

Attachment C: Comments and Responses on Administrative Draft Groundwater Pumping Reduction Workplan: Napa Valley Subbasin (October 30, 202)

March 4, 2024

Commenter Organization (if applicable)	Commenter Name	Section/Chapter Number	Page Number	Line Number	Table Number	Figure Number	Comment	Response
TAG	Julie Chambon	ES-7	ES-9	458			Add "starting with agricultural use" - benchmarking is listed as a practice for all users in tables but in the text it is focused on growers	Added requested text after "benchmarking tool".
TAG	Julie Chambon	2.1.1	4	599			add "either directly measured or" in front of estimated	Edit made.
TAG	Julie Chambon	2.1.1	5	630			word "based" is missing	Added requested text
TAG	Julie Chambon	2.1.3	7	681			17.4 is a typo	The typo was corrected and now reads 17,400
TAG	Julie Chambon	2.2.2	11	802			Need to recognize the limited impact of such restrictions as very few permits are filed for new wells per year. Water saving potential seems very low.	Additional text was added that clarifies water savings potential. "Water conservation from new wells may be modest because relatively few new well permits are issued annually, and thus conservation will need to consider existing wells and users in addition to new well permitting standards. "
TAG	Julie Chambon	2.3	13	footnote			measurably instead of measurable	Edit made in footnote.
TAG	Julie Chambon	2.4.1	14	924			Add practices such as drought resistant landscaping or turf removal	A paragraph has been added to include these practices. "Drought-resistant landscaping and turf removal also reduce water demand. Outdoor landscaping is typically the greatest source of residential water use. Local programs that pay for turf removal have been implemented across the state. Turf removal and drought-tolerant landscaping reduce ET losses and therefore can result in a net depletion water savings. "
TAG	Julie Chambon	3	21	1114			Change "growers" to "water users" as this section/work plan applies to all water users	Edit made.
TAG	Julie Chambon	3.1.2	24	1184			Tule Technology is not satellite based so the information in this paragraph is confusing	Added "or in-field sensors" after satellite.
TAG	Julie Chambon	3.1.2	25	1248			Other limitations may include resistance from water users to measure data with fear of restrictions to be implemented in the future	At the end of this paragraph, added text similar to this, but finish with "because of fear that sharing this data might cause them harm in the long run"
TAG	Julie Chambon	3.1.2.1	28	1316			Add information/potential on expansion of infrastructure to recycle > 54% of Napa WW	Added a paragraph noting the infrastructure needs and expansion potential. "Expanding recycled water requires infrastructure to process water and infrastructure to deliver recycled water to customers. NapaSan published its Wastewater Treatment Plant Master Plan in October 2022. It reviews the existing infrastructure, evaluates facilities, and assesses capacity and capacity constraints. Demands for some customers can be met with expanded water treatment and recycled water delivery."
TAG	Julie Chambon	3.1.2.2	31	1412			Add that education and outreach on the basis for benchmarking will be important to get buy-in from users	Added sentence at the end of the paragraph - saying "encourage participation" rather than "buy in."
TAG	Julie Chambon	3.1.3.2	38	1623			Estimates typo	Edited.
TAG	Julie Chambon	3.1.5	52			3-17	Cash-for-Grass should have its own row (and associated scaling opportunity/saving/etc...)	Cash-for-Grass (or similar incentive programs for replacing landscaping) has been noted as a separate program within the GPR text. No information for scaling opportunity and savings potential was readily available and thus it has not been added as a separate row in the table. Quantifying savings potential would require mapping existing residential outdoor landscaping and estimating the change in ET with drought-tolerant alternatives. This will be considered as part of GPR implementation to achieve residential water savings.
TAG	Julie Chambon	4	57				Add a general introduction to this section before focusing on vineyards: measuring water used is needed across sections; municipal water use and wineries are generally metered and a significant data gap is for water use in vineyard and by rural users	An introduction has been added. "Measuring water use is critical for helping water users reduce consumption in addition to quantifying program-level water savings. Municipal water use and wineries are generally metered. The main data gap exists for water use in vineyards. "

