

# **Napa County**

1195 THIRD STREET  
SUITE 310  
NAPA, CA 94559



## **Agenda - Final**

**Thursday, April 9, 2026**

**1:30 PM**

**Board of Supervisors Chambers  
1195 Third Street, Third Floor**

### **Groundwater Technical Advisory Group**

*Mathias Kondolf (Chair)*  
*Miguel Garcia (Vice-Chair)*  
*Albert Filipelli*  
*Monica Cooper*  
*Julie Chambon*

*Brian D. Bordona, Secretary - Director*  
*Chris Apallas, County Counsel*  
*Jamison Crosby, Natural Resources Conservation Manager*  
*Brendan McGovern, Principal Planner*  
*Nick Fetherston, Planner II*  
*Alexandria Quackenbush, Meeting Clerk*  
*Angie Ramirez Vega, Meeting Clerk*  
*Aime Ramos, Meeting Clerk*

### How to Watch or Listen to the Napa County Groundwater Technical Advisory Group Meetings

The Napa County Groundwater Technical Advisory Group will continue to meet the 2nd Thursday of each month. There will be no regular meeting in January, May, June or October. August 19, 2025 will be a special-joint meeting of the GTAG & GSA.

The Groundwater Technical Advisory Group meets at 1195 Third Street, Suite 310, Napa, California 94559. The meeting room is wheelchair accessible. Assistive listening devices and interpreters are available through the clerk of the Groundwater Technical Advisory Group. Requests for disability related modifications or accommodations, aids or services may be made to the Clerk of the Groundwater Technical Advisory Group's office no less than 72 hours prior to the meeting date by contacting (707) 253-4417 or [meetingclerk@countyofnapa.org](mailto:meetingclerk@countyofnapa.org).

The Groundwater Technical Advisory Group realizes that not all County residents have the same ways to stay engaged, so several alternatives are offered. Remote Zoom participation for members of the public is provided for convenience only. In the event that the Zoom connection malfunctions for any reason, the Groundwater Technical Advisory Group reserves the right to conduct the meeting without remote access.

Please watch or listen to the Groundwater Technical Advisory Group meeting in one of the following ways:

1. Attend in-person at the Board of Supervisors Chambers, 1195 Third Street, Napa, Third Floor.
2. Watch on Zoom using the attendee link: <https://countyofnapa.zoom.us/j/89426085834>. Make sure the browser is up-to-date.
3. Listen on Zoom by calling 1-669-900-6833 (Meeting ID: 894-2608-5834).

### **If you are unable to attend the meeting in person and wish to submit a general public comment or a comment on a specific agenda item, please do the following:**

1. Email your comment to [meetingclerk@countyofnapa.org](mailto:meetingclerk@countyofnapa.org). Emails will not be read aloud but will still become part of the public record and shared with the Groundwater Technical Advisory Group.
2. Use the Zoom attendee link: <https://Countyofnapa.zoom.us/j/89426085834>. Make sure the browser is up-to-date. When the Chair calls for the item on which you wish to speak, click "raise hand". Please limit your remarks to three minutes.
3. Call the Zoom phone number: 1-669-900-6833. (Meeting ID: 894-2608-5834). When the Chair calls for the item on which you wish to speak, press \*9 to raise hand. Please limit your remarks to three minutes.

**\*\*Please note that phone numbers in their entirety will be visible online while speakers are speaking\*\***

For more information, please contact us via telephone at (707) 253-4417 or send an email to [meetingclerk@countyofnapa.org](mailto:meetingclerk@countyofnapa.org).

ANY MEMBER OF THE AUDIENCE DESIRING TO ADDRESS THE COMMITTEE:

**ON A MATTER ON THE AGENDA**

Please proceed to the podium when the matter is called and, after receiving recognition from the Chair, give your name and your comments or questions. In order that all interested parties have an opportunity to speak, please be brief and limit your comments to the specific subject under discussion. Time limitations shall be at the discretion of the Chair or Committee, but is generally limited to three minutes.

**ON A MATTER NOT ON THE AGENDA**

Public comment is an opportunity for members of the public to speak on items that are not on the agenda but are within the subject matter jurisdiction of the Committee. Public comment is limited to three minutes per speaker, subject to the discretion of the Chair. Comments should be brief and focused, and speakers should be respectful of one another who may have different opinions. Please remember this meeting is being recorded and broadcasted live via ZOOM. The County will not tolerate profanity, hate speech, abusive language, or threats. Also, while public input is appreciated, the Brown Act prohibits the Committee from taking any action on matters raised during public comment that are not on the agenda.

1. **CALL TO ORDER; ROLL CALL**
2. **PUBLIC COMMENTS AND RECOMMENDATIONS**  
(The Committee invites comments and recommendations from the public concerning issues relevant to the charge of the Technical Advisory Group. Anyone who wishes to speak to the Technical Advisory Group on such a matter, if it is not on the agenda, may do so at this time. At the discretion of the Chair, individuals will be limited to a three-minute presentation. No action will be taken by the Technical Advisory Group as a result of any item presented at this time.)
3. **APPROVAL OF MINUTES**
  - A. The Secretary of the committee requests approval of the minutes from the March 12, 2026 TAG meeting. [26-905](#)  
**Attachments:** [Draft Minutes](#)
4. **REPORTS AND ANNOUNCEMENTS**
5. **ADMINISTRATIVE ITEMS**

- A. Receive an update on the implementation of the Groundwater Sustainability Plan including the Annual Report on conditions in Water Year 2025, implementation of Workplans, increased monitoring, and outreach activities. [26-917](#)  
  
**Attachments:** [WY2025 Annual Report Presentation](#)  
[WY2025 AR Executive Summary](#)  
[Table 1 Sustainable Management Criteria](#)
  
- B. Provide an update on the Interconnected Surface Water (ISW) and Groundwater Dependent Ecosystem (GDE) Workplan implementation with a focus on 2025 monitoring results. [26-906](#)  
  
**Attachments:** [ISW and GDE Monitoring Presentation](#)
  
- C. The TAG will receive a presentation by staff and technical consultants on the Napa County Public Draft 2026 Water Availability Analysis (WAA) Guidance document and supplemental Technical Report for Napa County’s updated draft well permitting standards. [26-931](#)  
  
**Attachments:** [2026 Draft WAA Presentation](#)

6. FUTURE AGENDA ITEMS

7. ADJOURNMENT

I HEREBY CERTIFY THAT THE AGENDA FOR THE ABOVE STATED MEETING WAS POSTED AT A LOCATION FREELY ACCESSIBLE TO MEMBERS OF THE PUBLIC AT THE NAPA COUNTY ADMINISTRATIVE BUILDING, 1195 THIRD STREET, NAPA, CALIFORNIA ON APRIL 6, 2026 BY 10:00 AM. A HARDCOPY SIGNED VERSION OF THE CERTIFICATE IS ON FILE WITH THE COMMITTEE CLERK AND AVAILABLE FOR PUBLIC INSPECTION.

AIME RAMOS (By e-signature)  
Aime Ramos, Committee Clerk



Napa County  
Board Agenda Letter

1195 THIRD STREET  
SUITE 310  
NAPA, CA 94559  
www.napacounty.gov  
Main: (707) 253-4580

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Groundwater Technical Advisory Group **Agenda Date:** 4/9/2026

**File ID #:** 26-905

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**TO:** Technical Advisory Group for the Napa County Groundwater Sustainability Agency  
**FROM:** Brian Bordona - Director of Planning, Building and Environmental Services  
**REPORT BY:** Jamison Crosby, Natural Resources Conservation Manager  
**SUBJECT:** TAG Minutes from March 12, 2026

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**RECOMMENDATION**

The Secretary of the committee requests approval of the minutes from the March 12, 2026 TAG meeting.

**ENVIRONMENTAL IMPACT**

ENVIRONMENTAL DETERMINATION: The proposed action is not a project as defined by 14 California Code of Regulations 15378 (State CEQA Guidelines) and therefore CEQA is not applicable.

**BACKGROUND AND DISCUSSION**

The TAG held its meeting on March 12, 2026. Minutes were prepared and are ready for the committee's approval.



## Draft - Meeting Minutes

### Technical Advisory Group

Julie Chambon  
Monica Cooper  
Albert Filipelli  
Miguel Garcia (*Vice-Chair*)  
Mathias Kondolf (*Chair*)

Brian D. Bordona, Director  
Chris Apallas, County Counsel  
Jamison Crosby, Natural Resources Manager  
Brendan McGovern, Principal Planner  
Nick Fetherston, Planner II  
Alexandria Quackenbush, Meeting Clerk  
Angie Ramirez-Vega, Meeting Clerk  
Aime Ramos, Meeting Clerk

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Thursday, March 12, 2026

1:30 PM

Board of Supervisors Chambers  
1195 Third Street, Third Floor

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**1. CALL TO ORDER / ROLL CALL**

Group Members Present: Chair Matt Kondolf, Albert Filipelli, Miguel Garcia, Julie Chambon, Monica Cooper (arrived during Item 5A)

**2. PUBLIC COMMENTS AND RECOMMENDATIONS**

(1) Public comment was heard.

**3. APPROVAL OF MINUTES**

Motion made by Member Chambon to approve minutes for the December 11, 2025, meeting as presented, seconded by Member Filipelli.

Vote: Carried 4-0-0

Yes: Chambon, Garcia, Filipelli, Kondolf

No: N/A

**4. REPORTS AND ANNOUNCEMENTS**

Brendan McGovern made the announcements below:

- This week is National Groundwater Awareness Week, recognized by the National Groundwater Resources Association
- Napa County put out a press release, highlighting the importance and responsibility of managing and protecting groundwater resources in the Napa Valley subbasin
- Chair Manfree, of the Board of Supervisors highlighted the importance of the work that is being done to ensure the health and sustainability of the AG economy, rural communities and waterways throughout Napa.
- The County is in the process of reviewing the Water Year 2025 annual report. A presentation will be presented during the April 9, 2026, TAG meeting.

- Mid-March, County staff will be collecting static well levels across the entire Napa County Groundwater Monitoring Program.

## 5. ADMINISTRATIVE ITEMS

- A.** Miguel A. Garcia PhD, Senior Project Manager, Agriculture, Resource Conservation District of Napa County, will make a presentation to the TAG on a regional soil health and water storage assessment in dry-farmed vineyards funded by the California Department of Water Resources to better understand and promote dry-farming practices for water conservation and climate resilience.  
Member Garcia presented.  
Chair Kondolf initiated a discussion between members and staff.  
Chair Kondolf opened public comment, three public comments were heard.  
No action was taken.
- B.** Technical Advisory Group (TAG) members will receive a presentation on Project 1 of GSP Implementation: Managed Aquifer Recharge, including an update on the feasibility study development underway. In addition, the TAG will also receive an update on a vineyard replant modeling scenario that assesses the potential benefit over a 30-year period associated with extending the timeframe for vineyard replants in Napa Valley. The results of a preliminary modeling approach to assess recharge opportunities will also be presented. This is intended to spur discussion and questions and provide feedback to staff and participants.  
Duncan MacEwan, ERA and Nick Watterson, LSCE, Nick Newcomb, LSCE presented.  
Chair Kondolf initiated a discussion between members and staff.  
Chair Kondolf opened public comment, three public comments were heard.  
No action was taken.
- C.** Dr. Bachand will provide information on the development and implementation of the Alexander Valley On-Farm Recharge Initiative. Phase 1 of a multi-phase project, led by the Dry Creek Rancheria of Pomo Indians, is underway to utilize nearly 3,000 acres of active or fallow vineyards for recharge from diverting high flows off the Russian River.  
Dr. Phil Bachand, Bachand and Associates presented.  
Chair Kondolf initiated a discussion between members and staff.  
Chair Kondolf opened public comment, two public comments were heard.  
No action was taken.

## 6. FUTURE AGENDA ITEMS

Brendan announced that the next regular TAG meeting will be held on April 9, 2026. An update will be provided on the Water Year 2025 annual report, as well as an item from the ISW/GDE monitoring results. A presentation from the County's Planning Division will be provided on the County's update to the water availability analysis. A Special meeting is tentatively scheduled for June 11, 2026.

**7. ADJOURNMENT**  
Meeting adjourned at 4:33 P.M

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AIME RAMOS, Meeting Clerk



# Napa County

## Board Agenda Letter

1195 THIRD STREET  
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Groundwater Technical Advisory Group **Agenda Date:** 4/9/2026

**File ID #:** 26-917

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**TO:** Technical Advisory Group for the Napa County Groundwater Sustainability Agency  
**FROM:** Brian D. Bordona, Director of Planning, Building and Environmental Services  
**REPORT BY:** Jamison Crosby, Natural Resources Conservation Manager  
**SUBJECT:** Presentation on GSP Annual Report for Water Year 2025

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### **RECOMMENDATION**

Receive an update on the implementation of the Groundwater Sustainability Plan including the Annual Report on conditions in Water Year 2025, implementation of Workplans, increased monitoring, and outreach activities.

#### Procedure

Staff introduces.

Questions and answers with the TAG.

Public comments.

### **BACKGROUND AND DISCUSSION**

Pursuant to California Code of Regulations §356.2, an Annual Report is required to be submitted to the Department of Water Resources (DWR) each year by April 1. This is the fifth Napa Valley Subbasin Groundwater Sustainability Plan (GSP) Annual Report submitted to DWR since the adoption of the GSP. The report contains both a narrative description and data in various formats including DWR provided templates. Annual Reports are submitted to DWR through the state's Sustainable Groundwater Management Act (SGMA) Portal and are available for public comment at <https://sgma.water.ca.gov>.

The Annual Report (posted here: DWR SGMA Portal) reflects an ongoing commitment by Napa County and the Napa County Groundwater Sustainability Agency (NCGSA) to sustainably manage groundwater resources by implementing an adaptive management approach supported by best available information.

The goal of the GSP is to achieve the sustainability goal by ensuring that there are no Undesirable Results in the Napa Valley Subbasin by 2042. To accomplish the goal, the GSP includes 6 Sustainability Indicators, as follows:

1. Chronic groundwater level decline;
2. Reduction in groundwater storage;
3. Depletion of interconnected surface water;
4. Land subsidence;
5. Degraded water quality; and
6. Seawater intrusion.

These are critical factors used to measure the long-term health of groundwater in the Napa Valley Subbasin. For each Sustainability Indicator, the GSP has established a Minimum Threshold, which defines when the Sustainability Indicators are declining to a point where the GSA should evaluate the conditions and determine the necessary responses needed to maintain or achieve sustainability, including implementing Projects and Management Actions (PMAs) or other response actions to avoid Undesirable Results. Each Sustainability Indicator also has a defined Undesirable Result, which indicates conditions that need to be avoided to protect the long-term health of the Subbasin groundwater and interconnected surface water and to achieve the sustainability goal.

### **Water Year 2025 Conditions**

Water Year (WY) 2025 (defined as October 1, 2024 through September 30, 2025) saw normal (below average) precipitation throughout Napa County and the Napa Valley Subbasin. WYs 2020 and 2021 registered as the driest consecutive years since at least the 1890s, as measured by the precipitation gauge at the Napa State Hospital. WY 2022 registered 21.24 inches of precipitation and was classified as a normal (below average) year with most precipitation falling before Spring 2022, and WY 2023 registered 128 percent of average precipitation and was classified as a wet year. WY 2024 experienced a total of 22.94 inches, defining it as normal (below average). WY 2025 precipitation was slightly less than WY 2024 and recorded a total of 21.59 inches, again normal (below average).

Most rainfall occurred in November and December 2024, while no precipitation was measured from June through August 2025. This pattern reflects the region's Mediterranean climate, characterized by dry summers and wet winters. In WY 2025, precipitation varied across the region, with the highest amounts occurring to the north and west and decreasing toward the south and east. The Napa State Hospital rain gage is in a comparatively drier part of the watershed and Subbasin. PRISM data (provided by the PRISM Group of the Northwest Alliance for Computational Science and Engineering and housed at Oregon State University) are used for water year hydrologic data updates to the Napa Valley Integrated Hydrologic Model (NVIHM).

Temperature patterns also affect groundwater conditions because of the influence of temperature on the consumptive use of water through evaporation and transpiration, and associated demands of environmental, agricultural, and urban uses. In WY 2025, there were 30 days above 90 degrees, which is similar to the historical average, but 19 days fewer than observed in WY 2024. In WY 2025, there were 13 days above 95 degrees, which is the same as the historical average. WY 2025 temperatures align with historical averages; however, temperatures are trending upwards.

Total water use in the Napa Valley Subbasin in WY 2025 is estimated to have been approximately 41,493 acre-feet (similar to WY 2024 at 41,560 acre-feet), including uses by agriculture, cities, small public water systems, individual well users, groundwater dependent ecosystems (GDEs), and other native vegetation. This is within the range of total annual water use documented since 1988, which has varied between approximately 38,000 and 47,000 acre-feet per year.

The amount of groundwater pumping in WY 2025 was similar to WY 2024. Groundwater extraction by wells totaled approximately 16,580 acre-feet in WY 2025, representing 40 percent of total water use. The highest level of pumping was in 2021 (22,990 acre-feet) and the second highest year of groundwater pumping was in 2020, when 19,570 acre-feet of groundwater was used. WY 2025 estimated extraction is higher than the sustainable yield of 15,000 acre-feet for the Subbasin. Direct uptake of groundwater by GDEs, native vegetation, and managed wetlands accounted for another 22 percent (approximately 9,030 acre-feet) of total water use. The percentage distribution of water use falls within the observed range for the Subbasin.

In WY 2025, the Minimum Thresholds for the following Sustainability Indicators have been exceeded:

1. Chronic groundwater level decline;
2. Reduction in groundwater storage;
3. Depletion of interconnected surface water.

There was substantial groundwater level recovery in the majority of the Subbasin's representative monitoring site wells in WY 2023. Groundwater elevations in WY 2024 slightly declined after the recovery in WY 2023. Groundwater elevations in WY 2025 remained similar to WY 2024. Two wells located in the Northeast Napa Management Area exceeded the Minimum Threshold for chronic groundwater level decline. The Northeast Napa Management Area is located east of the Napa River and west of the Milliken-Sarco-Tuluca area in the southeast part of the Subbasin. Water level recovery in the Northeast Napa Management Area generally does not respond as quickly as the rest of the Subbasin. Factors contributing to the ongoing groundwater decline in the deeper portion of the aquifer system in this area include:

- the thin alluvium,
- the presence of low permeability volcanic rocks from which groundwater is produced in this area,
- local faults,
- delayed recharge and groundwater level recovery due to the low permeability volcanic rocks, and
- more pumping than can be supported by recharge to this area.

All representative monitoring wells co-located at five stream monitoring sites to assess groundwater levels relative to interconnected surface water did not exceed Minimum Thresholds. However, modeled results for the rate of depletion of interconnected surface water exceeded interim Minimum Thresholds at the Napa River at Oak Knoll and the Napa River at Pope Street gaging stations. The streamflow depletion is measured as a volume of depletion over the period from June through October. The stream depletion at the Napa River at Oak Knoll station was modeled as 3,650 acre-feet, approximately 430 acre-feet above the interim Minimum Threshold. The stream depletion at the Napa River at Pope Street was modeled as 1,500 acre-feet, approximately 110 acre-feet above the interim Minimum Threshold. This is the third interim Minimum Threshold exceedance at the Napa River at Oak Knoll gage, which by definition constitutes an interim Undesirable Result. Investigations into the cause of exceedances showed a complex interaction of many factors, including the higher streamflows in June and July at both stations, similar groundwater conditions observed in both WY 2024 and WY 2025, and the substantially higher direct groundwater uptake of vines and native vegetation. Implementation of the Interconnected Surface Water (ISW) and Groundwater Dependent Ecosystems (GDEs) Workplan (March 2024) along with additional groundwater levels measured at 28 new dedicated monitoring wells and wet-dry river reach mapping in the vicinity of the six intensive survey sites lend insights to the sustainable management criteria for interconnected surface water. The GSP regulations for depletion of interconnected surface water (California Code of Regulations §354.28 (c)(6)) require the minimum threshold to be the "rate or volume of depletions caused by groundwater use that has adverse impacts on beneficial uses of surface water and may lead to undesirable results." An important complement to this definition, which is not expressly in the GSP regulations but is being implemented as part of the Napa Valley Subbasin ISW and GDEs Workplan, are the actual surface water flows and the effect of depletion on the functional flows needed to support the health of GDEs. The factors contributing to streamflow depletion in WY 2025 will be further discussed during the presentation.

Because the 7-year average of annual groundwater extraction has exceeded the estimated sustainable yield of 15,000 acre-feet/year for the Napa Valley Subbasin, an Undesirable Result occurred for the Sustainability Indicator for reduction in groundwater storage for WY 2025. Groundwater extractions in 6 of the past 7 years have exceeded the sustainable yield, and as expected the 7-year average exceeded the sustainable yield.

Although groundwater levels in the main part of the Subbasin were mostly above the minimum threshold in WY 2025, achieving the sustainability goal at least by 2042 involves protecting and enhancing conditions and achieving measurable objectives, especially for interconnected surface water. Factors to be considered during GSP implementation include PMAs that augment recharge, reduce pumping, and help mitigate climate-related effects on reduction in groundwater storage such as occurred during WYs 2020 through 2022.

Groundwater storage change refers to the difference in the amount of water stored in the aquifer over time and reflects gains from recharge and losses from pumping and natural discharge. The change in the amount of water stored in the aquifer is reported using two separate methods. The first method analyzes seasonal high groundwater levels at wells throughout the Subbasin in spring within the principal aquifer, where the year-to-year (spring-to-spring) change is used to calculate the change in groundwater storage as required by SGMA regulations §356.2(b)(5). These measurements are typically conducted in March. The second method utilizes the NVIHM to calculate the change in storage for the period from October 1, 2024 to September 30, 2025. The second method takes into account factors such as subsurface inflow and stream depletion related to pumping influence. Whereas, the first method typically mutes the effects of these factors on the condition of the groundwater basin following the winter to early spring period when groundwater basins typically exhibit groundwater level recovery. In WY 2025, the change in groundwater storage of 580 acre-feet remained steady across most of the basin; this represents a slight increase in groundwater storage relative to WY 2024 based on spring-to-spring groundwater level measurements as required by SGMA regulations §356.2(b)(5).

As described in the GSP, once Minimum Thresholds and/or Undesirable Results have been exceeded, the GSA should assess the causal factors resulting in the exceedance(s) (Table 1). This analysis is critical to ensure careful consideration of groundwater conditions. The factors contributing to the exceedances have highlighted other important considerations such as the need for an understanding of the relationships between surface water flows and the effects of pumping on streamflow depletion and the functional flows needed to support healthy GDEs. Additional analyses pertaining to ecologic and streamflow relationships will be included in the upcoming Periodic Evaluation due to DWR in January 2027.

### **GSP Implementation Progress**

Implementation of GSP elements, including Projects and Management Actions, is intended to avoid Undesirable Results and achieve the Subbasin sustainability goal by 2042, as required by SGMA. The GSP adopted in January 2022 describes PMAs (Napa Subbasin GSP Section 11) along with actions developed to support sustainable groundwater management. The purpose of the Annual Report is to provide updates to each PMA that is being implemented. A full assessment of how each PMA is performing will be conducted during preparation of the Periodic Evaluation, which is due in January 2027. The Annual Report Section 7 includes a description of all PMA progress.

GSP implementation activities completed prior to and/or during WY 2025 through Spring 2026 include efforts related to the following GSP PMAs and other supplemental actions (see Annual Report Section 7 for additional details):

- GSP Project #1 (P1): Managed Aquifer Recharge
  - Evaluate recharge feasibility scenarios, assess economic feasibility relative to potential benefit, and prepare technical memorandum; explore the opportunity for NCGSA to apply for a 5-year temporary recharge permit.
- GSP Project #2 (P2): Expansion of Recycled Water Use
  - Coordinate with the City of St. Helena regarding the City's opportunities for potential in-lieu use of recycled water and/or direct recharge of recycled water.

- GSP Management Action #1 (MA1): Water Conservation (Vineyards, Wineries, and Other Water Users)
  - Continue implementation of water conservation activities related to the Napa County Water Conservation Workplan - A Guide for Vineyards, Wineries, and Other Water Users (March 2024).
- GSP Management Action #2 (MA2): Groundwater Pumping Reductions
  - Continue implementation of activities related to the Groundwater Pumping Reduction Workplan: Napa Valley Subbasin (March 2024); implement Napa Water Certification Partnership pilot concept; prepare Subbasin Vineyard Replant Extension concept, which is a voluntary initiative currently under development that, if implemented, could achieve groundwater pumping reduction by incentivizing landowners to delay vineyard replanting cycles.
- GSP Management Action #3 (MA3)
  - Release the Public Draft Water Availability Analysis Guidance Document and accompanying Technical Report for public review and comment (posted March 2026); periodic updates to countywide well inventory.
- GSP Section 6 to Address Data Gaps
  - Continue activities described in the ISW and GDEs Workplan, including monitoring of physical and biological characteristics at six intensive survey sites; installation of surface water monitoring facilities at five sites under the DWR California Stream gage Improvement Project (CalsIP) (in progress); installed two monitoring wells in Calistoga area for groundwater and interconnected surface water monitoring.
- Integrated Hydrologic Modeling
  - Refine NVIHM, including incorporation of soil moisture storage and utilization within the water supply and demand model framework; refine crop coefficients and evapotranspiration (ET) estimates based on locally measured and remotely sensed ET estimates; refine the upper watershed modeling platform; refine the distribution of groundwater pumping within water balance regions based on the County's updated well inventory; other updates have included utilization of stream channel geomorphology to better reflect real-world conditions; continue coordination with State Water Resources Control Board on model development for Napa River Watershed and the State's evaluation of streamflow diversions.

### **ENVIRONMENTAL IMPACT**

ENVIRONMENTAL DETERMINATION: The proposed action is not a project as defined by 14 California Code of Regulations 15378 (State CEQA Guidelines) and therefore CEQA is not applicable.

### **SUPPORTING DOCUMENTS**

- A. Napa County Groundwater Sustainability Annual Report, Water Year 2025 Presentation (LSCE, 2026)
- B. Napa County Groundwater Sustainability Annual Report, Water Year 2025 (Executive Summary)
- C. Table 1 - Sustainable Management Criteria Summary

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# Napa County Groundwater Sustainability Agency

## *Napa County Groundwater Sustainability Annual Report: Water Year 2025*

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April 9, 2026





# Outline

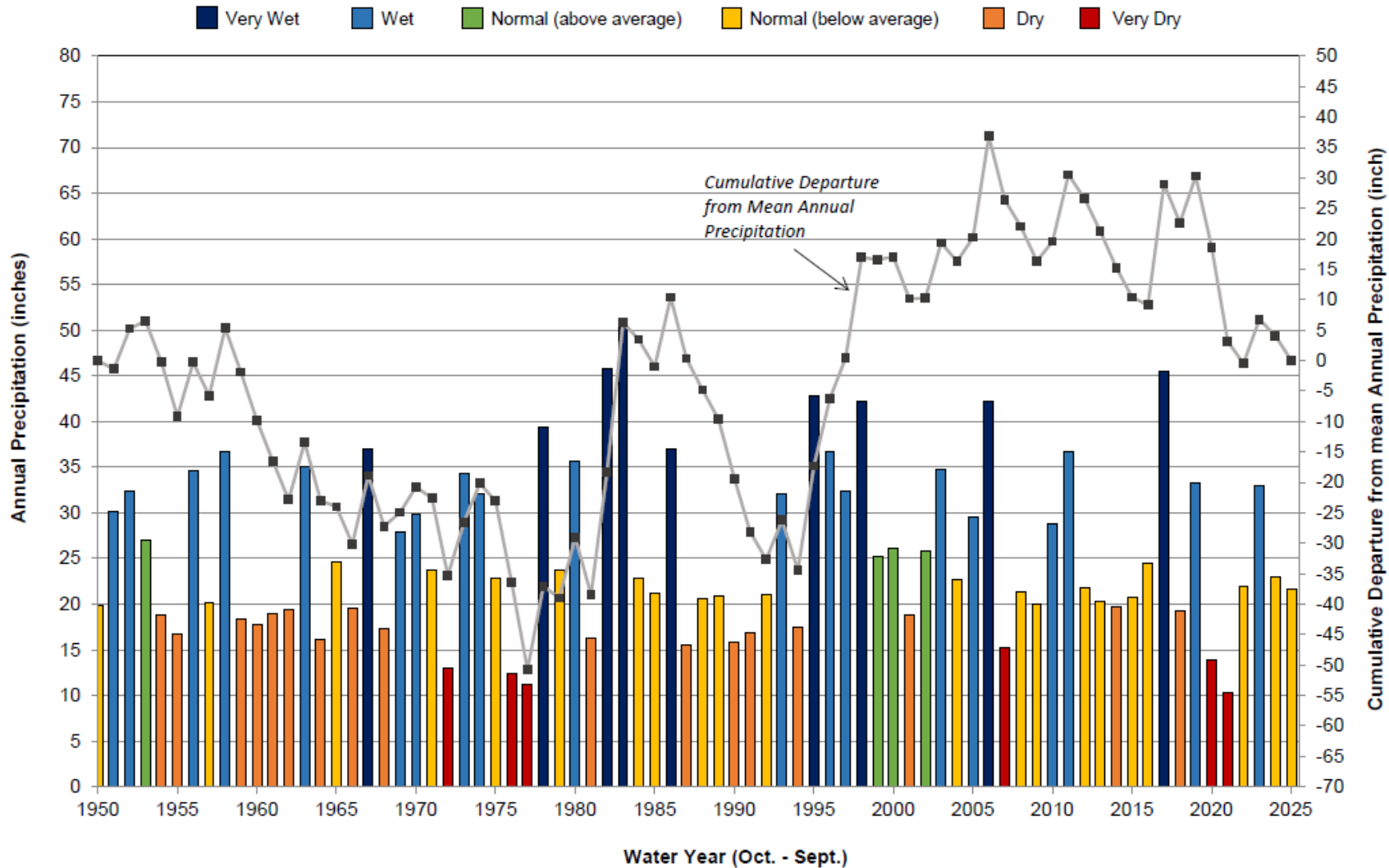
WY 2025 Conditions

Napa Valley Subbasin Water Budget

Sustainability Indicators

GSP Implementation

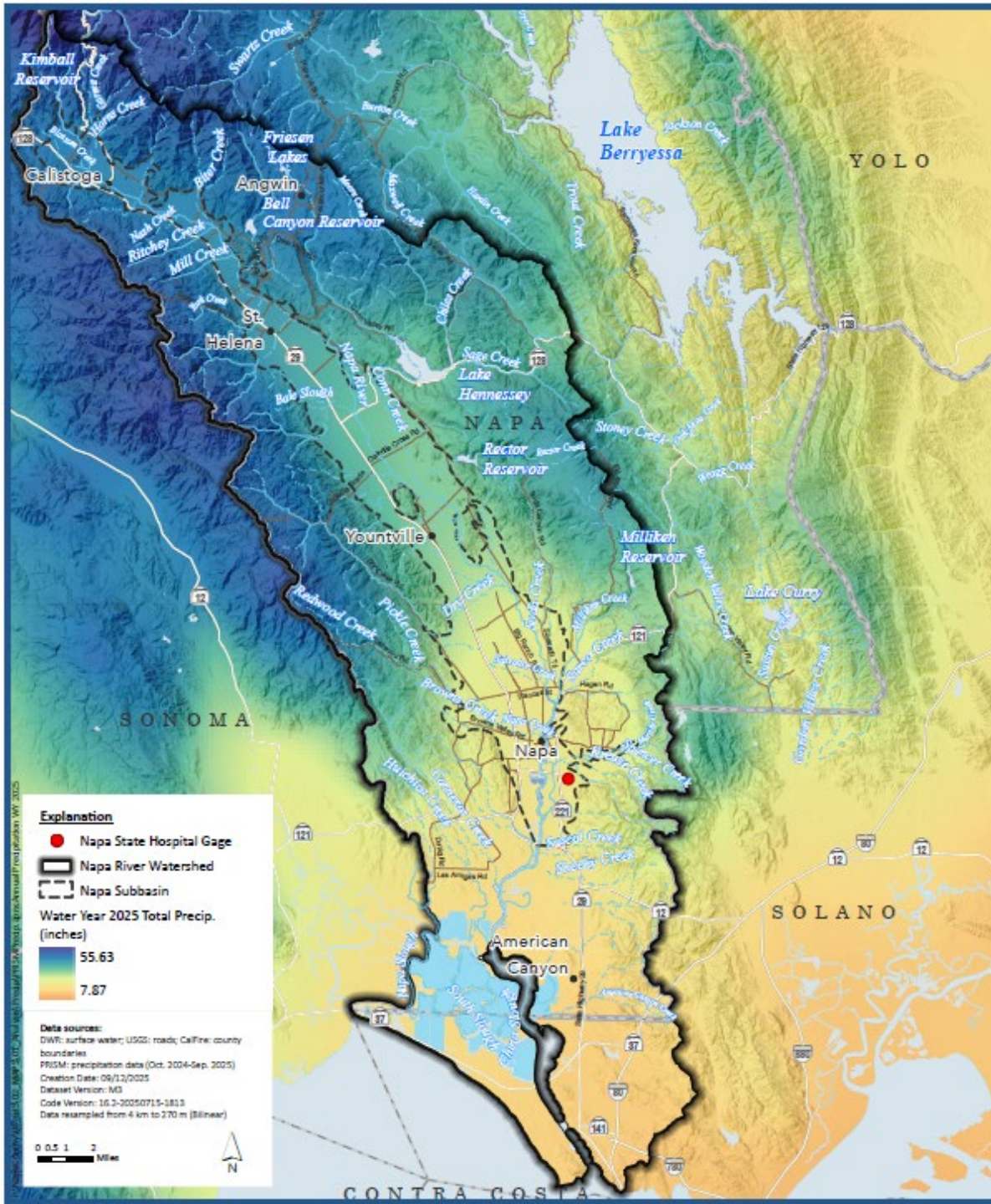
# Historical Precipitation (at Napa State Hospital)



