbasin's GSP already identified a well mitigation program as a management action, although this would be a future action and an expected schedule is not specified in the GSP.

At the December 10, 2025 joint meeting of the Vina and Rock Creek Reclamation District GSA Boards, staff received direction to bring back information regarding what other subbasins are doing related to well mitigation and well registries to inform an initial framework for the Vina subbasin.

In addition, the Boards also requested that staff prepare a summary of the number of domestic wells impacted at MT levels using the GSP (2022) dataset of domestic wells and using the 2025 refined dataset of domestic wells resulting from a desktop survey completed by LWA. LWA has prepared these results which are included in Attachment A. This information is necessary to begin

to address DWR's Recommended Corrective Action 3 which in part requests quantification of "domestic wells that will be impacted by the proposed minimum threshold."

This staff memo provides information to support discussion and potential recommendation from the SHAC to help inform the Board as they clarify the GSAs' intended path for timing, planning, developing, and implementing a well mitigation program, the outcome of which would be described in the PE. Therefore, the GSAs should clarify the intended path and expected schedule in the Periodic Evaluation by either:

1. Planning for the future development of an active mitigation program, or
2. Identifying a trigger-based standby framework that would guide program development if groundwater conditions warrant.

Development of either type of mitigation program would require dedicated staffing/consultant capacity and funding.

Background

Stakeholder Feedback to the GSAs regarding Domestic Well Mitigation

In Fall 2025, the Vina GSA hosted a series of stakeholder meetings to gather input on developing the Vina GSP Periodic Evaluation. Key topics of discussion related to DWR recommended corrective actions including interconnected surface water, monitoring networks, and groundwater level minimum thresholds. Additionally, one of the posed discussion questions was, "What are your reactions or suggestions regarding the development of a Domestic Well Mitigation (DWM) program as part of the Periodic Evaluation work?" At the meeting of the Domestic Well Users (October 27, 2025), participants expressed strong concern that 2022 GSP Minimum Threshold levels are too low to protect domestic wells and there was consensus that wells should be protected from going dry and that the GSA should develop a mitigation program and conduct more proactive communication with at-risk well owners. At the Agricultural Stakeholder meeting, while supportive of domestic well protection, they asked for more detail on the purpose, scope and funding responsibilities of any future well mitigation program.

On December 3, 2025, after hearing a report out on feedback received at the series of stakeholder meetings, the Vina GSA Stakeholder Advisory Committee (SHAC) supported staff further exploring options for a Domestic Well Mitigation Program, including reviewing approaches taken by neighboring basins. SHAC members noted the importance of clearly defining the GSA's role relative to Butte County's existing mitigation program to ensure the effort remains aligned with SGMA's intent and avoids duplicating responsibilities. It should be noted that the County's [Drought Resilience and Outreach Project \(DROP\) program](#), which includes a well mitigation program, is a temporary short-term program that is funded by the State Water Resources Control Board for domestic well owners that have been impacted specifically by drought, meet low-income disadvantage community requirements, and/or are located within burn-scar/disaster recovery areas.

While some SHAC members underscored that private well owners retain responsibility for maintaining their wells, others felt a GSA-level mitigation program could still be appropriate if groundwater conditions or management of the subbasin (i.e. MT levels) contribute to well impacts. Members also indicated that development of any program should be informed by a more complete domestic well inventory and consideration of agricultural well data.

Other specific input or ideas received from the Fall stakeholder meetings related to DWM are listed below, for reference:

- Include triggers or early-warning levels to prompt GSA action before MTs are reached.

- Notify domestic well owners in areas where groundwater levels approach MTs.
- Establish a domestic well mitigation program to assist with repair, deepening, or replacement when wells are impacted.
- Recognize the disproportionate impacts on domestic users compared with agricultural and development sectors and consider equity in mitigation funding.
- Evaluate the economic impacts of potential MT changes and any mitigation program, particularly for agricultural operations.
- Clarify the purpose, responsibilities, and funding sources for any potential domestic well mitigation program.
- Consider limiting mitigation responsibility to wells constructed after a certain year and requiring well registration, as other basins have done.
- Clarify the GSA's approach and potential commitment to mitigating dry wells.

These bullets are pulled from the individual stakeholder meeting summaries.

Domestic Well Mitigation Management Action in the Vina GSP

The Vina GSP includes Domestic Well Mitigation as a management action (Section 5.3.2). It states the following:

“If an increasing number of domestic groundwater wells go dry in the Vina Subbasin, the GSAs could propose a series of steps to help mitigate this issue. The following steps are proposed under this management action: 1. Establish a voluntary registry of domestic wells. 2. Compile domestic well logs, screen depths, and locations. 3. Secure financial resources to improve, deepen or replace select domestic wells. 4. Provide emergency response to homes with dry domestic wells, including supplying bottled water and potable water for sanitation.

Priority would be given to disadvantaged communities dependent on groundwater as a drinking water resource. Creating a registry of domestic wells in the region, with information on well location and screen depths, would help the GSAs compile important data into a centralized location. This would allow the GSAs to determine which wells need to be updated to the current standards and which may need to be deepened, as well as to help them prioritize certain communities for emergency response.”

Section 4 of the Periodic Evaluation annotated outline is, “Status of Projects and Management Actions.” Receiving Board direction on the expected scope and schedule of this management action will inform how its status and expected schedule is described in the Periodic Evaluation.

The existing management action in the GSP is therefore directional rather than fully programmatic. It identifies the types of actions the GSAs could pursue, but it does not establish eligibility criteria, funding mechanisms, administrative procedures, or implementation triggers. Clarifying the intended scope and schedule of this management action in the Periodic Evaluation would provide transparency on next steps.

Approach in the Vina GSP

The Vina GSP uses the concept of “sustainably constructed” domestic wells in connection with Groundwater Level Sustainable Management Criteria for chronic lowering of groundwater levels. The GSP states that sustainably constructed wells are wells installed following the relevant County well standards within permeable aquifer material and appropriately maintained, meaning the issue is not attributable to factors such as clogged well screens or silting of the well.

In establishing MTs, the GSP refined the domestic well dataset available from the DWR OSWCR database by removing wells installed before 1980. The stated rationale is that this excludes the oldest wells and wells likely to have been replaced following historically low groundwater

conditions during the 1976–1977 drought; as a result, the remaining wells were considered more likely to be consistent with current County well standards and still serving domestic water needs. In this way, the 1980 date was used as a dataset-refinement proxy tied to construction standards and likely continued use, not simply as a stand-alone policy conclusion that older wells are not relevant.

