

NAPA COUNTY TECHNICAL ADVISORY GROUP**Framing Questions Compiled for October, November, and December 2022 Meetings**

Discussion Questions in Technical Advisory Group (TAG) Meeting Staff Reports: The framing questions from TAG meetings during October through December 2022 have been compiled along with draft summaries of discussions during this period. Many of the questions (and the associated discussion by the TAG) occurred during one or more meetings due to the overlapping nature of the meeting topics. Accordingly, the questions and draft summaries of discussions are grouped by topic.

A. Water Conservation Measures and Other Considerations

- 1. What water conservation measure(s) has the greatest potential for additional water savings (especially at the Subbasin scale)? What tools/technology/data are recommended to improve the quantification of current and future water demands for all water use sectors? What tools/technology/data should vineyard and winery managers/operators use to demonstrate and quantify the water conservation occurring currently and also the additional water conservation (volume of water saved) that could potentially be achieved? Remotely sensed data require field verification. How should data privacy of field data be addressed as opposed to complete data transparency for calibration/verification purposes? What are the advantages and/or limitations to widespread adoption/acceptance of remotely sensed ET measurements for GSP implementation and annual reporting?**

Many tools and technologies are in use and/or available for use to monitor water consumption and achieve water conservation associated with urban, rural residential, agricultural, and other land uses. Among the measures discussed was the potential for additional water conservation through improvements to irrigation system efficiency as identified in the distribution uniformity (DU) testing conducted by the Napa County Resource Conservation District and Napa Green. Napa Green is now requiring a DU test as part of their vineyard certification program. Remote sensing technologies such as OpenET at the Napa Valley Subbasin or watershed scale or land-based sensors at a field scale are among the tools available to assess water demands. OpenET can facilitate computation of native and non-native plant water demands for the watershed, while land-based sensors are frequently being used to aid growers in real-time water management and irrigation scheduling. These remote sensing datasets can be used together (along with other types of data where available) to improve the understanding of total water use for native and non-native vegetation (e.g., vineyards and other land uses) and to refine the temporal and spatial representation of evapotranspiration coefficients in the Napa Valley Integrated Hydrologic Model (NVIHM). The field data can offer great value for refining the local application of OpenET data to better understand total water use and to improve the simulation results developed with the NVIHM. Land-based sensors, or other technologies to inform estimates of total water consumption, are not available on all parcels. The field data can be documented at a regional scale and need not release private owner/address data to meet the overarching objectives for using the best available data to better understand total water demands and water use by native and non-native plants.

2. Should water conservation measures be incentivized? If so, what might those incentives include?

Grapegrowers have invoked water conservation technologies for many years. However, opportunities exist to accomplish additional water conservation locally and also collectively on a Subbasin scale for all land uses, including urban, rural, agricultural, and other land uses. Incentives would be useful to encourage additional water conservation by all users. One type of incentive could include benefits associated with vineyard and/or winery water management certification programs. Benefits derived from certification may be qualitative such as visible promotion of growers that are implementing improved water monitoring and management tools and technologies that support water resources sustainability. Outreach should help raise awareness of the: 1) irrigation efficiency service provided by the Napa County Resource Conservation District and Napa Green, 2) local and state certification programs that include water management criteria, and 3) the importance of monitoring and managing water resources to achieve groundwater sustainability.

The Napa County GSA could incentivize educational opportunities, including water conservation workshops, training videos, specialized speakers' fees, or other educational materials and venues. Workshops could be subsidized to lessen costs for participants to ensure training materials and resources are accessible to all persons who can contribute to achieving water conservation objectives.

The Napa County GSA could potentially provide (subsidize) land-based sensors and/or flow meters to vineyard and winery operators or managers who express an interest in tracking water demand and use and increasing the volume of water saved annually. Devices provided through the GSA could include required training on the use, calibration, and maintenance of the device(s). The incentive could occur through a time-limited offering for the Napa County GSA to provide one or both tracking tools, including the cost of shipping, installation, verification of operation, and initial calibration. The time-limited offering could also include calibration of existing flow meters. The Natural Resources Conservation Service (NRCS) could assist vineyard managers/operators in applying (when eligible) to applicable grant opportunities, including the Environmental Quality Incentives Program (EQIP) and installation of monitoring devices and more efficient irrigation technology and infrastructure. The California Department of Food and Agriculture (CDFA) State Water Efficiency and Enhancement Program (SWEEP) could also be considered for eligible applicants. Additional details on the benefits associated with incentives to track water use and conserve more water will be described in the *Napa County Vineyard and Winery Water Conservation Workplan* (in progress). The incentives program could also be integrated with programs that certify vineyards and/or wineries. Incentives are envisioned to help: 1) ensure the future of grape growing in Napa Valley, 2) demonstrate commitment to stewardship, 3) illustrate the utility of tracking current and future water use, and 4) assess vineyard uniformity.

