Draft Groundwater Pumping Reduction Workplan

A Workplan for Implementing Measures to Reduce Groundwater Pumping in the Napa Valley Subbasin

Two key approaches can be used to reduce groundwater pumping: reduce groundwater use via voluntary or mandatory measures. The Groundwater Pumping Reduction Workplan (GPR Workplan) is being prepared to provide options and a roadmap for implementing measures to reduce groundwater pumping to meet water demands in the Napa Valley Subbasin. This Workplan is a companion document to the related document, the Napa County Vineyard and Winery Water Conservation Workplan (VWWC Workplan). The VWWC Workplan will describe the understanding of water use, including groundwater, and the various conservation measures that are already or could be implemented to save water. The VWWC Workplan will also serve to motivate future innovative water conservation approaches to help buffer drought year affects and advance watershed resiliency. The GPR Workplan will describe the range of voluntary measures that can be used to conserve water, including reducing groundwater pumping. It will also describe requirements for reduced groundwater use that stem from the County's new well permitting standards (as of January 6, 2023). The GPR 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. The GPR Workplan will also include adaptive management and a process to define the monitoring and other data that will be used to define and implement mandatory measures if voluntary measures are insufficient to achieve groundwater sustainability.

1. Introduction
    a. Workplan Purpose
        i. Summary of guiding framework, including emphasizing voluntary actions and identifying cost-effective solutions to be included in the Workplan
    b. Groundwater Pumping Reduction Goals
        i. Achieving groundwater sustainability in the Napa Valley Subbasin (summary of requirements to achieve sustainability)
        ii. Mitigating short and long-term drought effects on groundwater resources
        iii. Implement Groundwater Sustainability Plan Advisory Committee (GSPAC) goal to reduce pumping in the Subbasin (at a Subbasin scale rather than parcel scale) by 10 percent (Groundwater Sustainability Plan [GSP] Section 11)

2. Background
    a. Napa County Groundwater Ordinance and Well Permit Requirements
        i. Summary of information in Groundwater Sustainability Plan (GSP) pertaining to Napa County Groundwater Ordinance and Water Availability Analysis (WAA)
        ii. Summary of new and existing Napa County well permitting standards (as of January 6, 2023)
            1. New regulations pertaining to domestic wells in Subbasin (groundwater use)
            2. New regulations to existing or replacement wells in Subbasin (groundwater use)

3. Existing requirements (e.g., mutual well interference and proximity to streams)

b. SB 552 Drought Resilience Planning
   i. Overview
   ii. Interrelationship between SB 552 and GSP/Groundwater Pumping Reduction Workplan goals

c. Existing Water Management Practices
   i. Overview
   ii. Summary of current investments in efficient water management practices commonly implemented in the Napa Valley Subbasin, and summary of extent of adoption (subject to available data)
   iii. Summary of costs and benefits of existing practices

d. Overview of Groundwater Pumping Reduction Approaches and Terms
   i. Brief summaries of potential methods to achieve reductions in groundwater use (groundwater users can use one or more methods as appropriate)
   ii. Terms applicable to this Workplan

e. Groundwater Pumping Profile
   i. Historical groundwater use (summary of information in GSP and most recent Water Year Annual Report for the Subbasin)
      1. Non-native vegetation groundwater use
      2. Native vegetation groundwater use
   ii. Groundwater demand forecast
      1. Anticipated water demand for future time periods
      2. Adjustments to demand based on known and measurable factors
      3. Discussion of uncertainties, including climate factors
   iii. Existing groundwater conservation practices
      1. Summary of/cross reference to Napa County Vineyard and Winery Water Conservation Workplan
      2. Summary of urban/other conservation measures

3. Voluntary Approaches to Reduce Groundwater Pumping

a. Measurement Devices to Track Water Use at Subbasin and Parcel Scales
   i. Remote sensing
      1. Napa County Groundwater Sustainability Agency (NCGSA) obtains/analyzes OpenET data in collaboration with grower-volunteered locations for additional land-based sensor data and other data; analysis at Subbasin scale)
   ii. Land-based sensor data
      1. Vineyard operators/managers (parcel or multi-parcel scale)
      2. Wineries (landscape groundwater use)
      3. Rural residential (large rural acreage)

iii. Soil moisture profiles

1. Vineyard operators/managers (dry farmed parcel(s))

iv. Pumping meters

1. Vineyard operators/managers (parcel or multi-parcel scale)
2. Wineries
3. Rural residential (large rural acreage)

v. Other

b. Best Management Practices (BMPs): Water Conservation

i. Vineyard BMPs

1. Summary of/cross reference to Napa County Vineyard and Winery Water Conservation Workplan

ii. Winery BMPs

1. Summary of/cross reference to Napa County Vineyard and Winery Water Conservation Workplan

iii. Urban BMPs

1. Cross reference to existing reference material including SB 552 materials

c. Training and Education

i. Vineyard water management and conservation

1. Training/education programs (Napa County Resource Conservation District (RCD), Napa Valley Grapegrowers, Napa County Farm Bureau, Third-Party organizations, etc.)

