

NCGSA Water Conservation Certification Program: Structure and Minimum Requirements

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Table of Contents

1. Purpose and Background.....	5
2. Current Winery and Vineyard Certification Programs	6
2.1 Certification Goals	6
2.2 Existing Programs	6
3. NCGSA Water Conservation Certification Program.....	10
3.1 Program Structure	10
3.2 Minimum Water Conservation Practices	11
3.2.1 Vineyard Minimum Water Conservation Practices.....	11
3.2.2 Winery Water Conservation Practices	15
3.3 Minimum Verification and Audit Requirements	16
4. Program Water Conservation Measurement	19
4.1 Data Reporting.....	19
4.2 Measuring Water Conservation	20
5. Program Costs, Incentives, and Funding	22
5.1 Certification Program Costs.....	22
5.2 Program Participant Costs	22
5.3 Incentive Opportunities.....	23
5.4 Funding Opportunities.....	24
6. Program Implementation	25
6.1 Implementation Timeline	25
6.2 Ongoing Program Implementation and Evaluation.....	27

List of Figures

Figure 1: Vineyard Certification Matrix.....	8
Figure 2: Winery Certification Matrix	9

List of Tables

Table 1: Vineyard Minimum Water Conservation Practices.....	12
Table 2: Winery Minimum Water Conservation Practices	15
Table 3: Vineyard Water Conservation Practice Minimum Verification Methods	17
Table 4: Winery Water Conservation Practice Minimum Verification Methods	18
Table 5: Implementation Timeline.....	26

1. Purpose and Background

The Napa County Groundwater Sustainability Agency (NCGSA) has developed and is implementing the Water Conservation (WC)¹ and Groundwater Pumping Reduction (GPR)² Workplans. The GPR Workplan includes an implementation plan and anticipated timeline for a broad program to achieve measurable reductions in groundwater pumping in the NCGSA. The WC Workplan identified a suite of water conservation practices and the GPR Workplan developed an implementation plan to achieve measurable water savings in the Napa Valley Subbasin. GPR implementation anticipates a voluntary program that incentivizes growers and other water users/industries in the Subbasin to adopt and expand water conservation practices. Water conservation actions include those that reduce total groundwater pumping and those that may additionally reduce net depletion of groundwater (total groundwater pumping less usable groundwater that returns to the aquifer).

One opportunity identified in the GPR implementation plan for encouraging voluntary adoption of water conservation practices is certification programs. Certification programs require participating operations to meet specified standards to become certified. In exchange, certified businesses can demonstrate good stewardship of resources, meet regulatory standards, satisfy buyer specifications, label their product in a certain way, and potentially have access to new markets. This can also create additional value (higher price or cost savings) for some producers.

This document defines the framework/elements for the **NCGSA Water Conservation Certification Program**, a voluntary certification program for water conservation practices to support sustainable groundwater conditions in the Napa Valley Subbasin. The program applies to vineyards and wineries³. Program elements include defining minimum standards for:

- Requirements for water conservation practices implemented by vineyards and wineries. This includes specific practices and the timeline for implementing practices.
- Standards for third-party audits and verification to ensure that practices are implemented and maintained.
- Data and reporting requirements for measuring program outcomes.
- Preliminary estimates of program costs and incentives for encouraging program adoption.

This document defines the minimum standards for the NCGSA Water Conservation Certification Program. The standards are specific in key components, but they are also purposefully flexible to encourage participation and adoption of the program. The NCGSA anticipates working with one or more existing certification programs to implement this program. The following sections of this document provide an overview of existing certification programs, define minimum water conservation practices for

¹ <https://www.countyofnapa.org/DocumentCenter/View/30301/Napa-County-Water-Conservation-Workplan-PDF?bidId=>

² <https://www.countyofnapa.org/DocumentCenter/View/30303/Groundwater-Pumping-Reduction-Workplan-PDF?bidId=>

³ Water conservation is being evaluated for all industries in Napa County, including municipal and industrial (M&I) water users. M&I water use, conservation opportunities, and existing programs are different than opportunities for vineyards and wineries. Programs and water conservation opportunities for M&I water uses are described in the Water Conservation and Groundwater Pumping Reduction Workplans. M&I water conservation is being evaluated under other GPR Workplan implementation components.

the NCGSA Water Conservation Certification Program, requirements for data and reporting, and opportunities for incentives to encourage program participation.

