Joint Agenda Item 4.4

Item 4.4
Consideration of the Approach to Addressing Interconnected Surface Water (ISW) in the Periodic Evaluation in response to the Department of Water Resources' Recommended Corrective Actions

Vina and Rock Creek Reclamation District GSA Joint Board Meeting
June 10, 2026

Christina Buck, PhD
Assistant Director
Butte County Dept. of Water and Resource Conservation
Providing technical staff support to the GSA

Purpose of Today's Discussion

The Boards are being asked to consider and potentially approve a proposed approach for responding to DWR's ISW Recommended Corrective Action in the Periodic Evaluation

What is the regulatory framework for ISW?

DWR focused on estimating the location, timing, and volume of depletions of interconnected surface water caused by groundwater pumping.

What progress has been made?

The Larry Walker Associates ISW Technical Memo provides new information on where ISW likely occurs and when some streams are connected or disconnected — this information was not available in the 2022 GSP or during its development.

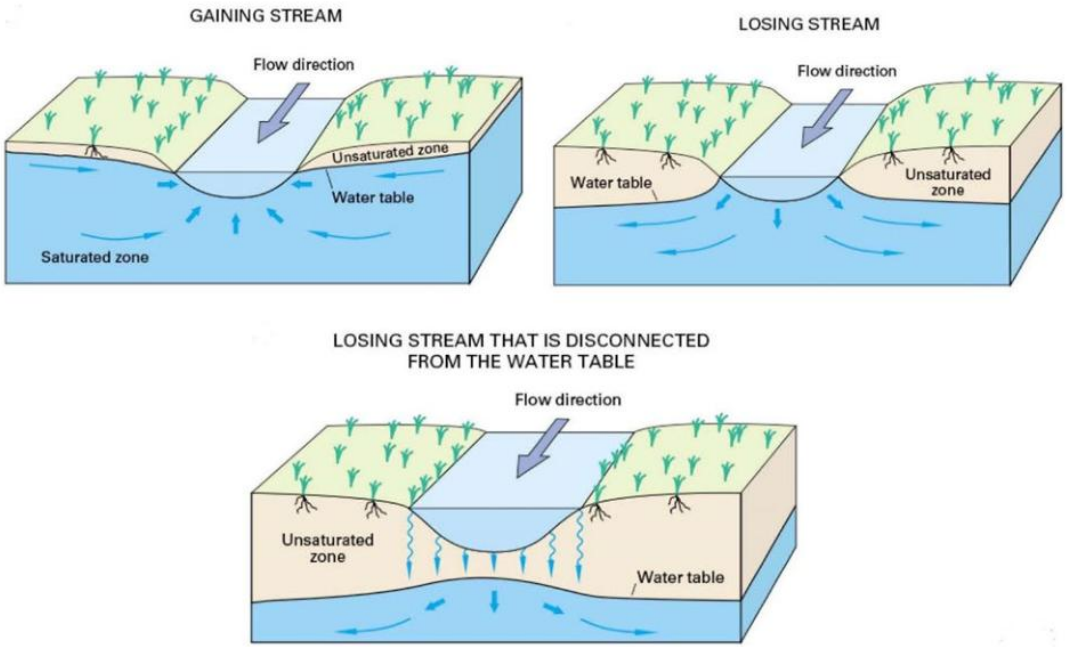
What remains?

The volume piece is the least resolved and depends most on DWR guidance, regional coordination, and continued monitoring — especially for the Sacramento River.

Key framing: show meaningful progress now; defer ISW-specific SMC until guidance, regional work, and additional data provide a stronger basis.

DWR – Department of Water Resources
ISW- Interconnected Surface Water
GSP – Groundwater Sustainability Plan

Quick Orientation: What Is Interconnected Surface Water (ISW)?



USGS figure from LWA ISW TM

Interconnected Surface Water (ISW) is where groundwater and rivers or streams are connected and can influence each other

Why it matters

Under SGMA, the key question is whether groundwater pumping causes depletions of ISW that significantly and unreasonably affect beneficial uses of surface water.

Sustainability Indicators

DWR Recommended Corrective Action (RCA): Location, Timing, and Volume

DWR recognized that estimating stream depletion from subbasin-wide pumping is complex, but expects progress by the first Periodic Evaluation.

Location
Where are streams connected, losing, gaining, or disconnected? Which monitoring sites evaluate ISW?

Timing
When are streams connected or disconnected? How does this vary by season and hydrologic conditions?

Volume
What is the rate and volume of pumping-induced depletion, and when does it occur?

SMC
How should ISW minimum thresholds, measurable objectives, and management actions be set?

Current Status: DWR has not yet released the ISW guidance referenced in its RCA.

Proceed deliberately: show progress on location and timing now; continue work on volume and SMC through guidance, monitoring, and regional coordination in this next implementation period (2027-2032).

DWR's Recommended Corrective Actions

Provided below is ISW Recommended Corrective Action 6, as stated in the Determination Letter:

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

In addition, the GSAs should work to address the following items by the first periodic evaluation:

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

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

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

d. Clarify the groundwater level monitoring sites that will be used for the evaluation of depletions of interconnected surface water and provide site-specific information.