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TAG	Julie Chambon	4.3	67				the implementation for the pilot test is unclear	A paragraph has been added to clarify implementation. "Pilot site implementation will be guided by interest from landowners/businesses that are willing to participate in the program and share data. During development of this workplan several businesses have expressed interest in participating as a pilot site. The potential benefits to participants include but are not limited to data and information regarding water use and conservation practices, reputation as an industry leader in water conservation, and other potential incentives (e.g., cost savings) to be defined as part of workplan implementation."
TAG	Julie Chambon	5	69				suggest adding cost effective for the water user and "for the NCGSA"	Edited.
TAG	Julie Chambon	7.1	80			7-1	Work Plans are not going to be finalized before March 2024 - should the timeline reflects this?	The GPR implementation plan includes adaptive management. If timelines need to be adjusted the implementation schedule will be updated accordingly. Currently, the GPR is scheduled to be completed in March 2024.
TAG	Julie Chambon	7.1.1	81			2772	Indicate here that metrics for evaluating success are provided in Section 7.2.1	Added a sentence at the end of the section.
	Maddy Barnard	ES-7	19	441			3 months seems ambitious. Maybe doing a succession of materials would allow the organization to be responsive to feedback.	The GPR implementation plan includes adaptive management and will be updated based on program progress. Developing initial outreach and educational materials includes a 3 month timeline. It is anticipated that implementation will continue throughout the GPR implementation period, allowing sufficient time for continued stakeholder feedback. This was clarified in the GPR. "The timelines reflect initial development of each component. It is Implementation will continue and will be adaptively managed in response to stakeholder feedback. "
	Maddy Barnard	2.1.2	26			2-1	Extending the averages for historical pumping and current pumping across the whole graph would be helpful	This comment is acknowledged. The horizontal lines indicate current and historical pumping and the period over which those averages apply, therefore no change has been made to the image. Text was added to clarify this for the reader. "The historical and current pumping averages (horizontal dashed lines) are shown over the period over which these averages were calculated. "
Fruition Sciences	Ryan Hill	References	91	3104-3105			AST was reviewing the document I noticed in the sensor technology and reference area that the Fruition Sciences link takes the user to a general sensor flow page of our website.	Added new citation for CEC. Referenced in text on line 1609, and added to list of references.
Napa RCD	Miguel García	3.1.3.2	35	1544			The Napa RCD typically measures flow for 3-5 min. depending on the type of emitter.	Changed "such as 30 seconds" to "such as 3 to 5 minutes"
Napa RCD	Miguel García	3.1.3.2	36	1558			In the past 5 years, the Napa RCD has evaluated 97 vineyards with an average score of 79%.	This has been added to provide additional context for current Napa DU. "The Napa Resource Conservation District (RCD) reports that over the past 5 years, the RCD has evaluated approximately 97 vineyards with an average DU score of 79 percent."
Napa RCD	Miguel García		38	1623			Typo	Edited "Estimates"
Napa RCD	Miguel García	3.1.3.4	44	1820			The Napa RCD does not provide guidance to growers on canopy management. We don't have the expertise.	Sentence deleted.
Napa RCD	Miguel García	3.1.5	50	2031			What about switching from grass lawn to California native vegetation?	The GPR has been expanded to acknowledge landscaping water conservation opportunities. Section 2.4.1 has been updated " "Drought-resistant landscaping and turf removal also reduce water demand. Outdoor landscaping is typically the greatest source of residential water use. Local programs that pay for turf removal have been implemented across the state. Turf removal and drought-tolerant landscaping reduce ET losses and therefore can result in a net depletion water savings. "
	Chris Benz	General			ES-1		1. Target of 13,500 AFY seems unachievable because vineyards (which pump more than 70% of the groundwater and have already taken steps to lower use) will have to decrease their recent (2015-2022) annual pumping (18150 AFY) by 25%.	The GPR defines a suite of voluntary actions the achieve water conservation in the Subbasin across all sectors including agriculture. Table 5-1 shows that the potential water savings for water conservation practices included in the GPR is up to 8,000 AFY. GPR implementation includes adaptive management to measure and monitor the effectiveness of water conservation actions across all water users in the Subbasin.

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	Chris Benz			1012-1013			GPR Workplan states that "Implementing water conservation practices must result in a quantifiable reduction in groundwater pumping in the Napa Valley Subbasin. This requires (i) measuring water use and (ii) quantifying and defining real groundwater savings as water conservation practices are implemented." (lines 1012-1013) How will this be done if metering and reporting are voluntary?	See Master Response #1
	Chris Benz	3.1.2		1207			Water measurement/Metering is listed as a Best Management Practice (3.1.2., line 1207). This should be made mandatory to determine if groundwater pumping is actually decreasing due to the other voluntary measures.	See Master Response #1
	Chris Benz	2.5.2					The GPR Workplan should include the number of groundwater users who currently meter and report use, so that new installation of meters (and the success of this voluntary action) can be tracked.	The exact number of wells that are metered is not known. Table 5-2 in the GPR shows the estimated share (%) and the range of wells that are metered for different types of water uses/users.
	Chris Benz			750-751			Clarify current well permit requirements (lines 750-751). Are meters required? Is there a requirement to report the gallons/year pumped? If so, who receives the report?	The County requires that new well permits in the MST area meter and report water use to the County. Other certification programs, such as Napa Green, may include metering and reporting requirements as part of certification.
	Chris Benz	General					Time and money will be best spent 1) paying for meter installation and a system to track actual amounts of groundwater pumped (as well as monitoring water levels in wells) so users can determine if conservation measures are effective, and 2) streamlining permitting, etc for above ground storage (e.g. surface ponds) at vineyards so that rainwater, rather than groundwater can be used for irrigation as vineyards are the largest groundwater users.	Measuring water use (including meters) is a core component of GPR water conservation practices (see Section 3.1.2) and GPR implementation to measure and validate water savings (see Section 2.5).
	David Graves	General					The GPR's focus on voluntary action is admirable and appropriate--but the outline of the Plan devotes only one vague sentence to eventual mandatory measures that would be required if the voluntary program does not achieve the required GPR goals. And many GSA's will be implementing GPR's--how will our GPR be informed by measures undertaken by other GSA's?	See Master Response #1
	David Graves	General					Component 1 cites "building partnerships with local organizations" as a goal. The County has been working with local organizations since the GRAC days. What is the purpose of a "notification/messaging system"--and what content would be transmitted?	The notification/messaging system would be developed as part of GPR implementation. It's purpose would include general information about water conservation practices and a mechanism for nudges to create behavioral change for water use practices. The GPR Section 7.1.1 has been edited. "This would increase awareness about water conservation practices and encourage adoption. In addition, the NCGSA could also develop an automated system to remind or "nudge" subscribers about relevant water-savings information and encourage behavioral change."
	David Graves	General					Component 2 again demonstrates an admirable commitment to voluntary actions--but if one of the incentives would be fee abatement, knowing what the eventual fee structure will be is important. Does Prop. 218 allow this? Once again, the effort for voluntary collection of meter data has been ongoing. How successful has it been, and what would make it more successful?	See Master Response #1