2. Current Winery and Vineyard Certification Programs

There are multiple sustainability certification programs currently used in Napa County. These programs have different water conservation practices, standards, verification methods, data reporting, and program costs. Due to the complexity of the program requirements and different program objectives, it is difficult to directly compare the programs. In general, Napa vineyards and wineries utilize these programs to meet various goals related to regulatory compliance, stewardship, sustainability, and marketing.

2.1 Certification Goals

In Napa Valley, wineries and vineyards have various motivations to pursue certification, from demonstrating responsible business practices to fulfilling market expectations. Interviews with industry representatives, certification bodies, and businesses reveal key goals and incentives for certification:

- **Business practices and resource stewardship.** Many Napa wineries and vineyards view certification as a mark of commitment to high standards and environmental stewardship. This allows businesses to showcase their dedication to industry-leading practices and resource conservation, enhancing their reputation among peers and consumers.
- **Consumer preferences and marketing.** Growing consumer interest in responsibly produced wines may provide some certified businesses with a marketing edge. Certification sets these businesses and their products apart from their competitors by validating their sustainability claims through third-party verification of a set of standards. Some certified producers may achieve a modest price premium, although in Napa Valley, isolating the premium from factors like grape quality, brand reputation, and broader industry practices is challenging.
- **Regulatory compliance.** Some programs can also assist vineyards and wineries with meeting regulatory requirements for farming and other businesses practices in industry.
- **Buyer specifications.** Components of some certification programs are recognized by international buyers. This reduces barriers for businesses exporting wine to meet requirements, regulations, and evolving trade expectations related to sustainability.

Certification for everything except regulatory compliance is voluntary. Expanding participation in certification programs—especially for water conservation practices—will require developing incentives that align with business objectives and industry goals.

2.2 Existing Programs

There are four prominent vineyard and winery certification programs used by California wineries and vineyards, and/or by producers in Napa County. While there are other programs in the region, such as

Napa County Resource Conservation District (RCD) LandSmart, these four include water conservation practices closely aligned with the goals of the GPR Workplan.

- **Napa Green (NG).** Napa Green is a sustainable winegrowing certification program focusing specifically on water efficiency, supply chain efficiency, energy efficiency, regenerative farming, soil health, and social equity. The local program has 90 Napa Green Certified wineries and 70 growers certified or in the process of becoming certified, representing over 7,200 vineyard acres in Napa County.
- **California Sustainable Winegrowing Alliance (CSWA).** Certified California Sustainable Winegrowing is a certification program dedicated to producing quality winegrapes and wine while protecting the environment, people, and businesses. The program operates statewide and has approximately 44 wineries and 260 vineyards on 15,500 acres certified in Napa County.
- **Sustainability In Practice Certified (SIP).** SIP is a certification program for winegrowers and winemakers centered around economic viability (prosperity), environmental stewardship (planet), and social equity (people) outcomes and practices. This program focuses on vineyards and wineries on the Central Coast of California but with some small additional certifications in other parts of California, Oregon, and Michigan.
- **Fish Friendly Farming (FFF).** Fish Friendly Farming is a vineyard and agricultural regulatory compliance program that serves over 39,600 acres of vineyards in 10 California counties, supporting regulatory compliance with water quality regulations and other environmental improvements, including water conservation and efficiency. It is the only program listed here that is specifically for regulatory compliance.

Every sustainability program certifies other practices in addition to water conservation. This includes practices such as pest management, fertilizer, soil health, social equity, ecosystem, fire, air quality, energy, and climate. In short, certification programs offer their members a wide scope of certified practices in addition to water conservation. These additional practices are developed, in part, to meet consumer expectations and buyer specifications, and for the broader program objectives for the certification program.

Figures 1 and 2 summarize four existing certification programs. Since the programs differ in the practices certified, the programs are not directly comparable in all aspects, but the figures provide a concise summary of practices certified, presence in Napa and other regions, and program costs. Fish Friendly Farming has the most certified area of vineyards because it provides regulatory compliance for the Regional Water Quality Control Board Irrigated Lands Regulatory Program. Napa Green and CSWA have around 7,200 and 15,500 acres certified in Napa County, respectively. SIP Certified has a smaller presence in Napa County but has certified over 46,000 acres in California, Oregon, and Michigan. Similarly, CWSA and Fish Friendly Farming have a broader certification program in California, with over 200,000 certified acres each.