3. What approaches are recommended to encourage support of and commitment to countywide water conservation efforts that meaningfully achieve efficient water use and future sustainability?

Some preliminary approaches to encourage countywide water conservation include implementation of field-scale studies involving analysis of multiple-types of data already being collected at some grower locations. These data include land-based remote sensing data,

groundwater extraction volumes, soil moisture, and other data. As described in No. A1, these field-scale analyses can be used to improve the understanding of total water use at the Subbasin or watershed scale. Additionally, outreach efforts by various groups, including vineyard and winery organizations, the Napa County GSA, the Napa County Resource Conservation District, UC Cooperative Extension, and others, could collaborate to increase outreach pertaining to water conservation, the utility of tracking water use, and water resources sustainability objectives. Additional approaches will be included in the *Napa County Vineyard and Winery Water Conservation Workplan* (in progress).

4. Should vineyard and/or winery water conservation measures be increased regardless of hydrologic year type? Or should increased effort be made during especially dry years? If the latter, how would this be managed and tracked?

The Napa River and its tributaries are an integral part of the Napa Valley Subbasin, where groundwater conditions and interconnected surface water respond to wetter and drier hydrologic water years, and are susceptible to drought effects. Prudent water resources management and water use efficiency are necessary regardless of water year type. Increased monitoring of interconnected surface water (ISW) and groundwater conditions and other considerations pertaining to wetter or drier water year types could be prioritized for Subbasin locations where ISW and groundwater dependent ecosystems are more susceptible to drier years, less recharge, and/or increased groundwater use.

B. Flood-MAR Specific Framing Questions

1. How applicable/feasible are Flood-MAR activities in Napa Valley for improving groundwater management?

As a preliminary step, the physical characteristics conducive to potential groundwater recharge need to be examined on a macro level to delineate sites/potential areas that warrant a next level of recharge site feasibility assessment. During recharge site feasibility evaluations, it will be important to understand the factors that would encourage (e.g., Subbasin sustainability, ISW, temporal GDE benefits, etc.) or discourage (e.g., vine pests or disease, low yield, flooding impacts, infrastructure constraints, etc.) participation in recharge pilot studies. As part of the recharge site feasibility evaluation, it will be necessary to assess whether proposed recharge projects can achieve the intended benefits and justify the cost of infrastructure, landscape/land use modification, monitoring, and potential impacts, as well as assess the potential water source for recharge and associated costs, challenges, and constraints. The feasibility evaluation should quantify the incremental temporal and spatial benefits to ISW at a prioritized location(s), for example, relative to no project.

2. What mechanisms for incentivizing recharge and water conservation should the GSA explore?

Incentives to encourage onsite recharge will be like those described in No. A2. The Napa Valley Subbasin physical structure, including near-term responses to groundwater inflows and outflows, is not conducive to a groundwater banking construct. Essentially, individuals or entities contributing recharge to the groundwater basin would not be able to extract the “recharged volume”; they would be subject to the same water management approaches as others who do not participate in groundwater recharge efforts. It is anticipated, however, that some type of incentive would be developed to encourage recharge where recharge is feasible

and beneficial to both the individual or entity and sustainable groundwater conditions in the Subbasin.

C. Demand Management Framing Questions

- 1. A reduction in groundwater use was approved by the Groundwater Sustainability Plan Advisory Committee (GSPAC) during GSP development. Many demand management options can be invoked, which thereby would reduce groundwater pumping. What demand management measures does the TAG consider to be viable for reducing groundwater pumping in the Napa Valley Subbasin?**

Demand management measures could occur through various approaches, and it is likely that different combinations of measures will be used by vineyard and winery managers and operators and others, depending on many factors related to the current water use, conservation measures already being employed, and plans for future water management. The preparation of a *Groundwater Pumping Reduction Workplan*, which on October 14, 2021 was unanimously approved by the GSPAC during GSP development for the purpose of reducing groundwater pumping in the Subbasin, achieving a 10 percent reduction in average annual historical (2005-2014) pumping, and initiating a reduction in pumping following adoption of the GSP by the Napa County GSA on January 11, 2022. The reduction in groundwater use approved by the GSPAC applies to the whole Subbasin and not to individual properties. Some of the approaches for demand management could include: 1) greater attention to irrigation infrastructure, uniformity and scheduling; 2) consideration of planting density, row orientation, trellis design, cultivar and rootstock selection, canopy management, etc.; type and utility of cover crops; 3) increased water use efficiency at wineries, including landscape irrigation, selection of drought-adapted plants for landscapes, capture and reuse of winery wastewater; 4) potential rebate for irrigation efficiency; and 5) other water conservation methods. The *Napa County Vineyard and Winery Water Conservation Workplan* (in progress) will serve as a resource for various approaches that can be used to achieve additional water conservation.