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	David Graves	General					Component 3 again refers to financial incentives and certification but is not clear on the goal of any eventual certification program. What is consequence of not being certified? The applicability of Prop. 218 is important to understand.	Financial incentives will be developed as part of GPR implementation steps and would be consistent with applicable state law regarding fees. The GPR states that "The intent of this program would be to incentivize the vineyards and wineries to participate in existing certification programs that promote water quantity management, which would generate groundwater savings in the Subbasin." in Section 7.1.3.
	David Graves	General					SGMA prevents GSA's from requiring metering of so-called "de minimus" domestic wells on the assumption that they pump 2 acre-feet or less per year. A robust remote sensing program would enable the GSA to separate the truly de minimus groundwater users from the rest. It would also help us understand the water budget of the entire Watershed and help calibrate the NVIHM.	Remote sensing methods are included and described in GPR Section 4.1. Water conservation practices included in the GPR potentially apply to all water users.
TAG	Monica Cooper	Executive Summary	ES-5		ES-2		All three of these items are described in the text of the plan, but adding them to the table emphasizes their importance, and also demonstrates and details the commitment on potential, timeline and feasibility. a.Add Drought-tolerant or native landscaping to strategies for Municipal, Industrial, Residential: encourage planting of drought-tolerant or native landscaping for residential and commercial buildings and couple this with outreach and education efforts to landscape design professionals, the public and landscaping maintenance professionals to ensure that irrigation is targeted and minimized. b.Add "Reclaimed water for outdoor irrigation" to strategies for Municipal, Industrial, Residential. c.Add "Mulches" to strategies for Municipal, Industrial, Residential	These practices have been noted in the GPR. Additional information can be provided as part of workplan implementation. The following paragraph was added along with an additional paragraph as follows. These additions were included in the executive summary and project matrix sections of the GPR. "Other Urban Water Conservation Opportunities. Other water conservation opportunities for urban (M&I) water users include planting drought-tolerant or native landscaping for residential and commercial buildings, additional outreach and education efforts to landscape design professionals, use of reclaimed water for outdoor irrigation, use of mulches to reduce outdoor irrigation demand, and general improvements in outdoor irrigation scheduling and management.
TAG	Monica Cooper						My other comment is that the workplan should explore the potential, timeline and feasibility for increased stormwater capture for commercial, winery and residential (water catchment systems) and for municipal and agriculture (increased reservoir and pond storage capacity).	The following paragraph was added to the workplan "This GPR Workplan focuses on opportunities to reduce groundwater demand (conserve water). Supply augmentation options may include increased stormwater capture for commercial, winery and residential (water catchment systems) and for municipal and agriculture (increased reservoir and pond storage capacity). These and other supply augmentation opportunities will be assessed for technical, economic, and financial feasibility in parallel with GPR Workplan implementation. Supply augmentation opportunities must be consistent with Subbasin hydrogeologic conditions. " See also Master Response #2
TAG	Albert Filipelli	ES-7	ES-9	458			details to confirm: planting date, variety, rootstock, spacing, trellis system, row orientation, methods for measuring water use, water supply, floor management	GPR Workplan Section 3 describes some of these considerations. GPR Workplan implementation will consider the specifics of planting date, variety, rootstock, spacing, trellis system, row orientation, methods for measuring water use, water supply, floor management, and other items as appropriate to tailor conservation practices to individual water users.