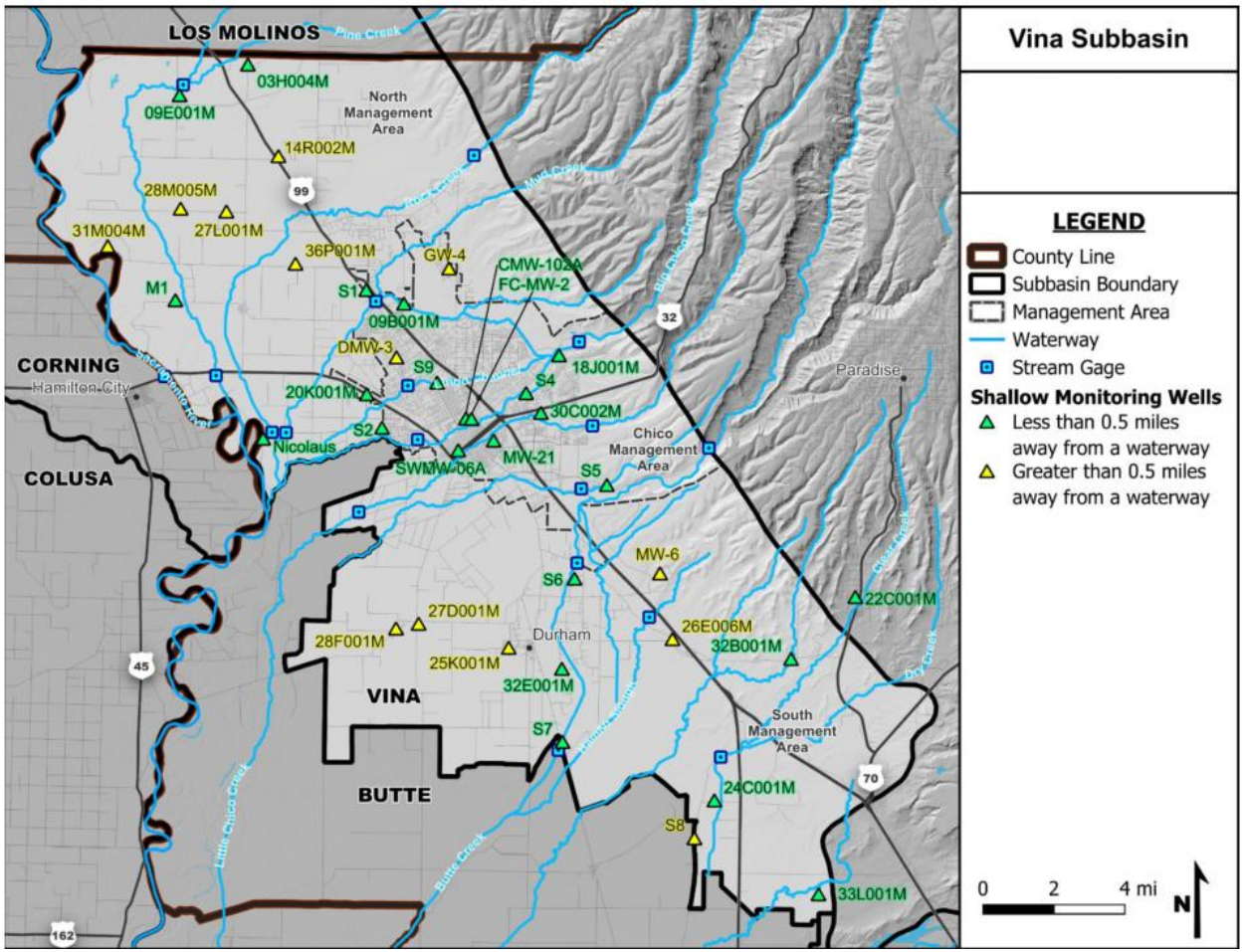
In addition, DWR included a related corrective action regarding model inputs and outputs for stream gains and losses: Review the model inputs/outputs and provide consistent information regarding stream loss and gains throughout the GSP. Clarify whether these values simply represent the overall interaction between the surface water and groundwater system or the quantity of depletion due to groundwater pumping.

Notable Progress:

New information from the Larry Walker Associates ISW Technical Memorandum

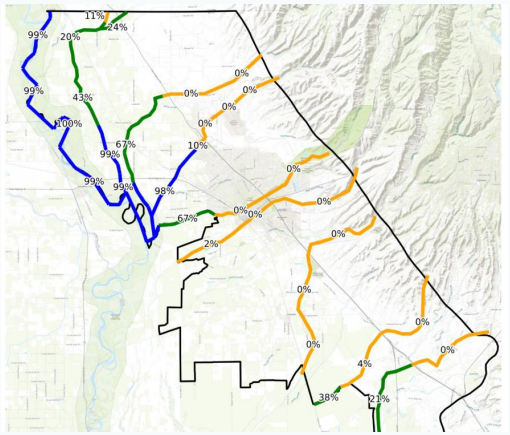
New Information from the SGM grant Data Gap Project

Identified existing shallow wells with historical data relevant for defining a broad ISW network



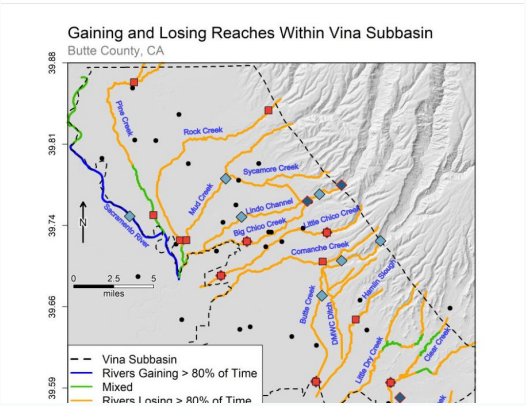
New Information from the SGM grant Data Gap Project: ISW Tech Memo

The TM uses multiple lines of evidence to improve understanding of ISW in the Vina Subbasin



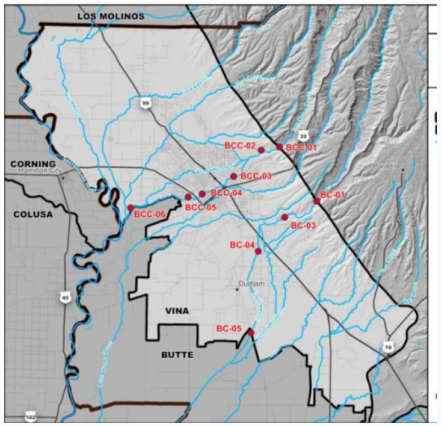
Butte Basin Groundwater Model

Updated BBGM v1.3 results identify likely connected, losing, gaining, and disconnected reaches.