Figure 1: Vineyard Certification Matrix

	California Sustainable Winegrowing Alliance	Fish Friendly Farming	Napa Green	SIP Certified
Vineyard Certification?	Yes	Yes	Yes	Yes
Costs				
Certification Cost (Up Front)	0	95% of vineyards in Napa have already paid	\$800-\$1,200	\$500/\$1,000
Certification Cost (Annual)	\$250-\$2,500	0	\$450-\$3,100	\$5-\$20/acre
Additional Costs	\$250 for vineyard management companies	\$2.00 per vineyard acre for direct access to the FFF data base for managers to see their required actions and timelines	0	0
Third-Party Audit	\$650-\$2,000+, depending on size	\$500 every 5 years	\$500-\$2,000+ every 3 years, depending on size	\$100 - \$2,000+ annually, depending on size and Cycle type
Water Conservation Practices				
Distribution Uniformity Testing	Yes	Yes	Yes	Yes
Metering	Yes (category 3)	Yes	Yes	Yes
Soil Moisture Monitoring	Yes	Yes	Yes	Yes
Plant Moisture Monitoring	Yes	Yes	Yes	Yes
Erosion Control	Yes	Yes	Yes	Yes
Water Source Documenting	No (auditors check data collection methods, and site specific efforts are made to minimize negative impacts on watershed issues)	Yes	Yes	Yes (wells are mentioned several times; when a well isn't used, source water is identified so backflow prevention can be implemented)
Low-Volume Irrigation (e.g., drip)	Yes	Yes	Yes (baseline)	Yes
Water Conservation for Replanting	No	Yes	Yes	No
Cover Cropping	Yes	Yes	Yes	Yes
Verification Process				
Third Party Verification?	Yes	Yes	Yes	Yes
Report Metered Water Use?	Yes	Surface water diversions are reported to the State Water Board	Yes	Yes
Verification Frequency	Annual	5 years	Annual	Annual
Other Notes	Must rank category 2 for 85% of 148 practices; 60 required practices; main costs from annual audit	Certified by National Marine Fisheries Service and County Agricultural Commissioner; annual online audits	Interim annual desk audits; third-party audit every 3 years	Third-party desk audit annually; Third-party onsite visit every 3 years
Napa County Presence				
Acres Certified	15,500	40,000 (100k including roads, creeks, etc.)	6,000 (14,000 acres including properties)	
Vineyards Certified	260	1,100	62	
California Presence				
Acres Certified	204,000	224,000	6,000	46,000+ (CA, OR, MI)
Vineyards Certified	2,247	2,000	62	400+
Other Program Certifications				
Pest Management	Yes	Yes	Yes	Yes
Applied Nitrogen	Yes	Yes	Yes	Yes
Social Equity	Yes	Yes	Yes	Yes
Forest/Fire Management	No (not required, but provide resources for fire preparedness and practices to help with fire prevention)	No (in process of developing separate Fire Risk Reduction certification in cooperation with CAL FIRE)	Yes	No
Ecosystem Management	Yes	Yes	Yes	Yes
Air Quality and Climate Protection	Yes	No (separate Climate Adaptation certification)	Yes	Yes
Other Program Considerations				
Educational Tools/Events	Yes	Yes	Yes	Yes
Process for Program Updates	Annually reviewed	Scientific review	Bi-annual update; Updates more frequently as needed	Annual Review; 5-year Peer Review