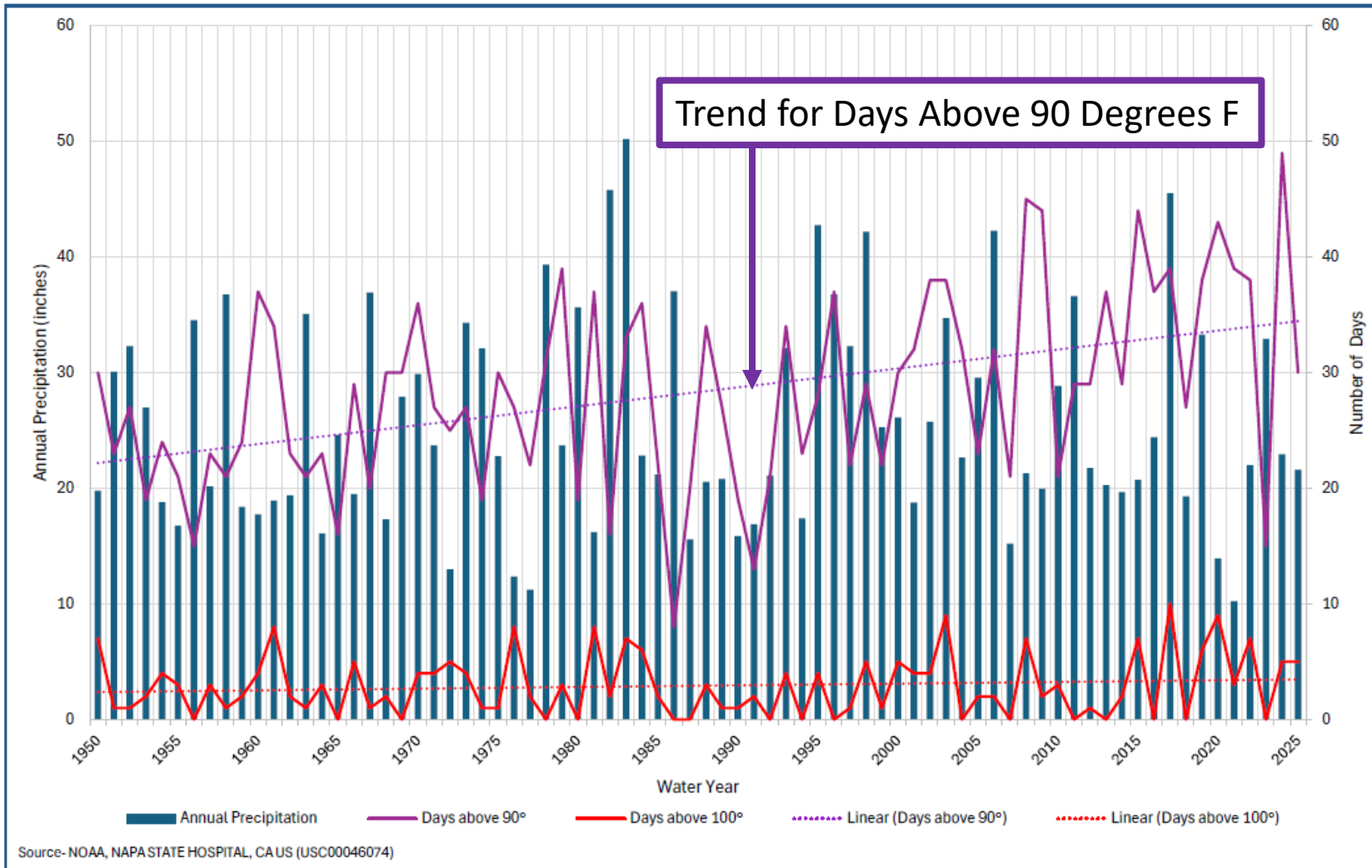
- Napa State Hospital weather station used for historical perspective, although other data are used to assess conditions throughout the watershed.
- The Napa State Hospital is in a relatively drier part of the watershed and the Subbasin.
- WY 2025 had normal (below average) precipitation.

# Total Annual Precipitation WY 2025

- Precipitation varied across the region, with the highest amounts occurring to the north and west and decreasing toward the south and east.
- Napa Valley Integrated Hydrologic Model (NVIHM) incorporates spatially distributed precipitation to estimate water budgets.



# Temperature and Annual Precipitation Napa State Hospital (1950-2025)



- WY 2025 had 30 days above 90 degrees (similar to historical average), but 19 days fewer than WY 2024.
- WY 2025 temperatures align with historical averages; however, temperatures are trending upwards.



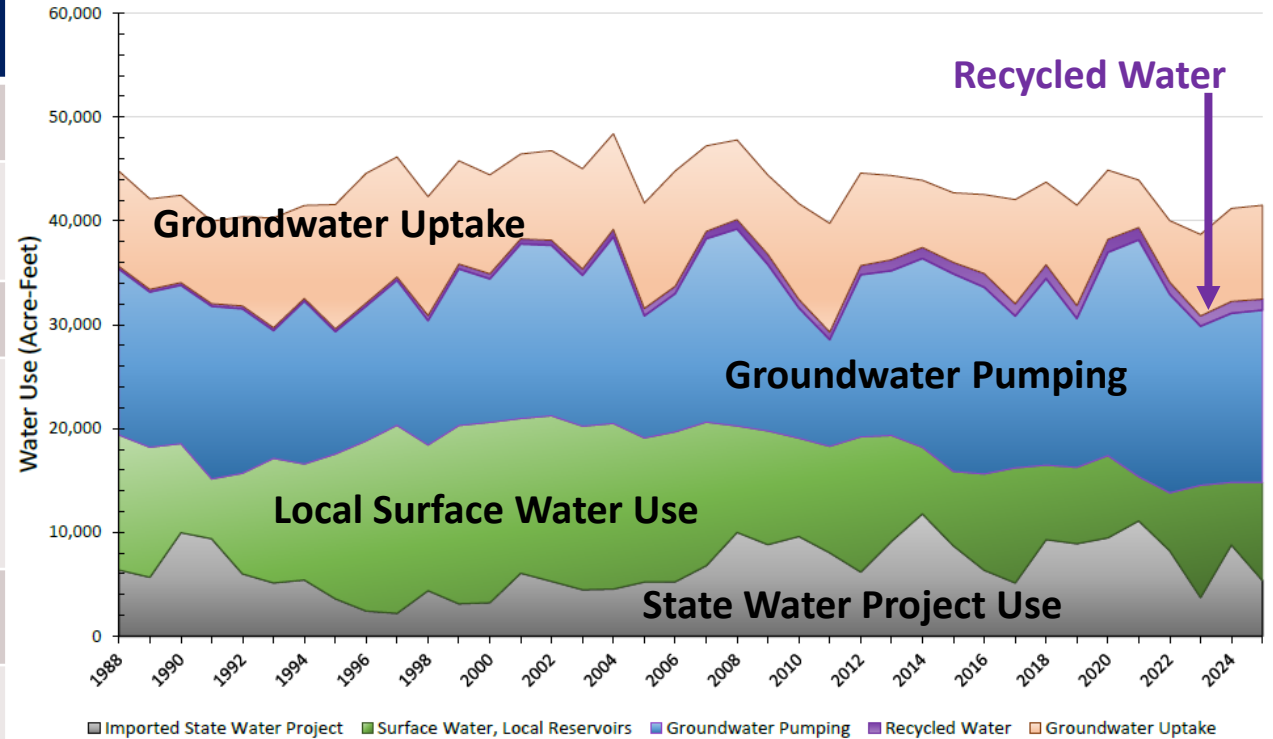
# Napa Valley Subbasin Water Budget WY 2025

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# Total Water Use: WY 2025 (acre-feet)

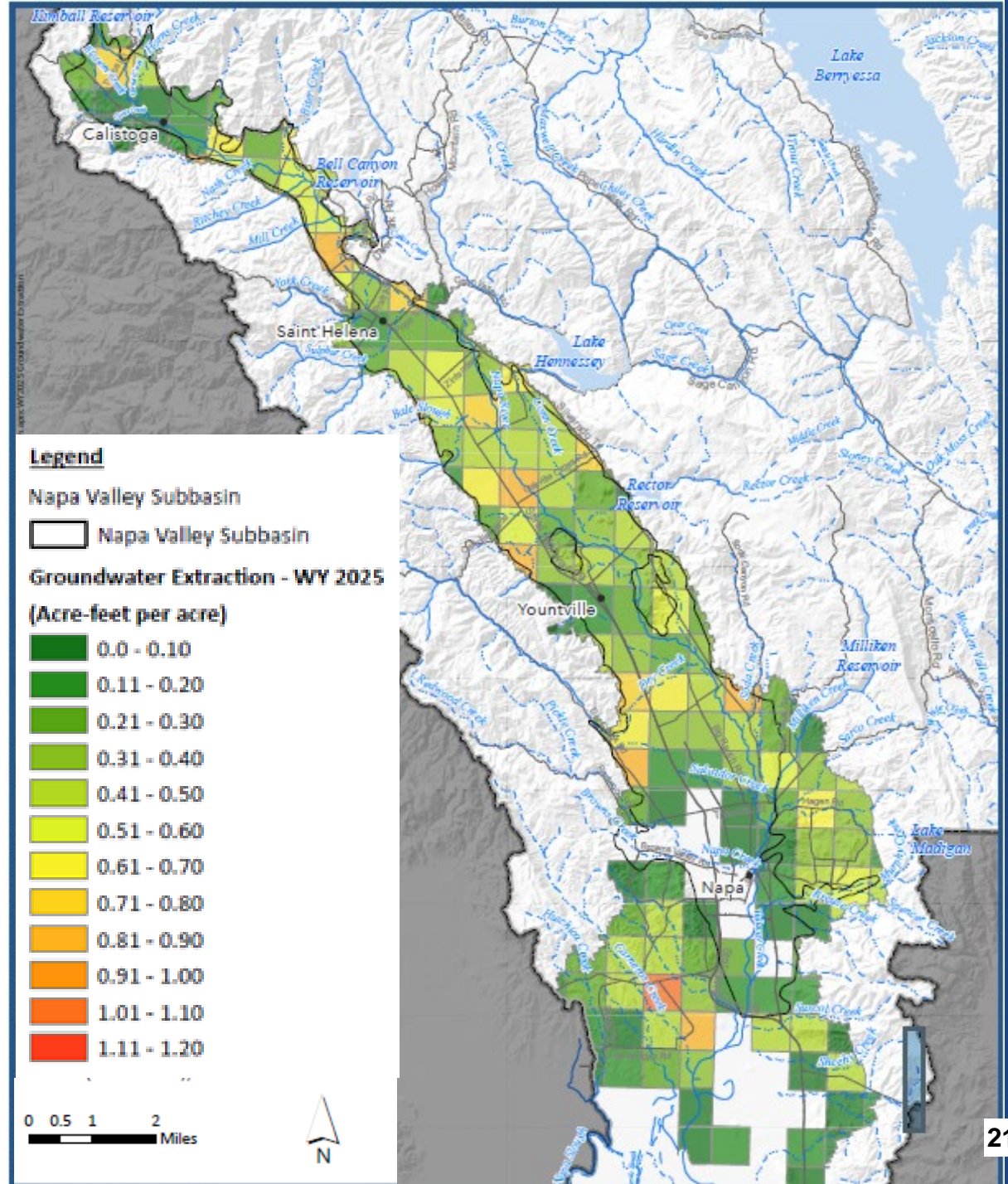
Water Use	2023 (W)	2024 (BN)	2025 (BN)
Groundwater Pumping	15,300	16,290	16,580
Native Veg, GDEs & Managed Wetlands	7,830	8,950	9,030
Recycled Water Use	1,020	1,140	1,080
Local Surface Water Use (including reservoirs, diversions, etc.)	10,780	6,001	9,434
State Water Project Use	3,750	8,803	5,368
<b>TOTAL</b>	<b>38,680</b>	<b>41,184</b>	<b>41,493</b>



# Groundwater Pumping, WY 2025 (Acre-Feet)

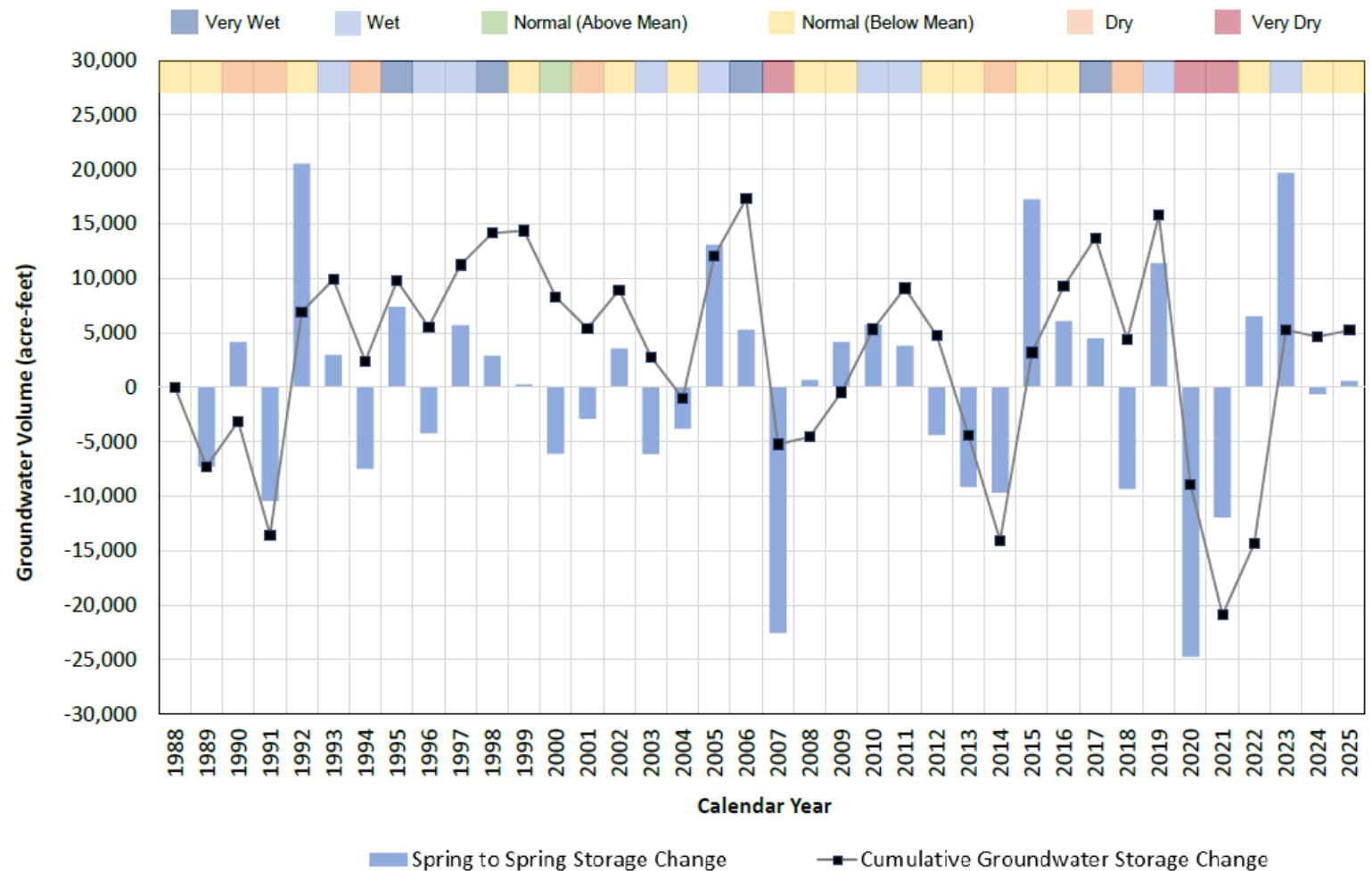
Groundwater Pumping	Acre-Feet	Percent Use
Ag (vines and other)	12,290	74%
Municipal	280	2%
Self-Supplied Users Domestic (2,870 AF for outdoor use)	2,940	18%
Small Public Water Systems	1,070	6%

**TOTAL = 16,580 Acre-Feet**



# Change in Groundwater Storage: Spring 2024 to Spring 2025

- Change in groundwater storage influenced by water year type, pumping, and recharge.
- Slight increase in storage in WY 2025.
- Cumulative storage shows significant recovery since historical 2021 low and has remained steady.





# Sustainability Indicators & Metrics

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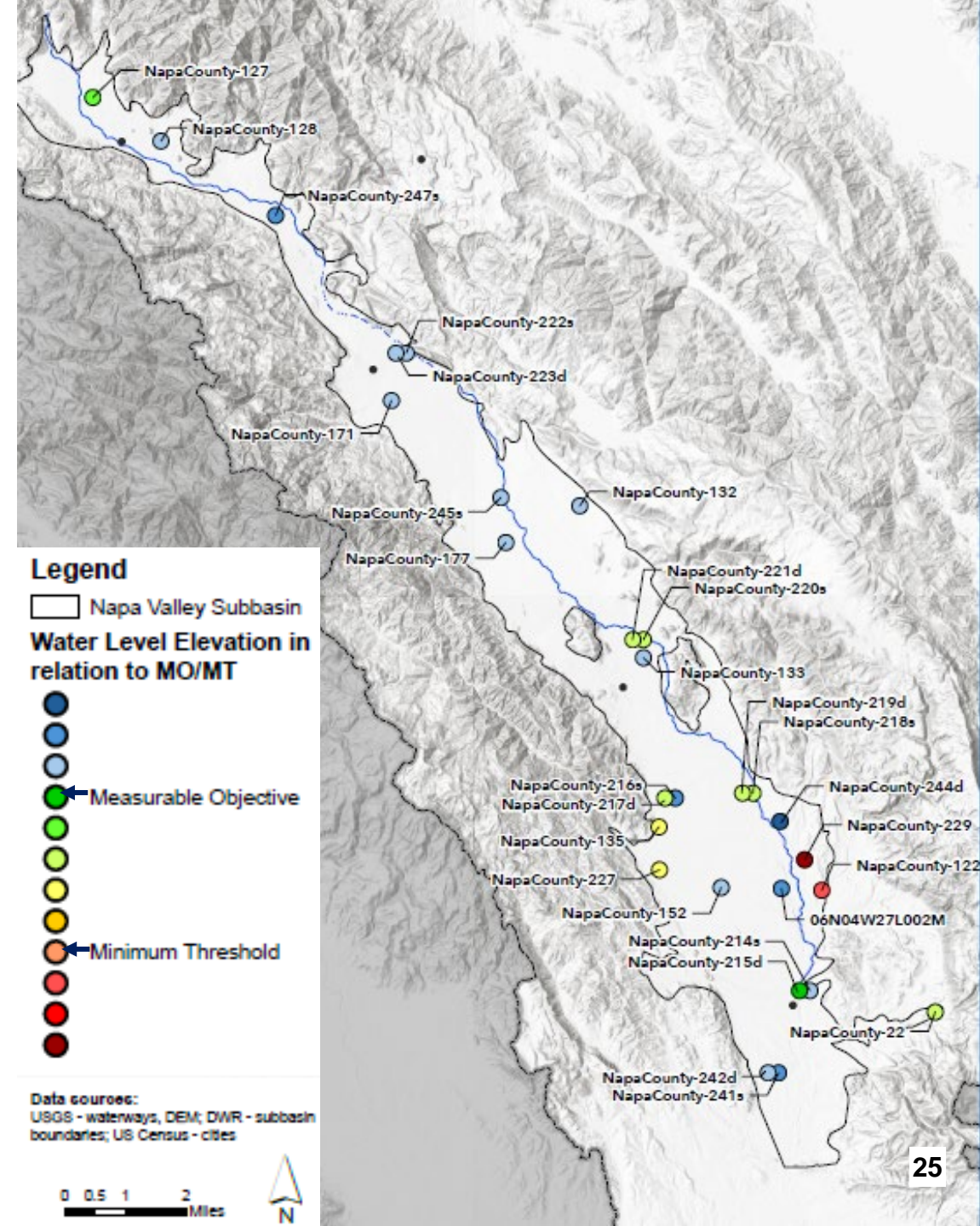


# Sustainability Indicator Description and Summary

Sustainability Indicator	Description of Monitoring			Simplified Summary of Minimum Threshold and Undesirable Result
	Parameter	Observed	Modeled	
<b>Chronic GW Lowering (CGWL)</b>	GW elevations in representative wells.	✓		Based on observed low GW elevation prior to 2015.
<b>Depletion of Interconnected Surface Water (ISW)</b>	GW elevations and model results that equate pumping to streamflow depletion.	✓	✓	Minimum GW elevation from 2005-2014 and second highest seasonal depletion that occurred from 2005-2014.
<b>GW Quality Degradation</b>	Measurements of total dissolved solids (TDS), arsenic, and nitrate.	✓		Based on drinking water standards as well as historical range.
<b>Reduction of GW Storage</b>	Modeled GW extraction.		✓	GW extraction in exceedance of the Sustainable Yield for a single year and the 7-year average.
<b>Land Subsidence</b>	Based on remotely sensed changes in ground surface elevation.	✓		Inelastic subsidence of 0.2 feet per year.
<b>Seawater Intrusion</b>	Measurements of TDS and/or chloride near tidally influenced areas.	✓		Historical maximum chloride concentrations.

# Water Levels Measurable Objective and Minimum Threshold – Fall 2025

- Many Representative Monitoring Site (RMS) wells were between the Measurable Objective (MO) and Minimum Threshold (MT).
  - Fall 2025 groundwater level measurements at many wells show progress towards achieving the MO for the Groundwater Level Sustainability Indicator.
- Two exceedances of MTs occurred in the Northeast Napa Management Area (wells NapaCounty-122 and -229).
  - This is an area of interest where groundwater levels are declining, particularly in wells completed in older formations beneath the alluvium.



## Minimum Threshold and Measurable Objective Summary: Fall Groundwater Levels

### Groundwater Level SMC:

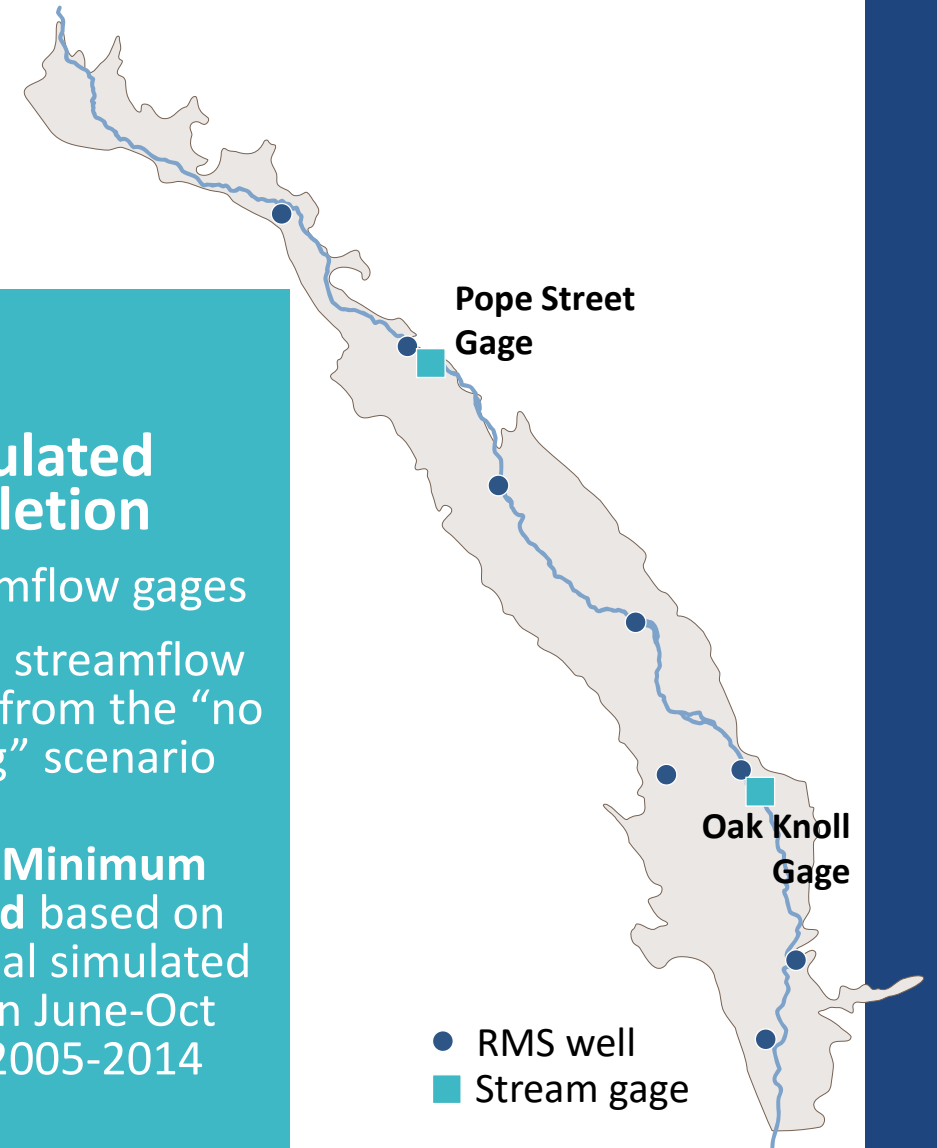
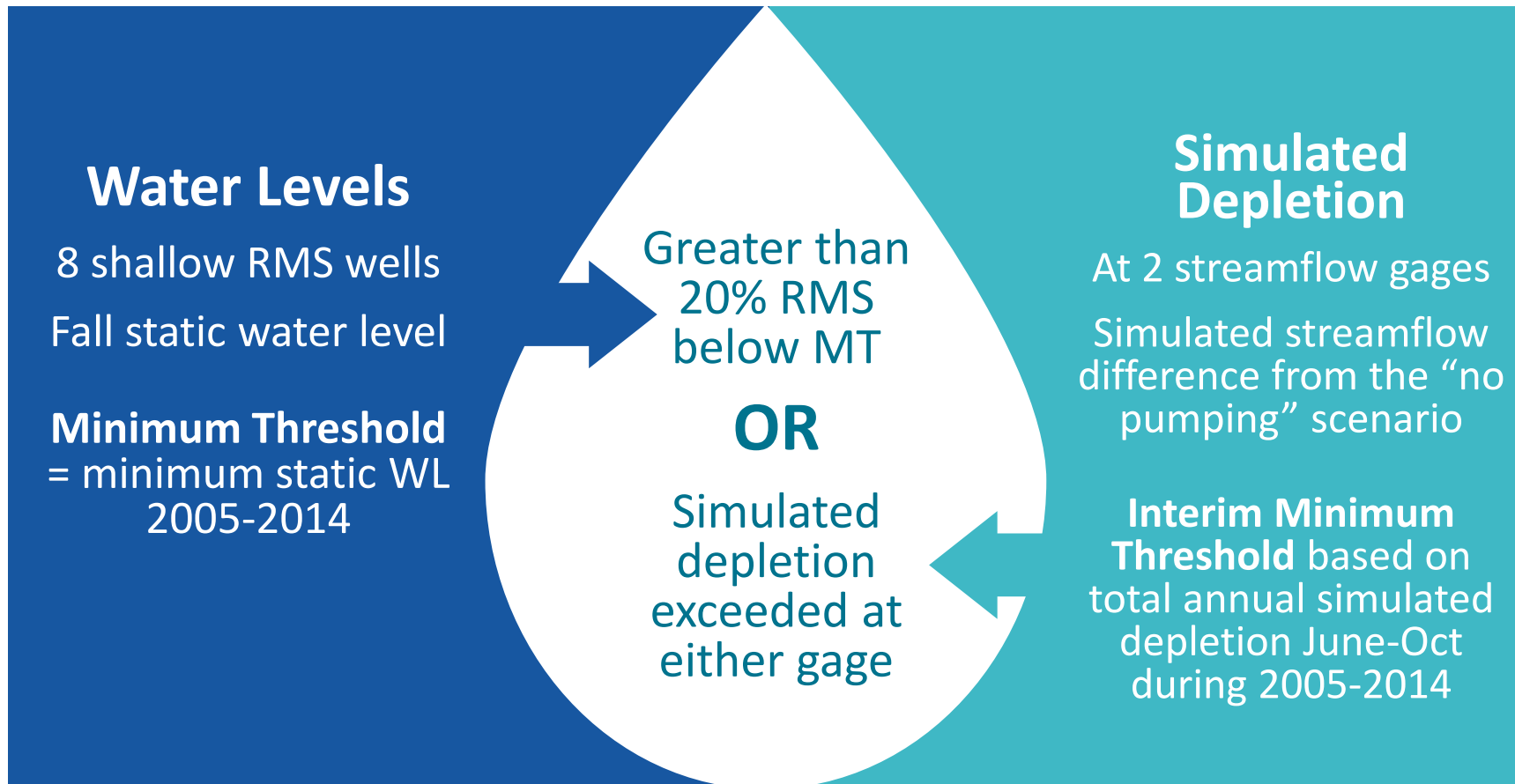
- 2 level network wells exceeded the **MT** in the Northeast Napa Management Area
  - NC-122 is **5.9 ft below** the MT
  - NC-229 is **17.75 ft below** the MT

Chronic Lowering of Groundwater RMS Wells	Minimum Thresholds (ft msl)	Measurable Objective (ft msl)	Fall Groundwater Elevations (ft msl)		
			2023	2024	2025
06N04W27L002M	-2	9	10.2	7.6	16.32
NapaCounty-122	-45	-37	-11.6	<b>-56.8</b>	<b>-50.9</b>
NapaCounty-127	351	374	373.8	373.4	376.1
NapaCounty-128	330	331	330.8	331.1	331.55
NapaCounty-132	109	115	112.9	111.1	115.9
NapaCounty-133	73	75	75.4	73.6	75.9
NapaCounty-135	33	62	33.4	37.5	40.65
NapaCounty-152	55	61	61.4	58.0	62.41
NapaCounty-171	165	173	180.2	--	183.45
NapaCounty-177	131	136	137.8	137.2	137.76
NapaCounty-214s	2	4	4.9	3.8	4.14
NapaCounty-215d	2	4	4.4	2.7	3.46
NapaCounty-216s	66	75	75.1	74.8	71.61
NapaCounty-217d	60	67	65.4	63.0	63.43
NapaCounty-218s	29	33	31.7	30.1	31.30
NapaCounty-219d	29	33	31.5	30.0	31.16
NapaCounty-22	150	170	165.5	165.3	165.59
NapaCounty-220s	75	79	77.0	76.0	77.45
NapaCounty-221d	75	79	76.8	75.6	77.18
NapaCounty-222s	185	191	187.9	186.6	192.53
NapaCounty-223d	164	171	169.3	166.9	171.63
NapaCounty-227	59	72	64.5	85.5	62.04
NapaCounty-229	-69	-42	<b>-91.4</b>	<b>-94.6</b>	<b>-86.75</b>

Large **Bold Values** in the Table Indicate Groundwater Elevations Exceed the Minimum Threshold; see Annual Report Table 6-5 for Full Table and Additional Details.

