



# Napa County

## Board Agenda Letter

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Board of Supervisors

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**TO:** Napa County Groundwater Sustainability Agency (NCGSA)  
**FROM:** Brian Bordona - Director of Planning, Building, and Environmental Services  
**REPORT BY:** Jamison Crosby, Natural Resources Conservation Manager  
**SUBJECT:** Joint meeting of the Technical Advisory Group and Groundwater Sustainability Agency

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### **RECOMMENDATION**

SET MATTER 9:30 AM - Groundwater Sustainability Agency and Technical Advisory Group Update

Staff requests the Napa County Groundwater Sustainability Agency (NCGSA) Board of Directors:

1. Receive a summary of key discussion topics (aka “Framing Questions”) considered by the Technical Advisory Group (TAG) during their January through July 2023 meetings presented within the Background section of this staff report; and
2. Discuss the Framing Questions directly with TAG members and pose questions to the TAG about their findings; and
3. Provide the TAG direction on discussion topics and questions the NCGSA would like the TAG to consider during the course of the next 6-month to 1-year period related to ongoing Groundwater Sustainability Plan (GSP) implementation and achieving groundwater sustainability in the Napa Valley Subbasin.

### **EXECUTIVE SUMMARY**

The NCGSA formed a Technical Advisory Group (TAG) to advise the NCGSA and aid in the implementation of the Napa Valley Subbasin GSP, including responding to changing groundwater conditions. The five-member TAG was first convened on August 11, 2022. During the TAG’s monthly meetings, staff posed Framing Questions to the TAG which they considered and responded to, bringing their individual expertise to bear on topics related to groundwater conditions, GSP implementation and development of four workplans. A summary of the Framing Questions considered by the TAG during their meetings in 2023 is presented herein.

The purpose of the today’s meeting is to provide an opportunity for the NCGSA to receive, discuss and question the TAG about their findings and provide direction on topics and questions they would like the TAG to consider during the course of the next 6-month to 1-year period related to ongoing GSP implementation and

achieving groundwater sustainability.

Key topics discussed by the TAG include:

- A. Interconnected Surface Water and Groundwater Dependent Ecosystems Workplan;
- B. Napa County Water Conservation and Groundwater Pumping Reduction Workplans; and
- C. Adaptive Management Response Actions, Climate Adaptation and Building Resiliency;

The goal of the GSP is to achieve sustainability by ensuring that there are no Undesirable Results in the Napa Valley Subbasin by 2042. As described in the GSP, once Minimum Thresholds and/or Undesirable Results have been exceeded, the NCGSA should assess the causal factors resulting in the exceedance(s), including the extent to which climate change has contributed to these conditions. This analysis is critical to ensure careful consideration of potentially changed groundwater conditions and inform steps to implement Projects and Management Actions (PMAs).

Following the NCGSA’s adoption of the GSP in January 2022, GSA staff and technical consultants immediately initiated many PMAs, including the development of four workplans:

- 1. Stormwater resource plan (completed);
- 2. Interconnected surface waters and groundwater dependent ecosystems (in progress);
- 3. Napa County water conservation - a guide for vineyards, wineries, and other sectors (in progress); and
- 4. Groundwater pumping reduction (in progress).

Altogether, these plans will include implementing advanced technologies for water conservation; pumping reduction; stormwater management and potential utilization for managed aquifer recharge; measures for tracking and reporting groundwater use in the Subbasin; and assessments of groundwater dependent ecosystems (GDEs) within the Subbasin. These workplans are being developed with input from the public and other stakeholders. Input from the public is also requested during monthly TAG meetings and through other GSA announcements and communications. These workplans are integral to ongoing GSP implementation, informing adaptive management strategies, addressing data gaps, and achieving groundwater sustainability. The three workplans in progress are planned to be completed by the end of 2023.