Figure 2: Winery Certification Matrix

	California Sustainable Winegrowing Alliance	Fish Friendly Farming	Napa Green	SIP Certified
Winery Certification?	Yes	No	Yes	Yes
Costs				
Certification Cost (Up Front)	0	NA	0	\$500/\$1,000
Certification Cost (Annual)	\$300-\$5,000	NA	\$550-\$3,850	\$0.002-\$0.03/gallon; 25% discount if combined with Vineyard certification
Additional Costs	\$100 discount for certifying both winery and vineyard	NA	Integrated resource audit year 1, 6, 12,... \$1,350-\$2,250; abbreviated resource audit year 3, 9, 15,... \$750-\$1,500	0
Third-Party Audit	\$650-\$2,000+ per year, depending on size		\$500-\$2,000+ every 3 years, depending on size	\$100 - \$2,000+ annually, depending on size and Cycle type
Water Conservation Practices				
Waste Water Management	Yes	NA	Yes	Yes
Metering	Yes (category 3)	NA	Yes	Yes
Sanitation	Yes	NA	Yes	Yes
Landscaping	Yes	NA	Yes	Yes
Process Water Reuse	Yes	NA	Yes	Yes
Water Timing (off-peak hours)	Yes	NA	Yes	Yes
Verification Process				
Third Party Verification?	Yes	NA	Yes	Yes
Report Metered Water Use?	Yes	NA	Yes	Yes
Verification Frequency	Annual	NA	Annual	Annual
Other Notes	Annual self-assessment; 4 categories; must rank category 2 for 85% of 108 requirements; 41 required practices; main costs from annual audit	NA	Annual desk audit; third-party audit every 3 years; Winery Irrigation Resource Assessment is an "Upfront Cost" because it is required to be certified.	Third-party desk audit annually; Third-party onsite visit every 3 years
Napa County Presence				
Wineries Certified	44	NA	90	
California Presence				
Wineries Certified	171	NA	90	5 (CA & MI)
Other Program Certifications				
Energy or Greenhouse Gas Reporting	Yes	NA	Yes	Yes
Social Equity	Yes	NA	Yes	Yes
Labor/Employee Practices	Yes	NA	Yes	Yes
Sustainable Purchasing	Yes	NA	Yes	Yes
Air Quality and Climate Protection	Yes	NA	Yes	Yes
Other Program Considerations				
Educational Tools/Events	Yes	NA	Yes	Yes
Process for Program Updates	Annually reviewed; regulatory compliance	NA	Annually reviewed	Annual Review; 5-year Peer Review

3. NCGSA Water Conservation Certification Program

This section defines the NCGSA Water Conservation Certification Program, including the program structure, minimum requirements for water conservation, verification, reporting, and implementation.

Potential participants in the program include both:

- **Partner certification programs.** These are one or more existing certification programs that would be approved/recognized by the NCGSA as meeting the minimum requirements of the NCGSA Water Conservation Certification Program.
- **Certified vineyard and winery participants.** Eligible participants include wineries and vineyards located within the Napa Valley Subbasin. Participants become certified through one or more of the partner certification programs.

Certification program participation will be voluntary. It is not intended to be an additional regulatory burden and cost for participants but an opportunity to be recognized for conserving water in a region with significant concerns for the future of water and agriculture sustainability. The NCGSA Water Conservation Certification Program furthers outreach and education about water stewardship in the Napa Valley Subbasin and provides a process for measuring and validating water conservation practices in the Napa Valley Subbasin.

3.1 Program Structure

The NCGSA Water Conservation Certification Program structure defines how the program will be implemented by the NCGSA. The following options were considered:

1. A stand-alone program managed by NCGSA staff. There would be no partner programs (the NCGSA would be the program), but this would impose a substantial administrative burden on the NCGSA and would duplicate some of the efforts of other certification programs that already operate in the county.
2. NCGSA partners with one or more local organizations to develop the program (the NCGSA jointly runs the program). For example, the Napa County RCD manages the LandSmart program that assists growers with resource management. This or similar programs could be expanded to become the NCGSA Water Conservation Certification Program.
3. An existing certification program endorsed by NCGSA that meets minimum requirements for water conservation practices and verification. This would reduce the administrative burden on the NCGSA and would leverage an existing certification program that meets minimum requirements defined by NCGSA. It may also require an existing certification program to modify standards to meet NCGSA requirements.
4. Multiple existing certification program endorsed by NCGSA that meet minimum requirements for water conservation practices. This would reduce the administrative burden on the NCGSA and would leverage multiple existing certification programs that meet minimum requirements defined by NCGSA. It could also require existing certification programs to modify standards to meet NCGSA requirements.

After discussion and feedback, the recommended program structure is partnering with multiple existing certification programs that meet the minimum requirements for water certification practices (#4). This gives businesses the most options for certification compliance while reducing the administrative burden for the NCGSA.

Partner certification programs that meet the minimum standards for implementing the NCGSA Water Conservation Certification Program will be identified through a process defined by the NCGSA.

3.2 Minimum Water Conservation Practices

This section defines the minimum water conservation practices required for the NCGSA Water Conservation Certification Program. For a certification program, these minimum required practices are described across vineyards and wineries, with some practices possible in both business types. Wineries with a vineyard enrolled in the program would be expected to verify both vineyard and winery practices to be certified.