# Sustainable Management Criteria for Depletion of Interconnected Surface Water

Either metric over 3 consecutive years is an **Undesirable Result**



# Interconnected Surface Water: Fall Groundwater Elevations

➤ None of the 8 Wells Exceeded their MT

Well ID	Representative Site		Fall Minimum WLE (ft, NAVD88)			WY 2025 MT Exceedance	Three Consecutive WY MT Exceedances
	MT (WLE, ft)	MO (WLE, ft)	WY 2023	WY 2024	WY 2025		
NC-214s	2.0	4.0	4.90	3.82	4.14	No	No
NC-216s	66.0	75.0	75.1	74.80	71.61	No	No
NC-218s	29.0	33.0	31.7	30.12	31.3	No	No
NC-220s	75.0	79.0	77.00	75.97	77.45	No	No
NC-222s	185.0	191.0	187.90	186.63	192.53	No	No
NC-241s	0	2.0	5.20	5.08	4.69	No	No
NC-245s	129.0	133.0	133.70	130.43	132.74	No	No
NC-247s	258.0	260.0	277.40	277.43	267.95	No	No

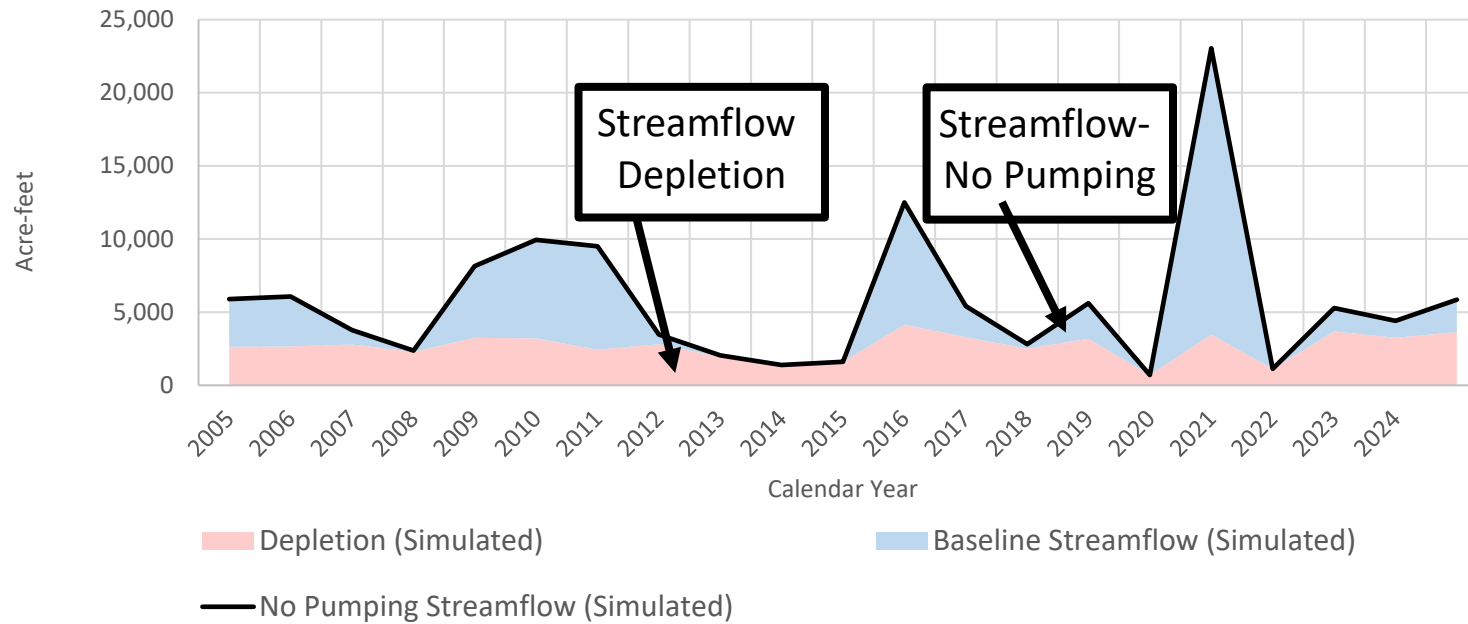
# Interconnected Surface Water and Model Results

## Seasonal (June to October) Streamflow Depletion Volume Estimated with Model at Stream Sites

Well ID	Representative Site		Seasonal Depletion (AF)			WY 2025 MT Exceedance	Three Consecutive WY MT Exceedances
	Minimum Threshold (AF)	Measurable Objective (AF)	WY 2023	WY 2024	WY 2025		
Napa River at Oak Knoll Avenue, Napa	3,220	2,370	3,680	3,240	3,650	Yes	Yes
Napa River at Pope Street, St. Helena	1,390	1,120	1,370	1,490	1,500	Yes	No

- Streamflow depletion volume conditions at Oak Knoll met the definition for an undesirable result.
- In WY 2025, groundwater elevations did not meet the definition for an undesirable result.

# Simulated Streamflow Depletion Napa River at Oak Knoll



Total Seasonal Streamflow Depletion (June-October)	MT	2024	2025
	3,220	3,240	3,650

***2025: More Depletion but also more Measured Streamflow during summer period***

Base Period 2005-2014			
	JUL	AUG	SEPT
<b>AVG % Depletion</b>	<b>77</b>	<b>88</b>	<b>90</b>
	5 of 10 yrs 100%	6 of 10 yrs 100%	6 of 10 yrs 100%

2024 and 2025 Percent Percent Depletion			
	JUL	AUG	SEPT
2024	74	99	100
2025	65	94	100

Measured Streamflow (acre-ft)			
	JUL	AUG	SEPT
2024	280	97	14
2025	424	155	54

## ISW Criteria and California Environmental Flows Framework (CEFF)

GSP regulations for depletion of interconnected surface water (California Code of Regulations §354.28 (c)(6)) require the minimum threshold to be the:

*“rate or volume of depletions caused by groundwater use that has adverse impacts on beneficial uses of surface water and may lead to undesirable results.”*

Importantly, as part of the ISW and GDEs Workplan, CEFF includes evaluation of actual surface water flows and the effect of depletion on the functional flows needed to support healthy GDEs.

This will be an area of emphasis in the upcoming Periodic Evaluation.



# Reduction of Groundwater Storage

## Minimum Threshold

Net GW extraction by pumping exceeding the SY for the Subbasin, where net GW extraction is the volume extracted less any volume of augmented recharge achieved by implemented projects.

## Undesirable Result

Seven (7) year average annual net GW extraction in the Subbasin exceeds the sustainable yield.

UR occurred since the 7-year average exceeds the sustainable yield for the Subbasin.

Six of seven years exceeded the SY (exceedances are **bolded**). To achieve the Sustainability Goal by 2042, of protecting and enhancing, as well as preparing for a more extreme climate, requires augmented recharge and less pumping.

Sustainable Yield (Est.) =  
~15,000 AFY

Year	Total Groundwater Extraction (AF)
2019	14,340
2020	<b>19,570</b>
2021	<b>22,750</b>
2022	<b>19,120</b>
2023	<b>15,300</b>
2024	<b>16,260</b>
2025	<b>16,580</b>
7-Year Avg.	<b>17,700</b>

# Water Quality, Seawater Intrusion, and Subsidence

## Water Quality:

- One RMS well exceeded the MT for Arsenic; this was in an area where Arsenic has been historically detected in the Napa Valley Subbasin. The exceedance was not attributable to groundwater conditions affected by groundwater management.
- One RMS well exceeded the MT for TDS. The exceedance was not attributable to groundwater conditions affected by groundwater management.

## Seawater Intrusion:

- High TDS in the tidally influenced area of the Napa Valley Subbasin; no MT exceeded.

## Subsidence:

- No notable subsidence occurred; no MT exceedances and little concern of potential for subsidence.

All monitoring networks are being continually reviewed and updated as needed.

# Sustainability Indicator Summary of Undesirable Results

- Average GW pumping over a 7-year period exceeds Sustainable Yield
  - UR occurred for the reduction of GW Storage
- Seasonal streamflow depletion volume exceeds interim MT 3 times at the Oak Knoll gage and meets the definition for an Undesirable Result

Sustainability Indicator	WY 2022	WY 2023	WY 2024	WY 2025
	UR: Yes or No	UR: Yes or No	UR: Yes or No	UR: Yes or No
Chronic GW Lowering (CGWL)	No	No	No	No
Depletion of Interconnected Surface Water (ISW)	Yes	No	No	Yes
GW Quality Degradation	No	No	No	No
Reduction of GW Storage	Yes	Yes	Yes	Yes
Land Subsidence	No	No	No	No
Seawater Intrusion	No	No	No	No

# Undesirable Results and Response Actions in Progress

## Seasonal Streamflow Depletion

- Implement ISW and GDEs Workplan including aquatic and terrestrial GDEs monitoring at 6 sites
- Expand ISW monitoring network to 28 ISW MWs
- Expand wet/dry reach mapping with Napa County RCD; expand stream DO and temperature monitoring
- Reactivation of 5 historical USGS Stream Gages to improve streamflow monitoring (DWR CalSIP grant)
- Implement California Environmental Flows Framework approach to refine ISW sustainable management criteria

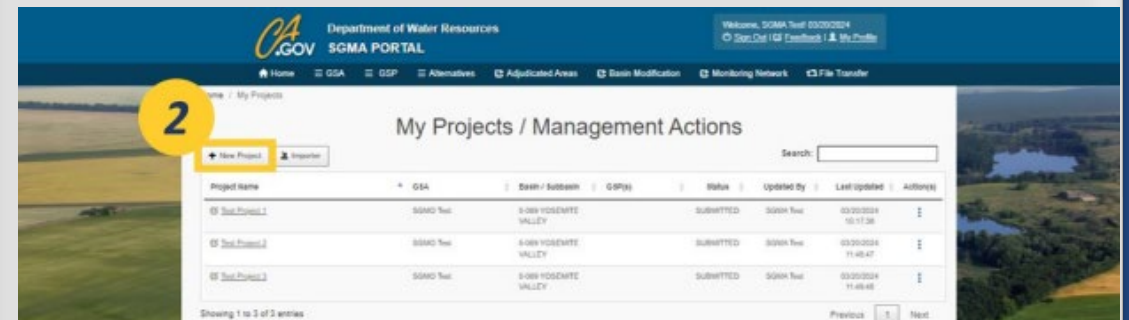
## Chronic Reduction in Groundwater Storage

- In Spring 2024, began Groundwater Pumping Reduction Workplan implementation
- Develop Water Certification Partnership pilot concept; NCGSA partnering with existing certification entities
- Develop vineyard replant strategy
- Promote Water Conservation as a Napa Way of Life
- Release Public Draft WAA Guidance document for review and feedback (March 2026)

# GSP Projects and Management Actions (PMAs)

- Sustainable groundwater management **required within 20 years**
  - 2040 (critically overdrafted basins) and 2042 (non-critically overdrafted basins)
- Must **achieve the sustainability goal** for the basin
- Must **annually describe progress** towards GSP implementation
- Beginning in WY 2025, DWR requires GSAs to upload their PMA summary template to DWR's website

Sustainable Groundwater Management Act Portal  
Projects and Management Actions Module  
User Manual



Project Name	GSA	Basin / Subbasin	GSP(s)	Status	Updated By	Last Updated	Actions
EP_Summary_1	SGM2 Fee	S-OBS YOSEMITE VALLEY		SUBMITTED	SGM2 Fee	05/01/2024 10:17:36	
EP_Summary_2	SGM2 Fee	S-OBS YOSEMITE VALLEY		SUBMITTED	SGM2 Fee	05/01/2024 11:48:47	
EP_Summary_3	SGM2 Fee	S-OBS YOSEMITE VALLEY		SUBMITTED	SGM2 Fee	05/01/2024 11:48:48	

**New Online DWR Portal : 2025**

# Other Ongoing GSP Implementation

- **Annual Report – WY 2025**  
(645 pages; 11 Appendices)
  - Public-Friendly Executive Summary
  - ISW and GDEs Monitoring (Spring 2025)
- **Refining Water Use Data, NVIHM Model Updates**
- **June 11, 2026 TAG Meeting**
  - Recharge feasibility scenarios
  - California Environmental Flows Framework for incorporation in the periodic evaluation
  - Model refinement update

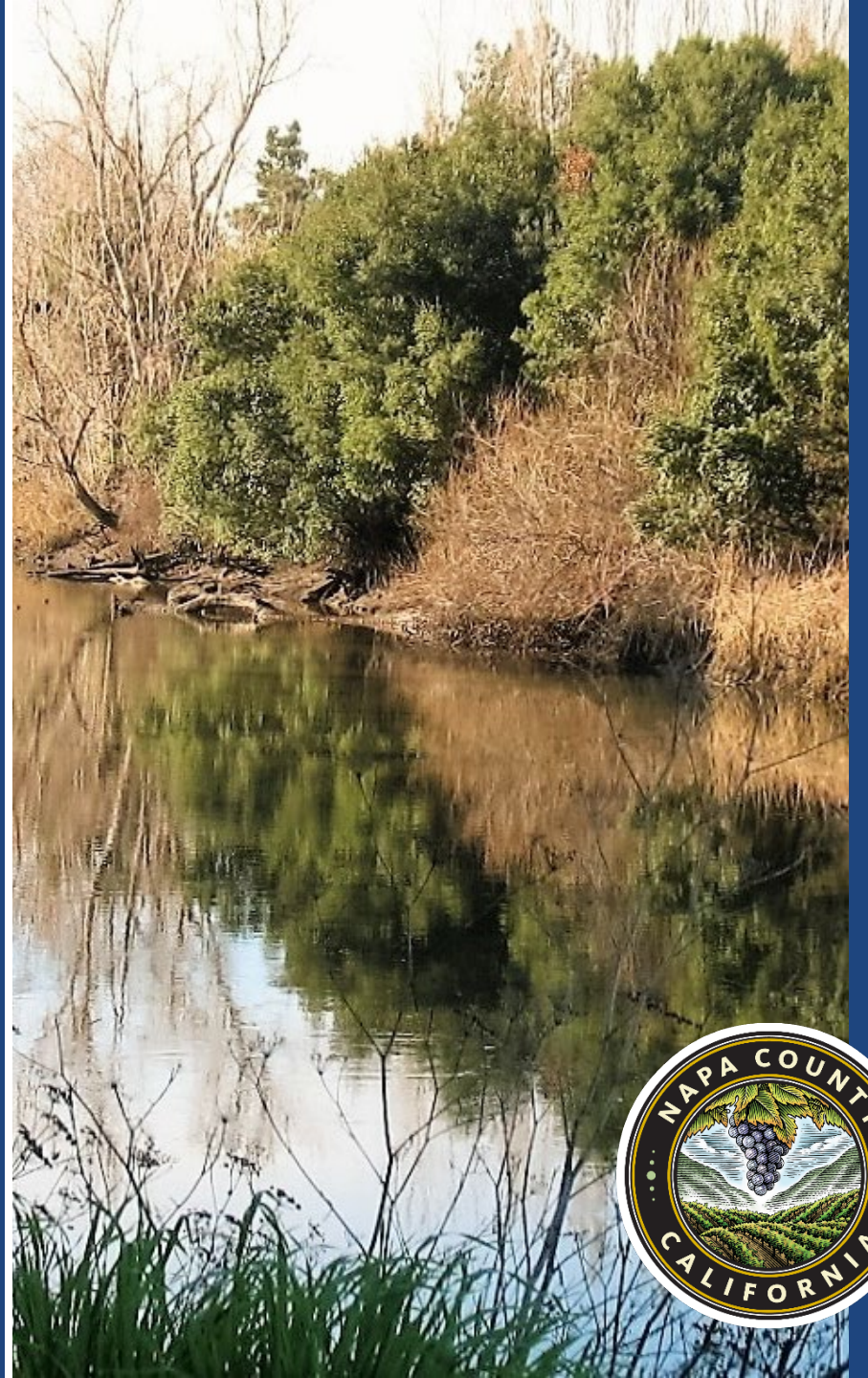
*DWR Approved Napa Valley Subbasin GSP  
January 26, 2023*



*Periodic Evaluation of  
GSP to DWR January  
31, 2027*

# TAG Discussion

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# Thank You!

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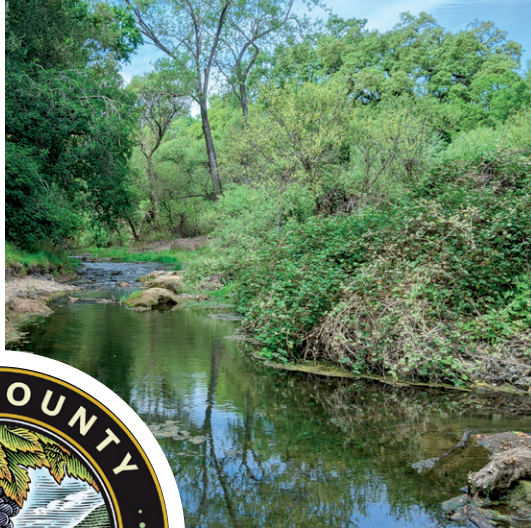
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# NAPA COUNTY GROUNDWATER SUSTAINABILITY Annual Report – Water Year 2025

## EXECUTIVE SUMMARY

MARCH 2026

Prepared for:

Napa County Groundwater Sustainability Agency  
Napa County Department of Planning, Building,  
and Environmental Services

Prepared by:

Luhdorff and Scalmanini, Consulting Engineers  
ERA Economics  
Stillwater Sciences

*This document summarizes the Napa County Groundwater Sustainability Annual Report – Water Year 2025 (WY 2025 Annual Report). For more information, the full report is available at <https://www.countyofnapa.org/3219/County-of-Napa-Plans-Reports-Documents>.*

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# Introduction

Groundwater and surface water are highly important natural resources in Napa County. Together, the County, Napa County Groundwater Sustainability Agency (NCGSA or GSA), municipalities, water districts, public water system operators, commercial and industrial operations, the agricultural community, and the public are stewards of available water resources. Everyone living and working in Napa County has a stake in protecting the county's groundwater resources, including groundwater supplies, quality, and associated watersheds (LSCE et al., 2022). Without sustainable groundwater and interconnected surface water resources, the character and quality of the county would be significantly different in terms of its economy, communities, rural character, ecology, and lifestyles.

*The Napa County Groundwater Sustainability: Annual Report–Water Year 2025 (Annual Report) presents an update on groundwater conditions, water use, and Groundwater Sustainability Plan (GSP) implementation in the Napa Valley Subbasin (Subbasin), as required by §356.2 of the GSP Regulations.<sup>1,2</sup>*

*As in the past 11 consecutive annual reports, this Report includes an update on groundwater conditions elsewhere in the county. This is the fifth Annual Report prepared to support implementation of the Napa Valley Subbasin GSP, adopted by the NCGSA in January 2022 and approved by the California Department of Water Resources (DWR) in January 2023.*

The Napa Valley Subbasin (DWR Subbasin No. 2-002.01) generally aligns with the locally defined Napa Valley floor. The Subbasin boundary was updated in 2025; it covers 73 square miles (46,600 acres) and spans approximately 3 miles in width and 30 miles in length, trending southeast-northwest (**Figure 1**). The Subbasin is bordered by the Mayacamas Mountains to the west and the northern Coast Range to the east, an area characterized by low northwest-trending mountain ridges separated by intervening stream valleys (CAGS, 2002).

DWR has identified four other groundwater basins and subbasins in and around Napa

<sup>1</sup> Consistent with the GSP Regulations, the term "water year" is used in this report to refer to the period from October 1 through the following September 30, with the year designated according to the calendar year in which it ends (i.e., water year 2025 spanned from October 1, 2024 through September 30, 2025).

<sup>2</sup> References to GSP Regulations in this report refer to Title 23 of the California Code of Regulations (CCR) originally developed and adopted by the California Department of Water Resources in 2016, as required by the 2014 Sustainable Groundwater Management Act (SGMA). SGMA is published in California Water Code Section 10733.2.

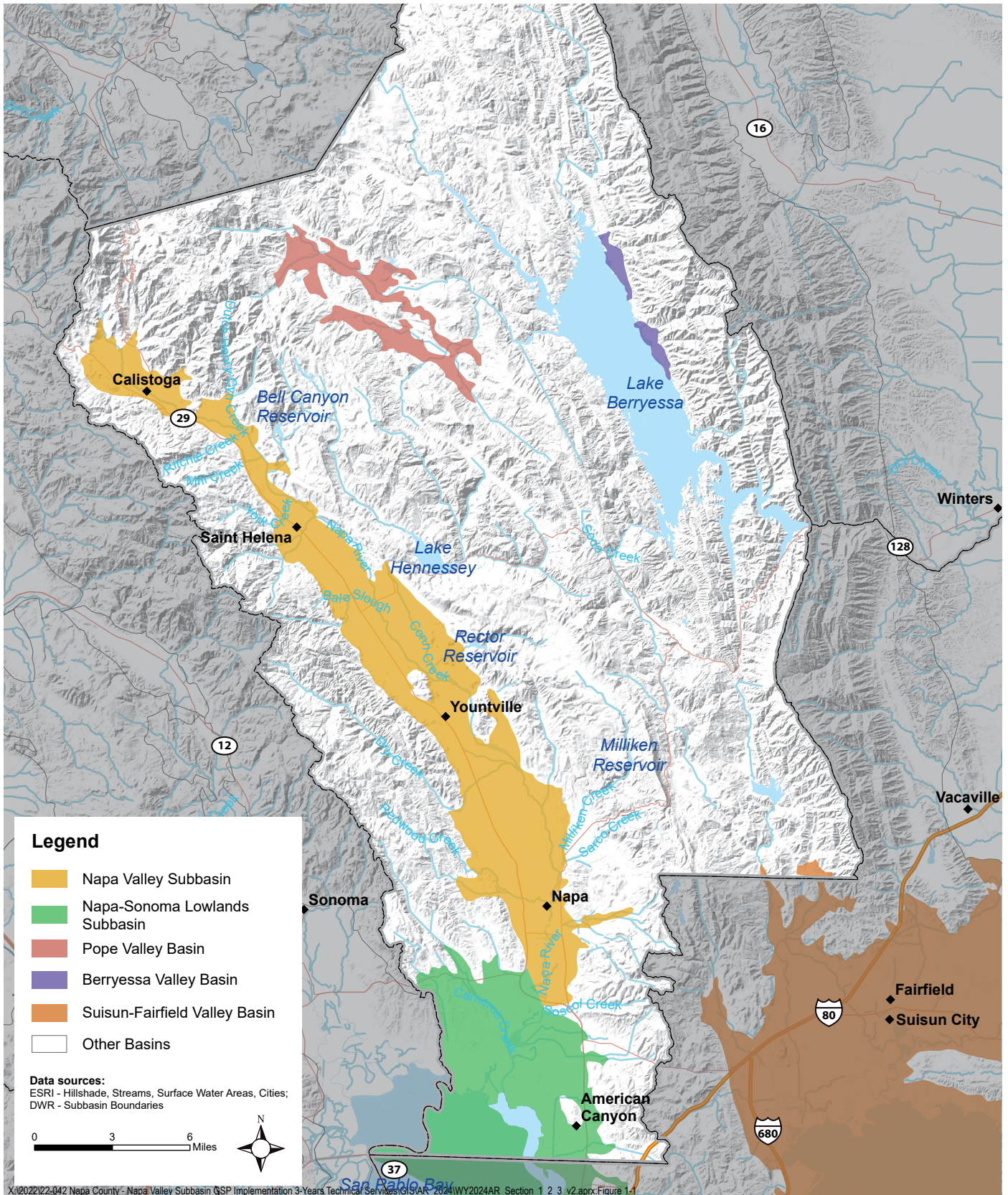




Figure 1. DWR Basins and Subbasins







County (DWR, 2016).<sup>3</sup> These basins and subbasins include the Napa-Sonoma Lowlands Subbasin (DWR Subbasin No. 2-002.03), Berryessa Valley Basin (DWR Basin No. 5-020), Pope Valley Basin (DWR Basin No. 5-068), and a small part of the Suisun-Fairfield Valley Basin (DWR Basin No. 2-003) (**Figure 1**). The Napa-Sonoma Lowlands Subbasin, designated as a very low priority subbasin by DWR, is the only subbasin adjacent to the Napa Valley Subbasin and is not required to develop a GSP.

Napa County has advanced groundwater monitoring efforts in the county since 2009, with the creation of the Comprehensive Groundwater Monitoring Program, which formalized the groundwater monitoring efforts in the Napa County Groundwater Monitoring Plan 2013 (see Section 6 of the WY 2025 Annual Report). Since the adoption of the GSP in January 2022, the monitoring program expanded to include nine monitoring networks managed by the NCGSA (**Table 1**). These nine monitoring networks provide the necessary data to evaluate the sustainable management criteria for each of the six sustainability indicators. While the monitoring networks provide information critical for groundwater management within the Subbasin, they also provide some coverage throughout Napa County. In addition to the GSP-specific monitoring networks, the NCGSA is working in coordination with other local, state, and federal agencies to collect and integrate data for the sustainable management of groundwater and interconnected surface water. Further description of each of the nine monitoring networks is provided in Section 6 of the WY 2025 Annual Report. Efforts to refine or upgrade the monitoring networks and address data gaps are ongoing.

<sup>3</sup> <https://water.ca.gov/Programs/Groundwater-Management/Bulletin-118>

**Table 1. Monitoring Networks and Measurement Types in Napa County and the Napa Valley Subbasin**

Monitoring Network	Measurement Type	Total		GSP-Specific		
		County	Napa Valley Subbasin	RMS	Supplemental	Planned
 Groundwater Level	Groundwater Level	127	76	32	62	--
 Groundwater Storage	Groundwater Levels	--	34	--	35	--
	NVIHM Model Results	--	1	1	--	--

Monitoring Network	Measurement Type	Total		GSP-Specific		
		County	Napa Valley Subbasin	RMS	Supplemental	Planned
 Land Subsidence	Groundwater Levels	--	15	15	--	--
	Benchmark Monitoring	--	8	5	3	--
	InSAR	--	1	--	--	--
 Stream Stage and Stream Discharge	Stream Stage and Stream Discharge	--	15	--	15	5
	Stream Watch	43	37	--	--	Yes
	Flood Control	28	17	--	17	--
 Interconnected Surface Water/ Groundwater	Groundwater Level	--	28	8	18	--
	NVIHM Model Results	--	2	2	--	--
 GDE Monitoring	Groundwater Level	--	31	--	31	--
	Stream Habitat	--	1	--	4	2
	Remote Sensing	--	10	-	10	--
 Groundwater Quality	Groundwater Quality	1,532 <sup>1</sup>	37	21	34	--
 Seawater Intrusion	Chloride testing	--	18	11	7	--
 Surface Water Quality	Surface Water Quality	--	7	--	7	--

<sup>1</sup> Value is from GAMA database accessed through SWRCB's server: <https://gispublic.waterboards.ca.gov/portalservices/services>

GDE = groundwater dependent ecosystem; InSAR = Interferometric Synthetic Aperture Radar; NVIHM = Napa Valley Integrated Hydrologic Model

This Report reflects an ongoing commitment by the County and NCGSA to sustainably manage groundwater and interconnected surface water resources by implementing an adaptive management approach supported by the best available information. To better manage and respond to changing conditions, the NCGSA formed a Technical Advisory Group (TAG) to advise the NCGSA and aid in the implementation of the Napa Valley Subbasin GSP. The five-member committee was first convened on August 11, 2022. Additional details about the TAG are documented in Section 7.1 of the WY 2025 Annual Report.

The Report includes data and information for water year (WY) 2025. Pursuant to GSP Regulations, this Annual Report includes the following and other information on groundwater conditions and GSP implementation:

1. Groundwater Elevation Data
2. Water Supply and Use Data
3. Groundwater Storage Data
4. Sustainable Management Criteria
5. GSP Implementation Progress

## Groundwater Elevations

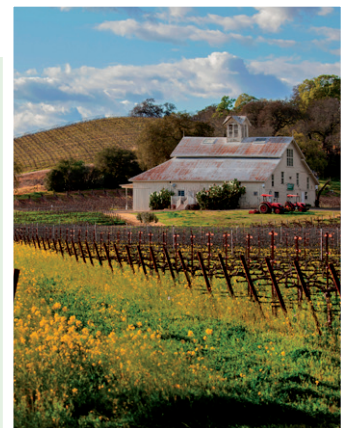
Groundwater elevation data in the Subbasin were analyzed for WY 2025. Groundwater elevation contour maps for seasonal low- and seasonal high-water levels have been prepared for WY 2025. Groundwater level data used to develop groundwater contours and hydrographs at representative and other monitoring sites are collected by various entities and maintained by the NCGSA's consultant, Luhdorff and Scalmanini Consulting Engineers (LSCE). Depths to groundwater in Spring 2025 ranged from four to 57 feet below ground surface, as compared to one to 21 feet below ground surface in Spring 2024. Fall depths to groundwater in the alluvial aquifer ranged from six to 93 feet below ground surface in Fall 2025, as compared to nine to 58 feet below ground surface in Fall 2024.