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TAG	Albert Filipelli	1	2	11			ground water pumping model transparency and mapping	The following was added to section 1. "Other water management documents to support GSP implementation are being developed in parallel with the GPR and WC Workplans. The NCGSA is continually updating its website, informational emails, Technical Advisory Group presentations, NCGSA Board presentations, and other public workshops to provide current information to the public. This includes improving mapping resources and providing technical information about groundwater modeling efforts to support GSP implementation. Interested stakeholders are encouraged to subscribe to NCGSA notifications and participate in all opportunities to provide input on workplan implementation. "
TAG	Albert Filipelli	2.1.3					ground water pumping increases for ag are tied to low rainfall years, how can we maximize big water years to recharge aquifers and/or storage	This GPR Workplan is a management action specified in the GSP that focuses on demand management specifically. The GSP includes a range of projects and management actions, which includes supply augmentation options. These are considered separately. See also Master Response #2.
TAG	Albert Filipelli	3.1.2.1					map showing current NSD service area and overlap with Napa Valley Basin	The following has been added to the section. "The NapaSan service area overlaps with a portion of the Napa Valley Subbasin. As such, opportunities for expanding recycled water deliveries would need to be targeted to existing service areas in the short-term, and could be expanded to other areas."
TAG	Albert Filipelli	3.1.3.4	42	1777			(suckering) belongs with shoot thinning, not pruning	Edited.
TAG	Albert Filipelli	3.3	53				Premiere Vit has volunteered, I know of others that would be interested. Important to confirm details from comment on pg# ES-9	This potential interested party has been noted.
		3.3.4					annual cover crop with cultivation v. perennial cover crop no till. Compaction and benefits of in row deep ripping on a multi year program	The following was added: " Cover cropping may include annual cover crops with cultivation or perennial cover crops with no tilling. Other opportunities include soil compaction and benefits of within row deep ripping on a multi year program. Specific opportunities will vary by operation and field conditions. "
TAG	Albert Filipelli	3.5.2					green lawns wih irrigated by well water signs, education	Added the following sentence to urban conservation opportunities: "Other education and outreach opportunities include signs that indicate lawns irrigated using specific water conservation practices and other community awareness. "
TAG	Albert Filipelli	4.2.1	66			4.5	how can we improve presentation of data for ET/AVA/Planting density	A sentence was added to clarify all graphics in section 4. "The figures show box and whisker plots, which indicate the variability (typically in quartiles) around the average in graphical form. "
TAG	Albert Filipelli	7.1.3					matrix of certification program metrics for water use	Certification program review will be included for GPR implementaation. Additional graphics summarizing certification program requirements will be included in these future implementation materials. This may include a summary chart comparing across certification programs.
Winegrowers of Napa County	Michelle Benvenuto	ES-2	ES-3				It is important to emphasize the significance of voluntary actions. First, Napa growers and vintners have a documented history of voluntarily implementing sustainable measures, additionally, achieving overall buy-in is crucial for the success of the plan. Hence, a strategy that emphasizes voluntary participation and encourages a sense of ownership among the community is likely to yield better results in fostering sustainable practices. Regulation is not the cure if stakeholders do not perceive the solutions as effective or feasible. See https://www.strategy-business.com/article/Want-people-to-embrace-transformation-Allow-them-to-own-the-change	The comment is acknowledged. The implementation plan for the GPR emphasizes voluntary actions. See also master Response #1.
Winegrowers of Napa County	Michelle Benvenuto	1.1	3	543-545, 548-552			It's important to clarify the decisions made by the GSPAC. The GSPAC supported a voluntary 10% reduction in pumping, in aggregate throughout the Subbasin (i.e., not well by well), from a base period, not a reduction to a specific volume of 13,500 acre-feet per year.	Noted. Text revised with intent to clarify. See also Master Response #3.

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Winegrowers of Napa County	Michelle Benvenuto	ES-3	ES-6	322-334			Mandatory and Pumping allocations cited in other California jurisdictions - Are these adjudicated allocations (i.e. court issued) or were these made by a GSA?	The examples include both adjudicated basins and GSA management/policy.
Winegrowers of Napa County	Michelle Benvenuto	ES-4	ES-7	381-382			What is the funding source of financial incentive as NCGSA is currently funded through County's General Fund.	The funding sources and specific incentives (financial and otherwise) will be considered as part of GPR Workplan implementation. This will be part of the standard public process at TAG meetings, NCGSA Board meetings, and other public workshops.
Winegrowers of Napa County	Michelle Benvenuto	1.1	3	543-545, 548-552			It's important to clarify the decisions made by the GSPAC. The GSPAC unanimously supported a voluntary 10% reduction in pumping, in aggregate throughout the Subbasin (i.e., not well by well), from current use, not a reduction to a specific volume of 13,500 acre-feet per year. The interim Measurable Objective for ISW of a 10% reduction in pumping to approximately 10 percent of 15,000 acre-feet per year or 13,500 AFY, is not interchangeable. These are two different actions that are not related.	Comment noted. Text revised with intent to clarify. See also Master Response #3.
Winegrowers of Napa County	Michelle Benvenuto	2.1.1	4	596			It seems like a missed opportunity to not monitor groundwater usage by environmental users and GDEs. While there is no expectation to reduce groundwater use by GDEs through this workplan, knowing GDE groundwater use is key to understanding how the basin's groundwater is consumed. Reducing applied groundwater benefits ISW and GDEs (838-840), so measuring that benefit seems valuable to understand the effect of the GSP and associated workplans. Could evapotranspiration be used to monitor this groundwater use as well? If GDE groundwater consumption increases, isn't that a metric in relation to ISW?	All sources of groundwater use are monitored as part of GSP hydrologic modeling and water balance development. Some remote sensing algorithms provide data on the consumptive use of water by vegetation in GDEs. Some of the plant water demand will be met by groundwater and some may be met by surface water, depending on the location of the GDE. GDE use varies with annual weather conditions, which is accounted for in GSP modeling. GDEs are not expanding so there is no reason to expect increasing consumptive water use. The ISW Workplan addresses monitoring and data needs for evaluating ISW.
Winegrowers of Napa County	Michelle Benvenuto	2.2.2	10	776-777			In February 2022, the Napa County BOS acknowledged the need to revise the County's Groundwater Ordinance and the WAA. However, it's important to avoid stating that they approved an action or resolution since that was not the case. An accurate representation of the events ensures the document maintains its credibility and transparency.	Text revised to clarify.
Winegrowers of Napa County	Michelle Benvenuto	2.2.2	10	782-783			To date, there has been no data or scientific evidence provided by Napa County to support the reduction of the water use criterion for the Subbasin to 0.3 acre-feet per acre per year. The reduction was calculated based on simple arithmetic by dividing the total Subbasin area of 45,900 acres by the estimated sustainable yield of 15,000 acre-feet per year. The absence of supporting data raises questions about the scientific basis for this criterion.	Comment noted. Additional explanation of the water use criterion will be provided in conjunction with information on revisions to the Groundwater Ordinance and WAA, which are being developed through a separate process.
Winegrowers of Napa County	Michelle Benvenuto	2.2.2	11	785-786			Groundwater Ordinance are in progress, since this has been discussed for over two years without any tangible progress. When will these updates be agendized for public discussion? Clear communication on the timeline for these items would help ensure transparency and trust.	The process for updating the Groundwater Ordinance is beyond the scope of the GPR Workplan. The GSP, Workplans, and all County Ordinances will continue to be developed through a transparent, public process.