**FISCAL & STRATEGIC PLAN IMPACT**

Is there a Fiscal Impact?	No
Is it Mandatory or Discretionary?	Discretionary
Discretionary Justification:	This item is related to GSP implementation
Is the general fund affected?	No
Future fiscal impact:	Analysis of future impact is pending
County Strategic Plan pillar addressed:	Vibrant and Sustainable Environment

**ENVIRONMENTAL IMPACT**

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

## **BACKGROUND AND DISCUSSION**

### **GROUNDWATER SUSTAINABILITY PLAN (GSP)**

The NCGSA formed a Technical Advisory Group (TAG) to advise the NCGSA, respond to changing groundwater conditions, and aid in the implementation of the Napa Valley Subbasin GSP, which was approved by the Department of Water Resources on January 26, 2023. The five-member TAG was first convened on August 11, 2022.

The goal of the GSP is to achieve sustainability by ensuring that there are no Undesirable Results in the Napa Valley Subbasin by 2042. The Subbasin was significantly affected by persistent drought conditions during Water Years (WYs) 2020, 2021, and 2022; groundwater levels exceeded Minimum Thresholds, and Undesirable Results occurred for two Sustainability Indicators. The large amount of precipitation in the first five months of WY 2023 is likely to result in significantly more groundwater replenishment in WY 2023 compared to WY 2022. As described in the GSP, once Minimum Thresholds and/or Undesirable Results have been exceeded, the NCGSA should assess the causal factors resulting in the exceedance(s), including the extent to which climate change has contributed to these conditions. Ongoing analysis is critical to ensure careful consideration of potentially changed groundwater conditions and inform steps to implement Projects and Management Actions (PMAs). The GSP describes PMAs along with supporting actions for sustainable groundwater management, including four workplans; one workplan has been completed and three others are anticipated to be completed in 2023 (see Annual Report Table ES-7).

### **NCGSA TECHNICAL ADVISORY GROUP: SUMMARY OF KEY 2023 TOPICS**

During the TAG's monthly meetings, the TAG has considered and discussed framing questions related to groundwater conditions and the development of the aforementioned workplans. The framing questions from TAG meetings during October through December 2022 were compiled and presented to the NCGSA at their March 28, 2023, meeting. The TAG has had ongoing discussions, and a compiled summary of those Framing Questions is provided herein for TAG meetings from January through July 2023 for the NCGSA's review and consideration. **The August 22 meeting provides an opportunity for the NCGSA to receive, discuss and question the TAG about their findings and provide the TAG direction on topics and questions they would like them to consider during the course of the next 6-month to 1-year period related to ongoing GSP implementation and achieving groundwater sustainability.**

Key topics in the Summary include:

- A. Interconnected Surface Water and Groundwater Dependent Ecosystems Workplan;
- B. Napa County Water Conservation and Groundwater Pumping Reduction Workplans; and
- C. Adaptive Management Response Actions, Climate Adaptation and Building Resiliency

### **Interconnected Surface Water and Groundwater Dependent Ecosystems Workplan**

In the Napa Valley Subbasin, groundwater dependent ecosystems (GDEs) include species and ecosystems that use groundwater or interconnected surface water to meet at least part of their water requirements. Overarching objectives of the Interconnected Surface Water (ISW) and GDEs Workplan include:

- Review and establish hydrologic and ecologic criteria for maintaining or improving ISW and groundwater conditions that support the health of aquatic ecosystems and GDEs in the Subbasin;

- Characterizing the biological parameters, thresholds, and physical conditions needed to maintain the health and viability of aquatic ecosystems and GDEs;
- Identifying data gaps to be addressed to characterize the aquatic and GDE-related parameters and baseline conditions needed to assess the effects of groundwater pumping on the status of key indicator species; and
- Identifying parameters, thresholds, monitoring facilities, and/or modeling needed to track the status of ISW and GDEs and inform Sustainable Management Criteria for ISW to achieve sustainability.