*Following the normal (below average) WY 2025, a total of two representative monitoring sites (RMS) exceeded the groundwater level minimum threshold (MT) in Fall WY 2025. Both wells were located in the Northeast Napa Management Area.*



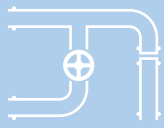


# Water Supply and Use

**Table 2** presents recent groundwater use data by sector from WYs 2018 to 2025. The water use sectors and methods for determining water use presented in this Annual Report are consistent with the sectors and methods presented in the Napa Valley Subbasin GSP (LSCE et al., 2022). Groundwater uses, and users in the Subbasin that rely on groundwater extracted by wells include agriculture, public water systems, which include municipalities and small public water systems (including small community supply wells and wineries), and self-supplied domestic users. Other groundwater users in the Subbasin include native vegetation, groundwater-dependent ecosystems (GDEs), and managed wetlands. These latter groundwater users depend on groundwater that occurs near the land surface. Groundwater users in the Subbasin also include disadvantaged communities (LSCE et al., 2022). Groundwater use by disadvantaged communities is included in data for the public water systems and self-supplied user sectors. As noted in **Table 2**, groundwater use is quantified through a combination of direct measurements reported by groundwater users, estimates based on population, and estimates based on irrigation demands calculated with the Napa Valley Integrated Hydrologic Model (NVIHM).

Surface water use by sector for WYs 2018 through 2025 is presented in **Table 3**, representing both imported supplies and local surface water supplies. Agricultural surface water use was compiled from surface water deliveries reported to the State Water Resources Control Board (SWRCB or State Water Board), California Water Accounting, Tracking, and Reporting System (CalWATRS), formerly Electronic Water Rights Information Management System (eWRIMS), and from reported surface water deliveries from municipalities. The Cities of Napa, Calistoga, St. Helena, and the Town of Yountville report surface water supply for municipal users. Surface water use from small PWS is self-reported to the SWRCB Electronic Annual Reporting System (EARS).



**Table 2. Recent Groundwater Use by Water Use Sector**

Water Use Sector	Acre-feet per Water Year							
	2018	2019	2020	2021	2022	2023	2024	2025
 <b>Agriculture</b> <sup>1</sup>	13,570	10,590	14,620	17,150	14,200	11,170	11,860	12,290
 <b>Municipal Public Water Systems</b> <sup>2</sup>	270	250	420	540	450	330	480	280
 <b>Small Public Water Systems</b> <sup>3</sup>	1,020	890	970	1,030	1,070	1,070	1,070	1,070
 <b>Self-Supplied Users</b> <sup>4</sup>	3,090	2,610	3,560	4,070	3,400	2,730	2,880	2,940
 <b>Native Vegetation (including GDEs and Managed Wetlands)</b> <sup>5</sup>	7,940	9,630	6,650	4,580	5,900	7,830	8,950	9,030
<b>TOTAL</b>	<b>25,890</b>	<b>23,970</b>	<b>26,220</b>	<b>27,370</b>	<b>25,020</b>	<b>23,130</b>	<b>25,240</b>	<b>25,610</b>

1. Estimated based on irrigation demand calculated by the NVIHM (Estimated, Accuracy: Medium)

2. Metered use reported by municipalities (Direct, Accuracy: High)



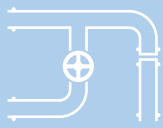
3. Metered use reported by small public water systems to the SWRCB Electronic Annual Reporting System (Direct, Accuracy: High)

4. Indoor domestic use is estimated based on self-supplied population and per capita demand. Outdoor uses for landscaping estimated based on irrigation demand calculated by the NVIHM (Estimated, Accuracy: Medium)

5. Estimated based on direct groundwater uptake calculated by the NVIHM (Estimated, Accuracy: Medium)

Note: Due to the limited availability of some hydrologic model inputs obtained from other agencies, WY 2025 groundwater extraction estimates developed using the NVIHM for this Annual Report are considered preliminary and subject to revision in subsequent Annual Reports and GSP updates.

**Table 3. Recent Surface Water Use by Water Use Sector (2018-2025)**

Water Use Sector	Acre-feet per Water Year							
	2018	2019	2020	2021	2022	2023	2024	2025
 <b>Agriculture</b> <sup>1</sup>	870	670	620	150	400	890	540	500
 <b>Municipal Public Water Systems</b> <sup>2</sup>	14,690	14,870	15,960	14,750	13,140	13,280	13,900	13,960
 <b>Small Public Water Systems</b> <sup>3</sup>	780	480	620	290	250	260	260	260
<b>TOTAL</b>	<b>16,340</b>	<b>16,020</b>	<b>17,200</b>	<b>15,190</b>	<b>13,790</b>	<b>14,430</b>	<b>14,700</b>	<b>14,720</b>

1. Metered use reported to the SWRCB eWRIMS (Direct, Accuracy: High)

2. Metered use reported to the NCGSA (Direct, Accuracy: High)

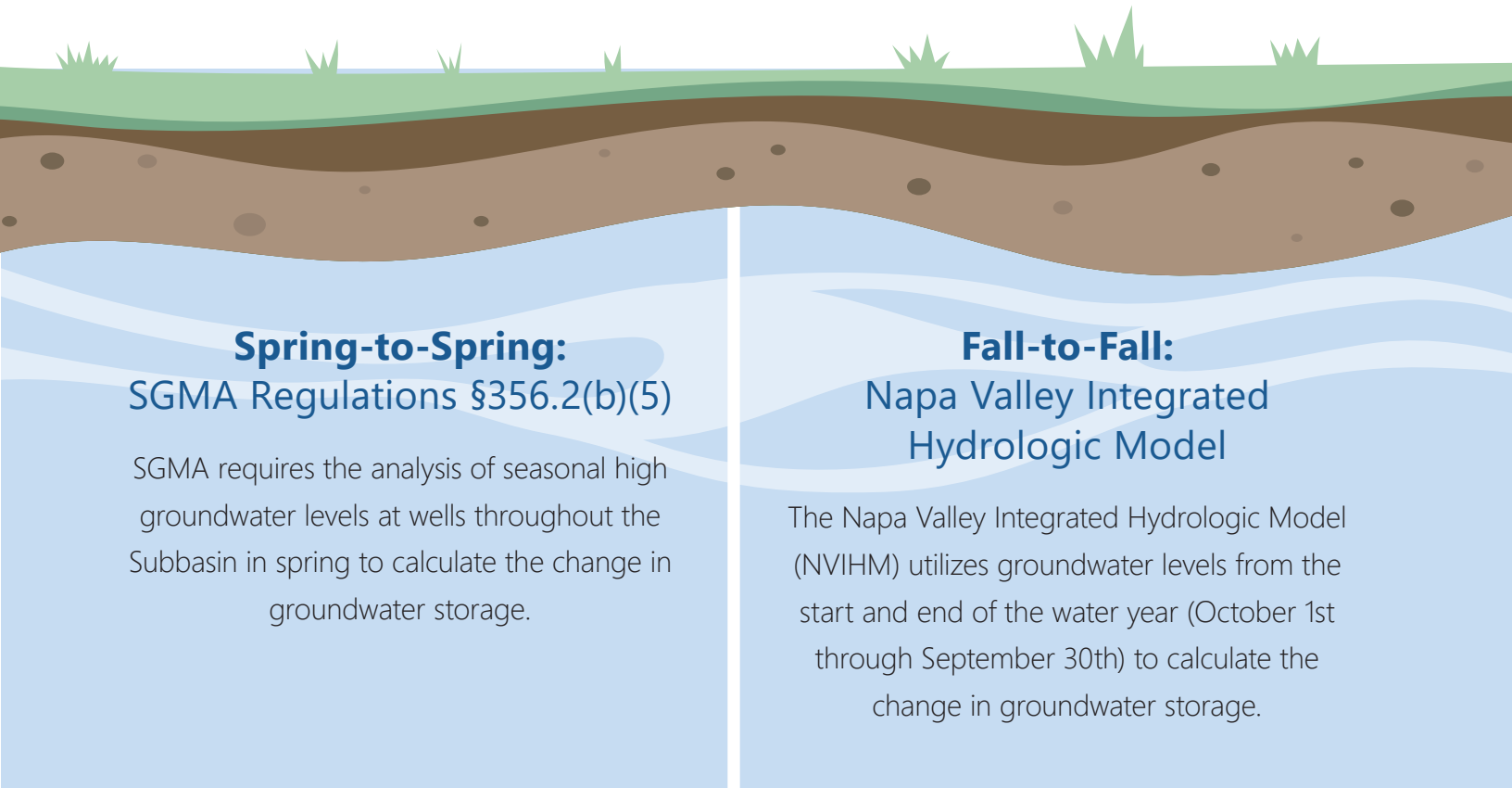
3. Metered use reported to the SWRCB EARs (Direct, Accuracy: High)

Note: Due to the limited availability of some data obtained from other agencies, surface water use data for WY 2023 is considered preliminary and subject to revision in subsequent annual reports and GSP updates.

## Subbasin Groundwater Storage

Changes in groundwater storage in the Napa Valley Subbasin are calculated with two different methodologies (**Figure 2**). The first method is through analyzing seasonal high groundwater levels at wells throughout the Subbasin in spring within the principal aquifer (Section 6.2 of the WY 2025 Annual Report), where the year-to-year (spring-to-spring) change is used to calculate the change in groundwater storage as required by SGMA regulations §356.2(b)(5). The second method is conducted by utilizing the NVIHM, where storage is calculated for the period from October 1, 2024, to September 30, 2025. **Table 4** presents the annual storage change in the Subbasin from WY 2019 to WY 2025 and the cumulative change of groundwater in storage from WY 1988 to WY 2025 for both methodologies. The results show that groundwater storage in the principal aquifer slightly increased in WY 2025 based on spring-to-spring groundwater level measurement. The NVIHM simulation for the entire groundwater system showed a slight increase from fall to fall in WY 2025. Groundwater storage declined in WYs 2020 and 2021, both of which were very dry years. The cumulative change in groundwater storage is positive under both methodologies.

**Figure 2. Change in Groundwater Storage Calculation Methods**



**Table 4. Calculated Changes in Groundwater Storage**

Storage Change Method	Water Year							1988-2025 Cumulative
	2019	2020	2021	2022	2023	2024	2025 <sup>1</sup>	
Seasonal <b>(Spring-to-Spring)</b> Groundwater Storage Change (AF) <sup>2</sup>	11,370	-24,710	-11,930	6,510	19,200	-640	580	<b>5,210</b>
NVIHM <b>(Fall to Fall)</b> Groundwater Storage Change (AF) <sup>3</sup>	9,310	-19,460	-16,510	9,410	20,440	2,310	1,070	<b>7,270</b>

1. Updated Subbasin boundary used in analyses  
 2. Required by SGMA regulations §356.2(b)(5) for the Principal Aquifer.  
 3. Supplemental analysis for the entire Subbasin aquifer system

AF = acre-feet

The MT for the reduction of groundwater storage sustainability indicator is defined as the net groundwater extraction by pumping that exceeds the sustainable yield for the Subbasin, where net groundwater extraction is the volume extracted less any volume of augmented recharge achieved by projects implemented in the Subbasin. An undesirable result due to reduced groundwater storage is defined as occurring when the 7-year average annual net groundwater extraction from pumping in the Subbasin exceeds the sustainable yield. The sustainable yield of the Subbasin is estimated to be 15,000 acre-feet per year. As described in the GSP (2022), given the uncertainty and variability associated with historical and projected estimates, the sustainable yield could range from 13,000 to 17,000 AFY. **Table 5** summarizes the last seven years (2019-2025) of annual groundwater extraction from pumping and the 7-year average groundwater extraction from pumping with respect to the Subbasin sustainable yield. Groundwater pumping was a total of about 16,580 acre-feet (AF) in WY 2025.

*... the importance of groundwater management approaches to increase Subbasin resiliency to dry-year conditions.*

**Table 5. Recent Subbasin Groundwater Extraction with Respect to the Seven-Year Average Net Groundwater Extraction and Sustainable Yield**

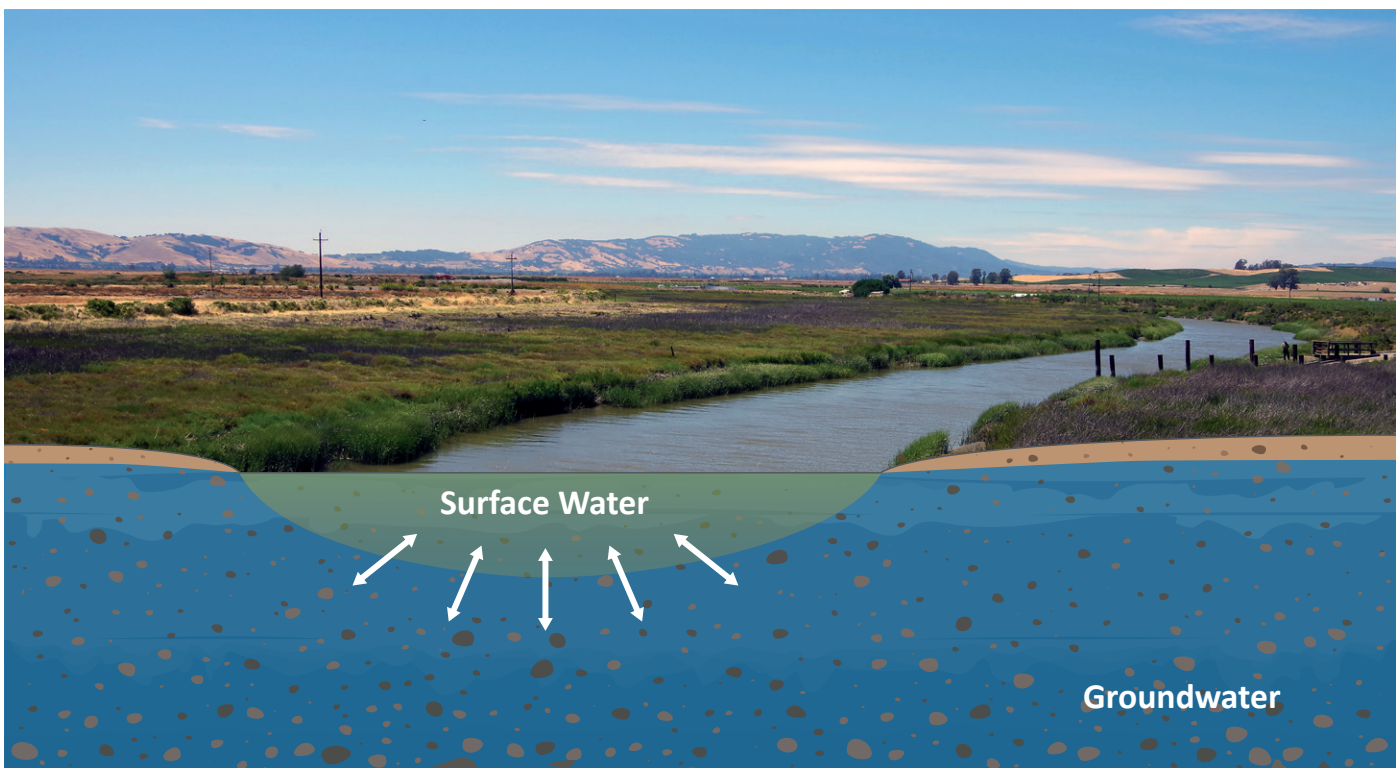
Water Year	Water Year Type	Extraction/Pumping		Annual Minimum Threshold Exceedance*
		Total	7-Year Average	
2019	Wet	14,340	16,850	No
2020	Very Dry	19,570	17,380	Yes
2021	Very Dry	22,750	18,030	Yes
2022	Normal (below average)	19,120	18,050	Yes
2023	Wet	15,300	17,670	Yes
2024	Normal (below average)	16,260	17,900	Yes
2025	Normal (below average)	16,580	17,700	Yes

\* An annual minimum threshold exceedance occurs when the annual pumping total exceeds the Napa Valley Subbasin sustainable yield of 15,000 acre-feet.

Additionally, groundwater pumping in WY 2025 results in 17,700 AF as the seven-year groundwater pumping average. The seven-year groundwater pumping average in WY 2025 qualifies as an undesirable result in the Subbasin. Notably, the change in groundwater storage over WY 2024 to 2025 is 580 AF, which indicates a slight surplus in groundwater storage in the Subbasin. The reduction in groundwater storage sustainability indicator represents a longer-term average of conditions in the Subbasin. The simulated groundwater extraction has decreased significantly since WYs 2020 through 2022, and this contributes to improved groundwater conditions. The computed groundwater pumping average, which is defined as an undesirable result, does not represent a concern, but it does indicate the importance of groundwater management approaches to increase Subbasin resiliency to dry-year conditions and avoid significant and unreasonable depletions of interconnected surface water.

## Interconnected Surface Water

Undesirable results for interconnected surface water occur when groundwater levels at 20 percent of the wells in the representative groundwater level monitoring network are below the MT in the fall for three consecutive years of fall measurements. In WY 2025, no groundwater levels exceeded the MT. The GSP defined the interim undesirable result specific to computed streamflow depletion as occurring when the MT for the volume of streamflow depletion during the June to October period is exceeded



*A shallow groundwater table in the Napa Valley Subbasin leads to highly interconnected surface water and groundwater throughout much of the Subbasin.*

for three consecutive years. The Napa River at Oak Knoll and Napa River at Pope Street gages exceeded the interim MT for seasonal streamflow depletion volume during June to October in WY 2025. This is the third consecutive interim MT exceedance for streamflow depletion at the Napa River at Oak Knoll gage, which by definition is an interim undesirable result. The GSP describes that “available information on the occurrence and duration of MT exceedances at groundwater level and depletion volume monitoring sites does not reflect a persistent undesirable result...” The Napa Valley Subbasin GSP was one of the few GSPs submitted to DWR that defined interconnected surface water sustainable management criteria using both 1) groundwater levels and 2) the volume of streamflow depletion during a sensitive period for beneficial uses; most GSPs established sustainable management criteria based only on groundwater levels. The interim undesirable result definition for streamflow volume depletion appropriately recognizes the additional work necessary during GSP implementation to refine this criterion. Additional work has been or is currently being completed to better define the potential for adverse impacts on beneficial uses due to the volume of streamflow depletion, including:

- Development and implementation of the Interconnected Surface Water and Groundwater Dependent Ecosystems (GDEs) Workplan: Napa Valley Subbasin (2024);
- Aquatic and terrestrial GDEs monitoring at six intensive survey sites together with wet/dry mapping of expansive river reaches at these sites;
- Installation of nine additional ISW/groundwater monitoring sites (including 18 new dedicated monitoring wells);
- Stream gage improvement occurring at five additional sites (CalSIP program, see Section 6.7 of the WY 2025 Annual Report); and
- Refinement of the physical representation of the channel geomorphology, hydraulic parameters, soil moisture utilization by native and non-native vegetation, and evapotranspiration in NVIHM.

It is apparent that the interim definitions for minimum thresholds and undesirable results for streamflow depletion need refinement to incorporate not only a depletion volume, but consideration of the temporal and spatial characteristics of depletion and the relationship of depletion volume to the total volume of streamflow in the river system available to meet beneficial needs. Further discussion of this will be presented in the GSP periodic evaluation.

## Land Subsidence

The monitoring network for land subsidence is composed of National Geodetic Survey (NGS) land surface elevation benchmarks, groundwater well sites, and remotely sensed land surface vertical displacement (Section 6.5 of the WY 2025 Annual Report). The GSA implemented the first annual monitoring of the NGS stations in September 2022, with subsequent monitoring in August 2023. During WY 2024, monitoring of the NGS stations was discontinued in favor of remotely sensed vertical displacement. The highest rate of subsidence measured within the Subbasin occurred northwest of Yountville at the rate of -0.56 inches per year, or -0.05 feet per year, remaining below the -0.2 feet per year MT for land subsidence. Three of the 15 wells exceeded the MT groundwater levels for land subsidence. This is not considered an undesirable result based on three wells with exceedances being less than 20 percent of the land subsidence wells.

## Degraded Water Quality and Seawater Intrusion

The Napa Valley Subbasin GSP identifies three main groundwater quality constituents of concern within the Subbasin: arsenic (As), nitrate (as nitrogen) (NO<sub>3</sub>-N), and total dissolved solids (TDS). The groundwater quality monitoring network includes 39 well sites that include domestic supply, irrigation, and public supply wells that are currently monitored by Napa County, DWR, US Geological Survey, and the SWRCB's Division of Drinking Water (DDW). Following the GSA's approval of the Napa Valley Subbasin GSP on January 11, 2022, the GSA implemented annual monitoring for the established GSP monitoring network. Water quality sampling was initiated in WY 2023 and continued through WY 2025. In WY 2025, one RMS well exceeded the As MT, no RMS wells exceeded the NO<sub>3</sub>-N MT, and one RMS well exceeded the TDS MT. The MT exceedances for As and TDS are within the historical range of the wells and are not attributable to changed groundwater conditions. The MT exceedances are not an undesirable result.



# Sustainable Management Criteria

**Table 6** summarizes the status of groundwater conditions in WY 2025 relative to the GSA adopted sustainable management criteria (SMC) for the Napa Valley Subbasin. Additional information on SMC and groundwater conditions relative to SMC are provided in Sections 5 and 6 of the WY 2025 Annual Report. Sustainable management criteria, specifically minimum thresholds, were exceeded for sustainability indicators addressing groundwater levels, reduction in groundwater storage, and depletion of interconnected surface water. Undesirable results occurred for the sustainability indicators for the reduction in groundwater storage and depletion of interconnected surface water. While not unforeseen, given the preceding historical drought conditions, management criteria exceedances emphasize the importance of GSP implementation activities. Historical data for the degraded water quality and seawater intrusion indicators indicate that undesirable results have not occurred for those indicators. The NCGSA is continuing to expand the monitoring effort related to those indicators, as described in the GSP. The recent very dry water years' conditions (WY 2020 through 2022) emphasize the susceptibility of the Subbasin to substantially reduced recharge and the propensity for increased groundwater pumping to meet water demands. Together, these water budget components resulted in significantly reduced groundwater storage during those very dry water years. The GSP sets forth adaptive management









*Workplans can be found on the Napa County website at: <https://www.countyofnapa.org/3219/County-of-Napa-Plans-Reports-Documents>*

criteria, which are also summarized in this Report. One of the adaptive management “response actions” includes review of subsequent mid-winter hydrologic conditions and consideration of projects and/or management actions to address concerning current and future conditions. WY 2022 was classified as a normal (below average) water year, and while groundwater storage and water levels increased, in general, MT thresholds were still exceeded. Most of the precipitation in WY 2022 occurred in Fall 2022, while January through May 2022 was atypically dry with very little precipitation. The precipitation in WY 2023 registered 128 percent of average and led to significant groundwater level recovery. WYs 2024 and 2025 were both below-average water years; groundwater levels in most areas saw limited additional recovery and minor seasonal fluctuations.

This Report describes GSP implementation activities that will inform management actions that help mitigate dry-year hydrologic effects. These include (but are not limited to) the development and implementation of the Groundwater Pumping Reduction Workplan: Napa Valley Subbasin, the Napa County Water Conservation Workplan – A Guide for Vineyards, Wineries and Other Water Users, and the Interconnected Surface Water and Groundwater Dependent Ecosystems Workplan: Napa Valley Subbasin. The TAG (see Section 7 of the WY 2025 Annual Report) actively reviews information and makes recommendations to the NCGSA, including addressing the unprecedented drought conditions in WYs 2021 through 2022.



**Table 6. Summary of Sustainable Management Criteria Status and Responses**

Sustainability Indicator	Minimum Threshold Exceedances	Trigger Occurrence	Undesirable Result Occurrence	Response Summary
 <p><b>Chronic Groundwater Level Decline</b></p>	Yes, 2 of 26 representative wells	No. Trigger occurs if 20% of designated RMS well levels fall below the MT in fall during a single year.	No	<p>Management actions underway include (but are not limited to) implementing the Groundwater Pumping Reduction Workplan and the Napa County Water Conservation Workplan. These Workplans will help curtail groundwater pumping and overall water use to enable the Subbasin to achieve the sustainability goal (see Section 7.2 of the WY 2025 Annual Report). Efforts to expand existing monitoring networks continue to address data gaps identified in the GSP (see Section 7.3 of the WY 2025 Annual Report).</p>
 <p><b>Reduction in Groundwater Storage</b></p>	Yes, six consecutive water years, 2020 through 2025	Yes. Trigger occurs if net groundwater extraction in three consecutive non-drought years, or four consecutive years including drought years, exceeds the sustainable yield.	Yes, the seven-year average annual net groundwater extraction has exceeded the sustainable yield of 15,000 acre-feet/year*	
 <p><b>Depletions of Interconnected Surface Water</b></p>	Yes, the interim MT for streamflow depletion volume (over the June through October period) was exceeded at the Napa River at Oak Knoll and Pope Street gages. (Groundwater elevations remained above MT.)	Yes. Trigger occurs if any groundwater level or surface water depletion volume MT is exceeded.	Yes, based on the interim MT for streamflow depletion being exceeded for three consecutive years at the Oak Knoll gage	
 <p><b>Land Subsidence</b></p>	No, all but three wells remain above MT, and land surface displacement (InSAR) data indicate no MT exceedance.	No. Trigger occurs if either groundwater levels at 20% of the RMS wells exceed the MT, or land surface elevation at the RMS location exceeds 0.2 ft/year.	No	
 <p><b>Degraded Water Quality</b></p>	Yes, in WY 2025, one RMS well exceeded the arsenic MT and one RMS well exceeded the TDS MT.	Concentrations exceeding 75% of the primary MCL (or exceeding 25% more than the baseline concentration) = Trigger; statistically significant increases in concentration at any RMS indicating nearing exceedance of criteria for Trigger may also be considered a Trigger.	No	<p>The MT exceedances were within the historical range of the RMS well and not attributable to changed groundwater conditions.</p>
 <p><b>Seawater Intrusion</b></p>	No, continued data collection in 2025 to evaluate baseline conditions for newly constructed monitoring wells.	No. Concentrations exceeding 75% of 250 mg/L, which is the secondary MCL (or exceed 25% more than the baseline concentration) = Trigger; Statistically significant increases in concentration at an RMS indicating nearing exceedance of criteria for Trigger may also be considered a Trigger.	No	<p>Historical data for the sustainability indicator for seawater intrusion indicators indicate that undesirable results have not occurred.</p>

\* The seven-year average annual net groundwater extraction has exceeded the sustainable yield of 15,000 acre-feet/year from 2019 to 2025.

mg/L = micrograms per liter; MT = minimum threshold; TDS = total dissolved solids; RMS = representative monitoring site; MCL = maximum contaminant level; WY = water year; mg/L= milligrams per liter; InSAR = Interferometric Synthetic Aperture Radar

# GSP Implementation Progress

This Report summarizes the GSA’s progress towards implementing the GSP elements intended to avoid undesirable results and achieve the Subbasin sustainability goal by 2042, as required by SGMA (see Section 7 of the WY 2025 Annual Report). The GSP adopted in January 2022 describes Projects and Management Actions (PMAs) along with supplemental actions developed to support sustainable groundwater management, several of which entail preparatory steps and workplans.

GSP implementation activities completed prior to and/or during WY 2025 through Spring 2026 include efforts related to the following GSP PMAs (see Section 7 of the WY 2025 Annual Report) for additional details):

<p><b>GSP Project #1 (P1)</b></p>	<p><b>Managed Aquifer Recharge</b></p> <ul style="list-style-type: none"> <li>● Development and completion of the Stormwater Resource Plan (LWA, 2023; May 2023).</li> <li>● Evaluate recharge feasibility scenarios and stakeholder discussion (ongoing).</li> <li>● Explore the opportunity for NCGSA to apply for a 5-year temporary recharge permit.</li> </ul>
<p><b>GSP Project #2 (P2)</b></p>	<p><b>Expansion of Recycled Water Use (ongoing)</b></p> <ul style="list-style-type: none"> <li>● Coordinate with the City of St. Helena regarding the City’s opportunities for potential in-lieu use of recycled water and/or direct recharge of recycled water.</li> </ul>
<p><b>GSP Management Action #1 (MA1)</b></p>	<p><b>Water Conservation (Vineyards, Wineries and Other Water Users)</b></p> <ul style="list-style-type: none"> <li>● Continue implementation of water conservation activities related to the Napa County Water Conservation Workplan – A Guide for Vineyards, Wineries, and Other Water Users (March 2024).</li> </ul>
<p><b>GSP Management Action #2 (MA2)</b></p>	<p><b>Groundwater Pumping Reductions</b></p> <ul style="list-style-type: none"> <li>● Continue implementation of activities related to the Groundwater Pumping Reduction Workplan: Napa Valley Subbasin (March 2024).</li> </ul>




<p><b>GSP Management Action #3 (MA3)</b></p>	<p>Updates to the Napa County Groundwater Ordinance and updated Water Availability Analysis (in progress).</p> <ul style="list-style-type: none"> <li>● Updates to the Napa County Groundwater Ordinance and updated Water Availability Analysis (Public Draft WAA Guidance Document and Technical Report posted March 2026).</li> <li>● Adopt well metering and reporting standards (in progress).</li> <li>● Countywide well inventory was conducted in 2023 and is updated periodically (ongoing).</li> </ul>
<p><b>GSP Section 6 to address data gaps</b></p>	<p>Continue implementation of activities described in the Interconnected Surface Water and Groundwater Dependent Ecosystems Workplan: Napa Valley Subbasin (March 2024).</p> <ul style="list-style-type: none"> <li>● Implement Workplan, including intensive monitoring of physical and biological characteristics at six survey sites. <i>Results are presented in Appendix G of the WY 2025 Annual Report.</i></li> </ul>



Near-term implementation activities are summarized below and described further in Section 7 of the WY 2025 Annual Report.






1. Near-term installation of surface water monitoring facilities at five sites under the DWR California Stream gage Improvement Grant (CalSIP).
2. Ongoing groundwater monitoring and further steps to expand monitoring as described in GSP Sections 5, 9, and 12.
3. Public outreach and community engagement.

The Workplans (completed in 2024) include ongoing implementation of advanced technologies for water conservation, groundwater pumping reduction, stormwater management, and potential utilization of surplus stormwater for managed aquifer recharge, measures for tracking and reporting groundwater use, and assessments of GDEs within the Subbasin. **Table 7** provides a summary list of PMAs and their status; additional details are provided in Section 7 of the WY 2025 Annual Report.