ii. Winery water management and conservation

1. Training/education programs (Winegrowers of Napa County, Napa County Farm Bureau, Third-Party organizations, etc.)

iii. Urban water management and conservation

1. Training/education programs (Napa County, Third-Party organizations, statewide agencies, etc.)

d. Data-Driven Irrigation Performance and Benchmarking

i. Program objectives and design

ii. Develop data (see Section 3(a)) to support benchmarking of water use that would allow individual groundwater users to compare their use to similar users

a. Anonymous data to protect confidentiality

ii. Develop linkages to monitoring programs and certifications/water management practices and method for quantifying savings

iii. Case Studies: volunteers (spatial distribution); prior participants in Napa County RCD irrigation evaluation program and irrigation distribution uniformity assessment

iv. Program implementation, initial results, and recommendations

e. Adaptive Management

i. Identify the monitoring and other data that will be used to define cause and effect relationships that underlie decisions needed to ensure groundwater sustainability in

the Subbasin.

ii. Implement periodic review process to coordinate assessment of the effectiveness of voluntary groundwater pumping reductions with the status of groundwater conditions and Subbasin sustainability at the Subbasin not parcel scale (periodic review could include annual and five-year reviews in coordination with GSP required reporting)

iii. Coordinate groundwater pumping reduction assessment metrics with sustainable management criteria and triggers that lead to response actions (e.g., coordinate with GSP Table 11-3 Criteria and Triggers: Six Sustainability Indicators)

iv. Process for determining whether voluntary measures suffice or mandatory measures are required; this includes the information, steps, and monitoring needed to inform, define, and implement mandatory measures should such measures be required

f. Certification Programs

i. Identify existing vineyard, and potentially winery, certification programs that will focus on water management practices for certifications

ii. Inventory existing programs and extent of adoption of those programs

iii. Establish a list of existing certifiers and potential for adoptions in the Napa Valley Subbasin

iv. Value/benefits of certification programs

v. Link to water management benefits and costs of each

4. Subbasin Groundwater Use and Tracking

a. Remote Sensing

i. Periodic data collection OpenET

ii. Potential incentives for volunteered sites to include other complementary data

iii. Periodic analysis of water demands at specified Subbasin locations (indicator areas)

iv. Annual analysis of water demands at Subbasin scale and comparative analysis of trends at specified locations (indicator areas)

v. Summarize results in GSP Water Year Annual Report

b. Groundwater Metering

i. Program objectives, design

ii. Potential incentives (including through Third-Party Certification Programs)

iii. Periodic data collection (volunteered metering at various Subbasin locations)

iv. Periodic analysis of groundwater use at volunteered Subbasin locations

v. Summarize results in GSP Water Year Annual Report

c. Tracking New County Well Permits

i. Ministerial (locations and other key criteria (key criteria: groundwater use allocation, mutual well interference, and stream proximity))

ii. Discretionary (locations and other key criteria, as noted above)

d. Groundwater Level Trends at RMS and Supplemental Wells

   i. Compare groundwater level trends relative to OpenET trends

   ii. Compare trends in areas with volunteered sites

   iii. Compare trends in areas with new well permits

   iv. Assess trends in response to conservation/water savings approaches (including areas where Third-Party Certification programs have been implemented)

5. Cost-Effectiveness Analysis

a. For potential water management practices, prepare a reconnaissance-level analysis of the costs of implementing such practices in addition to the potential water savings/benefits and monetary benefits of such practices

b. Summarize cost-effectiveness of each potential water management practice, rank accordingly, and document/describe results

c. Narrative summary of potential water management practices adoption

6. Communication and Engagement

a. Outreach approach, including identification of stakeholders and variations in applicable outreach methods

b. Napa County GSA Technical Advisory Group engagement

c. Stakeholder engagement

d. Education and resources

7. Steps for Implementation

a. Coordinate GPR Workplan development with SB 552 Drought Resilience Planning and development of Napa County Drought Resilience Plan

b. Calculate and report cost-effectiveness of all potential measures identified for implementation, and screen/rank potential measures accordingly

c. Steps and schedule considerations for assessing effectiveness of voluntary groundwater pumping reduction measures for vineyards, wineries, urban, rural residential, and other

d. Steps and schedule considerations for assessing effectiveness of new County well permitting standards

e. Steps and schedule to implement adaptive management and potential mandatory measures in problem areas and/or Subbasin wide, pending effectiveness of voluntary measures

8. References

a. Department of Water Resources and State Water Resources Control Board. 2022. Primer of Senate Bill 552: Drought Planning for Small Water Suppliers and Rural Communities (Drought Planning for Small Water Suppliers and Rural Communities (SB 552) (ca.gov))

b. Luhdorff & Scalmanini, Consulting Engineers. 2022. Napa Valley Subbasin Groundwater Sustainability Plan. Prepared for Napa County Groundwater Sustainability Agency

a. Napa County. 2015. Water Availability Analysis (WAA)