The Napa County Resource Conservation District's (RCD's) Stream Watch program provides an especially useful complement to other existing or proposed monitoring to further assess ISWs and groundwater conditions important to GDEs. GSA staff and the GSP technical team are currently considering the Stream Watch network and observations from the program during prioritization of potential locations for installing additional dedicated groundwater monitoring wells. Per GSP efforts to address data gaps, eight new monitoring wells were installed in Spring 2023. Approximately, eight additional monitoring wells are planned to be installed in Fall 2023.

Based on ISW and GDE Workplan objectives and TAG meeting discussions, the TAG recommended the following outreach:

- Combine outreach on ISW and GDEs with water conservation and groundwater pumping reduction interests;
- Develop visualization tools to make ISW more visible/palpable to the public and water users; and
- Organize visits and/or school trips at selected sites to show riparian species, monitoring wells, and other features relevant to ISW and GDEs.

The ISW and GDEs Workplan includes development of approximately 18 ecohydrologic conceptual models (EHCMs) in the Napa Valley Subbasin to identify data gaps and inform recommended next steps to address Workplan objectives.

- As part of EHCM development, the TAG recommended that the technical team prepare a map that relates the magnitude of pumping relative to stream reaches for EHCM characterization, including temporal considerations.

The TAG noted a range of representative EHCM sites should be included so the relative effects on site conditions from stream geomorphology, groundwater contributions to stream baseflow, potential impacts of pumping and/or surface water diversions on streamflow, and variable hydrology (e.g., precipitation magnitude, frequency, duration) could be characterized. Invasive species could be evaluated, including the potential evapotranspiration effects associated with their removal.

- The TAG recommended development of a matrix to summarize site characteristics pertaining to each of the EHCMs (including the above considerations), opportunities for maintaining or improving ISW and groundwater conditions, and the timeline to develop site-specific relationships and additional sustainable management criteria based on additional data collection.

Hydrologic conditions pertaining to Workplan development are being assessed using a combination of data from surface water monitoring, groundwater monitoring, Stream Watch data, and the Napa Valley Integrated Hydrologic Model (NVIHM). Examples of NVIHM scenarios were presented to the TAG to illustrate the

degree of influence from pumping in various parts of the Subbasin on the total streamflow depletion (reduction in streamflow) observed at various stream sites.

- The TAG recommended that future NVIHM modeling scenarios should be explored, including reducing pumping by 10 percent (per the GSP PMA on pumping reduction) in an individual region(s) or for Subbasin as a whole.

### **Napa County Water Conservation and Groundwater Pumping Reduction Workplans**

The NCGSA is implementing adaptive management strategies and PMAs to reduce groundwater pumping in response to two Undesirable Results in the Subbasin. The DWR-approved GSP specifies a 10 percent reduction in groundwater pumping (10 percent of the historical average), and the Groundwater Pumping Reduction (GPR) Workplan is being developed as a roadmap to achieve this goal. The GPR Workplan is being developed in coordination with the Water Conservation Workplan, which identifies additional water conservation strategies. The GPR Workplan is based on a guiding framework that prioritizes voluntary actions, identifies cost-effective approaches, leverages existing water conservation programs, and includes an adaptive management process.

Voluntary water conservation practices include practices for vineyards, wineries, and domestic water users that lead to measurable reductions in groundwater pumping. These actions are being organized in the GPR Workplan in a matrix format to summarize costs of adoption, groundwater savings potential, implementation timeline, and grant-funding opportunities to further incentivize adoption and reduce costs. Example practices include distribution uniformity testing, soil health practices, using recycled water and winery wastewater for landscape and vineyard irrigation, benchmarking, and more. Benchmarking data could facilitate comparisons, and metering groundwater pumping or water use would improve tracking and benchmarking efforts.

Certification programs, such as Napa Green and California Sustainable Winegrowing Alliance, encourage adoption of water conservation practices by vineyards and wineries while generating business value for participation through the certification label. Labels for certification programs signal sustainability commitments and standards to conscientious consumers.