Shallow Regional Groundwater

Seasonal groundwater level comparisons to stream bed elevations using LiDAR data help evaluate where connection occurs

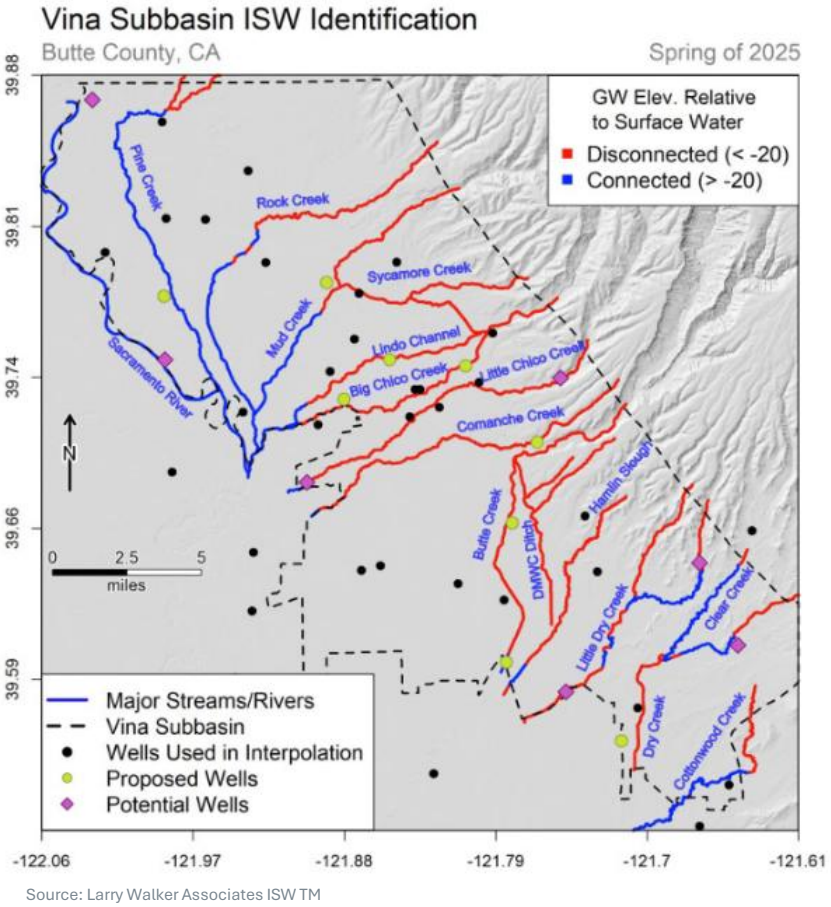


Isotope Sampling

May–October isotope sampling along Big Chico and Butte Creeks helps evaluate whether groundwater inputs were present during data collection period.

Source: Larry Walker Associates ISW TM, April 2026

Location: Big Strides in Identifying Where ISW Likely Occurs, and Doesn't



Source: Larry Walker Associates ISW TM

Preliminary location pattern

- Sacramento River is primarily connected and gaining.
- Lower western reaches of some creeks may be connected or mixed.
- Many central and eastern reaches appear disconnected much or all of the time.
- Connections may shift with hydrology and groundwater levels.

RCA progress

This directly addresses the "location" part of DWR's RCA by improving the basis for identifying connected stream segments and selecting monitoring locations.

Timing: What We Learned So Far

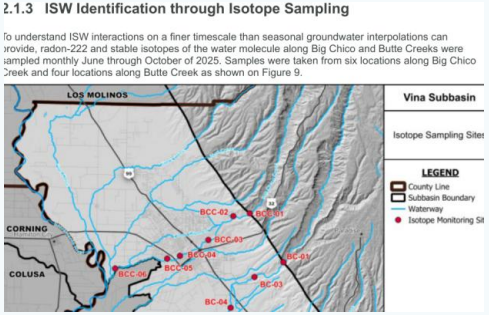
Sacramento River

Primarily connected and gaining across the analysis period. This makes it the main surface water feature for continued ISW depletion evaluation.

Important for both timing and volume because it borders multiple subbasins.

Big Chico + Butte Creeks

May–October isotope results indicate these streams did not show a groundwater-input signal and were disconnected from groundwater during the time sampled.



Ephemeral Streams

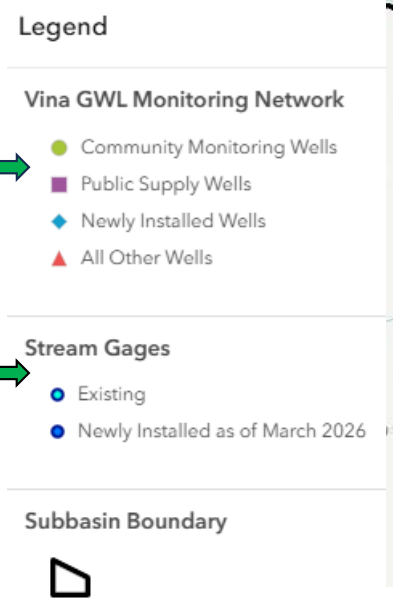
Potential depletions are limited to periods when streams are flowing and groundwater levels are high, making them connected to the aquifer. Streamflows typically end by June.

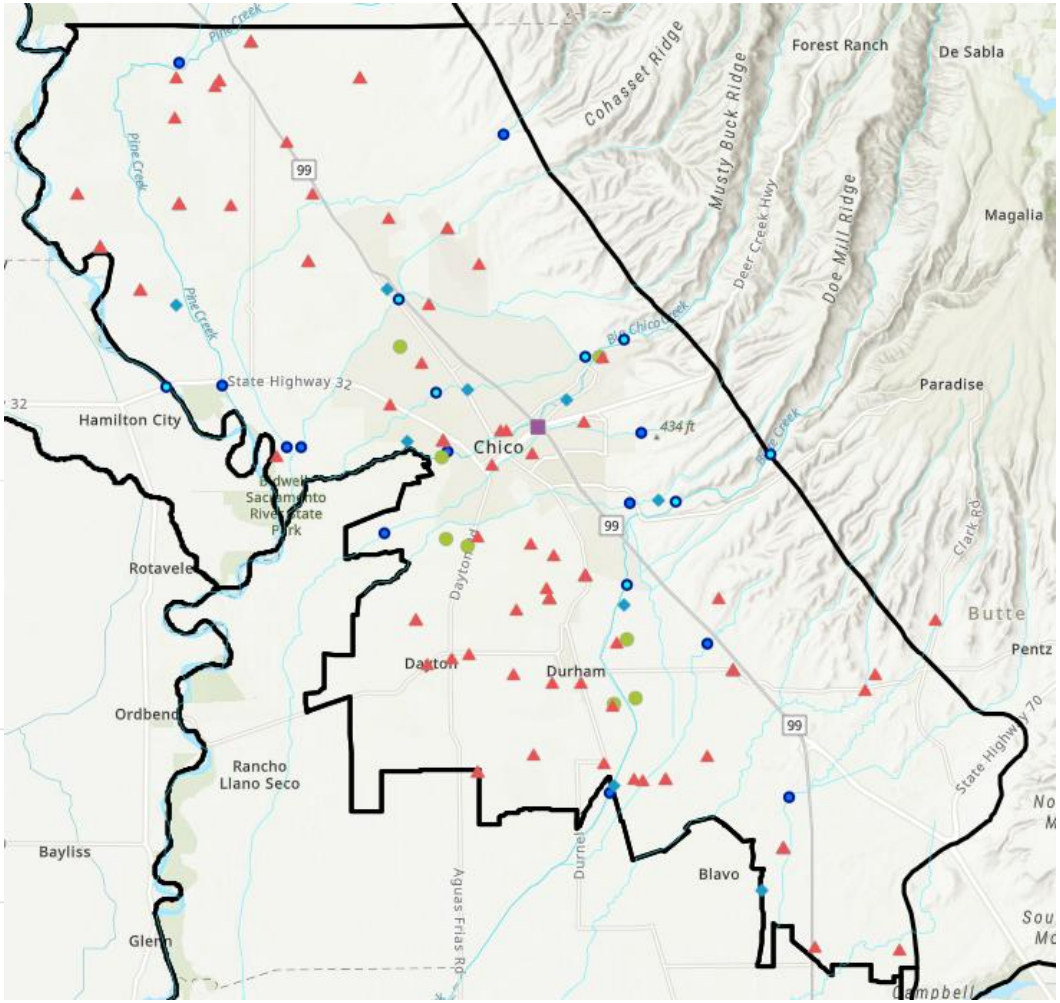
New continuous shallow groundwater data and stream gages will help characterize timing more clearly over the next implementation period.