The GSP then used the refined dataset within Representative Monitoring Site (RMS)-based zones/polygons to establish MTs intended to be protective of the majority of sustainably constructed domestic wells in each RMS zone. This distinction is important in discussion of cutoff dates: the GSP's approach was to use a proxy to work with an imperfect dataset, whereas DWR's more recent feedback (described further below) suggests GSAs should clearly explain and justify any such screening assumptions and, where feasible, focus on whether wells are active rather than relying solely on construction year.

DWR's Perspective on GSA Policies and Domestic Well Impacts

As part of a separate effort, County technical staff recently met with DWR Sustainable Groundwater Management Office (SGMO) staff along with other GSA managers from the Butte Subbasin to receive feedback on the Butte Subbasin Periodic Evaluation materials. During these discussions, it was asked whether excluding older domestic wells (e.g., constructed prior to a specified cutoff date) from the total number of wells that could be impacted would align with DWR's review and approval criteria for a GSP or PE.

DWR staff emphasized that, with respect to establishing Minimum Thresholds (MTs) and determining Undesirable Results, GSAs are responsible for defining what constitutes a significant and unreasonable impact. However, DWR staff indicated that filtering wells based solely on their construction year is not preferred. Instead, a more appropriate criterion is whether a well is currently active. GSA staff acknowledged that basis would be ideal, but is difficult or impossible given the nature of existing well data.

DWR staff emphasized that setting an arbitrary cut-off date for well inclusion is generally discouraged. As Paul Gosselin, Deputy Director of Sustainable Groundwater Management, has noted publicly on several occasions, if a well constructed decades ago (for example, in 1970) remains functional and groundwater level declines subsequently cause that well to go dry, it is difficult for a GSA to argue that the impact is not significant and unreasonable solely because of the well's age. In such cases, the impact would still be considered relevant for evaluating groundwater condition impacts.

Review of Domestic Well Mitigation Programs and Policy Considerations

The GSA Boards requested information be provided on domestic well mitigation programs in subbasins around the state. The attached program matrix (Attachment B) provides information on key aspects of mitigation programs including a summary of the eligibility/qualifications, application/process, mitigation and costs covered, funding/cost estimates, and other notes.

The following subbasins are included in the review:

1. Colusa and Corning Subbasins
2. Subbasins in Tehama County
3. Kings Subbasin
4. Tule Subbasin
5. Madera Subbasin
6. Chowchilla Subbasin
7. Kaweah Subbasin

Key Observations from the Summary:

- Comparable programs vary substantially in form. Some are adopted, operational programs with specific eligibility rules and payment structures, while others are pilots, memoranda of understanding, or conceptual proposals that still leave implementation details to be developed.
- Most programs distinguish between interim assistance and long-term mitigation. Interim measures commonly include bottled water, bulk water, or temporary tanks; long-term measures commonly include pump lowering, deepening, replacement wells, or connection to an existing system.
- Most programs also limit eligibility in some way. Common filters include well type, ownership, causation, permit compliance, age of well, good standing with the GSA, household income, or a post-2015 / post-program-adoption timing threshold.
- Several programs use third-party or partner entities for implementation. The Kaweah review is the most developed example of a partnership approach, with Self-Help Enterprises involved in administering drinking water claims while the GSAs retain broader mitigation responsibilities and funding obligations.

For reference, the table below (Table 1) lists and describes categories of policy choices that will need to be considered in development of a program. Choices in these categories affect program cost, equity, administrative complexity, and public expectations.

Table 1. Policy Choices to Consider in Development of Domestic Well Mitigation Program.

Category	Examples of Direction Needed	Why It Matters
Program timing and scope	Adopt now; prepare a ready-to-launch standby program; or adopt only a framework and return later with a full program.	This is the threshold policy issue and will determine the level of effort the GSA should undertake now.
Eligible well types	Domestic wells only; agricultural wells used for domestic supply; state small water systems; other drinking-water-serving wells.	Expanding the pool of eligible wells can significantly increase costs
Causation standard	Require linkage to declining groundwater levels associated with GSP implementation; include or exclude subsidence; include or exclude water quality impacts.	This determines which claims qualify and whether the program is limited to SGMA-related impacts or broader drinking water concerns.
Geographic focus	Entire Subbasin; mapped at-risk areas only; or phased implementation based on monitoring results.	A more targeted program may be easier to administer and budget.
Ownership and occupancy	Landowner only; claims initiated by tenants with owner follow-up; living trusts; owner-occupied versus non-owner-occupied homes.	These choices affect fairness, ease of implementation, and how readily affected households can access assistance.
Well age and permit compliance	Age cap; depreciation based on age; legal/permitted wells only; whether permit recommendations must have been followed.	These are common ways programs manage cost and avoid subsidizing older or non-compliant wells without limitation.

Category	Examples of Direction Needed	Why It Matters
Income and equity approach	No income threshold; DAC / low-income priority; income-based eligibility; or tiered assistance levels.	This affects both equity outcomes and total cost.
Interim assistance	Whether to provide bottled water, bulk water, tanks, or only referrals; desired response time; maximum duration.	Even a trigger-based program may benefit from a defined interim response protocol.
Long-term mitigation menu	Pump lowering; well deepening; replacement well; connection to an existing system; treatment; other case-by-case measures.	The menu of measures should align with local conditions, legal authority, and available funding.
Funding approach	Program reserve, annual budget, application fee, reimbursement cap, cost share, liens/recordation, grants, partner administration, or GSA-fee funding.	Funding structure will shape both feasibility and claimant expectations.
Administration and appeals	Staff-administered, consultant-administered, or third-party/nonprofit-administered; Board approval for each claim or delegated approval; appeal process.	Programs with more formal administration may be more defensible but require more staff time and transaction cost.
Monitoring and readiness tools	Well registration, domestic well reporting, permit review, at-risk mapping, or notification triggers.	These tools can support either an active program or a trigger-based standby approach.

Program Development Considerations

Based on the reviewed examples, Vina has at least two practical paths forward if the Board wishes to take steps toward developing a program; develop and adopt an active program or a trigger-based standby program, as described below:

- 1) **Active program.** The GSA would prepare a full draft program with eligibility criteria, an application process, an interim response framework, and a proposed funding approach
- 2) **Trigger-based standby program.** The GSA would prepare a program framework, but activation of interim or long-term mitigation would be specified and be tied to specified conditions, such as groundwater levels reaching new historical lows, monitoring points approaching defined warning thresholds, verified dry well incidents, or a documented increase in at-risk domestic wells.