The GPR Workplan will also include a phased implementation plan, which will cover voluntary practices, education, and benchmarking, assessing the effectiveness of the voluntary program, and an adaptive management process with potential mandatory measures if the voluntary program is ineffective. While the implementation plan is still in development, the TAG has discussed incentives for adopting voluntary water conservation practices, which would reduce groundwater pumping and potentially lower GSA/GSP costs. Examples of incentives include cost-share programs, rebates, or reduced groundwater fees, if fees are adopted by the NCGSA in future. Adaptive management would be incorporated throughout the phased GPR implementation program to refine baseline data, monitor sustainability indicators, and improve programs for achieving sustainability in the Subbasin.

Overall, the GPR Workplan seeks to achieve groundwater sustainability through education, voluntary actions, and incentives to encourage engagement in community efforts to reduce groundwater use. An adaptive management approach (following the approach described in GSP Section 11) will ensure the GPR Workplan implementation aligns with GSP requirements, such as the triggers, thresholds, and the timeline for other GSP processes and will help avoid the need for mandatory measures.

Findings from the TAG include:

- The TAG strongly supports more education, outreach, and training involving all community members and pertaining to water conservation practices and overall actions relevant to achieving sustainability. Multilingual educational workshops to reach the farmworkers, peer networking, “hands-on training,” and access to advisors are suggested to promote water conservation practices.
- It would be useful to better understand the extent of the various conservation practices currently being applied on vineyards and wineries, along with other information about the utility, benefits, and costs of such practices.
- Irrigation system evaluations, water use efficiency, and factoring in plant water needs are key best management practices (BMPs); increased use of BMPs with the greatest potential to achieve water savings/water use efficiency (e.g., technologies to measure plant water needs) could be incentivized. Collaboration with the RCD, also with winegrape organizations, to support irrigation system evaluations and/or broader education and outreach to adopt and implement BMPs is desired.
- The TAG identified certification as a pathway to boost voluntary adoption of BMPs and recommends using or expanding existing certification programs. Incentives for participation could include certification benefits, cost-share program, and lowered GSA fees for those that participate in a certification program.
- The TAG recommends developing a well-designed benchmarking program. Comparisons between vineyards could be challenging because of limited data and many factors that may differ across vineyards. However, information could be tracked through a self-reporting tool for growers (and others anonymously) to self-assess their own water use year-to-year and in relation to others in the industry.
- Metering of groundwater pumping or otherwise tracking water use would improve the ability to develop baseline water use data, measure how BMPs reduce water use, and facilitate benchmarking. The NCGSA could consider incentives such as offering reduced fees, rebates, or an incentive payment for those providing water meter data. Incentives could also “reward” early adopters - i.e., ways to value and recognize existing water conservation efforts and commitments to water resource stewardship.
- Pilot sites at approximately six locations would be beneficial to characterize various vineyard management styles, tools, and techniques, including groundwater and surface water use, drainage, soil types, row orientation, land-based sensors, soil moisture monitoring, plant measurements, etc. Information gathered for the pilot sites would seek to describe historical, current, and planned vineyard management practices, including drivers for changes in practices, the benefits realized, and the objectives for future changes. The benefits of adopting new or additional BMPs and practices to achieve climate resiliency should be promoted and encouraged.
- The GPR implementation plan needs to describe roles and responsibilities, including identifying actions to be led by the NCGSA and actions that will require partnering with other entities.
- The GPR Workplan matrix concept is helpful in facilitating review and comparison of various water conservation practices for all sectors. It would be helpful to contextualize the cost and potential water savings that could be achieved with nearer-term BMPs compared to other measures that may require more time to implement. Funding opportunities for the different practices should be included in the criteria. The TAG commented that flow measurements should be ranked “high” in the matrix, as it is not

possible to manage a resource without measurements.