Upcoming New Data: shallow wells and stream gages

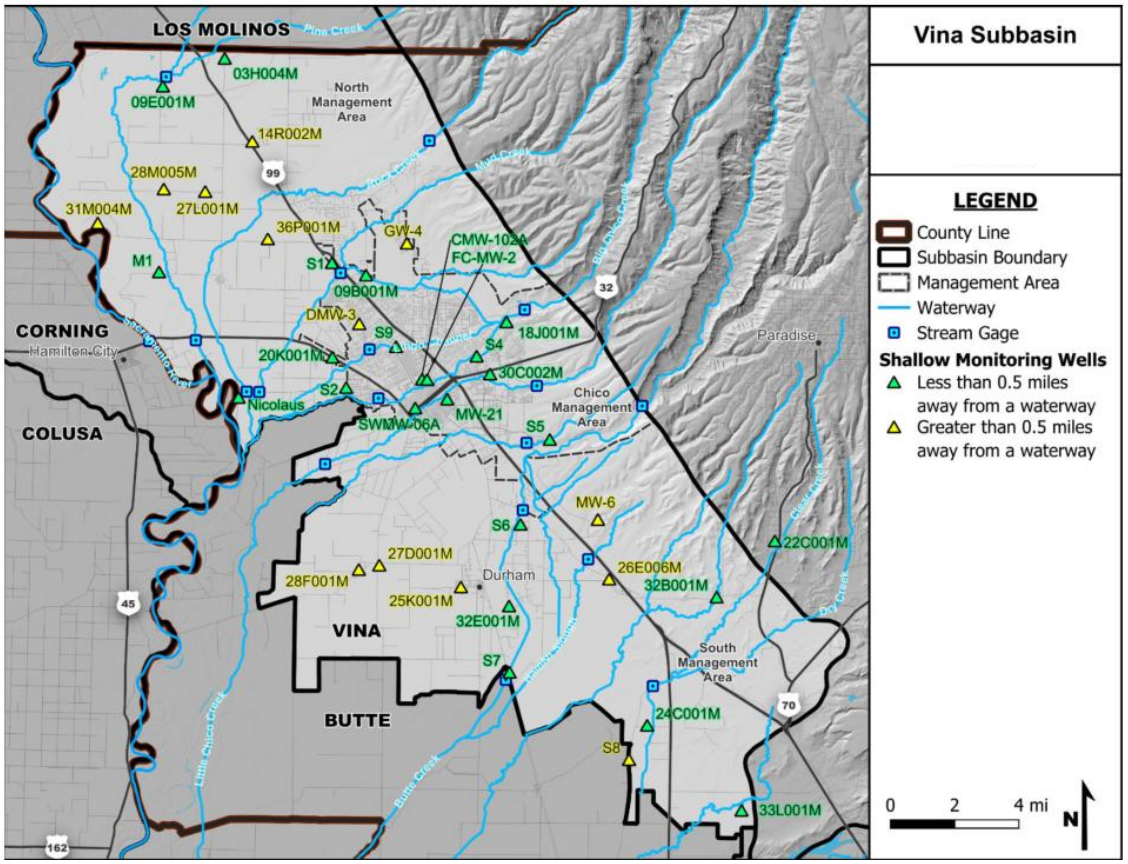
New monitoring will provide 'continuous' data – very helpful for location and timing question

Important for further understanding ephemeral streams





Volume: The Remaining Challenge



Source: LWA ISW TM

The volume piece is least resolved and most dependent on DWR guidance and regional coordination.

The Sacramento River is the primary connected feature of concern and is relevant to multiple subbasins.

Volume estimates and ISW SMC will need DWR guidance, regional coordination, improved modeling tools, and methods to distinguish pumping-induced depletion from broader hydrologic and surface water management influences.

The TM provides a preliminary estimate of pumping-related reduction from June–December of about 38 cfs / 16 TAF per year across Vina and adjacent subbasins.

Proposed RCA Response Strategy:

Demonstrate meaningful progress now; develop robust ISW SMC later

Range of Options for Responding to DWR's ISW RCA

Strawman/SHAC Recommendation

Minimal wait-and-see

What it would do

Describe uncertainty and defer most ISW decisions.

Consideration

Avoids premature decisions but may not show enough progress on DWR's location / timing / volume framework.

Incremental approach

What it would do

Document progress on characterizing location and timing; define broad ISW monitoring network; wait on volume and SMC.

Consideration

Recommended approach: demonstrates RCA progress while preserving flexibility for more robust development of thresholds in the future.

More immediate SMC

What it would do

Select ISW RMS sites and set preliminary Sustainable Management Criteria now (MT/MO).

Consideration

Proactive, but risks premature thresholds before DWR guidance, regional coordination, and sufficient monitoring data.