Example Trigger Concepts

For a trigger-based standby program, the following are examples that could be considered as triggers:

- Representative shallow groundwater level indicators reaching or exceeding prior historic lows in areas with a specified concentration of domestic wells.
- A defined number of verified domestic well complaints or dry well reports in a season or within a localized area.
- Monitoring or modeling that indicates a meaningful increase in the number of domestic wells at risk under forecasted dry-year conditions.

- Specific Board findings that drought or groundwater conditions warrant activation of interim assistance, program development, or full program implementation.

A trigger framework would allow the Vina GSA to define in advance what should be monitored, when staff should return to the Board regarding well mitigation, and what actions would be considered if conditions worsen.

The SHAC is not asked to discuss or provide feedback on one trigger concept over another. These are provided as examples only to further explain a Trigger-based standby program and how it might be framed.

Considerations for Next Steps and Timing

The Vina GSA does not have a contracted consultant, available funding, or staff capacity to support the development of a mitigation program within the 2026 calendar year and current fiscal year. However, receiving Board direction on the timing and scope of developing a program has implications for the contents of the Periodic Evaluation, adoption of the FY 2026-2027 budget, and selection of a Technical Support Consultant team in the fall who will be tasked with completing activities to implement the GSP (ex. Annual Reports) over the next 5 year periodic evaluation cycle (2027-2032). Development of a mitigation program could be done by the future GSA consultant team with dedicated funding from the Board. In addition, to help minimize costs, DWR Facilitation Support Services (FSS) could be pursued to support outreach and engagement that contributes to development of the program.

Developing a mitigation program commonly includes policy and procedure development, technical analysis, legal review, public outreach and facilitation, application process design, and funding framework development (refer to Table 1). The cost of developing a program will depend on the approach and to what extent in-house staff versus consultants are relied upon for the different aspects of the effort. Staff anticipates that a program could be developed within 12-14 months once consultant support and funding are identified.

Requested Action

- 1) Staff requests SHAC discussion and feedback on the scope, timing, and intended path for the Domestic Well Mitigation management action in the Vina Subbasin.
- 2) Provide a recommendation for Board consideration on what type of program (active, trigger-based, or other) and potential schedule for program development that would be reflected in the Periodic Evaluation.

Attachments

- A. LWA Tech Memo: Vina Subbasin Domestic Well Survey & Well Risk Assessment
- B. Domestic Well Mitigation Programs - Summary Matrix
- C. Well Registry Programs and Linkages to Mitigation



Technical Memorandum

TO Vina & Rock Creek Reclamation District
Groundwater Sustainability Agencies

FROM Ryan Fulton, PE

CC Christina Buck & Becky Fairbanks

DATE 04/22/2026

SUBJECT Vina Subbasin Domestic Well Survey & Risk
Assessment (SGM Grant Component 2, Task 7
Deliverable)

1 BACKGROUND

The Vina Groundwater Sustainability Plan (GSP) was adopted in December 2021 by the Vina Groundwater Sustainability Agency (GSA) and Rock Creek Reclamation District GSA and subsequently reviewed and approved by the California Department of Water Resources (DWR) in July 2023. As part of its review, DWR provided recommended corrective actions (RCAs) in its Determination Letter identifying several areas for improvement with an expectation that they should be considered by the GSAs for the first periodic evaluation of the GSP. The Sustainable Groundwater Management Act (SGMA) requires the GSAs to submit the first Periodic Evaluation (PE) by January 2027. The PE is the GSAs' written assessment of its GSP implementation. Subsequently, the DWR will conduct its Periodic Review of the GSP taking into consideration Annual Reports, the Periodic Evaluation, and assessment of progress made toward achieving sustainability and will issue a determination of the status of the Plan: Approved, Incomplete, or Inadequate. Per the Water Code, DWR conducts this review whether or not the GSAs amend the GSP as part of the Periodic Evaluation. Vina GSA received funding through the Sustainable Groundwater Management Round 2 grant program to support work to address data gaps identified in the plan, complete the Periodic Evaluation, and amend the GSP, as necessary.

This memorandum describes the work Larry Walker and Associates (LWA) has completed to update the current dataset of domestic wells in the Vina Subbasin with results of their desktop survey to address the identified data gap in the GSP related to uncertainty about well location and whether wells in DWR's Online System for Well Completions Reports (OSWCR) database are active or not. The 2022 GSP states "domestic well reliability and protection are the focus of the Groundwater Levels Minimum Thresholds (MT). From a policy perspective, sustainably constructed domestic wells going dry during non-dry year conditions would be a "significant and unreasonable" undesirable result of groundwater management (GSP Section 3.3.2)." The domestic well survey identifies active domestic wells that are sustainably constructed (e.g., drilled below historical low groundwater elevations).

In addition, the memorandum includes results addressing a portion of DWR's RCA regarding potential impacts to domestic wells within the Subbasin at established groundwater level minimum thresholds. Specifically, RCA 3 (b) states:

*"Provide information on impacts to domestic wells during projected conditions where minimum thresholds are exceeded but undesirable results do not occur and **also quantify domestic wells that will be impacted by the proposed minimum threshold.** Furthermore, the GSAs should*

evaluate the impacts of proposed minimum thresholds on other beneficial uses and users, such as public and small water systems and environmental users and users.”

The following sections described the updated domestic well survey and risk assessment.

2 UPDATED WELL SURVEY

The LWA Team conducted a preliminary evaluation of domestic wells in the Vina Subbasin by identifying residential parcels that are not served by public water suppliers and estimated approximately 4,400 parcels within the Subbasin are likely supplied by a domestic well as shown in Figure 1. The analysis did not provide sufficient information to fill the domestic well data gap described in the GSP and to respond to DWR’s RCA. Additional specifications, including well location and depth, are needed to estimate the number of wells at risk of going dry if groundwater level minimum thresholds are reached.