- 2. Exceedances of minimum thresholds pertaining to the interconnected surface water sustainability indicator have occurred. The GSP describes the need for accelerated actions to reduce groundwater pumping when this occurs. What sequence of steps does the TAG recommend to expedite actions to reduce groundwater pumping? What are reasonable timelines to implement the steps?**

In June 2022, Napa County took initial steps to revise the countywide well permitting standards, which in turn results in a significant reduction in groundwater use on a per acre basis for new groundwater development (i.e., this is a reduction from about 1 acre-foot per acre per year to 0.3 acre-foot per acre per year). The draft outline for the *Groundwater Pumping Reduction Workplan* is currently being reviewed, and this Workplan, which is a companion document to the *Napa County Vineyard and Winery Water Conservation Workplan*, is anticipated to be completed in Summer 2023. Additional near-term and ongoing community outreach and education are critical to ensure the public is aware of and supports the need to increase water conservation and reduce water demands (see also D2), and is aware of the GSP implementation process, including process for public comments and schedule for workplan approval and implementation.

D. Potential Response Actions

- 1. While the Workplans underway are intended to inform actions necessary to maintain sustainable groundwater conditions in the Subbasin, a central question for the TAG is what response actions should be considered in the very near term?**

Since adoption of the Napa Valley Subbasin GSP, GSP implementation activities have included steps to prepare four workplans, including the *Napa County Vineyard and Winery Water Conservation Workplan*, *Groundwater Pumping Reduction Workplan*, *Stormwater Resource Plan*, and *Interconnected Surface Water (ISW) and Groundwater Dependent Ecosystems (GDEs) Workplan*. Completion of these plans is a priority. It is anticipated that the first three of these workplans will be completed by June 2023, while the ISW and GDEs Workplan is anticipated to take a little longer.

Other key activities underway or planned while the workplans are being prepared include:

- Outreach and education (including Spanish language outreach materials), especially related to water conservation measures, tracking water use, and irrigation system evaluations. Implement a broad, whole community approach for water conservation outreach efforts (including landscaping for residential and commercial buildings) (see also No. A2 and A3);
 - Prepare outreach materials that are easy to widely post and/or distribute such as a one-page flyer or brief brochure;
 - Evaluate the current GSP monitoring networks and address data gaps identified in the GSP;
 - Evaluate the feasibility of recharge projects at selected sites/areas (see also No. B1);
 - Evaluate innovative approaches to mitigate drought effects on streamflow (e.g., reservoir releases where feasible);
 - Examine opportunities to increase the use of reclaimed and recycled water;
 - Napa County GSA pursue umbrella water right permit for surplus stormwater diversion for recharge when available; and
 - Prepare and implement a Memorandum of Understanding to demonstrate collaboration among multiple parties (including Napa County GSA, Napa County RCD, UC Cooperative Extension, Napa County Farm Bureau, Napa Valley Grap growers, Winegrowers of Napa County, Napa Valley Vintners, Napa Green and others) that will prepare a Water Conservation Outreach and Engagement Plan (WCOE Plan) focused on promoting increased water conservation, especially among vineyard and winery interests and private citizens who rely on well water.
- 2. What drought response measures (either voluntary or mandatory) should be implemented in 2023 to mitigate potential drought effects on groundwater conditions, especially interconnected surface water?**

Drought response (and drought mitigation) measures should emphasize implementing additional water conservation measures where such efforts have not already occurred to the

maximum extent practicable and tracking water use to better identify water savings achieved. The *Groundwater Pumping Reduction Workplan* will describe voluntary measures to conserve water, including reducing groundwater pumping, and also requirements for reduced groundwater use that stem from Napa County's new well permitting standards (as of January 6, 2023). The *Groundwater Pumping Reduction Workplan* will be action-oriented, including monitoring, tracking, and refining the understanding of groundwater use and the effect of that use on groundwater conditions and sustainability. This Workplan will also include adaptive management and a process to invoke mandatory measures if voluntary measures are insufficient to achieve groundwater sustainability.