SHAC Discussion and Recommendation

SHAC recommended an approach consistent with combining "Show progress" and "Proceed carefully"

Most proactive → **Middle path** → **Most cautious**

Move faster toward SMC

- Set ISW-specific SMC sooner.
- Raise thresholds to protect GDEs and ISWs.
- Use ecological indicators, such as valley oaks, urban canopy, and rooting depths to set thresholds
- Include early-warning triggers before thresholds are reached.

Show progress

- Define a broader ISW monitoring network now.
- Use new analysis to document location and timing progress.
- Improve visuals and explanations of stream connectivity, model outputs, and uncertainty.
- Collect new data - shallow groundwater and stream gage monitoring.

Proceed carefully

- Proceed cautiously given data gaps.
- Wait for DWR guidance
- Maintain flexibility; avoid locking in premature thresholds.
- Coordinate with neighboring subbasins on ISW and model calibration.
- Revisit SMC when DWR guidance, regional work, and new data are available.

One dissenting vote due to concern of GSAs making new commitments absent state guidance.

SHAC Discussion

Key themes and perspectives from the discussion included:

- **Support for the combined middle path**
- **Agreement that Sustainable Management Criteria (SMC) should not be set yet-** All SHAC members agreed on this point
- **Caution regarding the monitoring network-** One member expressed hesitancy about committing to establishing the monitoring network before DWR guidance is available, and was not comfortable moving forward with new commitments without state guidance.
- **Technical concern regarding Big Chico Creek:** One member expressed disagreement with the ISW Technical Memorandum's characterization of Big Chico Creek as likely disconnected, expressing the view that it is likely connected to a shallow aquifer. More data is needed.

SHAC Recommendation and Requested Board Action

SHAC Recommendation
(majority, one dissenting)

SHAC recommended the Boards support a combined “Show Progress / Proceed Carefully” approach.

Potential Board Action

Approve the approach to document the Interconnected Surface Water (ISW) response to Department of Water Resources (DWR) Recommended Corrective Actions in the Periodic Evaluation consistent with the combined “Show Progress / Proceed Carefully” path:

1. Describe progress in characterizing ISW location and timing using the Larry Walker Associates ISW Technical Memorandum
2. Define a broader ISW monitoring network using established monitoring wells, and
3. Defer ISW-specific Sustainable Management Criteria until DWR guidance, additional monitoring data, and regional coordination provide a stronger basis for threshold development.

Joint Agenda Item 4.4

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

MEMORANDUM

To: Vina and Rock Creek Reclamation District Groundwater Sustainability Agency Boards

From: Christina Buck, Assistant Director, Butte County Department of Water and Resource Conservation (providing technical staff support to the Vina GSA)

Date: June 4, 2026

Subject: Consideration of an Approach to Addressing Interconnected Surface Water in the Periodic Evaluation in response to DWR Recommended Corrective Actions

---

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 the RCAs should be considered by the GSAs in the first Periodic Evaluation of the GSP or addressed through amendments to 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 (SGM) 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. Butte County staff provide technical staff support to the Vina GSA due to their local expertise and institutional knowledge.

Purpose of this Memo

The following memo provides relevant background and a proposed approach for how the Vina and Rock Creek Reclamation District Groundwater Sustainability Agencies (GSAs) could address the Department of Water Resources' (DWR's) RCAs related to depletion of interconnected surface water (ISW) in the Vina Subbasin. A 'strawman proposal' describing a potential ISW approach was released by the Vina GSA for public and stakeholder consideration and input on May 18, 2026. A "strawman" proposal is an initial draft created to jump-start discussion and identify potential weaknesses or areas for improvement, serving as a starting point for collaborative refinement. The GSA is using this approach with the different topics of the RCAs. A public discussion on the strawman was held virtually on May 21, 2026 where a handful of public members attended a Zoom meeting and Christina Buck provided an overview of the Larry Walker and Associates ISW Technical Memo and the ISW strawman. Participants were able to ask questions in an informal setting. The strawman materials were then provided to the Stakeholder Advisory Committee (SHAC) for their input and potential recommendation at their meeting on May 27, 2026. The following presents a refined proposal for the GSA Boards' consideration based on discussion,

received input, and the SHAC's recommendation.

Relevant Documents and Resources

The following materials provide background for this discussion and should be considered together. Several documents are draft work products intended to support discussion of the Vina Subbasin Periodic Evaluation.

- Draft Technical Memorandum: Vina Subbasin Interconnected Surface Water (Larry Walker Associates, April 2026) ** This is a key document for this topic.
- Groundwater Monitoring Network Enhancements Technical Memorandum (Larry Walker Associates, November 2024)
- Airborne Electromagnetic (AEM)-Based Evaluation of Vina Monitoring Wells (Greene, October 2024)
- Joint GSP Evaluation – North Sacramento River Corridor Technical Memorandum (Montgomery and Associates, Jan 2026)
- North Sacramento River Corridor Inter-Basin Coordination / Meeting Materials
- DWR Vina Subbasin GSP Determination Letter and Staff Report (DWR, July 2023)
- Vina Subbasin GSP (2022)

Relevant Context

What Interconnected Surface Water Means Under SGMA

Under SGMA, depletion of interconnected surface water is one of the six sustainability indicators that must be considered in a GSP. DWR defines interconnected surface water as surface water that is hydrologically connected to the underlying aquifer by a continuous saturated zone and is not completely depleted. In practical terms, ISW refers to locations where groundwater and surface water systems directly influence one another.

Under SGMA, depletions of ISW are specifically related to depletions caused by groundwater use. Groundwater pumping may reduce groundwater inflow to a stream or river, or increase streamflow losses to groundwater, in a way that could affect beneficial uses of surface water. The key management challenge is distinguishing general stream-aquifer interaction from the portion of that interaction caused by groundwater pumping.