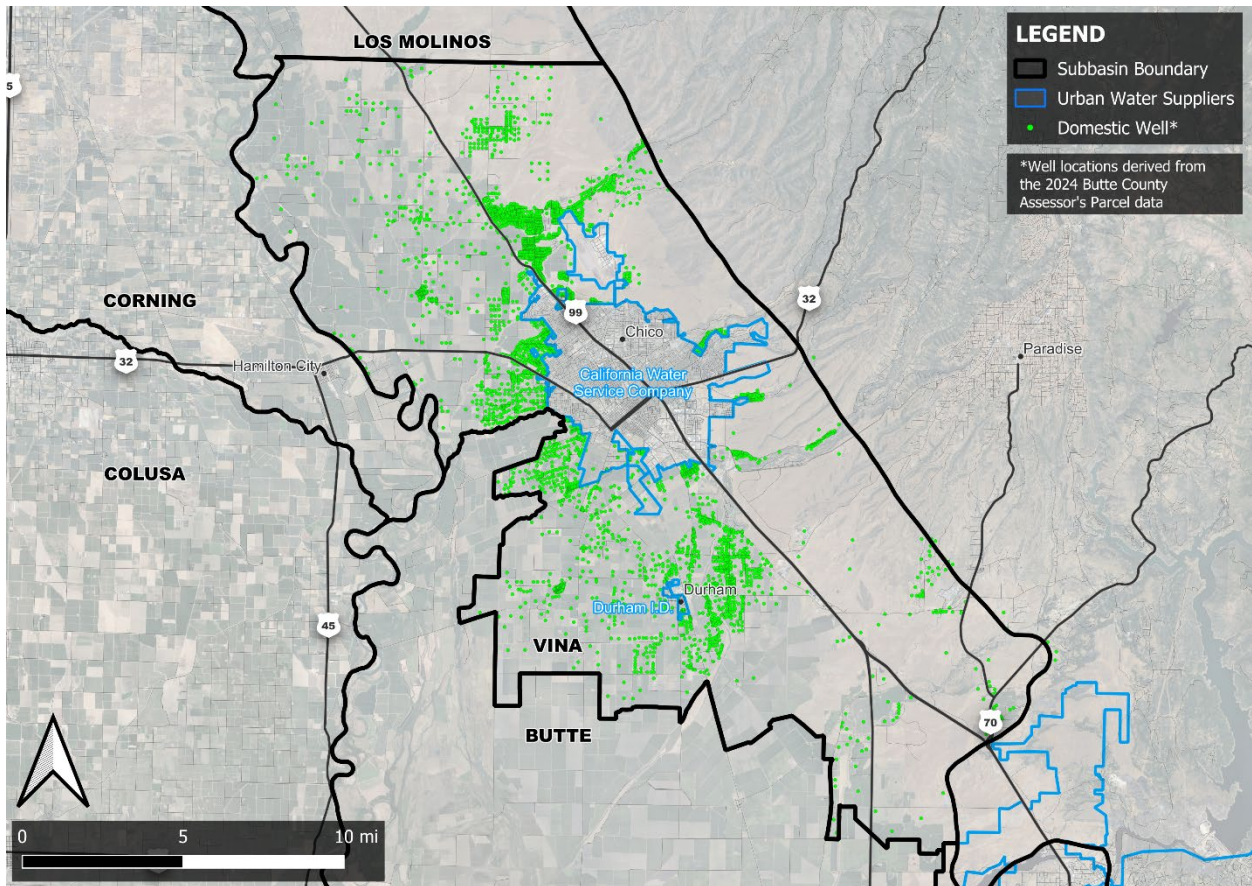


Figure 1. Vina Subbasin domestic well distribution (developed using County parcel information).

The LWA Team compiled domestic well completion reports (WCRs) from DWR’s OSWCR database. The database provides well specifications including drill / completion depth, location, screen interval(s), and age / status (e.g., active vs abandoned). The OSWCR database provides location information for all WCRs using the Public Land Survey System (PLSS) Section (or a one-square mile area). WCRs were thoroughly reviewed by LWA checking for other information that provided accurate location information such as sketches and APNs. This information is not always captured and digitized by DWR in the OSWCR database and is required to identify active and abandoned domestic wells. Abandoned wells are identified by looking at parcels with multiple domestic wells or within a public water supplier service area (e.g., Cal Water). For example, a parcel may have records of two domestic wells: one from the 1960s and

a second from the 2010s. In this case, it is assumed that the 1960s well is abandoned and replaced by the well drilled in the 2010s.

DWR's OSCWR database shows 4,275 domestic wells within the Vina Subbasin. Well depth is known for all wells except for nine (9) wells. Figure 2 shows the number of wells missing location information before and after LWA's review of the WCRs by decade. Approximately 75% of the WCRs were missing accurate location information before LWA's review. LWA staff identified the precise location of 1,731 domestic wells. An additional 403 wells had an identifiable APN on the WCR, bringing the total number of wells with a refined location to 2,134 (or 50%). The remaining 2,141 wells could not be identified past the center of the PLSS section. These wells were mostly drilled before 1980. The installation date is missing from 91 of the 4,275 WCRs. Figure 3 shows domestic wells with the updated locations.