### **Adaptive Management Response Actions, Climate Adaptation and Building Resiliency**

The NCGSA has implemented PMAs to address the Undesirable Results that occurred in WY 2022, including the workplans discussed above to reduce groundwater pumping in the Subbasin by 10 percent (of the historical average). Concurrently, the GSP requirements and public trust considerations, together with the County Drought Proclamation, the State Drought Emergency, and the Governor's Executive Order N-7-22, led to the request to the Napa County Board of Supervisors at its June 7, 2022, meeting that the County revise its well permitting procedures, including new water use criteria in the Subbasin, i.e., a change from 1 acre-foot per acre to 0.3 acre-feet per acre for new well permit applications (where existing groundwater use exceeds the 0.3 acre-feet per acre, a no net increase in groundwater use is required). This new water use criteria may be adjusted (either up or down) as the County considers revisions and updates to the Groundwater Ordinance and the 2015 Water Availability Analysis (WAA), completes development of the remaining three workplans underway, and assesses groundwater and ISW conditions based on ongoing monitoring and analysis of the Sustainable Management Criteria for all six sustainability indicators. The TAG's input and guidance were sought on whether, how, and under what conditions water use criteria may be adjusted in the future and whether other measures should occur to ensure groundwater sustainability.

Findings from the TAG include:

- Ongoing water conservation by the entire community living and working in Napa County is important to achieve and maintain groundwater sustainability.
- Public education is critical to shift from short-term (day-to-day) views of conditions (drought or no drought) to creating conservation-oriented habits, changing lifestyles, applying modern approaches regardless of current conditions, and establishing capacity to prepare for extreme weather events and, most importantly, to build resilience and achieve long-term sustainability. This means embracing water conservation as a way of life - rain or shine.
- Groundwater use has increased during recent years in response to hotter and drier conditions. Metering, with limited exceptions, is not required, and groundwater use is mostly estimated.
  - The OpenET remote sensing platform (in conjunction with local data) is being examined as a tool for developing refined estimates of regional groundwater use. The OpenET data used in concert with local data likely represent the best available technology at this time for estimating ET at a regional scale.
  - Volunteered data such as land-based sensor data, water use data (e.g., groundwater, surface water, recycled water), soil moisture data, sap flow measurements, and other local data would help improve the utility of the OpenET platform, refine water budget estimates, and inform water management strategies.

### ***Early Adaptive Management Action: New Napa County Permit Standards***

Some community members have expressed concerns about the revised well permitting procedures. An interim approach could be considered to allow for flexibility during a transitional period; a possible approach could consider:

- Demonstration of water use efficiency and implementation of BMPs.
- Participation in a certification program.
- Willingness to meter and track water use; reporting could occur in an aggregated/anonymized manner through a third-party certification program.
- The County could consider a phased approach (for eligible applicants), including a slightly greater water use criterion on an interim basis while changes occur (replants, vineyard design, etc.) and basin conditions are assessed relative to Sustainable Management Criteria.
- The County should continually align its requirements with what the NCGSA requires to achieve groundwater sustainability in the Napa Valley Subbasin in accordance with GSP regulations.

As currently implemented, the new water use criterion of 0.3 acre-feet per acre will have a small near-term effect on reducing groundwater use because it only applies to new permits within the Subbasin (which are limited based on permits in the past five years). This underscores the need for voluntary actions by all groundwater users to reduce groundwater use. The TAG finds that additional information on water demands, use, and disposition would enhance water management strategies by all sectors, including:

- Incentives could be developed to improve water use efficiency, implement additional BMPs and innovative technologies, and encourage other groundwater use reduction strategies.
- Efforts should occur to better understand use of recycled water inside and outside the Napa Valley Subbasin, including recycled water management strategies, opportunities available for expanding recycled water use, and potential constraints associated with recycled water use.
- Efforts would be beneficial to better delineate the occurrence, construction, and use of onsite farm ponds and associated infrastructure. Temporarily stored water may be beneficial for early season use in lieu of groundwater.
- Efforts to understand the occurrence and utilization of subsurface drainage features (e.g., tile drains or similar) could highlight opportunities to retain more stormwater on the landscape to facilitate groundwater recharge.