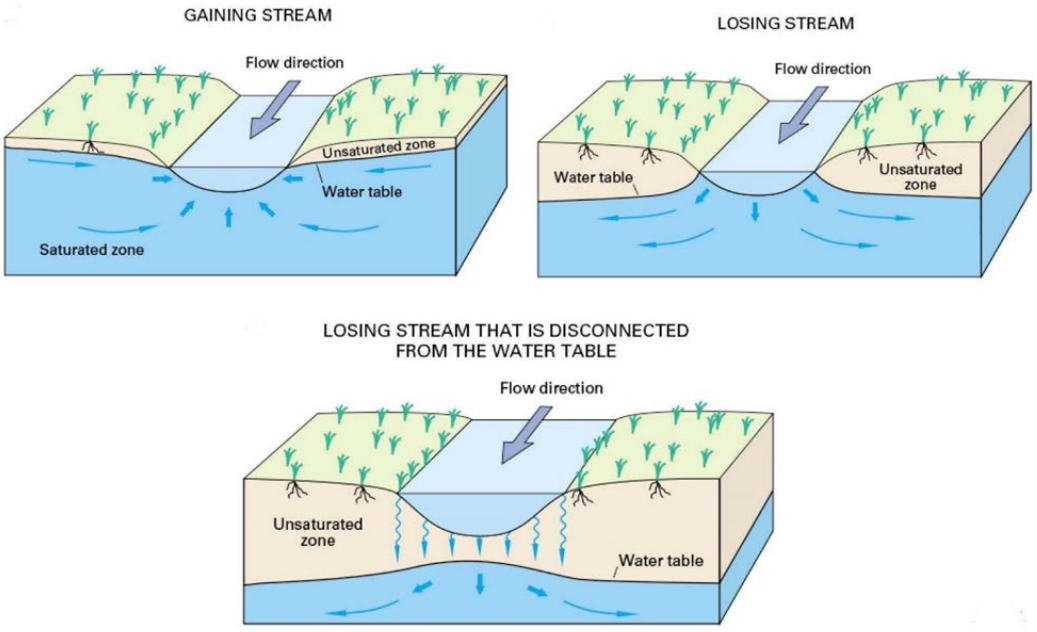


Figure 1. Conceptual illustration of gaining, losing, and disconnected stream conditions. Source: USGS

Current 2022 GSP Approach

The 2022 Vina GSP acknowledged the need to better characterize and monitor ISW. Because shallow groundwater data were limited at the time of GSP development, the GSP did not establish SMC specific to ISW depletion. Instead, Groundwater Level sustainability indicator SMC and the Groundwater Level Representative Monitoring Site (RMS) network were used for ISW. The GSP also identified a need for additional wells and other monitoring to analyze the interaction of streams and groundwater pumping. The plan identified ISW monitoring as a data gap to be addressed during implementation.

The new information developed since GSP adoption as part of the SGM grant funded Data Gap project provides an opportunity to move beyond relying solely on the Groundwater Level RMS network as the primary proxy for ISW. At the same time, the available data is still relatively new and additional monitoring and a longer period of record is needed before the GSAs can confidently identify ISW RMS sites or establish durable ISW-specific SMC.

DWR Recommended Corrective Actions Related to ISW

DWR approved the Vina Subbasin GSP in July 2023 and identified Recommended Corrective Actions (RCAs) to be considered as part of the first Periodic Evaluation.

Provided below is RCA 6, as stated in the Determination Letter:

> *Department staff understand that estimating the location, quantity, and timing of stream depletion due to ongoing, Subbasin-wide pumping is a complex task and that developing suitable tools may take additional time; however, it is critical for the Department's ongoing and future evaluations of whether GSP implementation is on track to achieve sustainable groundwater management. The Department plans to provide guidance on methods and approaches to evaluate the rate, timing, and volume of depletions of interconnected surface water and support for establishing specific sustainable management criteria in the near future. This guidance is intended to assist GSAs to sustainably manage depletions of interconnected surface water.*
>
> *In addition, the GSAs should work to address the following items by the first periodic evaluation:*
>
> *a. Consider utilizing the interconnected surface water guidance, as appropriate, when issued by the Department to establish quantifiable minimum thresholds, measurable objectives, and management actions.*
>
> *b. Continue to fill data gaps, collect additional monitoring data, and implement the current strategy to manage depletions of interconnected surface water and define segments of interconnectivity and timing.*
>
> *c. Prioritize collaborating and coordinating with local, state, and federal regulatory agencies as well as interested parties to better understand the full suite of beneficial uses and users that may be impacted by pumping induced surface water depletion within the GSAs' jurisdictional area.*
>
> *d. Clarify the groundwater level monitoring sites that will be used for the evaluation of depletions of interconnected surface water and provide site-specific information.*

In addition, DWR included a related corrective action regarding model inputs and outputs for stream gains and losses:

> *Review the model inputs/outputs and provide consistent information regarding stream loss and gains throughout the GSP. Clarify whether these values simply represent the overall interaction between the surface water and groundwater system or the quantity of depletion due to groundwater pumping*.

DWR has not yet released the ISW guidance referenced in its corrective action. This would be a key reason to proceed incrementally and avoid setting ISW-specific SMC before state guidance, regional coordination, and additional local monitoring data are available.

New Information Available Since the 2022 GSP

Since adoption of the 2022 GSP, the GSAs and partner agencies have developed substantial new information to improve the characterization of ISW in the Vina Subbasin. The draft ISW Technical Memorandum by Larry Walker Associates and work done through the grant funded Data Gap project (see other previously linked relevant documents) identify the following major lines of new information:

1. **Shallow groundwater monitoring network identification and development**. Existing groundwater level monitoring wells have been evaluated and classified based on screen intervals, AEM information, and other well construction data to identify wells more representative of shallow water table conditions.
2. **Additional monitoring wells and stream gages.** SGM Implementation Grant Program funding supported design and installation of new monitoring wells and stream gages (currently being installed, spring 2026).
3. **Updated Butte Basin Groundwater Model (BBGM).** BBGM version 1.3 has been extended through Water Year 2024 and provides updated model-based estimates relevant to understanding and estimating stream-aquifer interaction.
4. **AEM-based evaluation.** DWR's AEM data have been used to improve understanding of subsurface conditions and support classification of monitoring wells by aquifer zone.
5. **Isotope study.** Isotope data were collected along Big Chico Creek and Butte Creek to help identify gaining and losing stream reaches.
6. **Topographic surveys and LiDAR comparisons.** Streambed and water surface elevation information has been used with shallow groundwater elevations to help assess stream-aquifer connectivity.

Together, these data provide an improved foundation for ISW characterization. They also highlight the complexity of the issue and the importance of continuing to collect shallow groundwater and surface water data before selecting compliance monitoring sites or setting ISW thresholds. The newly installed wells and stream gages will provide valuable information over the next 5-year implementation period.