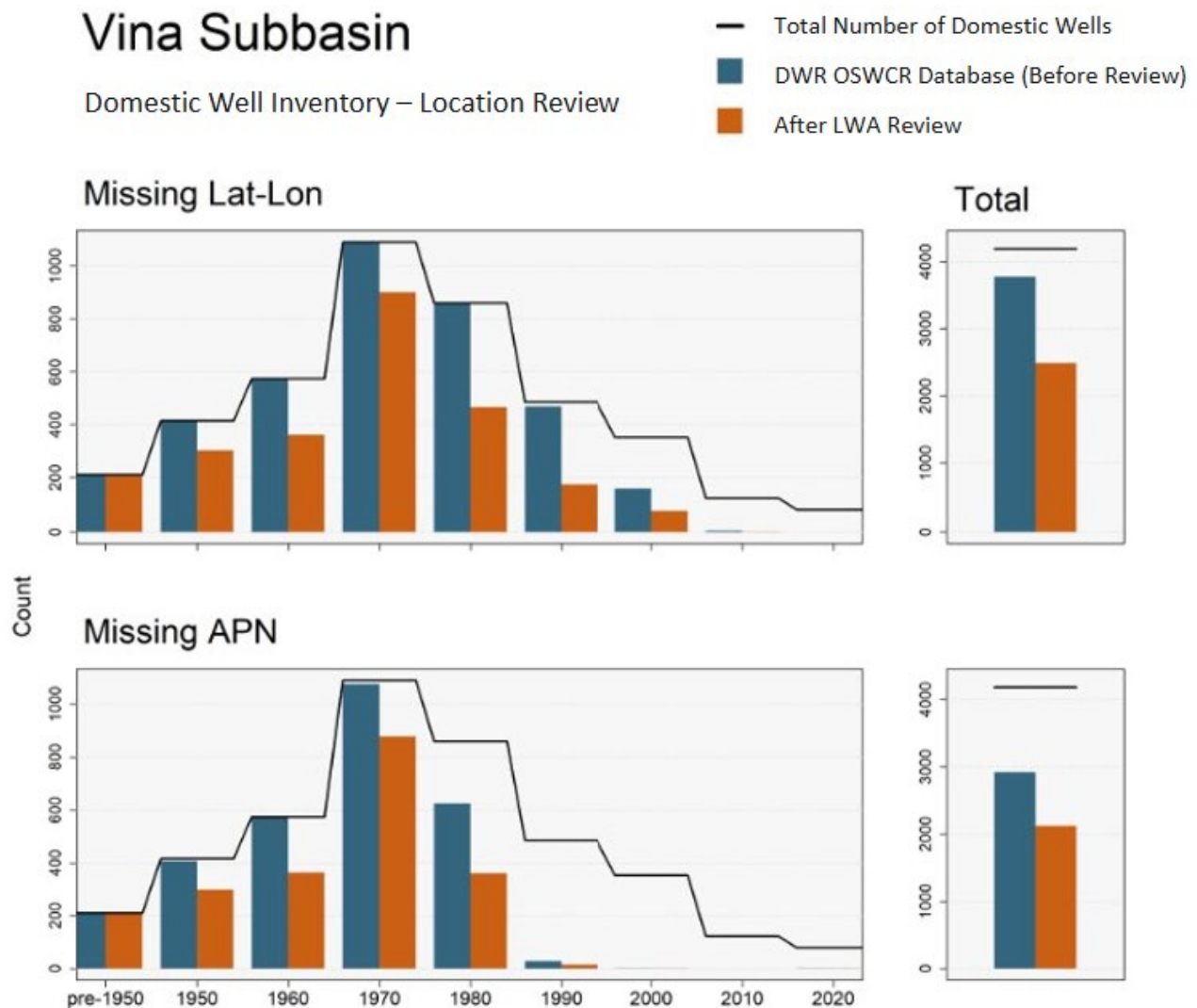


Figure 2. Summary of wells missing location information before and after manual review.

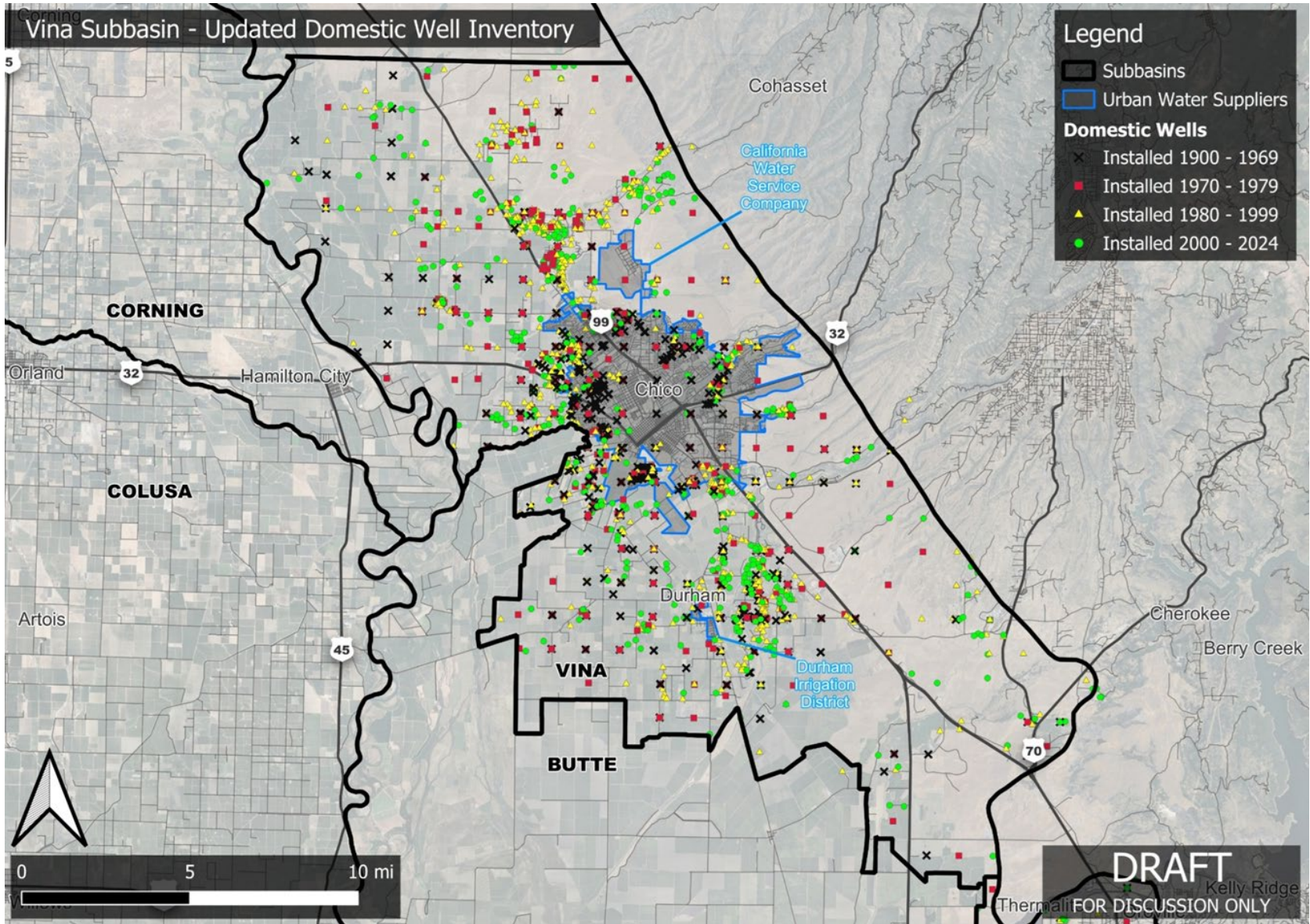


Figure 3. Vina Subbasin Domestic Wells from DWR's OSWCR database (updated locations shown).

Sustainably constructed, active domestic wells were identified using the refined OSWCR dataset based on the following assumptions:

1. Removed wells drilled prior to 1980 (consistent with the 2022 GSP). The GSP states “wells installed before 1980 were removed. This removes the oldest wells and wells likely to have been replaced as a result of historically low groundwater conditions that occurred during the 1976-1977 drought. Wells that remain are more likely to be consistent with current well standards and currently serving domestic water needs (GSP Section 3.3.2).” There are 2,282 WCRs dated before 1980 and 1,920 WCRs dated after 1980.
2. Removed wells within public water supplier service areas (e.g., Cal Water-Chico and Durham I.D.) or on the same parcel as another more recently installed well.
3. Removed wells that have gone dry in the past. These wells have a bottom elevation greater than the minimum historical groundwater level measured at the corresponding groundwater level RMS well per the 2022 GSP. The County well ordinance requires all wells to be drilled below the historical minimum groundwater elevation. In accordance with the 2022 GSP, the GSA considers these wells to be not sustainably constructed.