**Table 7. Current Status of Projects and Management Actions**

Action	Summary Description	Status	Implementation Notes
GSP Implementation: General and Supporting Activities			
Technical Advisory Group	Activities and meetings of the Technical Advisory Group	Ongoing	Periodic public meetings
Stakeholder engagement and outreach	Updated the Communication and Engagement Plan (February 2024). Outreach efforts include public meetings, social media announcements, and electronic communications through the NCGSA-interested parties email list.	Ongoing	GSP implementation includes ongoing stakeholder engagement and outreach <i>See Table 7-2 in the WY 2025 Annual Report.</i>
GSP webmap and data visualization	An interactive webmap application presents information to the public and stakeholders on the GSP monitoring network and other key sites monitored for the GSP, and available data on conditions at each site.	Ongoing	GSP implementation includes ongoing open data sharing via a public-friendly web-based application
Projects and Management Actions			
Project 1 (P1): Managed Aquifer Recharge	Completed Stormwater Resource Plan (2023). Conduct recharge feasibility analysis, including development of representative recharge feasibility modeling scenarios; explore opportunity to develop NCGSA five-year temporary recharge permit.	 Completed Technical Memorandum for Stormwater Plan Recharge feasibility in progress	Public outreach and model scenarios are informing recharge feasibility planning efforts
Project 2 (P2): Expansion of Recycled Water Use	Recycled water is produced by the Napa Sanitation District, City of Calistoga, and Town of Yountville, exploring recycled water use strategies with the City of St. Helena.	Ongoing expansion of recycled water use	Public outreach and model scenarios are informing planning efforts
Management Action 1 (MA1): Water Conservation (Vineyards, Wineries, and Other Water Users)	Completed Napa County Conservation Workplan: A Guide for Vineyards, Wineries, and Other Water Users; ongoing outreach and engagement on conservation measures that have been and can be implemented throughout Napa County for all water users.	 Completed Workplan (March 2024) Ongoing implementation	Stakeholder engagement and public outreach are part of Workplan implementation <i>See Table 7-3 of the WY 2025 Annual Report</i>
Management Action 2 (MA2): Groundwater Pumping Reductions	Completed Groundwater Pumping Reduction Workplan: Napa Valley Subbasin; a roadmap for implementing measures to reduce groundwater pumping in the Napa Valley Subbasin.	 Completed Workplan (March 2024) Ongoing Implementation	Stakeholder engagement and public outreach are part of Workplan implementation <i>See Table 7-3 of the WY 2025 Annual Report</i>

Action	Summary Description	Status	Implementation Notes
<b>MA1 and MA2 Supplemental Action: Water Certification Partnership</b>	NCGSA Water Certification Partnership Concept: Structure and Minimum Requirements (April 2025) Technical Memorandum to encourage the expansion of water conservation approaches and technologies; concepts include leveraging existing certification programs; released Request for Qualifications for participating partners; NCGSA partners selected (January 2026)	 Completed Technical Memorandum Water Certification Partnership Pilot implementation.	Refined draft program concept and input from stakeholders presented to the TAG on March 13, 2025; presentation to TAG in April 2025, and NCGSA in September 2025 <i>See Appendix H in the WY 2025 Annual Report</i>
<b>MA1 and MA2 Supplemental Action: Vineyard Replanting Strategy</b>	Technical Memorandum developed to consider incentives for and the feasibility of delaying vineyard replanting; such approaches would be considered where vineyard managers can readily incorporate the concept into ongoing operations.	In Progress	Presented to TAG in April 2025 and NCGSA in September 2025
<b>Management Action 3 (MA3): Napa County Groundwater Ordinance, new well permit conditions, and update Water Availability Analysis</b>	Adopt well setback and/or well construction standards to limit the direct influence of groundwater pumping on interconnected surface waters and Subbasin groundwater conditions. Includes measures to reflect updated consideration of public trust resources consistent with GSP water budget and sustainable yield analyses and sustainable management criteria.	In Progress Release of draft Water Availability Analysis Guidance document and Supplemental Technical Report for public review and comment (March 2026)	Napa County Board of Supervisors approved action to update Groundwater Ordinance in February 2022; stakeholder engagement and public outreach are included as part of MA3 <i>See Table 7-4 of the WY 2025 Annual Report</i>
<b>MA3 Supplemental Action: Adopt well metering and reporting standards</b>	Develop and adopt regulations specifying acceptable equipment, installation procedures, reporting procedures, and related aspects necessary to implement groundwater use reporting management actions.	In Progress Release of draft Water Availability Analysis Guidance document and Supplemental Technical Report for public review and comment (March 2026)	<i>See Table 7-4 of the WY 2025 Annual Report</i>
<b>MA3 Supplemental Action: Countywide well inventory</b>	In 2023, Napa County developed a refined countywide well inventory based on review of DWR well construction reports, along with County well permitting information and aerial photos to improve well location information. The inventory continues to be refined and updated with new information.	Ongoing	The countywide well inventory is being continually updated with information available through the County's permitting process and DWR updates.
<b>MA3 Supplemental Action: Refinement of the countywide significant streams map</b>	Napa County completed an updated countywide map of significant streams. Multiple data sources were used to verify and create more accurate stream data and stream flowlines. RCD information was also used to inform fish habitat, including fish presence and the determination of significant streams.	 Completed	The comprehensive update to the countywide streams map was completed in 2025; ongoing updates are anticipated when new data becomes available (including data generated through the Napa Valley Subbasin ISW and GDEs Workplan implementation) <i>See Table 7-4 of the WY 2025 Annual Report</i>

Action	Summary Description	Status	Implementation Notes
Ongoing and Expanded Monitoring			
<b>Interconnected Surface Water and Groundwater Dependent Ecosystems Workplan: Napa Valley Subbasin</b>	Ongoing ISW and GDEs Workplan implementation, including addressing data gaps, wet/dry stream reach surveys, and implementation of the California Environmental Flows Framework (CEFF) and defining ecological management goals	 Completed Workplan (March 2024) Substantial additional aquatic and terrestrial monitoring efforts are underway.	<i>For more information, see Appendix G of the WY 2025 Annual Report.</i>
<b>Install seawater intrusion monitoring wells at two sites</b>	Installed 2 monitoring wells as additions to the seawater intrusion monitoring network. (This is one of the 9 sites mentioned below.)	 Completed	Collection of baseline data is ongoing
<b>Install 16 new interconnected surface water monitoring wells at eight sites.</b>	Installed 16 new monitoring wells (8 sites) as additions to the interconnected surface water monitoring network.	 Completed	Final report submitted to DWR in Spring 2024
<b>Install 2 new interconnected surface water monitoring wells at the Calistoga site.</b>	Installed 2 new monitoring wells (1 site) as additions to the interconnected surface water monitoring network.	 Completed	Coordination with the City of Calistoga; completed in June 2025
<b>Install eight new surface water stage and quality meters</b>	Installed eight new surface water stage and quality meters as part of the surface water quality network, which includes water quality (Temperature, Total Dissolved Solids, Salinity, Electrical Conductivity) monitoring at stream sites.	 Completed	Locations correspond to new interconnected surface water monitoring well sites.
<b>Install or upgrade ten stream gages; expand Stream Watch network</b>	In coordination with the Napa County RCD and Napa County Flood Control and Water Conservation District, an expanded or upgraded stream stage and discharge monitoring network. Stream Watch network expanded to 43 sites; 4 sites include cameras.	In Progress	Ongoing coordination with RCD and Napa County Flood Control and Water Conservation District
<b>Design 5 refurbished/new surface water gaging stations</b>	Design 5 surface water gaging stations (4 refurbished and 1 new) as part of the DWR Stream Gage Improvement Program (CalSIP).	In Progress	Locations correspond to historical USGS stream gaging sites; installation in WY 2026
Model and Water Budget Refinement			
<b>Expand the collection of groundwater extraction and consumptive use data</b>	Adopt well metering and reporting standards. Water Conservation Workplan implementation. Water Certification Partnership program implementation. Expand the data management system to include additional extraction and consumptive use data made available through PMAs and other sources.	In Progress	Data collection through Workplan implementation

Action	Summary Description	Status	Implementation Notes
<p><b>Collect or acquire soil moisture data</b></p>	<p>Expand the collection of local soil moisture and irrigation scheduling data, utilizing publicly available datasets. Implement the Napa County Water Conservation Workplan. Coordinating with USGS on the development of a soil moisture module for the OWHM platform (i.e., will refine the handling of soil moisture utilization in the NVIHM)</p>	<p>In Progress</p>	<p>Data collection through Workplan implementation; USGS soil moisture module to be completed in Winter 2026</p>
<p><b>Evaluate and incorporate updated climate change projections</b></p>	<p>Evaluate and incorporate updated climate change projection datasets, as available from DWR or a similar source, to continue to apply best-available data to the ongoing evaluation of potential future Subbasin conditions.</p>	<p>Planning</p>	<p>Expected implementation of new climate change scenarios during the GSP 5-year periodic evaluation</p>
<p><b>State Water Resources Control Board Supply and Demand Assessment (SDA) Unit Coordination</b></p>	<p>State Board is developing a Napa River Watershed model to simulate the complicated watershed hydrology, including flows, surface water and groundwater interaction, and water demands. State Board staff are coordinating with the NCGSA on use of the Napa Valley Integrated Hydrologic Model (NVIHM); a Memorandum of Understanding has been executed to recognize Napa County’s, the NCGSA’s, and the State Board’s interest in cooperative data sharing and information, including outreach, engagement and education efforts to accomplish increased water conservation throughout Napa County for the benefit of present and future generations and in consideration of public trust principles.</p>	<p>In Progress</p>	<p>State Board Workplan Addendum completed April 2025; executed State Board and Napa County MOU May 2025; State Board anticipates completion of the Napa pilot project in 2026</p>

CalSIP = Stream Gage Improvement Program; CEFF = California Environmental Flows Framework; DWR = California Department of Water Resources; GDE = groundwater dependent ecosystem; ISW = interconnected surface water; MOU = memorandum of understanding; NVIHM = Napa Valley Integrated Hydrologic Model; RCD = Resource Conservation District; USGS = US Geological Survey

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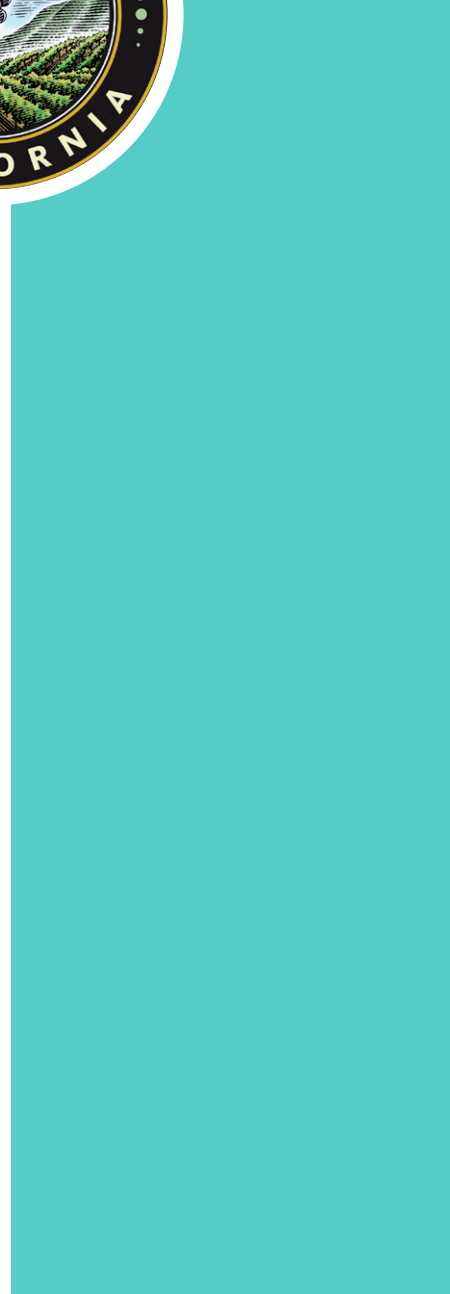
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## For More Information:

**Napa County Groundwater Sustainability Agency**  
Jamison Crosby, Natural Resources Conservation Manager  
[jamison.crosby@countyofnapa.org](mailto:jamison.crosby@countyofnapa.org)

1195 Third Street, Suite 210, Napa, CA 94559



**Table 1. Sustainable Management Criteria Summary**

Sustainability Indicator	Significant and Unreasonable Conditions	Minimum Threshold	Measurable Objective	Undesirable Result
<b>Chronic Lowering of Groundwater Levels</b>	<p>Excluding groundwater level declines that may occur during drought conditions, conditions that result in prolonged, year-to-year reductions in groundwater levels below levels recorded historically [10 years] at RMS wells, resulting in impacts to beneficial uses and users of groundwater.</p> <p>When the long-term period doesn't end in drought conditions and is balanced with above and below average water years, significant and unreasonable groundwater level decline occurs when groundwater level decline continues, including during drought periods, and extend for a long period [e.g., 10 years] resulting in impacts to beneficial uses and users of groundwater.</p>	<p><u>Wells with &gt;10 years historical groundwater elevation observations:</u> Minimum static October groundwater elevation prior to 2015.</p> <p><u>Wells with &lt;10 years historical groundwater elevation observations:</u> Inferred minimum static October groundwater elevation between 2005 to 2014 or historical groundwater levels simulated by the NVIHM.</p>	<p><u>Wells with &gt;10 years of groundwater level observations:</u> October average static groundwater elevation observed historically prior to 2015</p> <p><u>Wells with &lt;10 years of groundwater level observations:</u> October average static groundwater elevation between 2005 to 2014, for wells that lack at least 10 years of observed data</p>	<p>20% of designated RMS well levels fall below the MT in fall (October) for 3 consecutive years of fall measurements in non-drought years.</p>
<b>Reduction in Groundwater Storage</b>	<p>Groundwater extractions exceed the Subbasin sustainable yield and result in impacts to beneficial uses and users of groundwater.</p>	<p>The net groundwater extraction by pumping that exceeds the sustainable yield for the Subbasin, where net groundwater extraction is the volume extracted less any volume of augmented recharge achieved by projects implemented in the Subbasin.</p>	<p>The net annual groundwater extraction by pumping up to the sustainable yield for the Subbasin.</p>	<p>The 7-year average annual net groundwater extraction in the Subbasin exceeds the sustainable yield.</p>
<b>Seawater Intrusion</b>	<p>Groundwater conditions in the Subbasin allow for the increase of the flow of seawater into the Napa Valley Subbasin such that chloride concentrations measured in RMS wells reach levels that no longer meet the state secondary drinking water standard [250 mg/L] and would result in groundwater being unsuitable for beneficial uses.</p>	<p>Chloride concentration of 250 mg/L established at designated RMS.</p>	<p>Historical maximum native chloride concentration measured at each RMS.</p>	<p>A detected and confirmed exceedance of the MT at any of the RMS wells where sea water is determined to be the chloride source and the exceedance is determined to have resulted from Subbasin management.</p>
<b>Degraded Water Quality</b>	<p>Statistically significant increase in concentrations of groundwater quality constituents of concern that negatively affects the suitability of groundwater for domestic, agricultural, municipal or environmental beneficial uses.</p>	<p>State drinking water standards at each RMS for:</p> <ul style="list-style-type: none"> <li>• TDS - 500 mg/L</li> <li>• Nitrate (as N) - 10 mg/L</li> <li>• Arsenic - 10 µg/L</li> </ul>	<p>Historical range and no more than 75% of the MT for each constituent of concern.</p>	<p>Confirmed exceedance of an MT at any RMS determined to have resulted from Subbasin management.</p>

Sustainability Indicator	Significant and Unreasonable Conditions	Minimum Threshold	Measurable Objective	Undesirable Result
<b>Land Subsidence</b>	Permanent, inelastic subsidence to a degree that disrupts or causes accelerated damage to important public or private infrastructure as a result of groundwater extraction and use.	<u>Land surface elevation RMS:</u> 0.2 feet/year inelastic land surface elevation reduction. <u>Groundwater level RMS:</u> Minimum historical groundwater levels	<u>Land surface elevation RMS:</u> Less than 0.2 feet/year. <u>Groundwater level RMS:</u> Historical minimum groundwater elevation.	Annual MT is exceeded and groundwater extraction is determined to be the cause of the detected inelastic subsidence, based on correlation of groundwater levels and land surface elevation data or documentation of increased groundwater pumping rates.
<b>Depletion of Interconnected Surface Water</b>	A reduction of the timing and duration of hydraulic connection relative to the historical conditions, resulting in impacts to groundwater dependent ecosystems or other beneficial users of surface water.	<u>Streamflow Depletion RMS:</u> (Interim MT) The second highest seasonal volume of streamflow depletion that occurred from 2005 to 2014. <u>Groundwater level RMS:</u> the inferred minimum static groundwater elevation between 2005 to 2014, informed by available data and historical groundwater levels simulated by the NVIHM.	<u>Streamflow Depletion RMS:</u> (Interim MT) A reduced volume of streamflow depletion corresponding to a 10 percent reduction in average annual historical (2005 to 2014) pumping for all non-de minimis groundwater users. <u>Groundwater level RMS:</u> Inferred average static groundwater elevation between 2005 to 2014	<u>Streamflow Depletion RMS:</u> (Interim UR): Exceedance of the MT for the volume of streamflow depletion occurring for three consecutive years at the Napa River at Pope Street or Napa River at Oak Knoll Avenue locations. <u>Groundwater level RMS:</u> 20% of RMS well levels are below the MT in the Fall for three consecutive years of Fall measurements.



# Napa County

## Board Agenda Letter

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Groundwater Technical Advisory Group **Agenda Date:** 4/9/2026

**File ID #:** 26-906

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**TO:** Technical Advisory Group for the Napa County Groundwater Sustainability Agency  
**FROM:** Brian D. Bordona, Director of Planning, Building and Environmental Services  
**REPORT BY:** Jamison Crosby, Natural Resources Conservation Manager  
**SUBJECT:** Presentation on Interconnected Surface Water (ISW) and Groundwater Dependent Ecosystem (GDE) Workplan implementation and 2025 Monitoring Results

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### **RECOMMENDATION**

Provide an update on the Interconnected Surface Water (ISW) and Groundwater Dependent Ecosystem (GDE) Workplan implementation with a focus on 2025 monitoring results.

#### Procedure

Staff introduces.

Questions and answers with the TAG.

Public comments.

### **BACKGROUND AND DISCUSSION**

Monitoring groundwater dependent ecosystems for Napa Valley Subbasin Groundwater Sustainability Plan (GSP) implementation occurs through a combination of shallow monitoring wells and remotely sensed vegetation health. To address data gaps and better characterize the interconnection between surface water and groundwater dependent ecosystems, the NCGSA installed additional dual-completion ISW monitoring wells and developed a workplan that included biological field assessments, review of existing data, investigations of stream habitat conditions, and evaluation of listed species. The Interconnected Surface Water and Groundwater Dependent Ecosystems Workplan (Workplan) was completed in March 2024 with implementation beginning in May 2024. The Workplan identified six intensive survey sites: four on the Napa River (Napa River at Calistoga, Napa River at St. Helena, Napa River at Yountville, Napa River at Oak Knoll) and two tributary sites (Sulphur Creek and Bale Slough).

Surveys conducted in 2025 include:

- flow connectivity studies;
- fish population and fish habitat;
- continuous water quality monitoring for temperature and dissolved oxygen;
- up to four visual encounter surveys for aquatic wildlife;
- environmental DNA (eDNA) sampling for northwestern pond turtle and foothill yellow-legged frog;

- California freshwater shrimp surveys in the Calistoga Reach of the Napa River;
- point count surveys and acoustic monitoring for birds; and
- surveys of groundwater-dependent vegetation community health and composition.

Water year 2025 precipitation at Napa State Hospital was 21.6 inches, approximately 84% of average. However, WY 2025 was a much wetter year in the northern portion of the basin due to a focused, high-intensity atmospheric river in November 2024 where 17 inches of rain fell over 3 days recorded at the Petrified Forest OneRain station. Groundwater levels were monitored continuously at the Napa River at Oak Knoll, Sulphur Creek, and Bale Slough sites. Continuous groundwater levels were not recorded at the Napa River at St. Helena and Napa River near Yountville sites due to pressure transducer malfunction. A new monitoring well was installed at the Napa River at Calistoga site in July 2025, and groundwater level data collection began in October 2025. Stream stage data were recorded at the Napa River at St. Helena and Napa River at Oak Knoll sites. Stage data collected at the other four sites will be tied into a reference elevation for conversion to water surface elevation in WY 2026.

In 2025, stream habitats were evaluated at the six intensive survey sites using monthly wet-dry mapping to assess changes in the extent of aquatic habitat through time. At each site, the extent of wet and dry conditions was measured over approximately one-mile reaches using GPS to note transitions between conditions. The Napa River near Yountville and Napa River near Oak Knoll sites were flowing throughout 2025. The Napa River at Calistoga, Napa River at St. Helena, Sulphur Creek, and Bale Slough reaches all dried during the surveys, though the timing and extent of drying varied at each site. The Napa River at Calistoga reach began transitioning to isolated pools by early July, but the reach was wetter overall in 2025 (70% of the reach was wet throughout summer and fall) than in 2024 (30% of the reach was wet throughout summer and fall). The Napa River at St. Helena site began to dry downstream of Stonebridge Park by early August and was almost completely dry from the Pope Street bridge to Dowdell Lane by October. Like Calistoga, the site stayed wetter throughout the dry season in 2025 (35% of the reach was wet in October) than in 2024 (1% of the reach was wet in October). Sulphur Creek began to dry near the downstream end of the site in June, and the reach within the groundwater basin was almost entirely dry by August. The section of the Sulphur Creek reach immediately upstream of the basin boundary was flowing year-round. Dry conditions at the upstream end of the reach in July-October are attributed to dewatering associated with the Sulphur Creek Fish Passage Restoration Project. Bale Slough transitioned to isolated pools in June and was completely dry by August. A longitudinal profile of the Bale Slough channel bed was surveyed in June 2025.

Dissolved oxygen and stream temperature were monitored with HOBO loggers at all six sites. Dissolved oxygen levels generally declined as stream temperatures increased. By mid-July-August, oxygen conditions were generally stressful for steelhead. Stream temperatures were elevated but generally below lethal thresholds. Both dissolved oxygen and temperature can be highly heterogeneous in streams, particularly those fed by groundwater like the Napa River, and fish may be able to survive in pockets of highly oxygenated water with low temperature.

Napa County RCD conducted fish population surveys at all six sites. The population surveys included snorkeling the four sites and counting the number and species of fish present and their lifestage, if applicable. The number of steelhead (*O. mykiss*) were counted directly while the population of other fish were placed in ranges (1-10, 11-50, 50-100, 101-500, and greater than 500). Steelhead were present at four of the six snorkel sites surveyed in May and June 2025. Juvenile steelhead were most abundant on Sulphur Creek in May, with much smaller numbers at the other sites. Juvenile Chinook Salmon were observed at every site and anecdotally observed throughout the Napa River watershed in 2025. Chinook salmon were most abundant at Calistoga where hundreds of fish were observed. Whether fish of either species survived beyond June is unknown. Other observed fish include roach, stickleback, Sacramento sucker, largemouth bass and bluegill. The RCD also

conducted fish habitat typing surveys at Oak Knoll and attempted a habitat typing survey at Bale Slough, but the site was too dry to accurately map habitat units. The Bale Slough survey will be conducted in 2026.

The aquatic wildlife surveys included surveys for three listed wildlife species: foothill yellow legged frog (*Rana boylei*), northwestern pond turtle (*Actinemys marmorata*), and California freshwater shrimp (*Syncaris pacifica*). Visual encounter surveys and eDNA were used to assess the presence of foothill yellow-legged frogs and northwestern pond turtles at the six sites in April-June 2025, with follow-up surveys in July at Sulphur Creek and Napa River at Oak Knoll. Foothill yellow-legged frogs were found only in tributaries to the Napa River-tadpoles were found in Dry Creek (upstream of the Napa River at Oak Knoll site), and egg masses and tadpoles were found in Sulphur Creek. Northwestern pond turtles were observed at the Napa River at Oak Knoll site and detected from eDNA sampling at the Napa River at St. Helena site.

California freshwater shrimp were surveyed over a 1.5-mile reach of the Napa River near Calistoga from Lincoln Avenue to Greenwood Avenue and a 0.5-mile reach of Garnett Creek from the confluence with the Napa River to Grant Street. During the October 2025 surveys, 117 California freshwater shrimp were observed in pools throughout the Napa River reach, and 6 were observed in Garnett Creek. Flow in the Calistoga reach was discontinuous at the time of the surveys with isolated pools separated by dry riffle reaches. The observed shrimp included male adults, female adults, and juveniles, suggesting that the population is actively reproducing, with a similar population to the 2024 surveys.

Fifty-nine (59) unique avian species were identified in spring point count surveys and/or acoustic data across five of the six sites (access to Bale Slough was still pending during spring survey dates). One special-status species (northern yellow warbler [*Setophaga aestiva*]) was identified in the acoustic data collected at Sulphur Creek and the Napa River at St. Helena.

Groundwater dependent vegetation composition and vigor were assessed along two transects at each site. GDEs along the channel corridor generally supported oaks at surfaces further above the channel bottom and mixed riparian vegetation on surfaces closer to the channel bottom. GDEs at the mainstem Napa River typically showed minor vegetation stress, particularly in mature trees. Vegetation at Sulphur Creek was primarily upland and riparian herbaceous species not reliant on groundwater. No vegetation stress was apparent at Bale Slough, but riparian restoration plantings at the site are irrigated.

Flow connectivity surveys, water quality monitoring, and fish population surveys will be conducted again in 2026. Although originally scheduled for 2024 and 2025, the first bird surveys were conducted in 2025, and a second set of bird surveys will be conducted in 2026. In addition, a second set of wildlife surveys will occur in Bale Slough and the Napa River at Oak Knoll. To date, the 17.28 inches of precipitation at Napa State Hospital through WY 2026 has exceeded very dry conditions (9.52-15.57 inches) that would trigger supplemental surveys. This summer, the GSP technical team will develop the California Environmental Flows Framework assessment for the Napa Valley Subbasin using the results of the 2024 and 2025 surveys.

## **ENVIRONMENTAL IMPACT**

**ENVIRONMENTAL DETERMINATION:** The proposed action is not a project as defined by 14 California Code of Regulations 15378 (State CEQA Guidelines) and therefore CEQA is not applicable.

**SUPPORTING DOCUMENTS**

- A. Napa County Groundwater Sustainability Agency, Interconnected Surface Water and Groundwater Dependent Ecosystems Monitoring 2025 Update (Stillwater, April 2026)
- B. Stillwater Sciences, Napa Resource Conservation District, Napa County, and Luhdorff & Scalmanini, Consulting Engineers. 2026. Napa Valley Subbasin Interconnected Surface Water and Groundwater Dependent Ecosystems Monitoring, 2025. Available at:  
<https://www.napacounty.gov/DocumentCenter/View/42177/ISW-and-GDE-Monitoring-2025>



# Groundwater Dependent Ecosystems Monitoring 2025

Esther Adelstein, Stillwater Sciences  
eadelstein@stillwatersci.com



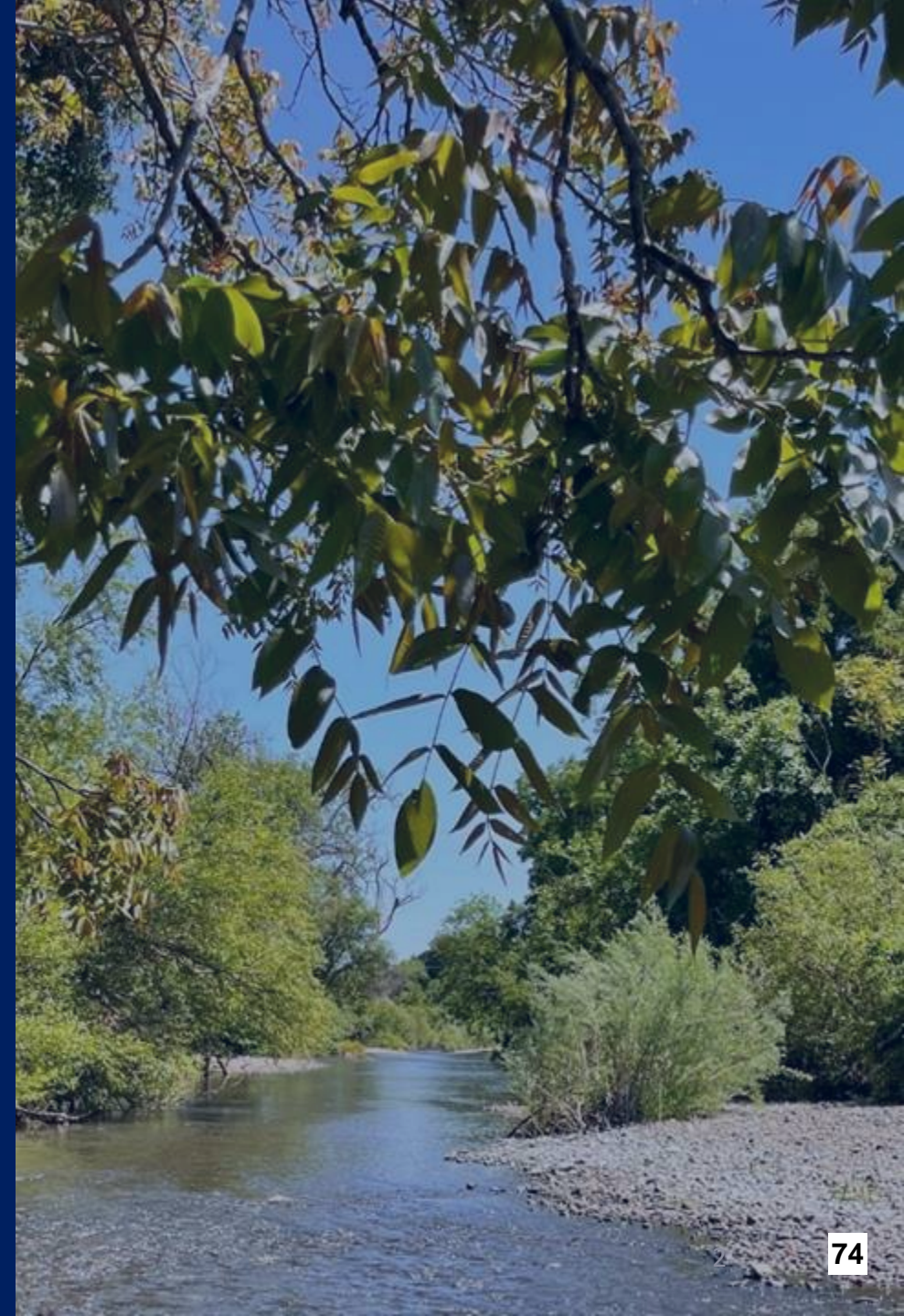
# Workplan Objectives

## Monitoring





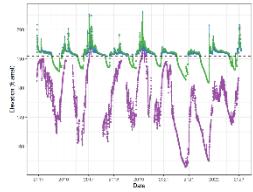







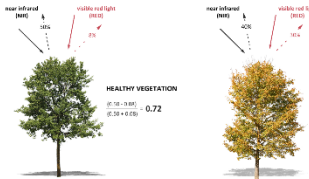
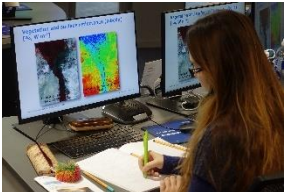
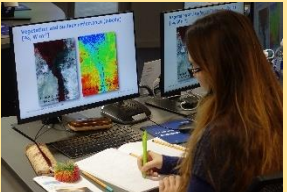
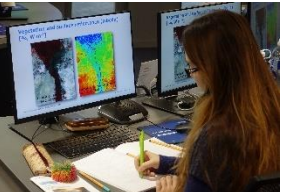
- What ecosystem components are at intensive monitoring sites (what species are present)?
- What are the groundwater elevation and surface water dynamics?