Regional Context

A regional approach is also warranted because several major surface water systems associated with the Vina Subbasin are regional in nature. The Sacramento River forms a boundary with multiple subbasins, and major tributaries and stream systems cross or influence more than one SGMA planning area, namely Butte Creek. The Vina GSP anticipated inter-basin coordination through the North Sacramento River Corridor (NSRC), including information sharing, joint analysis and evaluation of GSPs, coordination on mutually beneficial activities, and coordinated communication. Collaboration regarding ISW is one of those "mutually beneficial activities" that have been identified by GSA managers from the NSRC group. Meeting summaries are available from GSA coordination meetings so that individual GSAs and members of the public can stay informed of the NSRC inter-basin coordination discussions.

Regional discussions are in initial stages regarding ISW through the NSRC group. This memo focuses on the new information available to the Vina Subbasin; however, regional coordination where surface water systems, beneficial uses, and modeling tools extend beyond a single subbasin will be important. More information on the regional discussions will be available later in June.

Recent Public Input Regarding ISW

Stakeholder feedback received from a series of stakeholder meetings held in the fall of 2025 generally supported continued refinement of the ISW monitoring network, but groups differed on

how quickly the GSA should move toward setting ISW-specific Sustainable Management Criteria (SMC). Environmental representatives encouraged stronger protection of groundwater dependent ecosystems (GDEs), interconnected surface waters (ISWs), urban forests, valley oaks, and other groundwater-dependent vegetation. Technical experts emphasized the need for better visual explanations of stream connectivity, disconnection thresholds, and model outputs. Agricultural representatives urged caution, flexibility, and continued coordination with neighboring subbasins before locking in ISW SMC. Across groups, there was recognition that data gaps remain related to ISW, GDEs, shallow wells, stream connectivity, and modeling. Attachment A includes more details on input received during the series of stakeholder meetings.

Spectrum of Potential Approaches – ISW Matrix of Options and Considerations

The GSAs have a range of potential approaches for addressing ISW in the Periodic Evaluation. The proposed approach leans toward a wait-and-see approach, but not an inactive one. It would document progress, define the monitoring network, and establish a clear path for future SMC development while avoiding premature thresholds before DWR guidance and regional coordination are further developed.

Approach Option	What it would do	Advantages	Limitations / Concerns
Meaningful but measured approach **(Proposed Approach, see below)**	Define a broad ISW monitoring network; document new data and data gaps; wait to set ISW-specific SMC and RMS network selection.	Demonstrates progress in the Periodic Evaluation while preserving flexibility. Allows the GSAs to use new monitoring data, DWR guidance, and regional coordination before adopting thresholds.	Requires clear explanation to DWR and stakeholders that deferral is intentional and based on technical and policy reasons, not inaction.
More immediate SMC approach	Identify ISW RMS sites and establish preliminary ISW-specific Minimum Thresholds and Measurable Objectives in 2027 GSP amendments.	Shows a proactive response to DWR's RCA and creates a compliance framework now.	Would prematurely set thresholds before DWR guidance (as promised in its RCA), regional coordination, and sufficient local shallow monitoring data are available; would require later revision and additional amendments.
Minimal wait-and-see approach	Describe uncertainty and defer most ISW decisions until future guidance and data are available.	Avoids premature decisions.	May not demonstrate sufficient progress toward addressing DWR's RCA and may be viewed as too limited for the 2027 Periodic Evaluation.

SHAC Discussion and Recommendation

At their May 27, 2026 meeting, staff presented the SHAC with information described in this memo, including a strawman proposal, highlights from the LWA ISW Technical Memorandum, and a spectrum of potential approaches ranging from more immediate SMC development to a minimal wait-and-see approach. Staff requested SHAC discussion and a potential recommendation to the Vina GSA Board regarding an approach to addressing DWR's ISW RCA in the Periodic Evaluation. Materials provided to the SHAC are included in Attachment A.

SHAC Discussion

The SHAC engaged in substantive discussion of the proposed ISW approach. Discussion recognized that DWR expects the GSA to show progress in the Periodic Evaluation, and that the strawman proposal — which includes defining the broad ISW monitoring network and documenting what has been learned about ISW location and timing — directly addresses that expectation. The

majority of SHAC (all but one member) supported the middle-of-the-road path reflected in the strawman.

Key themes and perspectives from the discussion included:

- **Support for the combined middle path:** The majority of SHAC members supported combining the "Show Progress" and "Proceed Carefully" approaches presented in the stakeholder feedback spectrum (see slide 18 in Attachment A). This combined path would: define a broader ISW monitoring network, use new analysis to document progress in characterizing location and timing aspects of ISW, and improve visuals and explanations of stream connectivity, while also proceeding cautiously given data gaps, waiting for DWR guidance, maintaining flexibility, coordinating with neighboring subbasins, and deferring ISW-specific SMC until guidance, regional work, and new data are available. Members expressed that this approach allows the GSA to demonstrate meaningful progress in the Periodic Evaluation without locking in premature commitments.
- **Agreement that SMC should not be set yet:** All SHAC members agreed that ISW-specific SMC should not be developed at this time. The consensus was to proceed cautiously, wait for DWR guidance, maintain flexibility, and avoid locking in premature thresholds.
- **Caution regarding the monitoring network:** One member expressed hesitancy about committing to establishing the monitoring network before DWR guidance is available, and was not comfortable moving forward at all without state guidance.
- **Technical concern regarding Big Chico Creek:** One member raised a technical disagreement with the ISW Technical Memorandum's characterization of Big Chico Creek, expressing the view that it is likely connected to a shallow aquifer — contrary to the Tech Memo's preliminary findings.

A member of the public provided comment in support of the combined middle path / strawman approach, expressing agreement with the measured, progress-oriented direction. The public commenter also agreed with the SHAC member's technical concern regarding Big Chico Creek, sharing the view that it is connected to a shallow aquifer and disagreeing with the ISW Technical Memorandum's preliminary characterization of that stream reach.

SHAC Recommendation

By majority vote (all members except one), the SHAC recommended that the GSA Boards support a combined "Show Progress / Proceed Carefully" approach to addressing DWR's ISW RCA in the Periodic Evaluation. The SHAC recommendation reflects the following elements:

- Define a broader ISW monitoring network using established monitoring wells and use new analysis to document location and timing progress in the Periodic Evaluation.
- Improve visuals and explanations of stream connectivity, model outputs, and data uncertainty.
- Continue collecting new shallow groundwater and stream gage monitoring data.
- Proceed cautiously given existing data gaps; avoid locking in premature thresholds.
- Do not develop ISW-specific SMC at this time; wait for DWR guidance before establishing minimum thresholds, measurable objectives, or ISW RMS sites.
- Coordinate with neighboring subbasins on ISW monitoring and model calibration, and revisit SMC development when DWR guidance, regional work, and new monitoring data are available.