As a result, there are 1,253 sustainably constructed, active domestic wells across the Vina Subbasin as shown in Figure 4. Generally, wells are spatially distributed across the Subbasin similarly to the parcel-derived locations (Figure 1). There are significantly fewer sustainably constructed, active wells than parcels likely having a domestic well. This is likely due to uncertainties in both analyses including incomplete WCR records and errors in the County’s parcel coverage.

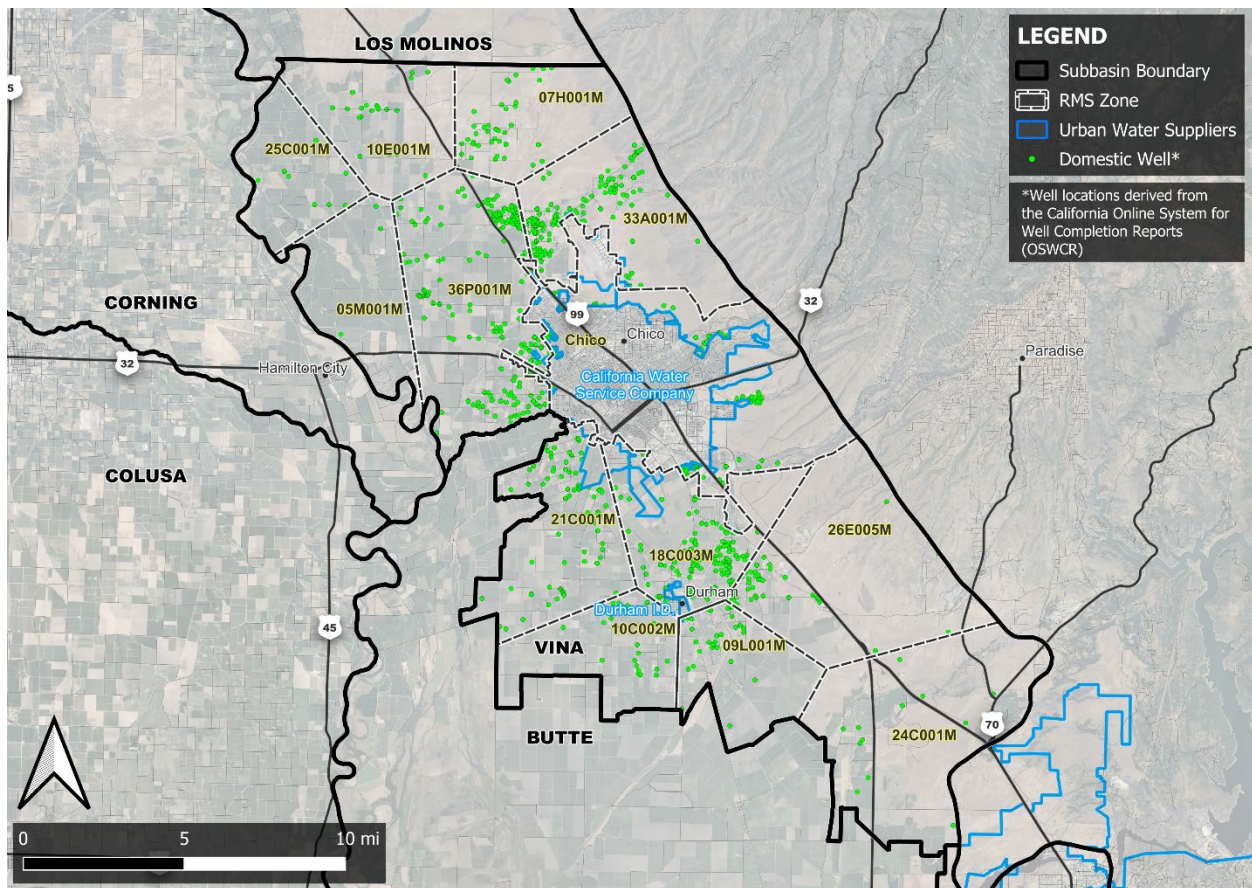


Figure 4. Vina Subbasin sustainably constructed, active domestic wells from DWR’s OSWCR database.

3 DOMESTIC WELL RISK ASSESSMENT

To address DWR's RCA 3(b): the number of wells at risk of going dry if groundwater levels reach MTs was estimated using two different approaches. The first approach is consistent with the methodology described in the 2022 GSP Appendix 3-B using the same data set of domestic wells. It relies on DWR's OSWCR database and assumes all domestic wells drilled post-1980 are active. Risks to domestic wells were determined by identifying wells where the bottom of the well is above the MT elevation. Wells above the MT elevation tend to be especially shallow (less than 100 feet deep) or are located at a higher ground surface elevation than the RMS well.

A second risk assessment was conducted using the sustainably constructed, active domestic wells from the LWA desktop survey (described in Section 2) and the same groundwater level RMS wells and zones provided in 2022 GSP, Appendix 3-B. The number of domestic wells at-risk at the current MTs was estimated using the following steps:

1. Estimated the "effective depth" of each domestic well, which was the shallower of the assumed pump elevation (e.g., bottom of well elevation plus 10 feet above mean sea level), and the bottom elevation of the well's deepest perforated interval.
2. Adjusted ground elevation at each domestic well using LiDAR data to account for ground elevations changes across each RMS zone.
3. Quantified the number of domestic wells at risk of going dry at the current MTs for each RMS zone. If a well's effective depth is shallower than the current MT, then it is at risk of going dry before undesirable results occur in the subbasin.

Table 3 summarizes the number of at-risk domestic wells using both approaches. DWR's OSWCR database shows there are a total of 4,275 domestic wells within the Subbasin of which 1,920 wells were drilled post-1980. It is estimated using the original well inventory that 462 wells (or 24% of 1,920 wells) are at risk at the current MTs. Likewise, it is estimated using the updated approach that 400 wells (or 32% of 1,253 wells) are at risk at the current MTs. Both assessments resulted in similar numbers of at-risk domestic wells even though the total number of active domestic wells decreased using the updated inventory. The total maximum mitigation program cost is up to \$18.5 million (2022 GSP) or \$16 million (updated inventory) assuming it will cost \$40,000 to replace / deepen a well and all at risk wells would be eligible for full replacement (Table 1). This therefore represents an upper estimate of mitigation costs. Dry wells are likely to occur over several years / decades as groundwater levels may gradually approach MTs. Assuming costs are spread over twenty years, the equivalent annual cost per irrigated acre is \$12.25 and \$10.60; respectively.