## Analysis














- What are the biological flow and groundwater needs for each ecosystem component?
- Use California Environmental Flows Framework (CEFF) to assess ecological flow needs.
- Periodic Evaluation will focus on analysis, to be discussed next meeting.



# Ongoing Monitoring Schedule

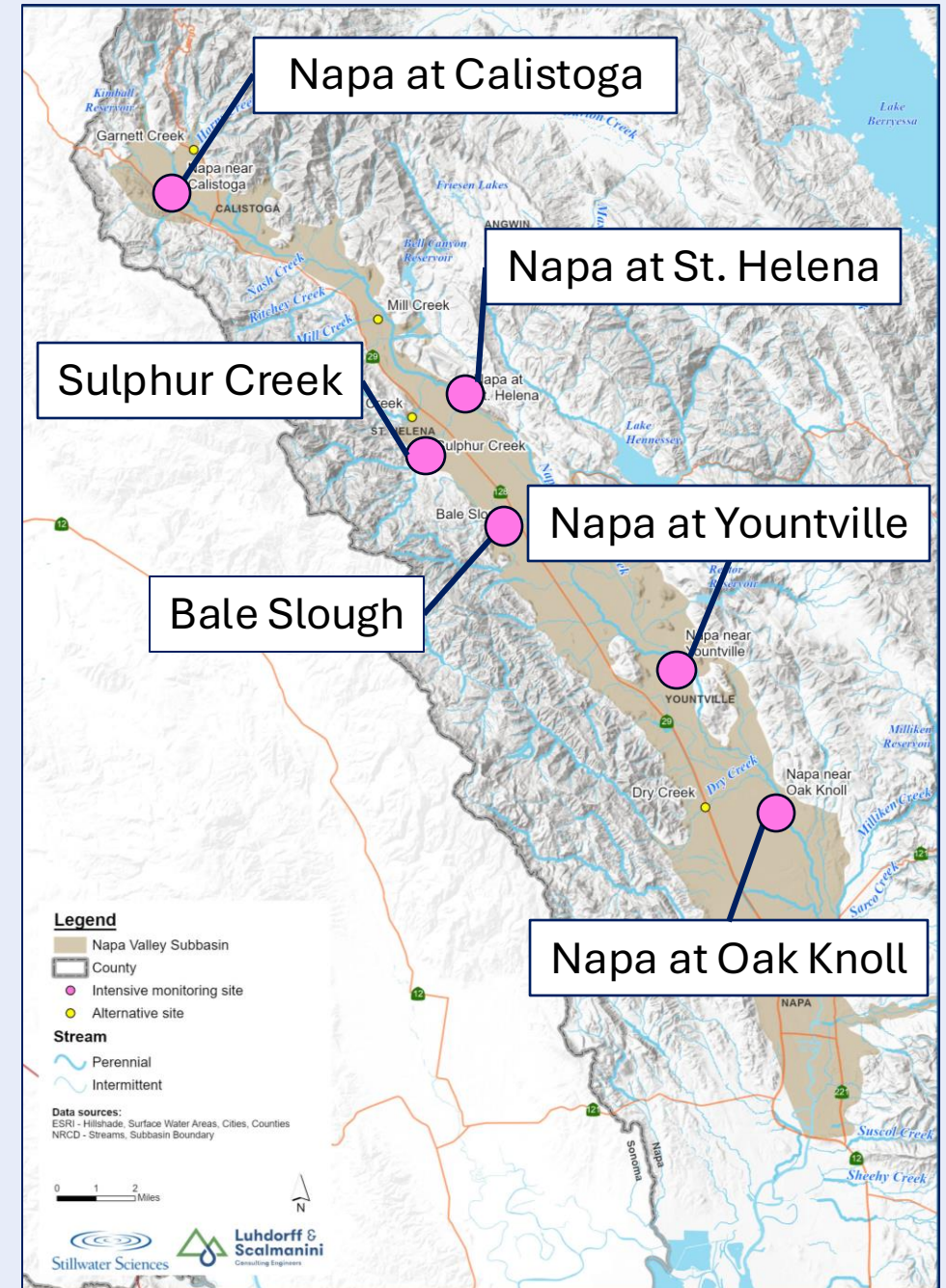
	2024	2025	2026	2027
 <p>Stream Watch</p>				Periodic Evaluation (January)
 <p>Shallow Groundwater Monitoring</p>				Periodic Evaluation (January)
 <p>Napa RCD fish surveys</p>				Periodic Evaluation (January)
 <p>Remote Sensing of GDEs</p>				Periodic Evaluation (January)

# Ongoing Monitoring Schedule (continued)

		2024	2025	2026	2027
	Fish Habitat and Usage				Periodic Evaluation (January)
	Aquatic Wildlife			Optional (Flood, Drought)	Periodic Evaluation (January)
	Vegetation Health and Rare Plants			Optional (Flood, Drought)	Periodic Evaluation (January)
	Terrestrial Wildlife (Birds)				Periodic Evaluation (January)

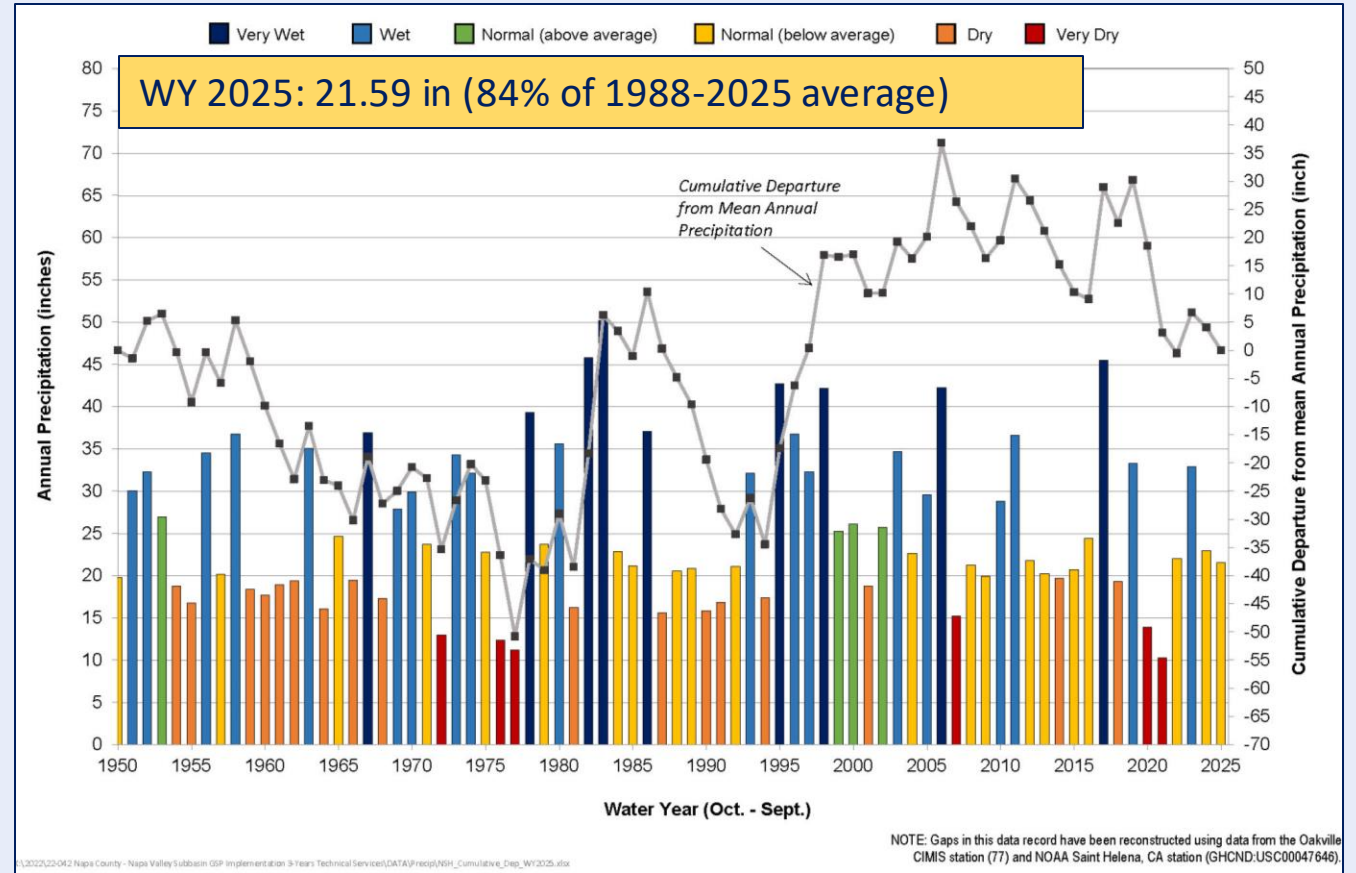
# ISW and GDEs Workplan Implementation

- Six intensive survey sites identified in the Workplan.
- Surveys conducted at all 6 sites in 2025.
- Stillwater led three field trips, which included members of the TAG and NCGSA.



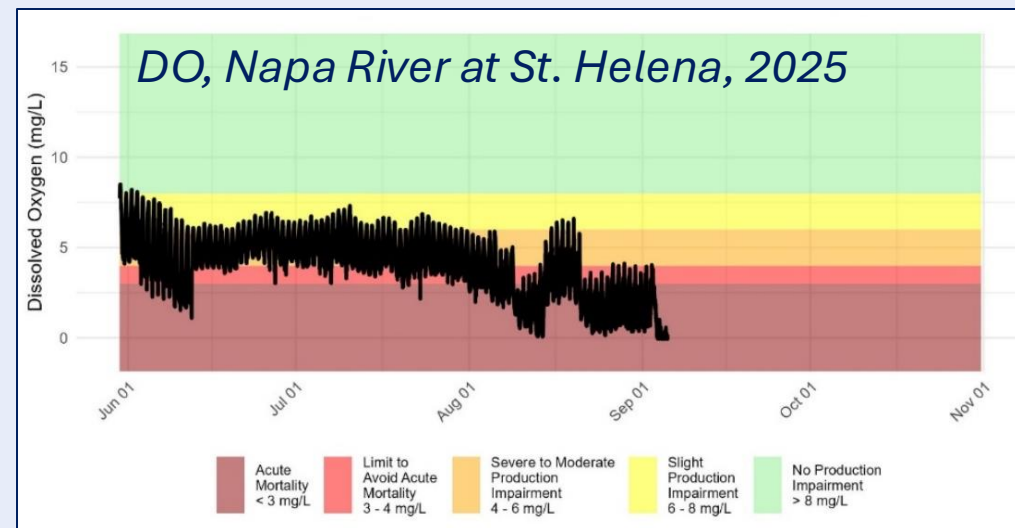
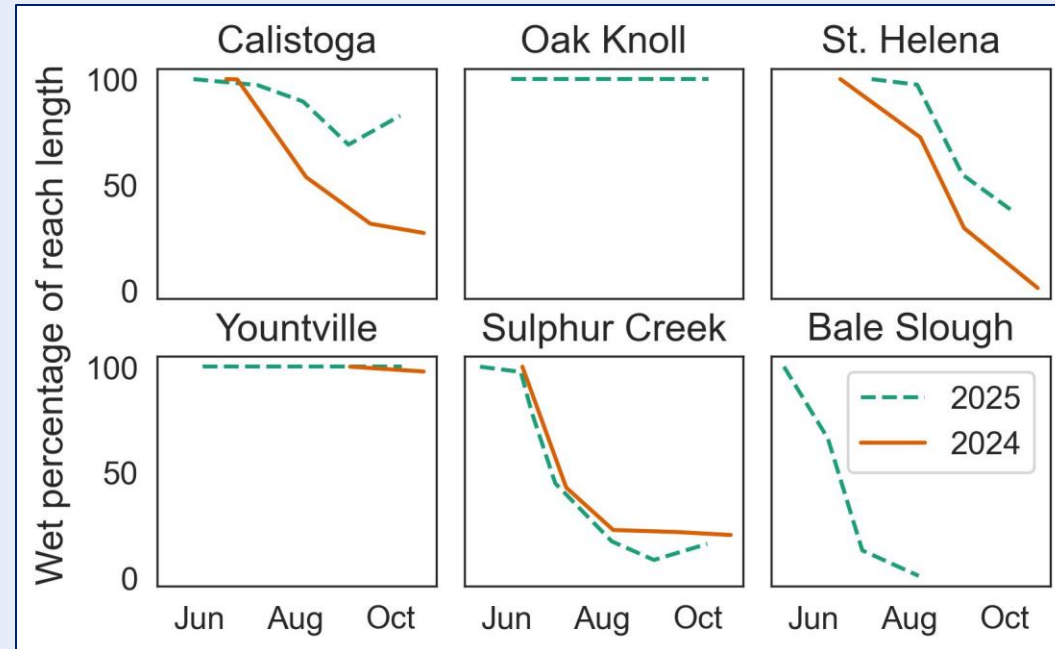
# Climate

- 2025 had normal (below average) precipitation in the southern portion of the basin.
- 2025 was much wetter relative to the historical record in the northern portion of the basin.
- July and August 2025 were relatively cool compared with the historical record.



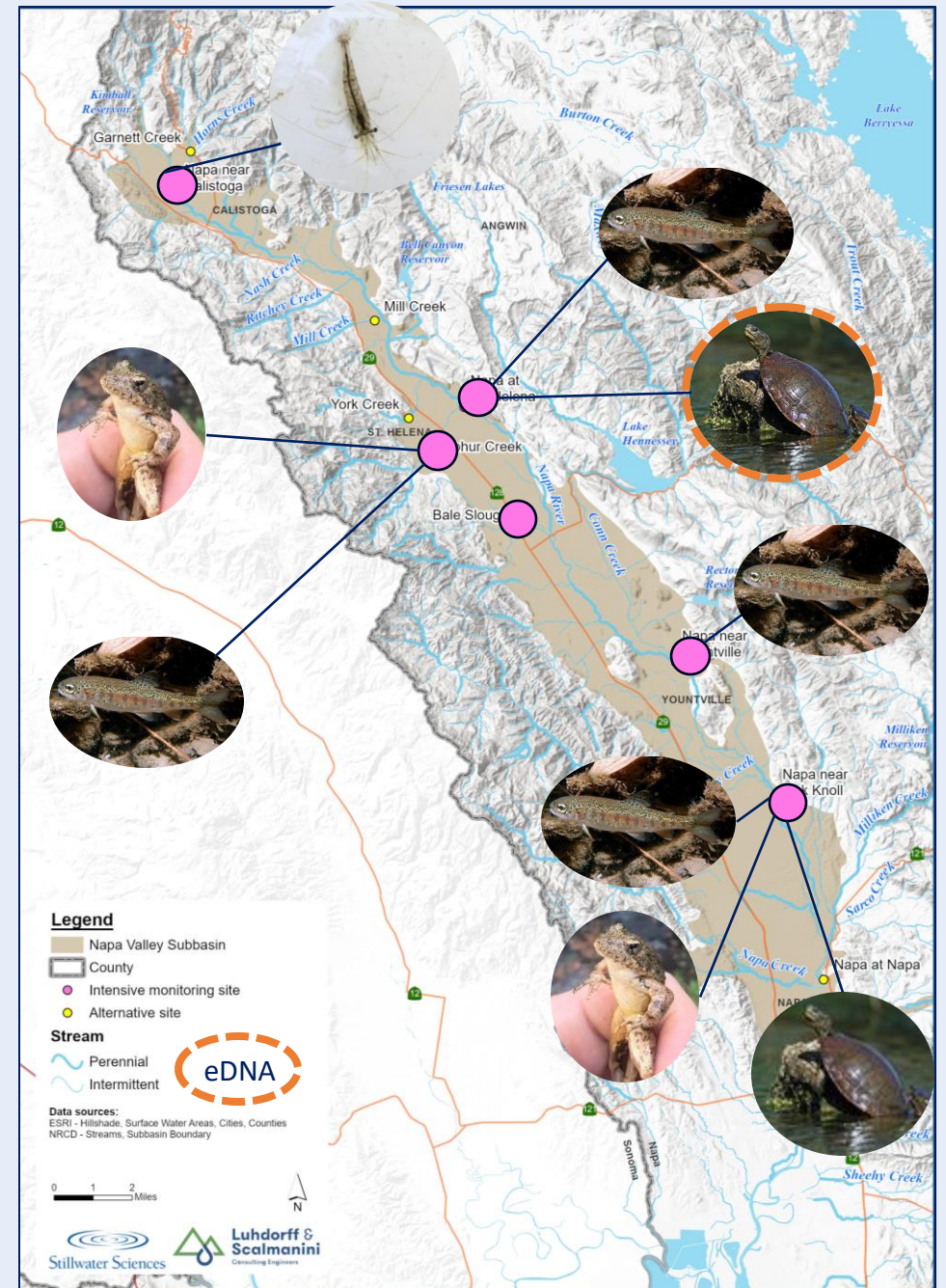
# Flow Connectivity and Water Quality Summary

- USGS gage at Oak Knoll did not go dry in 2025
- USGS gage at St. Helena went dry on August 28, 2025
- Sulphur Creek and St. Helena stayed wetter than in 2024
- Temperature and dissolved oxygen generally stressful for steelhead



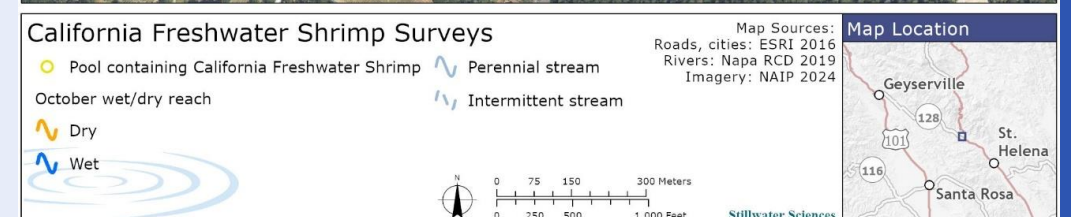
# 2025 Biological Survey Summary

- **Juvenile steelhead** observed at St. Helena, Sulphur Creek.
- **Adult steelhead** observed at Yountville.
- **Juvenile Chinook salmon** observed at all sites.
- **Foothill yellow-legged frogs** observed in tributaries only (Sulphur Creek and Dry Creek).
- **Northwestern pond turtle** observed at Oak Knoll and detected from eDNA sampling at St. Helena.
- **59 unique bird species** identified using sound recordings. One special-status species at the Napa River at St. Helena.
- **Minor vegetation stress** in mature trees on mainstem.



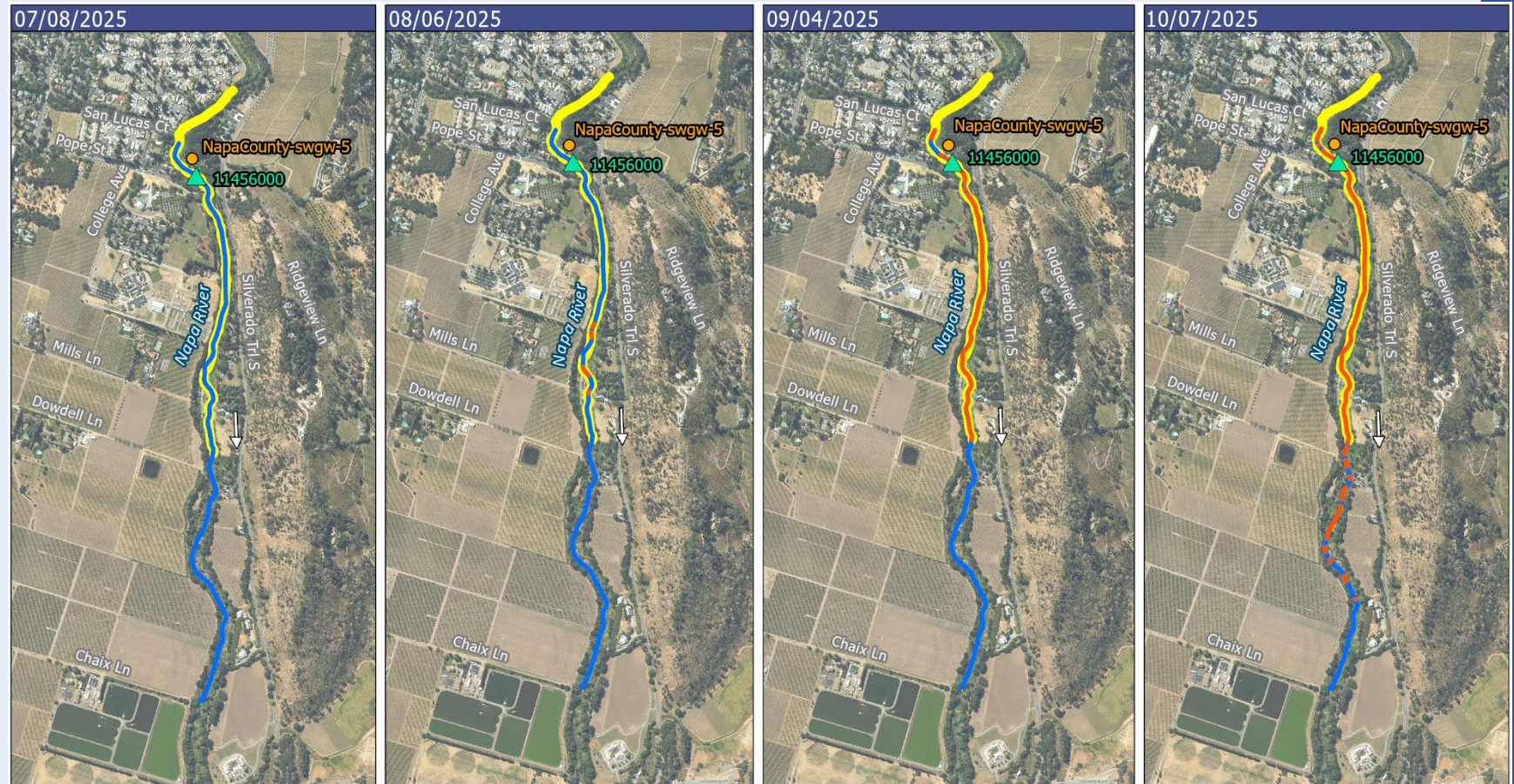
# Napa River at Calistoga: Biological Surveys

- California Freshwater Shrimp
  - 123 shrimp observed in isolated pools
  - 33 males, 32 females, 58 juveniles
  - Found throughout the reach and in Garnett Creek
- Fish
  - Juvenile chinook throughout
  - Abundant bluegill (non-native)
- Herps
  - Bullfrog tadpoles



# Napa River at St. Helena: Wet/Dry Mapping

- Upstream section of channel stayed wet through early August
- Surface flow observed at Pope Street on 8/28, isolated pools by 9/4
- Middle section started drying in early August, dry by September



Wet Dry Mapping: St. Helena

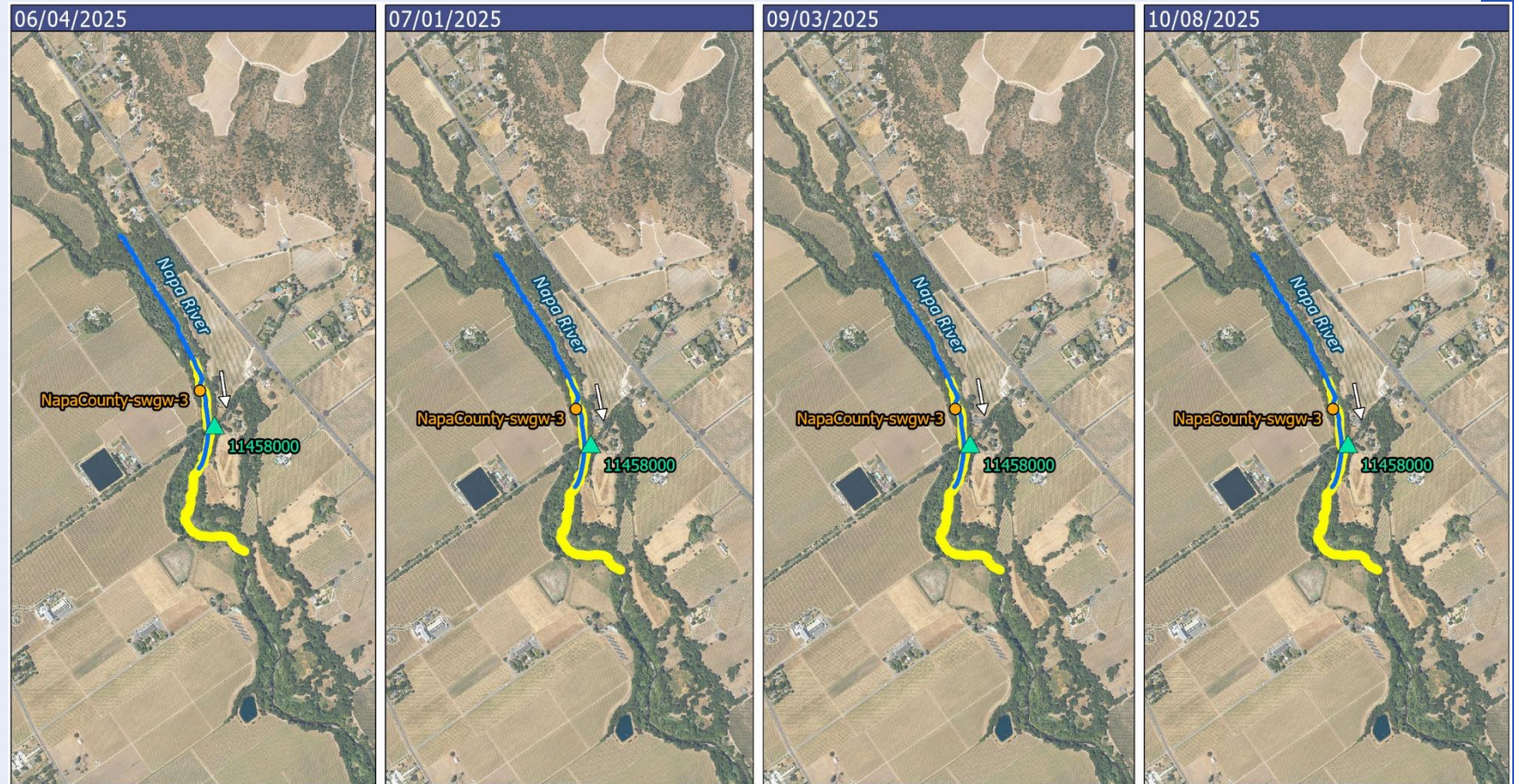
- Dry
- Wet
- Long profile
- ▲ Stream discharge monitoring site (USGS)
- Stream stage monitoring site (Napa County & NCFWCWD)
- ↖ Flow direction

Map Sources:  
 Roads, cities: ESRI 2016  
 Imagery: NAIP 2024  
 Wet/Dry Mapping: Napa RCD

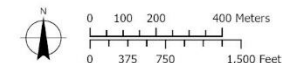
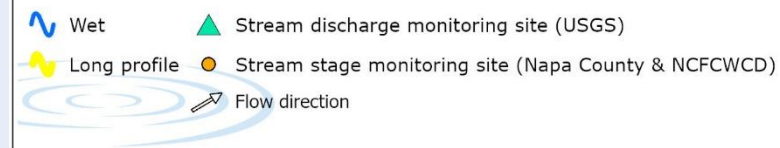


# Napa River at Oak Knoll: Wet/Dry Mapping

- Flowing year-round
- Beaver dams!



