



Legislation Text

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TO: Board of Directors, 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: Napa Valley Subbasin Groundwater Sustainability Plan (GSP): Implementation of Three Workplans

RECOMMENDATION

JOINT MEETING OF THE GROUNDWATER SUSTAINABILITY AGENCY AND TECHNICAL ADVISORY GROUP UPDATE

Receive an update on the Napa Valley Subbasin Groundwater Sustainability Plan (GSP) implementation including: the need for adaptive management due to climate change; benefits from recharge opportunities; coordination with growers' participating in pilot sites; and implementation of the GSP and the three Workplans.

BACKGROUND

Groundwater Sustainability Plan (GSP)

In 2022, the Napa County Groundwater Sustainability Agency (NCGSA) formed a five-member 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 goal of the GSP is to achieve sustainability by ensuring that there are no Undesirable Results in the Napa Valley Subbasin by 2042. As part of early GSP implementation steps to achieve the sustainability goal, the GSP recommended implementation of the following Workplans:

- Interconnected Surface Water and Groundwater Dependent Ecosystems Workplan (recommended in GSP Section 6)
- Napa County Water Conservation Workplan (GSP Management Action #1)
- Groundwater Pumping Reduction Workplan (GSP Management Action #2)

At the NCGSA meeting on March 26, 2024, these Workplans were adopted.

The purpose of today's meeting is to provide an opportunity for the NCGSA to receive, discuss, and question

the TAG about the implementation of the Workplans and provide direction on topics and questions they would like the TAG to consider during the next 6-months to 1-year period related to ongoing GSP implementation and achieving groundwater sustainability.

Adaptive Management Response Actions, Climate Adaptation and Building Resiliency

The Fifth National Climate Assessment (<https://nca2023.globalchange.gov/>), published in Fall 2023, presents current conditions as well as multiple climate scenarios for the United States. Four climate scenarios were assessed, which are based on 1.5°C (2.7°F), 2°C (3.6°F), 3°C (5.4°F), and 4°C (7.2°F) increases in global temperature. All four climate scenarios predict Napa County is likely to experience higher hot temperatures, higher low temperatures, more precipitation, and more extreme precipitation events.

While the degree of change resulting from future climate change is uncertain; national, state, and local data indicate shifting climate patterns and trends. Long-term adaptive management strategies and measures implemented to optimize recharge opportunities and conserve water can help minimize the local impact. Increases in extreme precipitation events provide potential opportunities to increase recharge through best management practices and on-farm strategies to retain precipitation, enhance infiltration, and augment groundwater supplies.

Possible management scenarios were evaluated with the Napa Valley Integrated Hydrologic Model (NVIHM). Each management scenario was evaluated by comparing the simulated flow at the Napa River at Napa (Oak Knoll) station. The first set of three scenarios limited groundwater extraction to the estimated Sustainable Yield in the DWR-approved 2022 GSP (SY; ~15,000 acre-feet per year), to 90 percent of the SY (~13,500 acre-feet per year), and to 75 percent of SY (~11,250 acre-feet per year). Each of the three scenarios that limited groundwater pumping increased the streamflow throughout the critical low-flow period with larger reductions associated with greater streamflow.

The second set of three scenarios evaluates the impact of retaining precipitation and enhancing infiltration on vineyard properties. The NVIHM evaluates the amount of precipitation that will infiltrate or runoff to the stream system based on the land use and estimated runoff fraction. The runoff fraction was modified to simulate more precipitation going to soil infiltration and groundwater recharge compared to the baseline runoff fraction of 0.78 (or about 80 percent) and less precipitation becoming surface runoff. Three scenarios were modeled, increasing infiltration from approximately 20 percent (baseline condition) to 30, 40, and 60 percent infiltration. For example, the 30 percent infiltration corresponds to approximately 70 percent runoff, which represents an increase of about 10 percent more infiltration and groundwater recharge compared to the baseline condition with a runoff fraction of 80 percent and 20 percent infiltration. The increased infiltration resulted in greater streamflow throughout the low-flow summer period. The three scenarios to retain rainwater and increase infiltration on vineyard properties potentially result in a much greater benefit to streamflow during the critical period compared to the 10 percent pumping reduction. Simulations indicate that a 10% increase in infiltration has potentially more positive benefit to streamflow than a 10% reduction in pumping.

Climate variability, including shifts in the timing and duration of precipitation events, can impact groundwater discharge to streams. The relationship between hydrologic variability, streamflow, and potential impacts to groundwater dependent ecosystems are key questions being investigated during implementation of the ISW and GDEs Workplan. Ongoing responses to climate change will require being prepared for potentially hotter years where precipitation events no longer occur in the same pattern as historical events. It is important to continue to embrace “Conservation as a Napa Way of Life” to help

build resiliency.

To continue evaluating potential impacts within vineyards, a Pilot Sites Program was established in early 2024. This program has two overarching objectives:

- To refine estimates of vineyard and winery water use in the Napa Valley.
- To share, collaborate, and contribute information about best management practices (including water conservation and surplus rainwater retention), lessons learned, and building climate resiliency.

Outreach to Napa Subbasin stakeholders, industry groups, and vineyard management companies is ongoing.