Table 1. Total number of domestic wells and wells at-risk by RMS zone.

Management Area	RMS Zone	2022 GSP ¹			Updated Risk Assessment		
		Number of At-Risk Wells	Total Number of Active Wells	Percent of Wells at Risk	Number of At-Risk Wells	Total Number of Active Wells	Percent of Wells at Risk
Vina North	10E001	6	21	29%	5	20	25%
Vina North	25C001	5	18	28%	4	10	40%
Vina North	05M001	2	5	40%	3	7	43%
Vina North	36P001	69	329	21%	103	288	36%
Vina North	07H001	32	67	48%	30	58	52%
Vina North	33A001	116	307	38%	99	228	43%
Chico MA	RMS All	85	544	16%	30	200	15%
Vina South	21C001	57	155	37%	42	120	35%
Vina South	18C003	60	339	18%	37	195	19%
Vina South	26E005	15	45	33%	23	50	46%
Vina South	10C002	4	29	14%	9	26	35%
Vina South	09L001	7	49	14%	6	39	15%
Vina South	24C001	4	12	33%	9	12	75%
Total:		462	1,920	24%	400	1,253	32%
Max. Total Mitigation Cost: ²		\$18.5 million (or \$245 per irrigated acre)			\$16 million (or \$212 per irrigated acre)		
Annual Mitigation Cost: ³		\$12.25 per irrigated acre			\$10.60 per irrigated acre		

Notes:

1.) Methodology described further in GSP Appendix 3-B. Risks to domestic wells are shown on graphs in Appendix.

2.) The maximum total mitigation cost assumes \$40,000 per well to deepen / replace. Per acre cost is based on 75,500 acres of irrigated farmland within Vina Subbasin (source: 2024 Annual Report).

3.) The equivalent annual mitigation cost per acre spreads the max total mitigation cost over 20 years.

4 RECOMMENDATIONS

The domestic well survey estimated the number of domestic wells within the Vina Subbasin to be as low as 1,253 (WCR-based approach) and to be as high as 4,400 (parcel-based approach). It is recommended that the GSA implement a well registration program to improve the GSA's domestic well inventory as funding allows. A registry may support a domestic well mitigation program as needed.

Attachment B. Domestic Well Mitigation Programs – Summary Matrix

Basin/GSA	Implementer	Eligibility/Qualifications	Application / Process	Mitigation and Costs Covered	Funding/Cost Estimate	Other Notes
Colusa and Corning Subbasin.	Jointly led and funded by Colusa Groundwater Authority, Glenn Groundwater Authority, and Corning Subbasin GSA. North Valley Community Foundation (complete field work/verification).	Well located within Pilot Program area Drinking water well used primarily for household supply Well impact must be caused by groundwater level decline or subsidence Well has not previously received assistance through this Program	Applicants contact information Well owner information Well type and location Description of well issue and date impact began Well construction information (if available) \$150 application fee (may be reimbursed for eligible wells) Well evaluation conducted by licensed professional	Long-Term Mitigation Measures: - Replacement well or other approved long-term mitigation (case-by-case). Interim Mitigation: - Temporary water supplies (bulk and/or bottled water)	Funding/Cost Estimate: Admin Cost for program \$470,000 Estimate Cost for potential well impacts before 2042 is \$4.7M	Pilot program (1-year duration, subject to extension) Well evaluation is critical part of the process.
Corning, Red Bluff, Los Molinos, and Antelope subbasins	Tehama County Flood Control and Water Conservation District GSA	All well types and ages are eligible (pump etc. not provided for wells >20 yrs) Must be confirmed dry and located in an over-drafted area Property owners only (lessees considered case-by-case) No income threshold for eligibility Applicants must be in good standing with District and Environmental Health	Submit application and required documentation Non-refundable application fee required District schedules field inspection within ~10 business days	Long-Term Mitigation: - Abandonment and sealing of existing well - Construction of replacement well Interim Mitigation: - Temporary drinking water supply prior to replacement well installation - Up to 3 months of	District mitigation program funding Maximum reimbursement: \$40,000	Reporting: A volunteer dry well reporting system is currently used to track impacts. Mandatory well registration program in place. One reimbursement allowed per parcel

Basin/GSA	Implementer	Eligibility/Qualifications	Application / Process	Mitigation and Costs Covered	Funding/Cost Estimate	Other Notes
		Department Wells installed after October 2021 must comply with well permit recommendations		water support (possible 3-month extension)		
Kings Subbasin	McMullin Area GSA	Domestic wells producing ≤ 2 AFY Used solely for household drinking water supply (≤ 4 service connections) Household income $\leq 80\%$ of statewide median income (DAC threshold) Applicant must be landowner and in good standing with GSA Wells ≤ 50 years old at time of application Wells must be legally constructed and registered Not eligible: New wells constructed on or after July 7, 2022 if not in compliance w/ all GSA policies (e.g. minimum depth requirements) Wells with vertical turbine pumps	Application must demonstrate compliance with eligibility and qualification criteria Landowner submits written request for mitigation assistance Well contractor assessment required MAGSA reviews applications and verifies eligibility	Long-term measures: - Lower Pump - Deepen Well - New Well - Other Interim measures: - Water delivery - Storage tank	GSA program funding Cost-sharing agreements may apply	Program is not retroactive and applies only to wells that go dry after adoption or October 1, 2024, whichever is later.
Tule Subbasin	Eastern Tule Subbasin GSA (program is specific to this GSA)	Owner must be in good standing with ETGSA Owners participating in Tier 1 or Tier 2 transitional pumping allocations are not eligible Well impacts must be linked to approved GSP-related activities	Applicant submits mitigation claim form to ETGSA staff Applications processed on a first-come, first-served basis Priority determined by date completed	Long-Term Mitigation - Service connection to existing water system - Replacement water supply - Reimbursement for well deepening or	Penalty revenue State, federal, and local grant funding	County provides new well permit applications to ETGSA for review and recommendations