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Winegrowers of Napa County	Michelle Benvenuto	2.2.2	11	798-799			How does the County justify the continuation of revised well permitting requirements in fulfilling its duty to manage groundwater resources when there has been no public discussion or approved BOS or GSA action to substantiate such measures in the first place?	County well permitting requirements are beyond the scope of the GPR Workplan. The GSP, Workplans, and all County Ordinances will continue to be developed through a transparent, public process.
Winegrowers of Napa County	Michelle Benvenuto	2.5	18	1021, 1071			Highlighting the importance of quantifying actual groundwater savings is essential for proponents of strict metering. This emphasis acknowledges that metering alone may not capture the complete picture, as noted on line 1071.	As stated in the GPR, quantifying reductions in groundwater pumping requires (i) measuring water use and (ii) quantifying and defining real groundwater savings as water conservation practices are implemented. Both metering (measuring gross pumping) and remote sensing data (measuring consumptive use) are important for quantifying groundwater savings.
Winegrowers of Napa County	Michelle Benvenuto	2.5.1	18	1048-1055			If remote sensing ET is used to impose limits on groundwater use in dry farming, the only way to comply would seem to be removing the dry farmed vineyard. Is that the intent? Property owners have precise control over groundwater pumping, but less precise control over water uptake by vines.	The GPR describes how remote sensing ET data can be used to calculate total consumptive water use. There is no discussion of a per acre limit on crop ET for dry farmed acres.
Winegrowers of Napa County	Michelle Benvenuto	3.1.2.1	26	1265-1266			What is the source for determining that recycled water most often offsets surface water use? The MST and Carneros are not supplied by municipal sources and, our understanding is that, there are not a huge number of surface water rights holders there. The 101 vineyards totaling over 2,200 acres that are receiving recycled water (1291), are more likely offsetting groundwater use.	Most recycled water is used to offset municipal and industrial uses, which primarily offsets surface water demand. A sentence was added to clarify agricultural uses in the Carneros area. "In agricultural uses, such as the Carneros area (which is outside of the Napa Valley Subbasin boundary) recycled water deliveries can offset groundwater pumping. "
Winegrowers of Napa County	Michelle Benvenuto	3.1.3.5	45	1865			Napa County must enhance its Track 2 replanting process to actively encourage consideration of row orientation rather than discouraging it.	This comment has been noted.
Winegrowers of Napa County	Michelle Benvenuto	7.3					Suggest adding a mechanism in the mandatory measures to recognise properties that already took voluntary measures.	See Master Response #1
Winegrowers of Napa County	Michelle Benvenuto	8					It's crucial to emphasize that the GSPAC took two distinct actions. The first involves a voluntary 10% reduction in current groundwater use, while the second pertains to the ISW Measurable Objective, aiming to reduce groundwater pumping by 10% of the recent historical average pumping (2005-2014) of 15,000 AFY to maintain and improve interconnected surface water conditions.	Text edits made to clarify and provide context.
Winegrowers of Napa County	Michelle Benvenuto	General					Incorporating a dedicated Definitions section in the document would enhance clarity and accessibility. This section could provide concise and clear definitions for terms such as water use, gross water applied, crop consumptive use, net depletion, and other key terms used throughout the document. This approach would make it easier for readers to reference and understand the terminology without having to search through the entire document, contributing to overall document transparency and comprehension.	Abbreviations and Acronyms are listed at the beginning of the document. Other technical terms are described in the document because these terms typically require some context to explain and thus do not lend themselves to a short table format.