Interconnected Surface Water (ISW) and Groundwater Dependent Ecosystems (GDE) Workplan Implementation

The ISW and GDEs Workplan implementation includes hydrologic and biological monitoring at 6 sites in the Napa Valley Subbasin. On May 1 and 14, 2024, two reconnaissance field trips were used to assess monitoring approaches, define survey boundaries, and define project roles. Dr. Matt Kondolf, member of the Technical Advisory Group, attended the May 14 field visit. Both field visits included 4 of the 6 sites where access permissions have been secured (Sulphur Creek, Napa River at Calistoga, Napa River at St. Helena, and Napa River at Napa). The access permissions are currently progressing for the other two sites (Bale Slough and Napa River at Oak Knoll).

The ISW and GDEs Workplan implementation includes steps to implement the California Environmental Flows Framework (CEFF). CEFF is a systematic approach to assessing environmental flow needs that is currently being applied throughout California.

Explicit ecological management goals that will be refined with Workplan implementation include:

1. Protect and enhance habitat for groundwater-dependent aquatic and terrestrial special-status species in the Subbasin;
2. Protect and enhance GDEs and natural communities;
3. Protect and enhance habitat connectivity with aquatic habitat upstream of the Subbasin; and
4. Develop discharge-habitat relationships for special-status species, where possible.

The ISW and GDEs Workplan will use physical and biological data coupled with hydrologic modeling to better understand the conditions required to protect and enhance healthy terrestrial and aquatic GDEs. For aquatic portions of the GDEs and the CEFF analysis, a more specific goal is to ensure the long-term viability of a self-sustaining steelhead population in the Napa River Watershed. This goal will consider changes in streamflow that occur due to: 1) climate effects (which the NCGSA cannot control), and/or 2) groundwater pumping (which the NCGSA can manage to achieve sustainable groundwater resources including avoiding undesirable results on interconnected surface water). This ecological goal is also consistent with the goals outlined in the Napa County General Plan Update (Napa County 2008), which include “conserving and improving fisheries and wildlife habitat”, “maintaining and improving fisheries habitat”, and “protecting and enhancing the County’s biodiversity”.

Luhdorff & Scalmanini, Consulting Engineers will lead the shallow groundwater monitoring and installation of stage recorders at 3 of the 6 sites (the other 3 already have stage recorders). The fish habitat and population surveys, deployment and collection of water quality data (dissolved oxygen and temperature), and stream connectivity surveys will be led by the Napa County Resource Conservation District (RCD). Stillwater

Sciences will lead the remaining biological surveys and CEFF analysis. Most of these surveys commenced in June and continue in Summer 2024; a few studies (birds and special status plants) will occur in Spring 2025.

Special status amphibian surveys were conducted at the 4 accessible study sites. Foothill yellow-legged frog egg masses, tadpoles, and a sub-adult were observed at the Napa River at St. Helena and Sulphur Creek sites. In addition, northwestern pond turtles were observed at Napa River at Yountville and Napa River at St. Helena. Napa County RCD biologists observed a steelhead redd (nests dug in gravel by steelhead) at the Napa River at Calistoga site.

Monitoring will continue over Summer 2024 to track changes in biological habitat as seasonal declines in groundwater levels and surface flows continue.

Napa County Water Conservation (NCGSA) and Groundwater Pumping Reduction (GPR) Workplans Implementation

The NCGSA has developed and is implementing the WC and GPR Workplans. The GPR Workplan includes an implementation plan and anticipated timeline for the program to achieve measurable reductions in groundwater pumping in the NCGSA. The WC and GPR Workplans identify a suite of water conservation practices. The GPR Workplan anticipates a voluntary program that incentivizes growers and other water users/industries in the Subbasin to adopt and expand water conservation practices.

One opportunity identified in the GPR Workplan for encouraging voluntary adoption of water conservation practices is certification programs. Certification programs require producers to meet specified standards to become certified. In exchange, certified businesses can meet regulatory standards, buyer specifications, label their product in a certain way, and have access to new markets. This can create additional value (higher price or cost savings) for some commodities. The GPR Workplan includes the identification and potential expansion of one or more certification programs for water conservation practices that will help the NCGSA achieve groundwater sustainability.

NCGSA staff are working toward development of a certification program guideline document that will define potential minimum standards/practices for certification and other desired program components such as auditing process, verification process, reporting, and data management. Certification program participation will be voluntary and will include appropriate incentives to encourage participation.

At the July joint NCGSA/TAG meeting a certification program summary matrix will be presented (see attached Technical Memo). This summarizes four existing example programs: Napa Green (NG), California Sustainable Winegrowing Alliance (CSWA), SIP Certified (SIP), and Fish Friendly Farming (FFF). The matrix compares and contrasts winery and vineyard certification requirements, program costs, water conservation practices, verification process, and presence in Napa County. The purpose is to illustrate the range of offerings within the existing programs and briefly summarize water conservation practices included in each program.

The presentation will provide an overview of different types of incentives for certification program participation. These include but are not limited to financial incentives (e.g., covering certification costs, capital costs, fees), behavioral nudges (e.g., benchmarking, notifications), brand awareness (e.g., pilot sites, industry leaders, water stewardship), and other education and assistance (e.g., planning assistance, permitting). An overview of funding opportunities and incentives will be presented.

The NCGSA is invited to provide direction to the TAG on 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 GSP implementation.

PROCEDURAL REQUIREMENTS

1. Staff reports
2. Discussion
3. Public Comments
4. No action required

FISCAL & STRATEGIC PLAN IMPACT

Is there a Fiscal Impact?	Yes
Is it currently budgeted?	Yes
Where is it budgeted?	272000
Is it Mandatory or Discretionary?	Mandatory
Is the general fund affected?	No
Future fiscal impact:	Analysis of future impact is pending

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.