Wet Dry Mapping: Oak Knoll

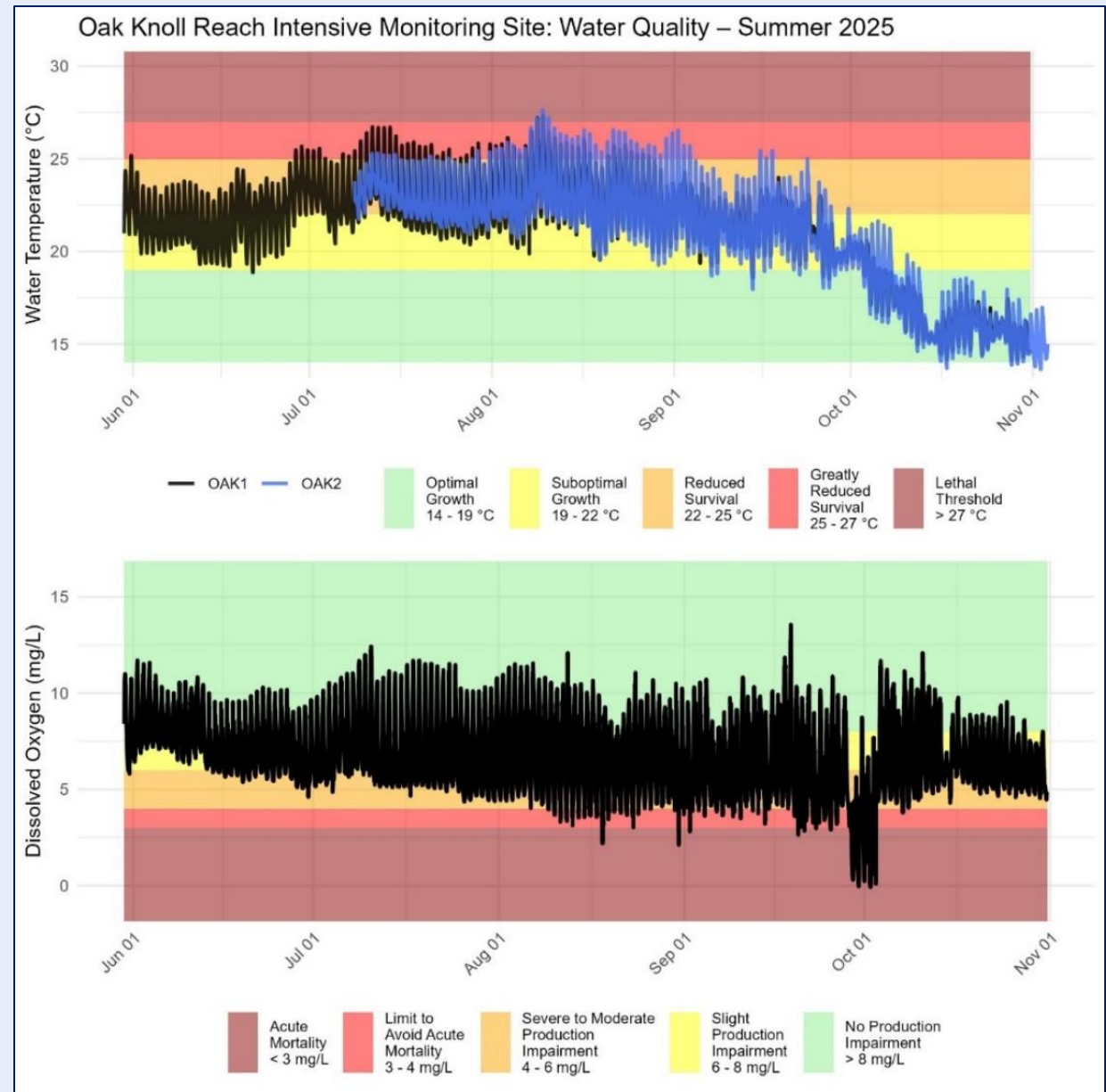


Map Sources:  
Roads, cities: ESRI 2016  
Imagery: NAIP 2024  
Wet/Dry Mapping: Napa RCD



# Napa River at Oak Knoll: Temperature and Dissolved Oxygen

- Temperature and DO somewhat suitable for steelhead in June
- Stressful water quality for juveniles
- Similar conditions at the Napa River near Yountville



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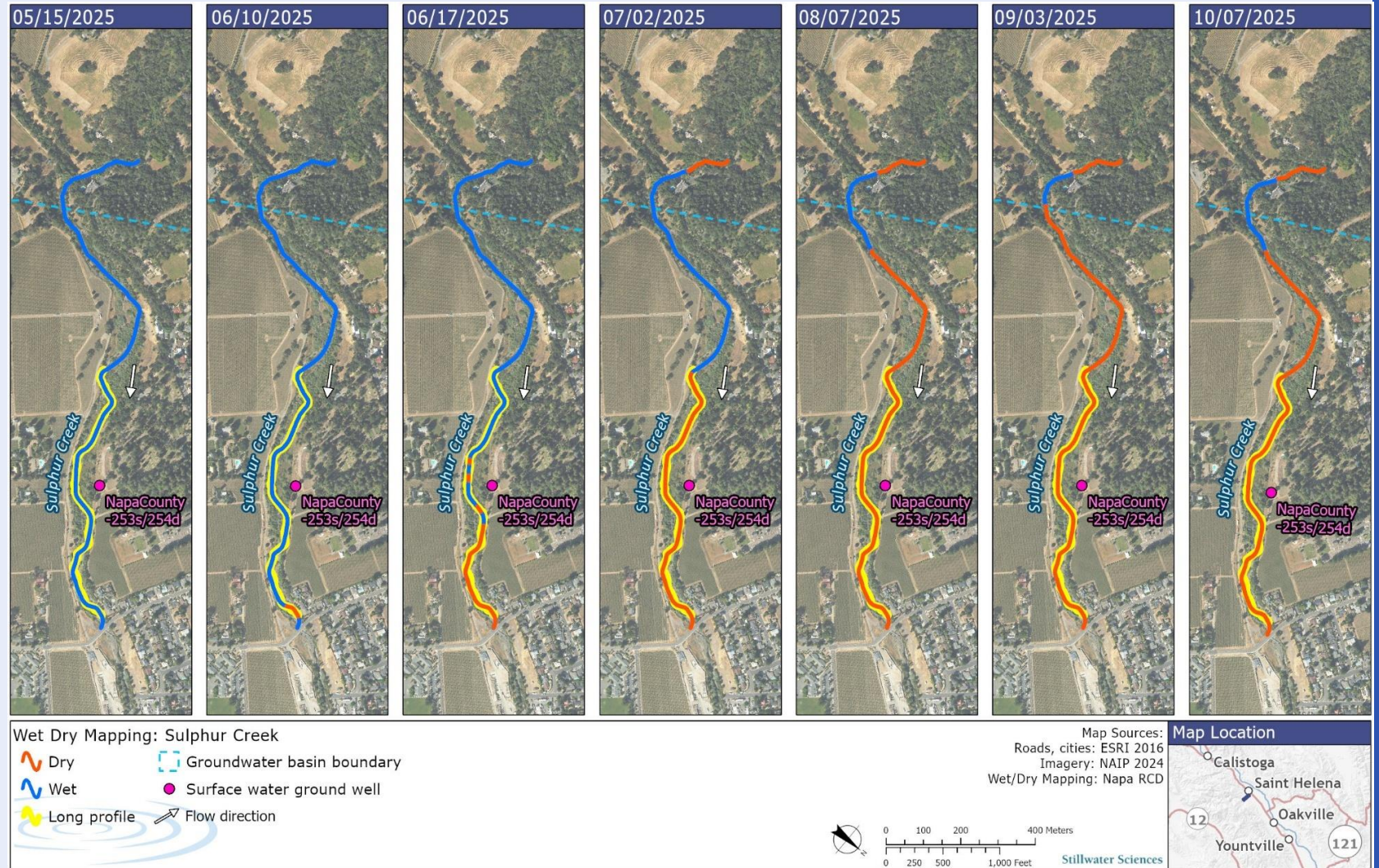
## Napa River at Oak Knoll: Biological Surveys

- Fish
  - 2 adult *O.mykiss*
  - 1 juvenile Chinook
- Herps
  - Northwestern pond turtles observed in June
  - Foothill yellow-legged frog detected in eDNA in June, observed at Dry Creek in July (habitat is poor at Oak Knoll)



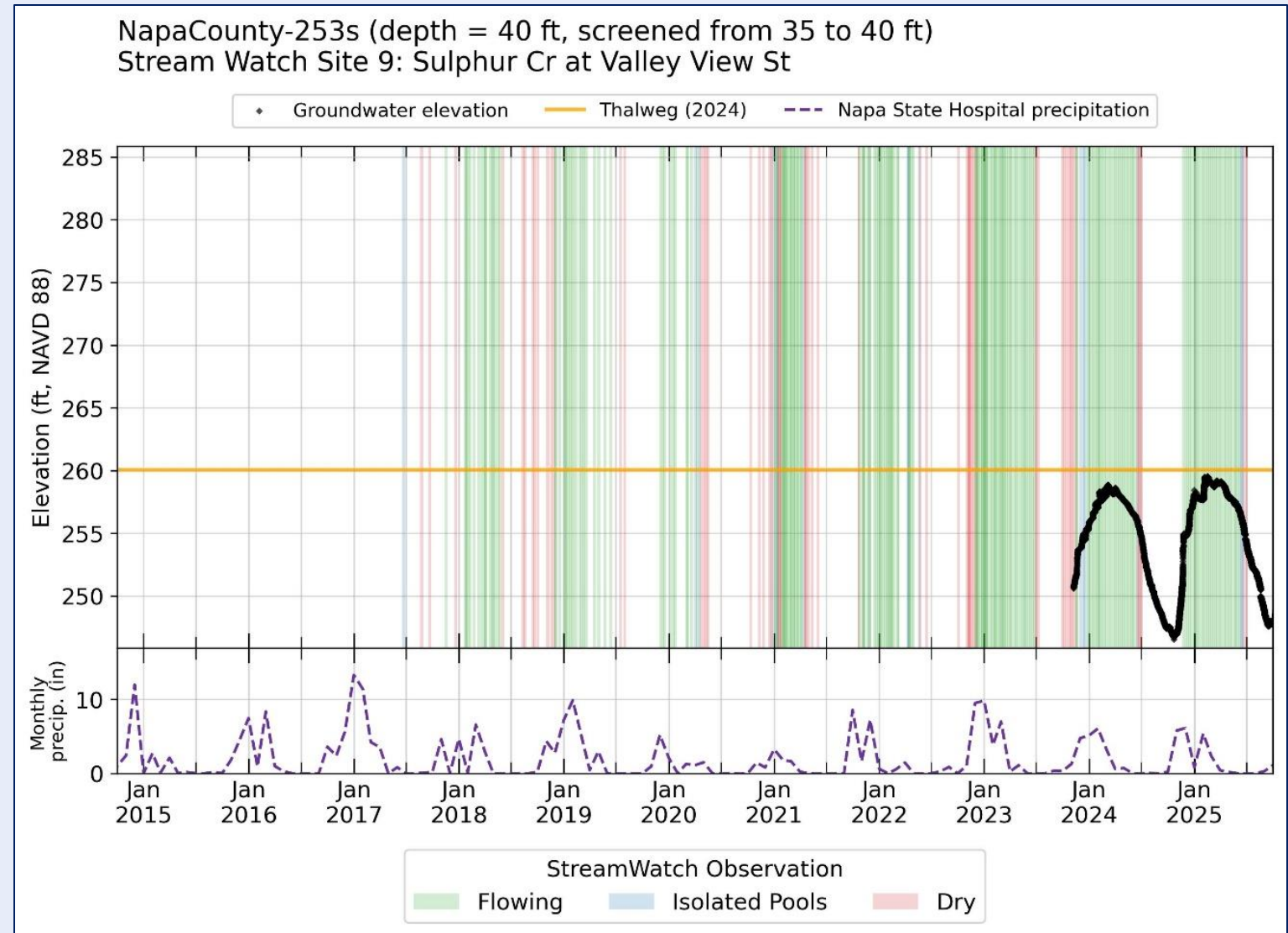
# Sulphur Creek: Wet/Dry Mapping

- Reach within basin began to dry by June
- Wet at Heath Canyon confluence year-round



# Sulphur Creek: Groundwater and Stream Watch

- Water table below channel thalweg throughout monitoring period
- Vegetation primarily upland and riparian herbaceous species unlikely to be GDEs



# Sulphur Creek: Biological Surveys

- Fish
  - 700+ juvenile steelhead in May, 200+ in June
  - Juvenile chinook
- Herps
  - Foothill yellow-legged frog egg masses (April) and tadpoles (April-June)
  - 1,471 foothill yellow-legged frogs relocated upstream during fish passage restoration project



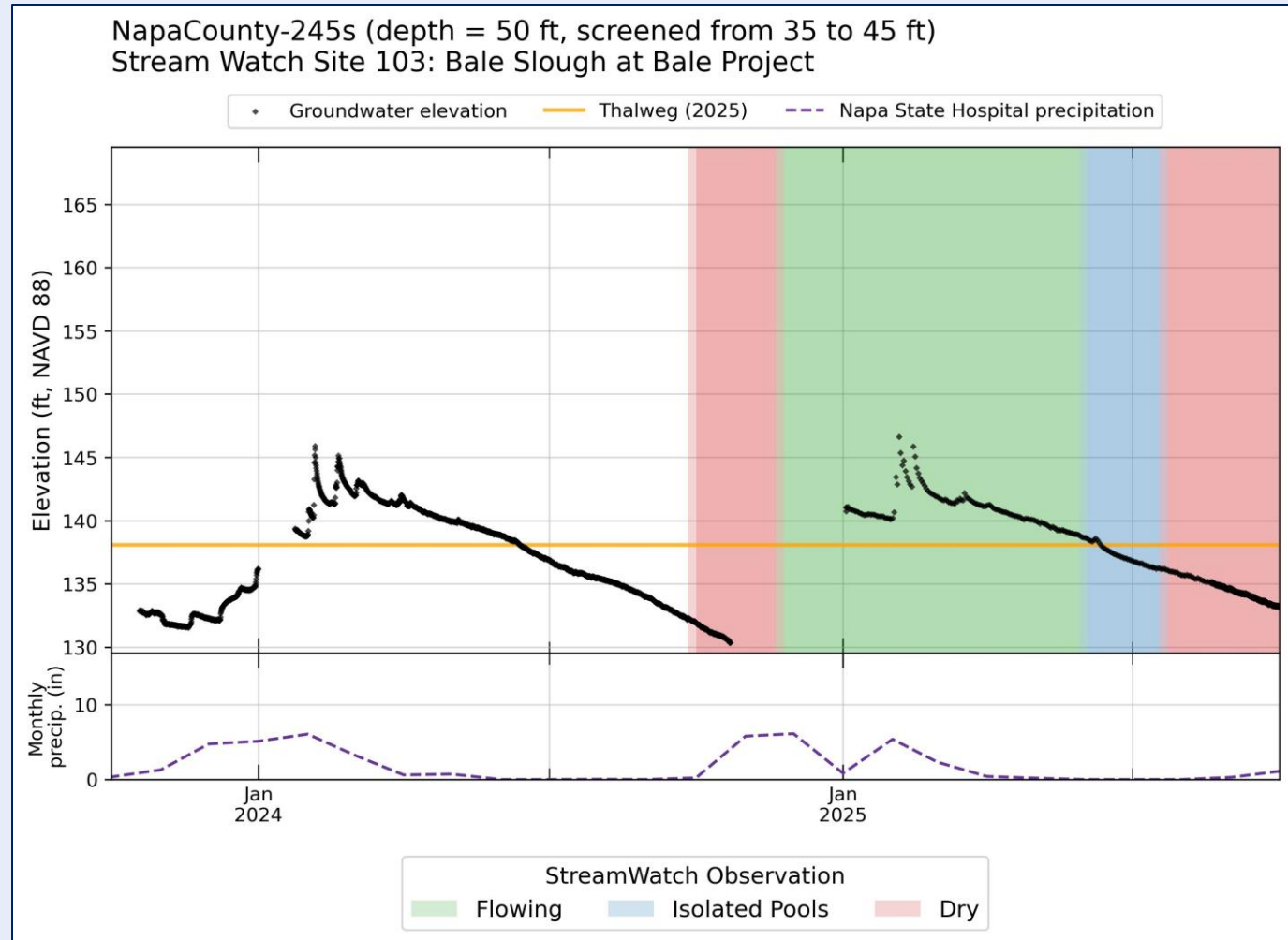
# Bale Slough: Wet/Dry Mapping

- Dries from downstream to upstream
- Isolated pools in early June
- Mostly dry by July
- Restoration completed in 2023



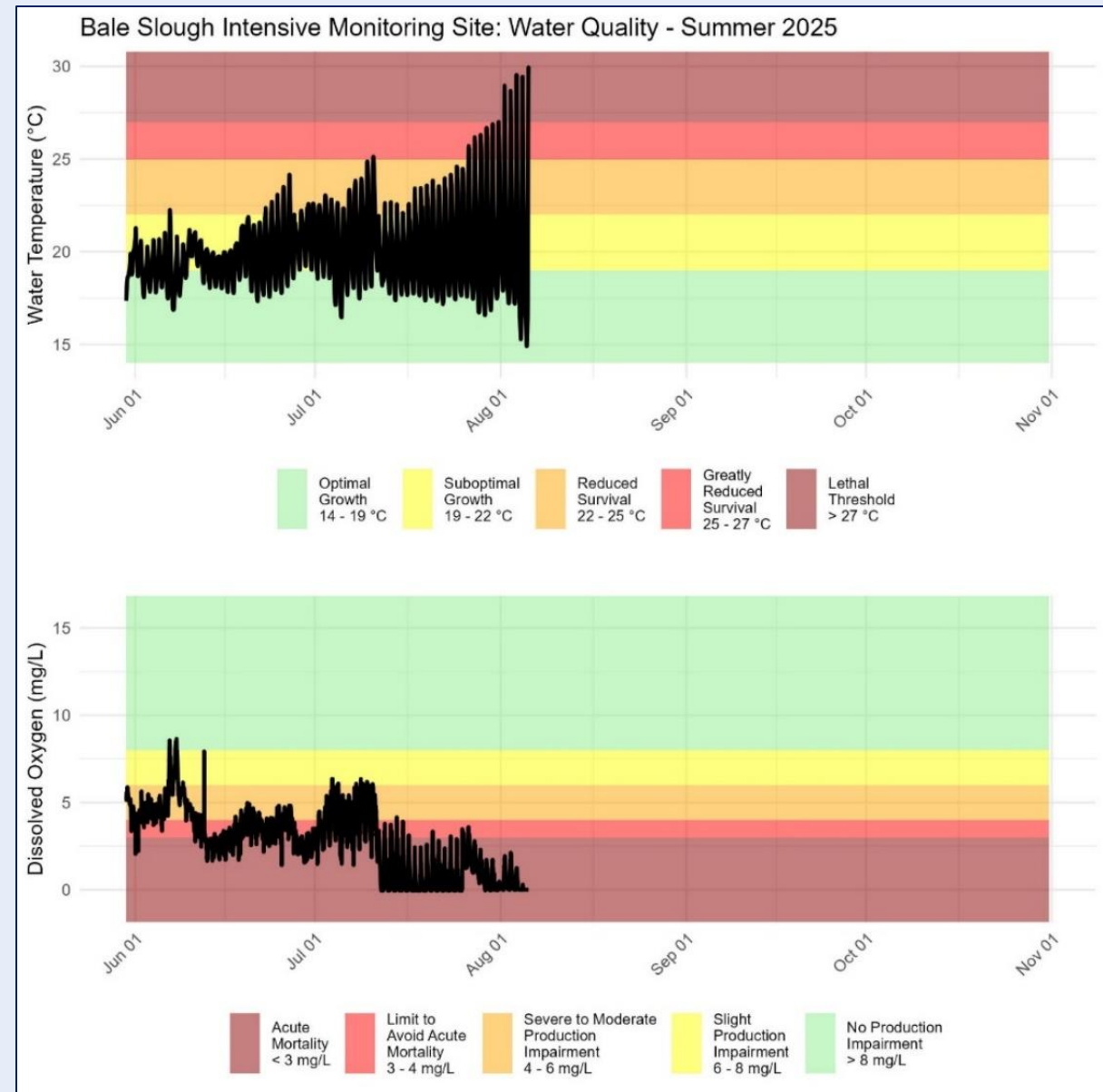
# Bale Slough: Groundwater and Stream Watch

- Dried as water table fell below channel thalweg
- Likely groundwater dependent
- Only a few fish observations (likely migration reach)
- No special-status herps
- Beaver pond!



# Bale Slough: Temperature and Dissolved Oxygen

- Temperature and DO somewhat suitable for steelhead in early June (several juvenile Chinook observed)
- Stressful temperature and DO otherwise
- Generally unsuitable habitat for salmonids



# 2026 Planned Surveys

## RCD

- Dissolved oxygen and temperature sensors redeployed in April
- Habitat connectivity surveys (wet/dry mapping)
- Fish population surveys

## Stillwater

- Birds (audio recorders deployed in March)
- Oak Knoll: herps; Bale Slough: herps, veg



# ISW and GDE Workplan Goal: ...better understand the conditions required to protect and enhance healthy terrestrial and aquatic GDEs

## Current Conditions:

- Juvenile steelhead abundant on Sulphur Creek
- Water temperature and dissolved oxygen stressful but slightly better in early summer
- 2024-2025 variability
  - More Chinook observed in 2025
  - June water quality slightly better in 2025: higher flows and cooler air temperature



# ISW and GDE Workplan Goal: ...better understand the conditions required to protect and enhance healthy terrestrial and aquatic GDEs

## In 2026:

- Periodic Evaluation will summarize 2024 and 2025 monitoring
- CEFF analysis will explore habitat requirements and flow-ecology relationships





# Questions and Discussion

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# Napa County

## Board Agenda Letter

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Groundwater Technical Advisory Group **Agenda Date:** 4/9/2026

**File ID #:** 26-931

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**TO:** Technical Advisory Group for the Napa County Groundwater Sustainability Agency  
**FROM:** Brian D. Bordona, Director of Planning, Building and Environmental Services  
**REPORT BY:** Jamison Crosby, Natural Resources Conservation Manager  
**SUBJECT:** Presentation on Public Draft 2026 Water Availability Analysis

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### **RECOMMENDATION**

The TAG will receive a presentation by staff and technical consultants on the Napa County Public Draft 2026 Water Availability Analysis (WAA) Guidance document and supplemental Technical Report for Napa County's updated draft well permitting standards.

#### Procedure

Staff introduces.  
Questions and answers with the TAG.  
Public comments.

### **BACKGROUND AND DISCUSSION**

In a presentation to the TAG on January 12, 2023, (then) Interim Director of Planning Building and Environmental Services (PBES), Brian Bordona, provided background information on the chronology of events which led to the development and evolution of Napa County's Water Availability Analysis (first adopted in 1991 and revised in 2015) and set the stage for further revisions which have been incorporated into the 2026 Public Draft WAA Guidance document.

The Napa County Board of Supervisors (BOS) is committed to preserving groundwater for agriculture and rural residential uses within the County. The Public Draft 2026 WAA Guidance supports groundwater policies in the Napa County General Plan which will be updated starting in summer 2026 following the completion of an updated Baseline Data Report (BDR) which was released to the public in March 2026. Through proper management, water conservation, and ongoing stewardship of natural resources, the groundwater and interconnected surface water resources found within the County can be sustained for future generations.

The 2026 update reflects recent regulatory developments, including Governor Newsom's Executive Orders (2022-2024) and formally integrates the Interim Well Permitting Requirements adopted by the Board in June 2023. It also addresses key groundwater and interconnected surface water management considerations that have emerged since the last major update in 2015, which followed adoption of the Sustainable Groundwater Management Act (SGMA) in 2014.

The updated WAA applies to project applications involving groundwater use through existing, improved, or new water supply systems, as well as proposals that would increase the intensity of groundwater extraction on a

parcel. It will most commonly be required for discretionary projects that rely on groundwater, such as wineries, vineyard development, commercial uses, and certain residential projects.

By formally integrating these updates, the 2026 WAA establishes a cohesive framework that aligns local project review with state groundwater sustainability requirements, with the goal of achieving subbasin sustainability by 2042. The release of these draft documents represents an important step in protecting Napa County's groundwater resources and watersheds, while providing clear and objective standards for applicants and decision-makers.

The Public Draft 2026 WAA Guidance document was posted on the PBES homepage for public comment on March 27, 2026. Comments may be submitted through May 26th to [groundwater@countyofnapa.org](mailto:groundwater@countyofnapa.org). The draft is available at <https://www.napacounty.gov/589/Planning-Building-Environmental-Services>.

### **ENVIRONMENTAL IMPACT**

ENVIRONMENTAL DETERMINATION: The proposed action is not a project as defined by 14 California Code of Regulations 15378 (State CEQA Guidelines) and therefore CEQA is not applicable.

### **SUPPORTING DOCUMENTS**

- A. Presentation: Patrick Ryan, Napa County Assistant Planning Director PBES, Napa County Public Draft 2026 Water Availability Analysis Guidance Document and Technical Report.

***Napa County Public Draft  
2026 Water Availability Analysis  
Guidance Document and  
Technical Report***

**Patrick Ryan, Napa County PBES Assistant Director  
Vicki Kretsinger Grabert, Luhdorff & Scalmanini**

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April 9, 2026





# Outline

**Napa County Groundwater  
Management and Water  
Availability Analysis (WAA)**

**Public Draft 2026 WAA Procedure  
and Screening Process**

**Summary of 2026 Updates and  
Next Steps**

# Napa County: Groundwater Management and Water Availability Analysis

## ❖ Napa County Groundwater Conservation Ordinance:

- County Code Section 13.15, describes activities requiring discretionary approval of use permits to develop groundwater as a source of water supply.

## ❖ Water Availability Analysis (WAA) (1991 through 2015):

- Established groundwater use thresholds across residential, agricultural, commercial, and industrial sectors, based on the premise that projects must operate so as not to create a net deficit in the local groundwater supply.

## ❖ 2015 WAA includes components for evaluating:

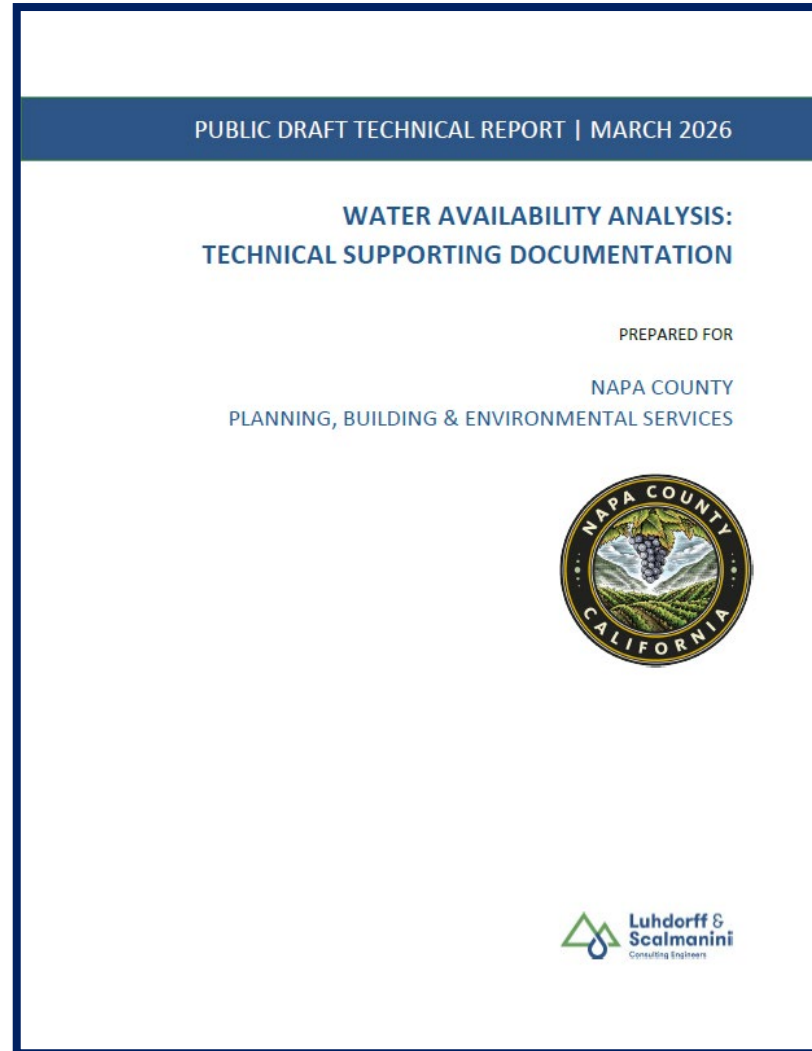
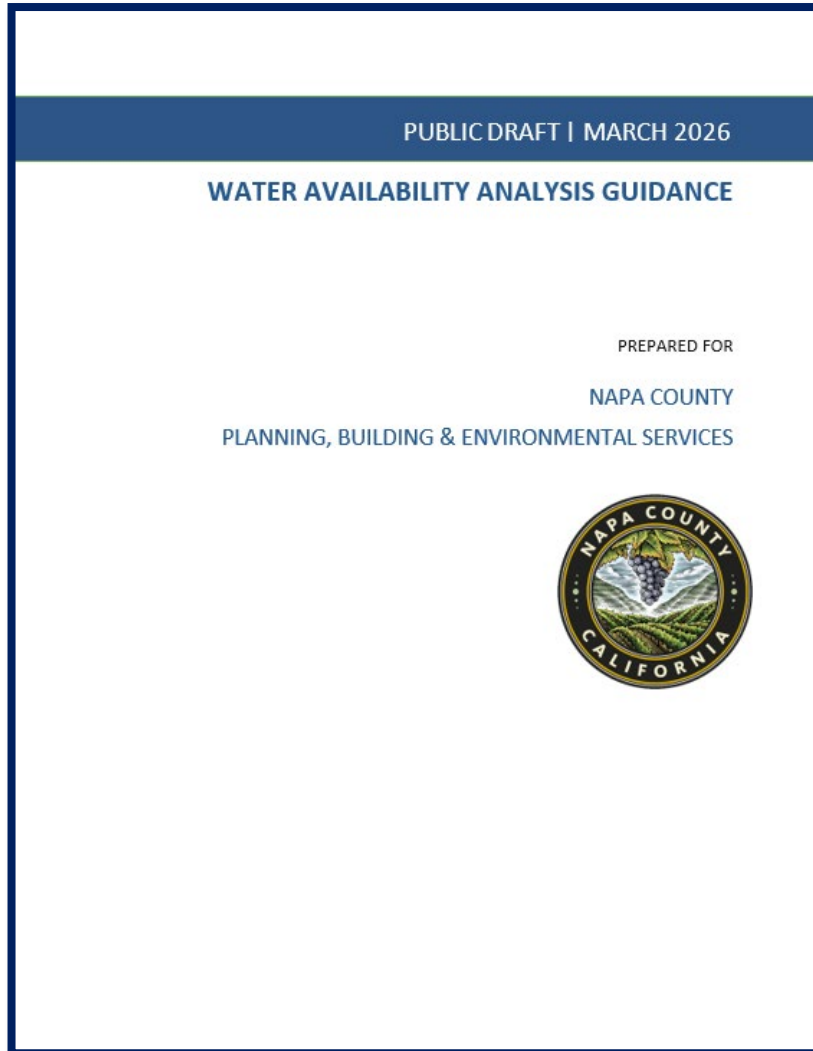
- Potential adverse impacts on the groundwater basin as a whole,
- On groundwater levels in neighboring non-project wells, and
- On surface waters.