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Winegrowers of Napa County	Michelle Benvenuto	General					Groundwater level and storage are valuable indicators. Why are they not utilized as a metric?	The GPR Workplan identifies opportunities for water users to reduce gross or net groundwater use within the Subbasin. Measuring the results of water conservation practices focuses on quantifying the water savings attributable to each water conservation practice included in the workplan. Separately, GSP implementation will continue to monitor appropriate basin-wide sustainability indicators.
UC Davis	Graham Fogg						General comment 1: I agree that starting with the goal of a 10% reduction in pumping makes sense. I think the authors could make the reasoning behind this clearer by referring to their previous work, such as Fig. 7-13 of the GSP, which shows the post-2000 general increase in groundwater pumping that also coincides with the post-2000 conversion of the Napa River from perennial to intermittent. This might help stimulate broader public support for the cutbacks by making clearer the motivation and reasoning for the 10%, along with the serious consequences that would likely arise from a failure to achieve that goal.	This comment is noted.
UC Davis	Graham Fogg						General comment 2: Although the goal of 10% reduction in pumping makes sense, I am concerned that the proposed strategy of applying this broadly across the valley might not yield the desired results (e.g., converting the Napa River from intermittent to perennial). I say this because, based on groundwater data already presented in the GSP and GS Annual Report 2022, the pumping impacts on streamflow depletion appear to be much more acute in some areas than others. This indicates to me that once the 'hot spots' of pumping and streamflow depletion are better identified, a more site-specific approach to reductions in groundwater pumping may be necessary. In fact, if the problem is site-specific due to streamflow depletion in just 2 or 3 reaches, a regional cutback of 10% by itself might fail to achieve the desired results.	Added clarifying text to point out that this Subbasin-wide goal may be achieved through site-specific efforts. At the end of the first paragraph of sections ES-1 and 8, added the sentence "Although this is a Subbasin-wide goal, it may also be achieved through site-specific, focused efforts, particularly those that ensure depletion of interconnected surface water is avoided." Please note that it is clarified in other parts of the Workplan that this is an aggregate goal, not a goal to be matched by every well (e.g., the last sentence of the second paragraph of section 1.1)
EGS Inc.	Paul Brophy	General					An excellent document with thorough analysis particularly of shallow (root-zone) hydraulics although the document does have the appearance more of a Technical report rather than a Workplan. It seems to primarily call for further studies and evaluations rather than specific goals, tasks with timelines and defined outcomes, more commonly included in Workplans. While Section 7 does include a general timeline (Table 7.1) there are only minimal specifics. Could more detailed metrics be included - such as annual targets for numbers of volunteer sites recruited, well metering etc	The timeline provided in the GPR Workplan provides a roadmap for achieving key milestones. Specific dates and annual targets will be determined as part of GPR implementation, and will be subject to change as part of the adaptive management process.

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Commenter Organization (if applicable)	Commenter Name	Section/Chapter Number	Page Number	Line Number	Table Number	Figure Number	Comment	Response
EGS Inc.	Paul Brophy	Chapter 4					Evaluation of ET and other surface/shallow water conditions are critical to ensuring groundwater sustainability and are comprehensively covered in this Workplan. However the unsaturated portion of aquifer i.e. the section from the base of the approximate root zone (say 10 feet) to the top of the groundwater table receives no attention in the document. It would be of value to have a brief discussion of how variations within the unsaturated zone impact i) groundwater availability, ii) the general movement of water in the subsurface, and iii) the possible vertical and horizontal groundwater flow rates. We do see significant variations of 5-60 feet in the average seasonal (spring) RMS depths to groundwater which will impact groundwater recharge and hence the need for pumping. As previously suggested, this could be a case where isotopic dating of groundwaters would help better understand impacts to sustainability.	This GPR Workplan is a management action specified in the GSP that focuses on demand management specifically. The GSP includes a range of projects and management actions, which includes supply augmentation options. See also Master Response #2. The emphasis on ET is because this represents crop consumptive water use. Additional analysis of subsurface water movement and isotopic dating of groundwater is noted as potential for future evaluation, but beyond the scope of the GPR.
UCCE Napa	Qicheng Tang	ES-7	ES-9	439-445			These two components can be combined. Delegating necessary material-building process to partners can be a feasible approach.	This comment is acknowledged. These bullet points are presented separately because they include different tasks with different timelines.
UCCE Napa	Qicheng Tang	2.14	9	719-722			Can we possibly do some uncertainty quantifications? (like a Bayesian-style analysis)	The climate conditions applied are appropriate for the scope of this Workplan.
UCCE Napa	Qicheng Tang	4.1.3.1	61			4-2	Should mark the p values for each group comparison	The figure illustrates the means across groups for illustrative purposes. The GPR implementation plan will define the benchmarking program. This includes identifying statistically relevant parameters to classify peer groups. Statistical measures of fit may be included in relevant implementation documents.
Napa Valley Vintners	Michelle Novi	General					This Groundwater Pumping Reduction Workplan (GPR Workplan) summarizes the actions, opportunities, and implementation plan for achieving water conservation that result in a reduction in total groundwater pumping and a reduction in net depletion from the Subbasin aquifer system. The NVV supports and recommends that all voluntary measures to achieve groundwater sustainability are supported, promoted and prioritized to the fullest extent possible before implementing mandatory measures.	This comment is acknowledged.
Napa Valley Vintners	Michelle Novi	General					Within the GPR's adaptive management framework, allowing for user water retention and supporting projects for ground water recharge should be given additional emphasis and focus.	This GPR Workplan focuses on demand management specifically. Supply augmentation opportunities will be considered separately. See also Master Response #2.