Basin/GSA	Implementer	Eligibility/Qualifications	Application / Process	Mitigation and Costs Covered	Funding/Cost Estimate	Other Notes
		Wells must comply with well permit application recommendation Wells must be ≤25 years old from date of construction	application is received	drilling a new well Interim Mitigation - Replacement water supply if needed during mitigation process - One mitigation award per eligible applicant or well		
Madera Subbasin	Implementer: Madera County GSA	Landowner with a domestic well located within the Madera Subbasin and GSA boundaries Well must have gone dry after January 1, 2026, or be on Self-Help interim water assistance list Domestic well must be ≤30 years old Well failure must be caused by declining groundwater levels/subsidence Residence must be considered habitable Property owner must have owned the property for at least one year Wells impacted by subsidence may also qualify	Submit application and \$100 application and assessment fee Well assessment conducted by GSA or program representative If eligible, landowner solicits three bids (2 from qualified driller list) and GSA selects one bid Payment issued according to mitigation contract Lien placed on property for program participation	Long-Term Mitigation - Drill replacement well - Connect property to existing community water system Interim Mitigation (implemented by Self Help Enterprises) - Emergency interim water assistance	The program provides up to \$35,000. Any cost over \$35,000 is the landowner's responsibility. Payback provision: 0-1 yrs: 100% up to \$35,000 1-2 yrs: 50% up to \$17,500 2+ yrs: 0%	Property lien required for 2 years after mitigation payment Payback required if property sold within first 2 years Information found at Maderadrywell.com
Chowchilla Subbasin	Chowchilla Water District administered on behalf of subbasin GSAs (through	Property owner must submit complete mitigation program application Property must be located within the Chowchilla	Submit application and initial well assessment documentation Provide records of	Long-Term Mitigation - Construction of new domestic well - Consolidation with	Maximum mitigation award: \$30,000 Proportional	

Basin/GSA	Implementer	Eligibility/Qualifications	Application / Process	Mitigation and Costs Covered	Funding/Cost Estimate	Other Notes
	cooperative MOU)	Subbasin boundaries Well must be impacted by groundwater level decline occurring after January 31, 2020 Water quality mitigation concepts included No income eligibility requirements	previous well work (if available) \$100 application fee (refunded if mitigation awarded)	existing domestic water system Interim Mitigation - Bottled drinking water delivery - Bulk water storage tank installation - Water delivery service - Maintenance of temporary storage tanks	funding contributions from participating agencies	
Kings Subbasin	Implemented by multiple GSAs within the Kings Subbasin.	Domestic wells and state small water systems Well failure caused by declining regional groundwater levels Wells must be ≤50 years old at time of application Household income ≤80% of statewide median income Applicant must be the landowner and in good standing with the GSA Wells must be legally permitted and registered Combination agricultural-domestic wells are not eligible	Well owner hires contractor to determine cause of well failure Application submitted with contractor findings Wells prioritized by severity of impact: Priority 1: Well non-operational due to groundwater decline Priority 2: Well operating at reduced capacity Priority 3: Well non-operational but alternate supply available Priority 4: Well operational but at	Long-Term Mitigation - Lower pump - Deepen well - Construct replacement well Interim Mitigation - Bottled water supply - Bulk water storage tanks	GSA program funding Mitigation funding determined case-by-case	

Basin/GSA	Implementer	Eligibility/Qualifications	Application / Process	Mitigation and Costs Covered	Funding/Cost Estimate	Other Notes
			risk of failure			
East Kaweah GSA / Kaweah Subbasin	Uses third-party nonprofit (Self-Help Enterprises) to administer mitigation services	Domestic wells, drinking water wells, and small community wells Well impact must occur after January 1, 2015 Well failure must be linked to groundwater overdraft conditions associated with the GSP On-site assessment required through Kaweah Subbasin Mitigation Program	Claim submitted through Self-Help Enterprises intake form Program conducts site assessment GSA Board reviews and approves mitigation funding	Long-Term Mitigation - Well repair or replacement (pump modification, deepening, replacement, consolidation) - Long-term mitigation funding assistance Interim Mitigation - Emergency drinking water supply	Costs reimbursed through program funding agreements	Third-party nonprofit manages mitigation services and implementation for drinking water wells

Attachment C. Well Registry Programs and Linkages to Mitigation

As requested by the Board, the following compiles information from groundwater sustainability agencies (GSAs) across the state to understand how well registration programs are structured and whether they are linked to domestic well mitigation programs. The table below summarizes whether registration is required, the types of wells included, and how registration is used in relation to mitigation program eligibility. This information is provided to support discussion of whether and how a well registry could be incorporated into the Vina Subbasin’s approach to domestic well mitigation and broader groundwater management.

GSA / Subbasin	Registration Required?	Well Types Covered	Link to Mitigation Program	Notes / Key Details
North Kings GSA (Kings Subbasin)	Yes	All wells (ag, domestic, industrial, public supply)	Required for participation	Registration required for mitigation assistance; part of Kings Subbasin program
North Fork Kings GSA (Kings Subbasin)	Yes	Domestic and agricultural wells	Required (via subbasin program)	Registration tied to subbasin-wide mitigation framework
McMullin Area GSA (Kings Subbasin)	Yes (threshold-based)	Wells >2 AFY; domestic ≤2 AFY generally excluded	Required for mitigation eligibility	Domestic wells must register to receive mitigation assistance
Kings Subbasin (multi-GSA program)	Yes (program requirement)	Domestic wells and State Small Water Systems	Required	Registration required prior to or with mitigation application
Tehama County Subbasins	Yes	All - Domestic, agricultural, other wells	Required	Countywide program exists; requirement status varies
Greater Kaweah GSA	Not clearly mandatory	Agricultural, domestic, industrial, retired wells	Not required	Registration encouraged; evolving toward formal program
Mid-Kaweah GSA	Not currently mandatory	Agricultural, domestic, industrial,	Not required	Intent to move toward mandatory

		retired wells		registration
Kaweah Subbasin (general framework)	No (voluntary)	All well types encouraged	Not required	Voluntary program; not tied to mitigation eligibility
Salinas Valley Basin GSA	Not clearly mandatory	All wells (requested)	Not required	Registration encouraged for basin management
Colusa / Glenn / Corning Subbasins	No	Not specified	Not required	Pilot mitigation program does not include registration requirement
Chowchilla Subbasin	No	Not specified	Not required	No registration prerequisite identified
Madera Subbasin (MCGSA)	No	Not specified	Not required	Mitigation program operates without registration requirement
Eastern Tule GSA	No	Not specified	Not required	No registration prerequisite identified

Note: This summary was compiled using publicly available information and generalized research tools (i.e. AI). While staff has reviewed the information for reasonableness, it has not been independently verified by staff and may not reflect the most current program requirements.