The one dissenting member was not comfortable moving forward with any commitments related to the monitoring network or ISW approach without DWR guidance in hand first.

Proposed Approach for Board Consideration

Based on SHAC's recommendation and feedback received since the May 27 meeting, the proposed approach is to take a meaningful step forward in the 2027 Periodic Evaluation by documenting the new information now available (see above section for an overview of new information), defining a broad ISW monitoring network focused on shallow groundwater and stream

gages, and waiting to establish ISW-specific sustainable management criteria (SMC), minimum thresholds (MTs), measurable objectives (MOs), or ISW RMS sites. Instead, those decisions would be deferred until: (1) additional monitoring data are collected, (2) DWR releases the ISW guidance referenced in its RCA, and (3) ongoing regional coordination provides a more consistent framework for shared surface water systems (ex. Sacramento River).

Description in the Periodic Evaluation would build off of the following key points:

- The 2022 GSP's groundwater level proxy approach was appropriate as an initial implementation step given limited available data, but implementation work since 2022 now supports a transition toward defining a separate ISW monitoring framework. This transition is underway by defining the ISW broad network.
- The Periodic Evaluation would clearly identify which existing and newly installed monitoring sites are considered part of the ISW monitoring network, explain the basis for including them, and identify remaining geographic or technical data gaps.
- An ISW RMS network would be selected later after sufficient monitoring data are available to evaluate which sites are reliable, representative, and appropriate for long-term compliance purposes.
- The approach would be to defer establishing ISW-specific MTs, MOs, or undesirable result criteria. Instead, the Periodic Evaluation would explain why deferral is appropriate at this time based on the following reasons:
    - DWR has not yet released the ISW guidance referenced in its RCA;
    - Regional coordination is ongoing and important because major surface water systems cross or border multiple subbasins (ex. Sacramento River, Butte Creek);
    - New shallow groundwater and stream gage data are only beginning to be collected and need time to establish a meaningful period of record;
    - Modeling tools are improving but still have uncertainty related to calibration and representation of shallow groundwater-surface water interaction
    - Additional work is needed to distinguish general stream gains/losses from pumping-induced depletion; and,
    - Current subbasin conditions (i.e. observed groundwater levels are above historical lows) and no increasing trend in groundwater extraction compared to historical amounts suggest that a significant increase in depletion of interconnected surface waters is unlikely to occur over the next five-year implementation period.
- The Periodic Evaluation would state that ISW SMC development is expected to be revisited after additional local data collection, regional coordination, and the release of DWR's ISW guidance.
- The Periodic Evaluation would describe the progress that has been made in characterizing the location and timing of ISW in the Vina subbasin using multiple lines of evidence, described previously (i.e. the BBGM, isotope sampling, evaluation of shallow groundwater level data in relation to stream bed elevations). This would allow the GSAs to show clear progress while acknowledging remaining uncertainty.
- The Periodic Evaluation would recognize that a subbasin-only approach may not fully address ISW policy and technical issues where rivers or creeks form boundaries or cross subbasins. The GSAs would continue participating in regional discussions, including the North Sacramento River Corridor inter-basin coordination effort and related Sacramento Valley ISW discussions.
- The Periodic Evaluation would include a concise response to each ISW-related RCA, see framing below. The GSP would not be amended with respect to ISW.

DWR RCA Topic	Proposed Periodic Evaluation Response	Further Work / Deferred Decision
Use DWR ISW guidance when issued	State that DWR has not yet released ISW guidance. The GSAs will review and incorporate applicable guidance when available over the next implementation period.	Defer ISW-specific SMC until guidance is available and can be considered alongside local data.
Fill data gaps and define segments of interconnectivity and timing	Document the identification of interconnected streams in the subbasin based on the new shallow groundwater monitoring, stream gages, isotope study, BBGM update, AEM-based well classification, and topographic survey information.	Continue data collection through the next implementation period and use annual reports to summarize new information.
Coordinate with agencies and interested parties	Describe stakeholder outreach and regional coordination, including the North Sacramento River Corridor and related regional ISW efforts.	Continue coordination during the next implementation period (2027-2032) with resource agencies, neighboring subbasins, and interested stakeholders before SMC are set.
Clarify monitoring sites used for ISW evaluation	Identify a broader ISW monitoring network and explain why shallow groundwater and stream gage data are the appropriate next step.	Do not designate final ISW RMS sites until the network has a sufficient monitoring record.
Review model inputs/outputs for stream gains and losses	Describe what has been learned - use updated BBGM results and clearly distinguish overall stream-aquifer interaction from pumping-induced depletion where possible.	Continue model refinement and regional analysis to better support future SMC development and quantification of depletion due to groundwater pumping.

Regarding composition of the ISW Broad Network. Staff suggests refining the set of wells that was listed in the strawman to include only established monitoring wells (wells for which the GSA or County has consistent, ongoing monitoring access) and newly installed SGM grant funded wells in the ISW Broad Network at this time. Wells identified through other monitoring programs (such as the Chico Nitrate monitoring program or monitoring wells associated with Chico plume sites) that were identified in the Data Gap project as informative of shallow groundwater conditions near streams could be described in the Periodic Evaluation as potential future additions, but would not be formally included in the Broad Network until monitoring access and coordination with those programs is established. The GSAs would consider the inclusion of these or other additional wells during the next implementation period in light of DWR guidance, once available. This approach could partly address the concerns expressed by the SHAC member regarding premature new commitments by the GSA.

Potential Board Action

Consider the following action:

- Approve the approach to document the Interconnected Surface Water (ISW) response to Department of Water Resources (DWR) Recommended Corrective Actions in the Periodic Evaluation consistent with the combined “Show Progress / Proceed Carefully” path: describe progress in characterizing ISW location and timing using the Larry Walker Associates ISW Technical Memorandum, define a broader ISW monitoring network using established monitoring wells, and defer ISW-specific Sustainable Management Criteria until DWR guidance, additional monitoring data, and regional coordination provide a stronger basis for threshold development.

Attachments

A. SHAC May 27, 2026 Meeting Materials