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Hundred Acre Wine Group, Inc	Scott Slater	General					Letter	This letter is acknowledged. As described in Section 1 of the GPR, the GPR Workplan is one of the PMAs defined in the GSP to provide a roadmap and options for reducing groundwater pumping across the Subbasin. The Napa Valley Subbasin GSP includes Projects and Management Actions for achieving the sustainability goal as required by GSP Regulations. Following adoption of the GSP, initial GSP implementation for Management Action #2: Groundwater Pumping Reductions (GPR) has involved development of the GPR Workplan as specified in the GSP. The GSP Regulations also require a description of the Measurable Objective that will benefit from the Projects and/or Management Actions. For Management Action #2: GPR, the GSP specifically describes the Measurable Objective for the sustainability indicator for depletions of interconnected surface water. Accordingly, the overarching objective of the GPR Workplan is to achieve a reduced streamflow depletion goal, and associated sustainability goal, through reducing groundwater pumping. The GPR focuses on voluntary, incentive-driven actions that can be applied by potentially all water users in the Subbasin to achieve groundwater sustainability benefits. See also Master Response #3.
GSM	Gary Margadant	General					Letter	This letter is acknowledged. The comments in this letter are specific to the Napa County Groundwater Sustainability Annual Report, the Napa County Groundwater Monitoring Report, the ISW and GDE Workplan, and the Napa County General Plan. There were no GPR Workplan-specific comments identified and no edits have been made.
Institute for Conservation Advocacy, Research & Education/ICARE	Chris Malan	General					Letter	In response to the parts of this letter pertaining specifically to the GPR workplan: 1. This GPR Workplan is a management action specified in the GSP that focuses on demand management specifically. Stream gauging is not a component of this specific Workplan. 2. Please refer to Master Response #1. 3. The goal of the GPR Workplan is to outline options for achieving a 10 percent reduction in groundwater pumping (see Master Response #3). The pumping reduction goal may be modified in the future as part of the adaptive management process. Please see Master Response #1 regarding voluntary actions. 4. Cover cropping is described in section 3.1.3.3. The section also describes limiting tillage operations as a means to increase soil water holding capacity, with additional text added to clarify that perennial cover crops do not require annual tillage. Dry farming is described in section 3.1.3.1. Mulching is discussed in section 3.1.3.3 as a means to improve soil health and water retention for vineyards, and in section 2.4.1 as a means to improve soil health and water retention for outdoor landscapes. Biodynamic farming incorporates a range of practices including those covered in these sections. Practices focused on increasing groundwater recharge are not specifically covered in this Workplan because the GPR Workplan is a management action focused on demand management, not supply augmentation. Please also refer to Master Response #2. 5. The GPR Workplan is concerned with reducing groundwater demand. Mapping dry wells may support targeted implementation of the GPR, but is beyond the scope of the Workplan. 6. The GPR Workplan explores ways to reduce groundwater pumping across all water users. Evaluating the location of any disadvantaged communities may support targeted implementation of the GPR, but is beyond the scope of the Workplan.

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NVG	Sonya DeLuca	General					Letter	In response to the questions presented in this letter on the GPR Workplan: 1. The water measurement options presented in this Workplan are voluntary actions for agricultural water users to consider for their operations. The limitations of using ET to measure water use, specifically the inability to separate water sources, are acknowledged in the Workplan. Options other than metering are presented in the Workplan. Collecting and synthesizing this data will be refined as part of GPR implementation, and the GSA will continue to monitor Subbasin-wide groundwater pumping using multiple methods. 2. The Workplan itself is not introducing new well permitting requirements. As described in Section 2.2, the the Groundwater Ordinance and WAA define the Interim 0.3 AFY amount for new well permits. 3. As the letter acknowledges, quantifying land and river restoration impacts is beyond the scope of the GPR Workplan. Additional interaction between this Workplan and land and river restoration efforts may be explored during GPR implementation.
Friends of the Napa River	Sent by David Graves on behalf of Board of the Friends of Napa River	General					Letter	In response to the parts of this letter pertaining specifically to the GPR Workplan: 1. Benchmarking is presented as an action that could benefit all water users, which would include "Domestic and Other Small Water Users." 2. As acknowledged in this letter, the GPR Workplan focuses on voluntary actions, including water measurement. Water measurement options include metering and ET measurement. The Workplan acknowledges that these measurement methods, especially remote sensing, have limitations. Collecting and synthesizing this data will be refined as part of GPR implementation, and the GSA will continue to monitor Subbasin-wide groundwater pumping using multiple methods.
Napa Green	Anna Brittain	ES-3					Current text: "In exchange, the NCGSA could include funding to pay individuals to become certified since certified businesses save the NCGSA costs by being good stewards of groundwater resources." <i>We would recommend a better approach would be for NCGSA to provide a pool of funds annually that could be distributed via trusted partners like Napa Green for implementation of a set list of best practices.</i>	On page ES-6, added after the referenced sentence, " Another option is for the NCGSA to provide a pool of funds annually that could be distributed to designated programs for implementing water conservation practices."
Napa Green	Anna Brittain	ES-7	10				Current text: "Outline the minimum criteria for a certification program to incorporate key water conservation practices of relevance to the Napa Valley Subbasin and groundwater sustainability issues (i.e., define which practices would need to be incorporated in the program)." <i>This is essential as, for instance, for CSWA you'd want to require Tier 3 or 4 level water efficiency/conservation practices, which are not currently required for certification. Or in the case of Fish Friendly Farming, there are actually no required water efficiency practices, and that program has no winery relevance.</i>	This is an essential component of the Workplan. Edits have been made to the section. "This is an important component of certification program design. Under existing certification programs specific practices could be required (e.g., Tier 3 or 4 level water efficiency/conservation practices under CWSA) or water conservation practices would need to be included (e.g., Fish Friendly Farming does not currently include water efficiency practices). "