Minimum water conservation practices define the timeline and general requirements for the NCGSA Water Conservation Certification Program. Specific practices are included. Some requirements are purposefully flexible to allow existing certification programs to align requirements with their existing programs. For example, Napa vineyards use different plant and soil moisture monitoring technologies. The minimum requirements do not define which practices must be implemented. Rather, the minimum requirements list the range of alternatives and require that one or more practices are implemented and documented. Any specific guidelines are left to the partner certification program.

To receive certification, participants must meet all minimum standards within three years of initial certification, fulfill third-party audit requirements, and provide required documentation annually to maintain compliance.

3.2.1 Vineyard Minimum Water Conservation Practices

The NCGSA Water Conservation Certification Program defines minimum water conservation practices for vineyards. The practices are based on industry outreach, certification program outreach, the analyses described in the Water Conservation and Groundwater Pumping Reduction Workplans, and subsequent analyses to implement the Workplans.

Table 1 summarizes the minimum program water conservation practices for certifying vineyards.

Table 1: Vineyard Minimum Water Conservation Practices

Practice	NCGSA Program Minimum Requirement
Water Measurement/Metering	All wells or other water sources providing irrigation must be metered within three years of initial certification. Meter installation, maintenance, and recalibration must be completed according to manufacturer’s recommendations. If transitioning to metering, water use must be measured with remote sensing of evapotranspiration (ET), irrigation timing and specifications, or well electricity records and specifications in the interim. Water use must be documented and reviewed during the irrigation season, and a cumulative measurement of water use must be recorded each year. Evidence of installation and operation can be provided through photos and appropriate documentation.
Irrigation System Maintenance and Efficiency	All irrigation systems must be monitored and inspected for leaks, flow issues, and filter cleaning frequently. Inspections and remediation actions must be documented and recorded, including an inspection plan and schedule. Vineyards are responsible for taking action to fix issues and adjusting systems for efficiency.
Distribution Uniformity	All irrigation systems must be tested for distribution uniformity at least once every five years. Upon completion of testing, vineyards must address issues with emitter outflows and pressure differences within the recommended timeframe, no more than three years since the receipt of testing results and recommendations. Testing and remediation actions must be documented and recorded.
Recycled Water	Vineyards that are able to receive recycled water deliveries must prioritize and utilize those supplies for irrigation. Deliveries must be documented and recorded.
Management Practices:	Vineyards must create a vineyard management plan describing the management practices the operation utilizes, including the standard methods, timing, and record keeping requirements of each practice. Because not all practices fit each vineyard’s specific microclimate, resources, and grape quality goals, vineyards would be required to select and implement at least one practice from each of the categories (plant and soil moisture monitoring, soil management, and canopy management), explaining why other possible practices do not fit with their operations. Implemented practices must be documented and recorded.
<i>Plant and Soil Moisture Monitoring</i>	
<i>Soil Management</i>	
<i>Canopy Management</i>	
Planting Design Practices:	When installing new plantings, vineyards must design blocks for optimal water conservation without sacrificing grape quality using row orientation, rootstock selection, and irrigation system design factors. Descriptions of the practices, explanations for decisions, and final installation must be documented.
<i>Row Orientation</i>	
<i>Rootstock Selection</i>	
<i>Irrigation Systems</i>	

The following describes each practice⁴ and minimum requirements listed in Table 1.

Water Measurement/Metering. Providing water use information to water users who do not currently measure or meter allows them to understand water use volume and patterns and take actions to reduce water use. Data show that this results in measurable conservation. To capture this information, meters must be installed and maintained to track water use overtime. Prior to meter installation, water use can be estimated with other measurement methods, including remote sensing of ET, irrigation timing and specifications, or well electricity records and specifications.

- **Requirement:** All wells or other water sources providing irrigation must be metered within three years of initial certification. Meter installation, maintenance, and recalibration must be completed according to manufacturer’s recommendations. If transitioning to metering, water use must be measured with remote sensing of ET, irrigation timing and specifications, or well electricity records and specifications in the interim. Water use must be documented and reviewed during the irrigation season, and a cumulative measurement of water use must be recorded each year. Evidence of installation and operation can be provided through photos and appropriate documentation.

Irrigation System Efficiency. When managed successfully, irrigation systems can effectively provide water to vines to reach an operation’s fruit goals. System improvements can increase the efficiency of water delivery, reducing water loss. These improvements include a range of actions, from fixing leaks to improving system management and monitoring.