## ❖ Napa Valley Subbasin Groundwater Sustainability Plan (2022)

## ❖ Governor's Executive Order N-7-22, Public Trust, and Related Actions (2022-2023)

## ❖ Public Draft 2026 WAA Guidance Document and Technical Report

# Public Draft 2026 WAA Guidance and Technical Report



**Two Public Draft Documents released  
March 27 for review  
and feedback**

# 2026 WAA Guidance Document and Technical Report

## Summary of Changes to 2015 WAA for the 2026 WAA

WAA Requirement	WAA Change
Groundwater Use and WAA Applicability	<b>3</b> existing groundwater areas (and <b>1</b> new area located within the Napa Valley Subbasin) are delineated for specific WAA requirements.
Tier 1: Groundwater Use	Groundwater use criteria are updated for the areas delineated in the WAA; the determination of recharge for areas outside the Napa Valley Subbasin is streamlined.
Tier 2: Well and Spring Interference	Clarification of methodology
Tier 3: Surface Water and Groundwater Interaction	Additional screening criteria and protective standards for groundwater extraction inside and outside the Napa River Watershed, within 1,500 feet of significant streams

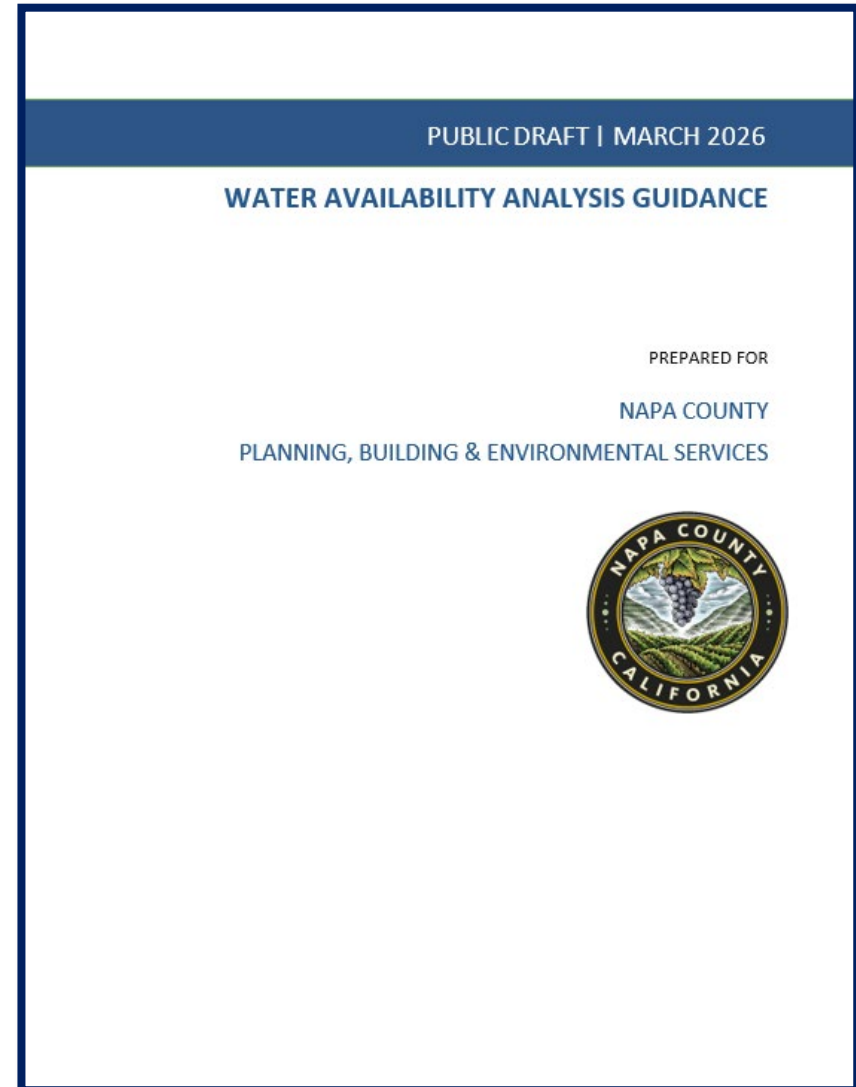
# 2026 WAA Procedure and Screening Process

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# 2026 WAA Procedure and Screening Process

- Extraction Locations
- Screening Process
  - ❖ Tier 1: Water Use Criteria
  - ❖ Tier 2: Well Interference Criterion
  - ❖ Tier 3: Groundwater/Surface Water Interaction (Potential Streamflow Depletion) Criterion

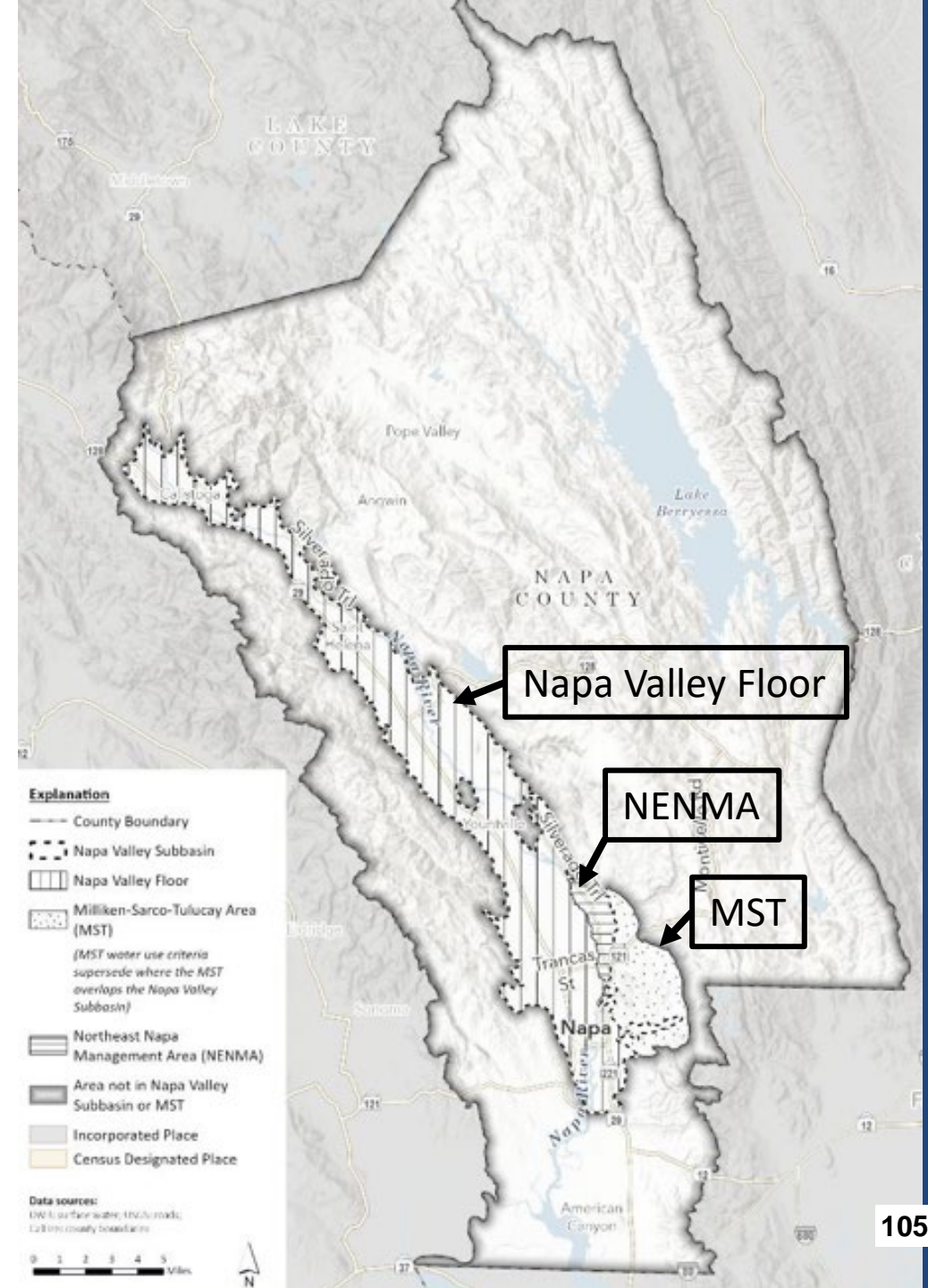


# 2026 WAA Procedure and Screening Process: Extraction Locations

*Historical WAAs referred to the Napa Valley Floor, but very specific Groundwater Sustainability Plan (GSP) requirements apply to the Napa Valley Subbasin.*

## 2026 WAA Extraction Locations Clarified:

- **Napa Valley Floor:** Area excluding Northeast Napa Management Area (NENMA) and portion of Subbasin extending into MST
- **NENMA:** formally designated area in GSP
- **Milliken-Sarco-Tulucay (MST):** Refined groundwater deficient area
- **All Other Areas:** Areas outside the Subbasin and the MST



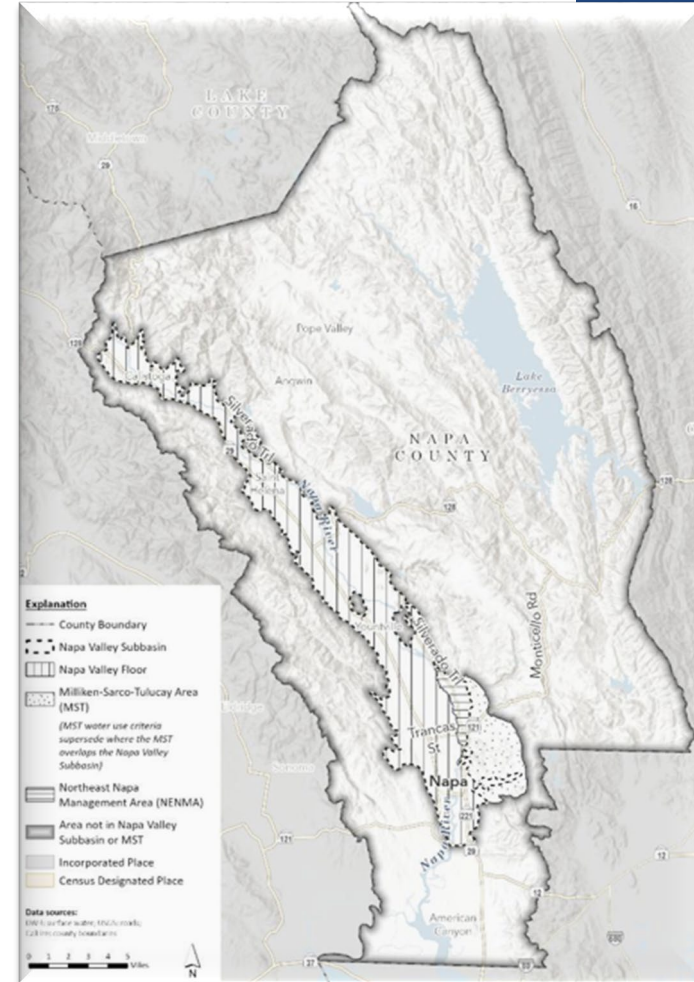


# 2026 WAA Procedure and Screening Process: Tier 1

## Water Use Criteria

2026 WAA updates the method to determine the water use criteria for the Napa Valley Subbasin; considerations include:

- Sustainable yield of approximately 15,000 ac-ft/year determined for the Napa Valley Subbasin and documented in the most recent NCGSA-adopted and DWR-approved GSP.
- The proportion of the Napa Valley Subbasin sustainable yield that applies to designated management areas. (In 2026, this includes the Northeast Napa Management Area (NENMA) and the analyses conducted to determine the proportion of the Subbasin sustainable yield for the NENMA.)
- Current land use data.
- Current appropriative uses of groundwater (this includes the City of St. Helena at its designated “safe yield” of 350 acre-feet/year).



# 2026 WAA Procedure and Screening Process: Tier 1 Water Use Criteria

- Based on the Napa Valley Subbasin sustainable yield of 15,000 acre-feet/year, the sustainable yield is proportioned into 3 parts.

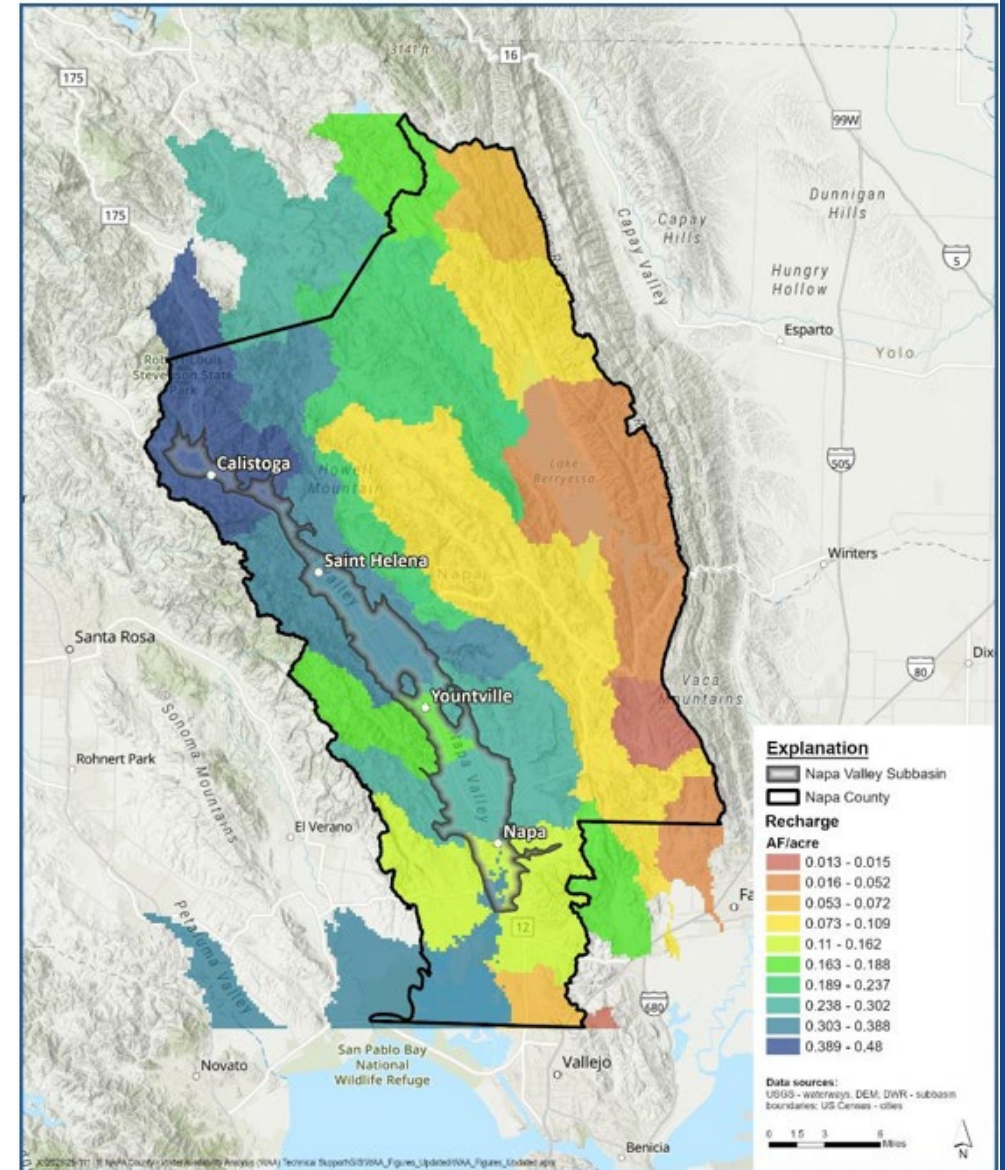
Groundwater Use Areas in the Napa Valley Subbasin	Acre-Feet/Year
<b>Napa Valley Floor</b> for areas with overlying groundwater uses (Subbasin area excluding NENMA and the portion of the Subbasin extending into the MST) and minus the appropriative use by the City of St. Helena	14,100
<b>NENMA</b> for areas with overlying groundwater uses	550
City of St. Helena appropriative use (assumed to be equal to the small proportion [2.3 percent] of the Subbasin sustainable yield allotted to the City) (an appropriative right is the right to divert and use a specific quantity of water)	350
<b>Total</b>	<b>15,000</b>



Voluntary efforts to engage in and promote **Water Conservation as a Napa Way of Life** are encouraged.

# 2026 WAA Procedure and Screening Process: Tier 1 Site-Specific Recharge Analysis

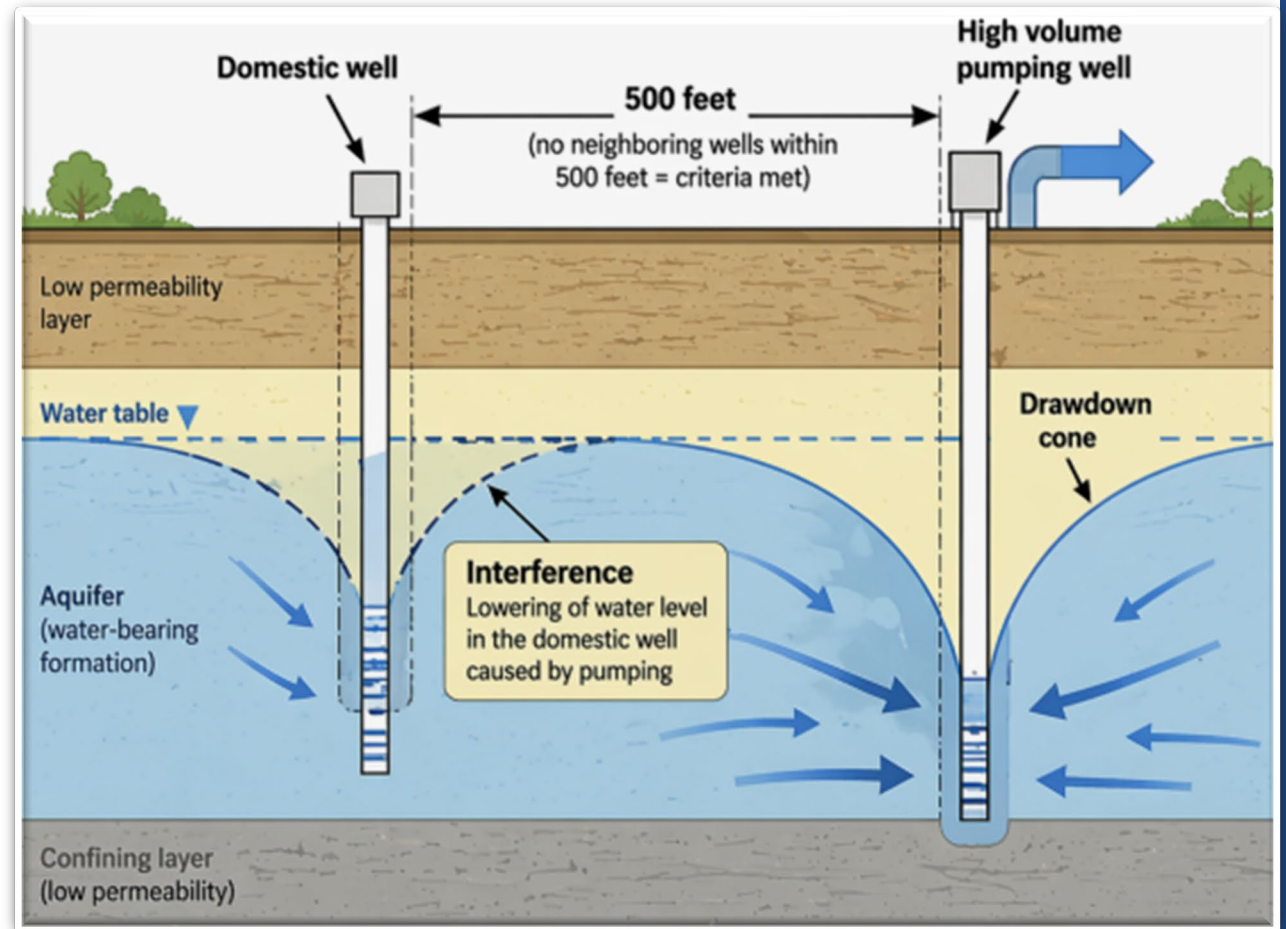
- **Streamlined Method**
  - Recharge estimates developed based on USGS Basin Characterization Model and a 10-year (2012-2021) period of PRISM data and site-specific information (parcel size, area with slope less than 30 percent)
- **Alternative Method**
  - Applicant may elect to have a site-specific analysis conducted by a registered professional



# 2026 WAA Procedure and Screening Process: Tier 2

## Well Interference Criterion

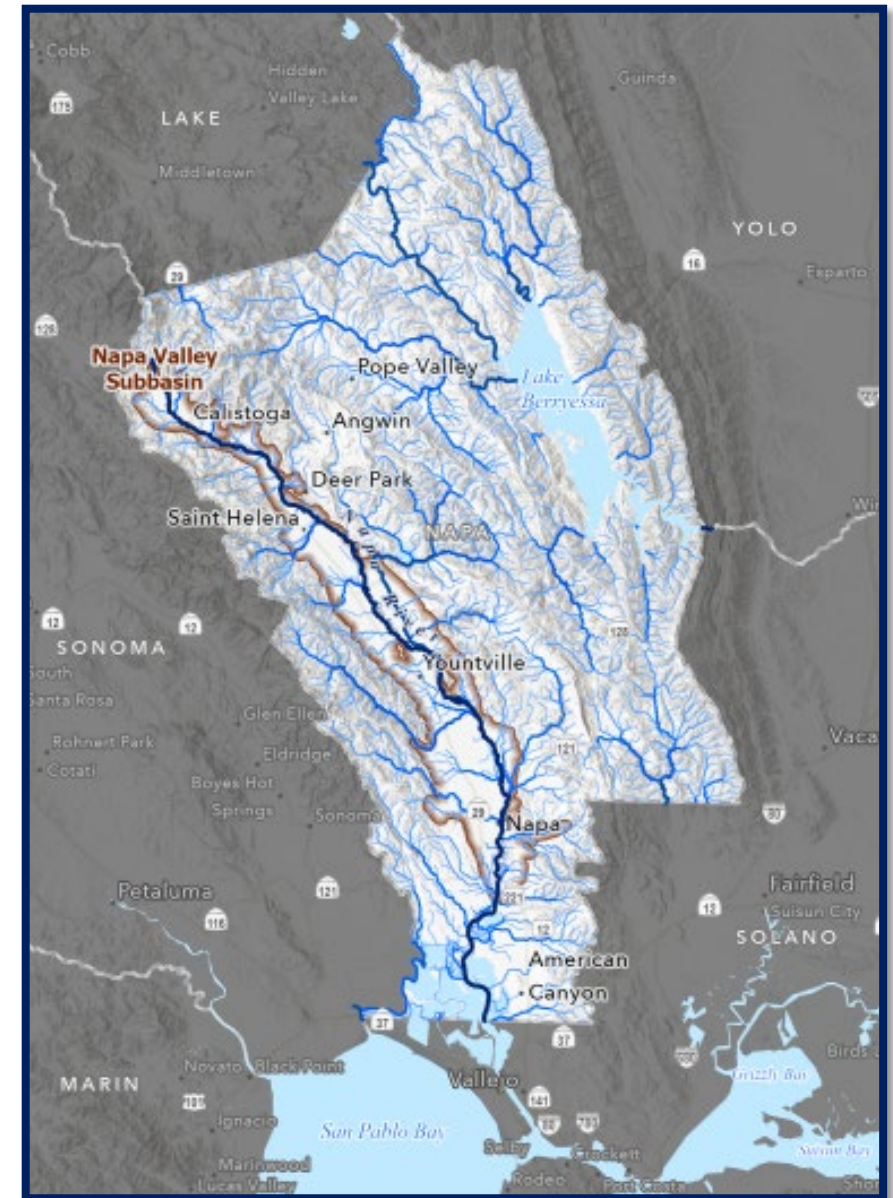
- Well interference criterion is presumptively met if there are no neighboring wells located within 500 ft of the applicant's existing or proposed well(s).
- New or replacement domestic wells planned to be located within 500 ft of a neighboring well(s) should be sited as far as feasible from neighboring well(s).
- 2026 WAA clarifies the methodology for conducting the Tier 2 analysis.



# 2026 WAA Procedure and Screening Process: Tier 3 Groundwater/Surface Water Criterion

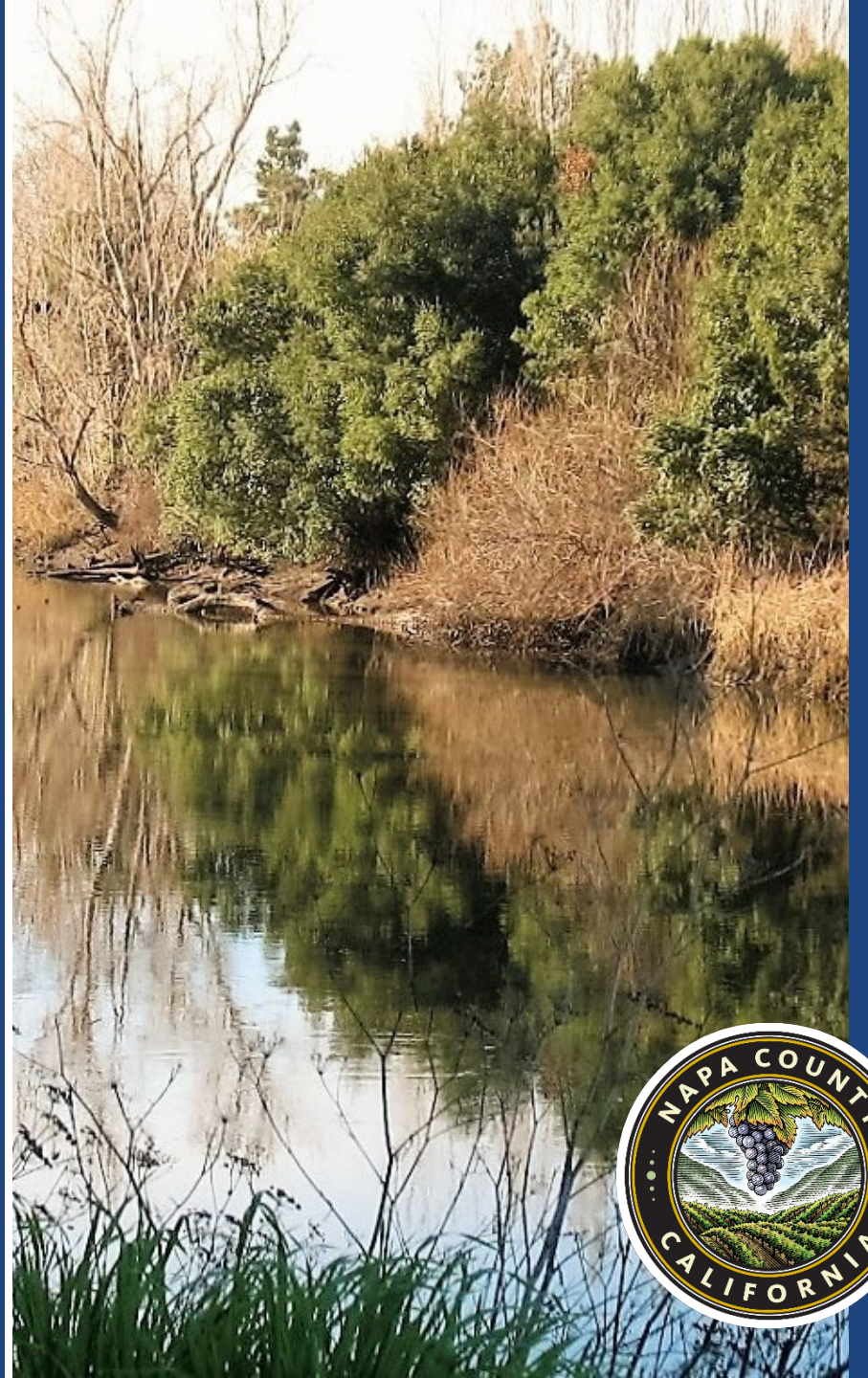
## Proximity of Well(s) to Significant Streams

- Greater than 1,500 ft presumptively meets criterion
- Within 1,500 ft various protective standards may apply
  - 0-500 ft: Metering and Reporting
  - Implement/enhance Water Conservation Best Management Practices
  - New or Replacement Wells: 150 ft well seal depth
- Meet applicable Water Use Criterion or demonstrate public trust considerations for proposed project design and operation and demonstrate reduced streamflow depletion



# Summary of 2026 WAA Updates and Next Steps

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# Summary of 2026 Draft Well Permitting Standards

## **WAA Tier 1: Inside the Subbasin (Napa Valley Floor and NENMA)**

- 0.5 ac-ft/ac in Napa Valley Floor or 0.3 ac-ft/ac in NENMA for new wells
- No net increase for new, replacement, or existing wells with new or increased use on property where existing use exceeds 0.5 ac-ft/ac Napa Valley Floor or 0.3 ac-ft/ac NENMA

## **WAA Tier 1: Outside the Subbasin**

- 0.3 ac-ft/ac (0.6 ac-ft/year total for domestic wells) MST and 0.3 ac-ft/ac for other wells in MST, or no net increase
- All Other Areas: Water use based on parcel specific recharge (other new, replacement or existing well(s)), or no net increase
  - Streamlined recharge method available

## **WAA Tiers 2 and 3**

- Demonstrate no significant interference with other wells located within 500 ft or 1,500 ft of springs (WAA Tier 2)
  - Methodology clarified
- Applicants must demonstrate implementation of protective standards to reduce streamflow depletion when well(s) within 1,500 ft of stream (WAA Tier 3)

## Next Steps

- **Public Review Draft  
Comments Received through  
May 26, 2026**
- **Napa County Planning  
Commission Meeting: May 6,  
2026**
- **Outreach and Stakeholder  
Meetings**





# Thank You!

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## Napa County Groundwater Sustainability Agency

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# WAA Tier 1: Previous (2015) Compared to Interim (2023 to present) and Draft 2026 WAA

Well Type	Groundwater Use	Inside Napa Valley Subbasin			Outside Napa Valley Subbasin		
		Previous (2015)	Interim Regulation	2026 Draft NVF; NENMA	Previous (2015)	Interim Regulation	2026 Draft MST; Other Areas
<b>NEW WELL</b>	Domestic - Individual User	NA	0.3 ac-ft/ac <sup>3,6</sup>	0.5; 0.3 ac-ft/ac <sup>6,7</sup>	NA	NA <sup>1</sup>	0.3 ac-ft/ac; Parcel Specific Recharge <sup>4</sup>
	Commercial, Industrial, or Agricultural	1 ac-ft/ac <sup>2</sup>	0.3 ac-ft/ac <sup>3</sup>	0.5; 0.3 ac-ft/ac <sup>6,7</sup>	Parcel Specific Recharge <sup>2</sup>	Parcel Specific Recharge <sup>4</sup>	0.3 ac-ft/ac; Parcel Specific Recharge <sup>4</sup>
	Public Water System	1 ac-ft/ac <sup>2</sup>	0.3 ac-ft/ac <sup>3</sup>	0.5; 0.3 ac-ft/ac <sup>6,7</sup>	Parcel Specific Recharge <sup>2</sup>	Parcel Specific Recharge <sup>4</sup>	0.3 ac-ft/ac; Parcel Specific Recharge <sup>4</sup>
<b>REPLACEMENT WELL</b>	Domestic - Individual User	NA	0.3 ac-ft/ac <sup>3</sup>	0.5; 0.3 ac-ft/ac <sup>6,7</sup>	NA	Parcel Specific Recharge <sup>1,4</sup>	0.3 ac-ft/ac; Parcel Specific Recharge <sup>4</sup>
	Commercial, Industrial, or Agricultural	NA	0.3 ac-ft/ac <sup>3</sup>	0.5; 0.3 ac-ft/ac <sup>6,7</sup>	NA	Parcel Specific Recharge <sup>4</sup>	0.3 ac-ft/ac; Parcel Specific Recharge <sup>4</sup>
	Public Water System	NA	0.3 ac-ft/ac <sup>3</sup>	0.5; 0.3 ac-ft/ac <sup>6,7</sup>	NA	Parcel Specific Recharge <sup>4</sup>	0.3 ac-ft/ac; Parcel Specific Recharge <sup>4</sup>
<b>EXISTING WELL</b>	New or Increased Water Use for Discretionary Project	1 ac-ft/ac	0.3 ac-ft/ac <sup>3</sup>	0.5; 0.3 ac-ft/ac <sup>6,7</sup>	Parcel Specific Recharge	Parcel Specific Recharge <sup>4</sup>	0.3 ac-ft/ac; Parcel Specific Recharge <sup>4</sup>

<sup>1</sup> Assumes less than 2-acre-feet per year of groundwater for individual domestic users.

<sup>2</sup> Previous practice was to apply Tier 1 requirements to only Discretionary Project. No water use limits were imposed on a Ministerial Project.

<sup>3</sup> Existing GW use exceeds 0.3 ac-ft/ac, then No Net Increase in GW use is required (Subject to Change by the GSA).

<sup>4</sup> Existing GW use exceeds the Parcel Specific Recharge, then No Net Increase in GW use is required.

<sup>5</sup> Analysis is not required when the replacement well is located further away from neighboring well, natural spring or Significant Stream, and no increase in GW use.

<sup>6</sup> Requirement can be met by submitting a “Water Use Declaration” that reflects the allowed water usage.

<sup>7</sup> Existing GW use exceeds 0.3 ac-ft/ac, then No Net Increase in GW use is required (Subject to Change by the GSA).