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Napa Green	Anna Brittain	2.3	13				Current text: "Agriculture. Reducing net depletion can be achieved by changing to less water intensive crops or grape varieties, idling land, and reducing non-productive5 evapotranspiration (ET)." <i>It is not realistic, given the value of vineyard land and winegrapes, to think that regional growers might shift to less water intensive crops (what would those even be, as winegrapes are not relatively water intensive?) or grape varieties, or idle land. It would be better to focus on opportunities at replant to shift to drought-tolerant rootstocks, design for dry farming, utilize new trellising systems, and/or strategic orientation to reduce water demand and heat stress.</i>	The workplan covers all potential opportunities for changes in land use. Changing to less water intensive crops can reduce net depletion, even if it is unlikely that much land would be interested or feasible to change into alternative uses. The statement is included for completeness. An additional sentence was added to clarify.
Napa Green	Anna Brittain	2.3	13				Current text: "It is important to note that some irrigation efficiency improvements can lead to an increase in ET of applied water by the crop and, therefore, an increase in total water use." <i>This statement doesn't make sense - if you improve efficiency you apply less water, so there would not be an increase in total water use. We have no seen an example where more efficient irrigation practices led to higher water use.</i>	Additional clarification was added to the workplan text. By applying water more efficiently to crops, the crop can use more of the applied water, and therefore can have a greater total ET for the season. The increase in irrigation efficiency in this case represents decreases in run-off, deep percolation, and other non-consumptive uses of applied water that are greater than the increase in total ET due to better application efficiency. That is, total applied water goes down, but the total used by the crop still goes up. Non-consumptive uses of water such as deep percolation can lead to groundwater recharge (decreases net groundwater pumping) while crop ET increases net groundwater pumping. Therefore, increased irrigation efficiency can, in some cases, increase the net demand for groundwater.
Napa Green	Anna Brittain	2.4.2	15				Current text: "Napa Green has also reported that most wineries are already implementing 60-70 percent of sustainability practices to become certified (Napa Green, 2023)." <i>I believe the context of this comment was that most wineries are not starting from zero when they begin the certification process, but this does not make sense in this context. Recommended text: "Napa Green Certified wineries have to implement over 120 sustainability practices, including a minimum of 23 Water Efficiency best management practices."</i>	This edit was made.
Napa Green	Anna Brittain		16		Table 2-2 & 2-3		<i>Given that CSWA is not hugely active in Napa County it seems like it would make more sense to show tables of Napa Green Winery & Vineyard measures. E.g., WINERY REQUIRED: Water metering/monitoring; SOPs for tank, barrel and hose cleaning; Spring-load, low-flow nozzles; Separate landscape meter for >5,000 sf; WINERY RECOMMENDED: Steam for barrel cleaning; Use cleaning product that significantly increases water use efficiency for tank cleaning process...</i>	Clarification was added to text of table 2-2. "Napa Green includes required and recommended practices for wineries under its verification and certification program. Examples of required practices under Napa Green include water metering/monitoring; tank, barrel and hose cleaning; low-flow nozzles; and separate landscape metering. Examples of Napa Green recommended practices include steam for barrel cleaning and using cleaning product that significantly increases water use efficiency for tank cleaning process. Workplan implementation may explore expanding these practices and ensuring verification. "
Napa Green	Anna Brittain	3.1.3.2	34				<i>May be worth noting that Napa Green requires DU tests every five years, conducts the tests for growers, and requires an Action Plan for implementation of any significant recommendations.</i>	Text is added to page 35.
Napa Green	Anna Brittain	3.1.4.1	47				<i>We have never seen waterless barrel sanitation. There is waterless TANK sanitation available via the BlueMorph UV systems.</i>	This has been corrected to refer to waterless tank sanitation.

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