- **Requirement:** All irrigation systems must be monitored and inspected for leaks, flow issues, and filter cleaning frequently. Inspections and remediation actions must be documented and recorded, including an inspection plan and schedule. Vineyards are responsible for taking action to fix issues and adjusting systems for efficiency.

Distribution Uniformity. An evenly pressurized irrigation system can ensure each vine in a vineyard receives water equally, improving fruit quality as well as helping identify system issues to reduce water use. Testing irrigation systems helps identify issues and prevent over or under-irrigation. Distribution Uniformity (DU) tests evaluate how evenly water is distributed to the block or field throughout the irrigation system. In Napa Valley, several local businesses and organizations provide DU testing at little to no cost to the producer.

- **Requirement:** All irrigation systems must be tested for DU at least once every five years. Upon completion of testing, vineyards must address issues with emitter outflows and pressure differences within the recommended timeframe, no more than three years after the receipt of testing results and recommendations. Testing and remediation actions must be documented and recorded.

Recycled Water. Recycled water is treated wastewater that is then delivered for other uses, such as irrigation. Some vineyards can recycle (reuse) winery wastewater under specific conditions, and the

⁴ Additional technical details and cost estimates for each practice are available in the Water Conservation Workplan and the Groundwater Pumping Reduction Workplan.

Napa Sanitation District (NapaSan) treats, manages, and provides recycled water for delivery to specific areas in the county. Not all parcels are able to receive recycled water.

- **Requirement:** Vineyards that are able to receive recycled water deliveries must prioritize and utilize those supplies for irrigation. Deliveries must be documented and recorded.

Management Practices. Several agronomic practices can help manage the ET in a vineyard, impacting water use each season. These practices fall under three categories:

- *Plant and Soil Moisture Monitoring.* Multiple technologies are available to vineyards to monitor plant and soil moisture. These data inform irrigation scheduling and help protect productivity and fruit quality. These can be soil-based monitoring for soil moisture depletion and/or plant-based monitoring for vineyard moisture uptake and use. The technologies recommended as part of the GPR Workplan include time temperature domain reflectometry, neutron probe, and tensiometers.
- *Soil Management.* Managing soil health can provide water benefits by improving infiltration and soil retention. These practices include implementing cover crops, mulching, and reduced tillage.
- *Canopy Management.* Vineyard canopies are carefully managed for productivity and fruit quality. Specific actions can be taken to reduce crop consumptive water use and save water, such as microclimate monitoring, fruit to pruning weight ratio, shoot density, and leaf pulling.

Individual operations have different goals and management approaches. A vineyard management plan or similar document describes the practices a vineyard utilizes in pursuit of its goals, including the standard methods, timing, and record keeping requirements of each practice.

- **Requirement:** Vineyards must create a vineyard management plan describing the management practices the operation utilizes, including the standard methods, timing, and record keeping requirements of each practice. Because not all practices fit each vineyard's specific microclimate, resources, and grape quality goals, vineyards would be required to select and implement at least one practice from each category (plant and soil moisture monitoring, soil management, and canopy management), explaining why other possible practices do not fit with their operations. Implemented practices must be documented and recorded.

Planting Design Practices. The permanent structure of a vineyard can impact its long-term water consumption patterns. When planting or replanting a vineyard, producers have control over these design factors and can optimize them to reduce water use over the vineyard's lifetime. These factors can include:

- *Row Orientation.* The orientation of vineyard rows affects sun and wind exposure, which affects crop consumptive water use. Adjusting row orientation to optimize these elements can reduce water use over the vineyard's lifetime.
- *Rootstock Selection.* Vineyard rootstocks are selected for pest and disease resistance, and some varieties provide drought tolerance. These traits enable healthy vines to uptake water more effectively under stress and can help manage water during times of shortage.

- *Irrigation Systems.* During replanting, vineyards can install updated low-flow irrigation systems to improve efficiency and reduce applied water, typically through drip irrigation. Producers may also forgo systems in favor of dry land farming if it meets their production requirements.

These factors can be considered and developed through a design plan or similar document, which shows the vineyard’s design and describes how these factors are addressed for optimal water conservation considering the operation’s goals.

- **Requirement:** When installing new plantings, vineyards must design blocks for optimal water conservation without sacrificing grape quality using row orientation, rootstock selection, and irrigation system design factors. Descriptions of the practices, explanations for decisions, and final installation must be documented.

3.2.2 Winery Water Conservation Practices

The NCGSA Water Conservation Certification Program defines minimum water conservation practices for wineries. The practices are based on industry outreach, certification program outreach, and the analyses described in the Water Conservation and Groundwater Pumping Reduction Workplans. A summary of the minimum program water conservation practices for certifying wineries is presented in Table 2.

Table 2: Winery Minimum Water Conservation Practices

Practice	NCGSA Program Minimum Requirement
Water Measurement/Metering	All wells or other water sources providing water for irrigation and operations must be metered within three years of initial certification. Meter installation, maintenance, and recalibration must be completed according to manufacturer’s recommendations. If transitioning to metering, water use must be measured with remote sensing of ET, irrigation timing and specifications, or well electricity records and specifications in the interim. Water use must be documented and reviewed frequently, documenting cumulative use for the year. Evidence of installation and operation can be provided through photos and appropriate documentation.
Winery Sanitation Processes	Wineries must implement water-saving technologies and other enhanced water-saving techniques in winery processes.
Processing Water Treatment and Reuse	Wineries able to implement additional treatment processes to recycle treated wastewater must prioritize utilizing treated wastewater for either for landscaping or agricultural irrigation purposes. Descriptions of the practices and explanations for decisions must be documented.

Water Measurement/Metering. Providing water use information to water users who do not currently measure or meter allows them to understand water use volume and patterns and take actions to reduce water use. To capture this information, meters can be installed and maintained to track water use

overtime. Alternatively, water use can be estimated with other measurement methods, including remote sensing of ET, irrigation timing and specifications, or well electricity records and specifications.

- **Requirement:** All wells or other water sources providing water for irrigation and operations must be metered within three years of initial certification. Meter installation, maintenance, and recalibration must be completed according to manufacturer’s recommendations. If transitioning to metering, water use must be measured with remote sensing of ET, irrigation timing and specifications, or well electricity records and specifications in the interim. Water use must be documented and reviewed frequently, documenting cumulative use for the year. Evidence of installation and operation can be provided through photos and appropriate documentation.

Winery Sanitation Processes. Wineries must clean tanks and complete other activities, typically using significant amounts of water. New technologies are available to reduce or eliminate water use in these processes, such as waterless tank and barrel steamers. In addition, other management practices can help reduce water use during sanitation processes, such as timers and automatic shut off valves.

- **Requirement:** Wineries must implement water-saving sanitation technologies and other enhanced water-saving techniques in winery processes. Descriptions of the practices, explanations for decisions, and photos of processes must be documented.

Processing Water Treatment and Reuse. Similar to recycled water use in vineyards, reusing water in wineries optimizes utilization and can help reduce water demand. Winery process water must currently be treated and managed before discharging to land to comply with state regulations. Some treatment processes can make the water usable for landscaping or vineyard irrigation purposes.

- **Requirement:** Wineries able to receive recycled water from NapaSan must utilize that water for irrigation or other uses at the winery. In addition, the winery must prioritize opportunities for utilizing on-site treated wastewater for either landscaping or agricultural irrigation purposes. Descriptions of the practices and explanations for decisions must be documented.

3.3 Minimum Verification and Audit Requirements

The partner certification program(s) will certify vineyard and winery certification program participants. To become certified (and qualify for any incentives), water conservation practices must be verified. The partner certification program(s) will ensure that certified vineyards and wineries meet requirements, develop documentation each year, and complete third-party audits.

Verification of water conservation practices must be completed by a third-party auditor.

An on-site third-party audit is required in the first year for a business seeking to become certified to demonstrate compliance with certification requirements. The partner certification program(s) will identify appropriate third-party auditors for water conservation practices. Participants will be required to provide auditors with access to properties, company records, and other requested documentation necessary to demonstrate compliance. If participants complete the audit and the third-party auditor determines that they meet the requirements, they receive certification for the year.

After the initial audit, certified participants are required to complete additional third-party audits at least every three years to maintain certification. The partner certification program(s) will identify appropriate third-party auditors for water conservation practices for ongoing audits.

To maintain certification (whether in an audit or non-audit year), participants are required to maintain and submit data to the certification program(s) that demonstrate compliance with each practice. This includes submitting data and records to the certification program. If participants meet the requirements, they receive certification for the year.

Tables 3 and 4 define minimum verification requirements for practices in audit and non-audit years. Most practices will need to be verified with records, but photos and other documentation may be required to validate implementation. While a third-party auditor will be able to verify practices and installations in person, participants will need to submit documentation to the certifying program(s) in non-audit years to maintain certification.

Table 3: Vineyard Water Conservation Practice Minimum Verification Methods

Practice	Verification – Third Party Audit Years	Verification – Non-Audit Years
Water Measurement/ Metering	<ul style="list-style-type: none"> • Auditor visually inspects water meter(s) and verifies operation. • Auditor reviews meter maintenance records. • Auditor reviews water use records, showing total calculated or measured water use for certified acres/business. 	<ul style="list-style-type: none"> • Participant provides photos of meter and/or installation. • Participant provides meter maintenance records. • Participant provides water use records, showing total calculated or measured water use for certified acres/business.
Irrigation System Management and Efficiency	<ul style="list-style-type: none"> • Auditor reviews irrigation system inspection records, showing inspection schedule, issues, and actions taken to address issues. • Participant provides records for irrigation system maintenance and supporting documentation. 	<ul style="list-style-type: none"> • Participant provides irrigation system inspection records, showing inspection schedule, issues, and actions taken to address issues.
Distribution Uniformity	<ul style="list-style-type: none"> • Auditor verifies irrigation systems have been tested for DU at least once every five years and recommended remediation actions have been taken to address issues within the recommended timeframe, no more than three years since the receipt of testing results and recommendations. <p><i>If DU test completed:</i></p> <ul style="list-style-type: none"> • Participant provides DU test results with recommended remediation actions • Participant provides remediation action records 	<p><i>If DU test completed:</i></p> <ul style="list-style-type: none"> • Participant provides DU test results with recommended remediation actions • Participant provides remediation action records <p><i>If no DU test completed:</i></p> <ul style="list-style-type: none"> • Participant provides year of DU test • Participant provides remediation action records

	<p><i>If no DU test completed:</i></p> <ul style="list-style-type: none"> • Participant provides year of DU test • Participant provides remediation action records 	
Recycled Water	<ul style="list-style-type: none"> • Auditor reviews whether the operation has access to recycled water and any implementation records 	<ul style="list-style-type: none"> • Participant indicates whether the property has access to recycled water, and any implementation records
<p>Management Practices: <i>Plant and Soil Moisture Monitoring Soil Management Canopy Management</i></p>	<ul style="list-style-type: none"> • Auditor reviews vineyard management plan and records of implemented practices for plant and soil moisture monitoring, soil management, and canopy management. 	<ul style="list-style-type: none"> • Participant provides vineyard management records for year, detailing practices implemented for plant and soil moisture monitoring, soil management, and canopy management to improve water use.
<p>Planting Design Practices: <i>Row Orientation Rootstock Selection Irrigation Systems</i></p>	<p><i>If planting or replanting vineyard in certification year:</i></p> <ul style="list-style-type: none"> • Auditor reviews current design plan with description of practices, including explanation of how design will optimize water conservation. • Auditor visually inspects the final installation if completed. <p><i>If not planting or planning vineyard in certification year:</i></p> <ul style="list-style-type: none"> • No action. 	<p><i>If planting or replanting vineyard in certification year:</i></p> <ul style="list-style-type: none"> • Participant provides current design plan with description of practices, including explanation of how design will optimize water conservation. • Participant provides photos of the final installation. <p><i>If not planting or planning vineyard in certification year:</i></p> <ul style="list-style-type: none"> • No action.

Table 4: Winery Water Conservation Practice Minimum Verification Methods

Practice	Verification – Third Party Audit Years	Verification – Non-Audit Years
Water Measurement/ Metering	<ul style="list-style-type: none"> • Auditor visually inspects water meter(s) and verifies operation. • Auditor reviews meter maintenance records. • Auditor reviews water use records, showing total calculated or measured water use for winery. 	<ul style="list-style-type: none"> • Participant provides photos of meter and/or installation. • Participant provides meter maintenance records. • Participant provides water use records, showing total calculated or measured water use for winery.
Winery Sanitation Processes	<ul style="list-style-type: none"> • Auditor reviews winery process water records, detailing implemented water-saving technologies and techniques. • Auditor visually inspects technologies. 	<ul style="list-style-type: none"> • Participant provides winery process records, detailing implemented water-saving technologies and techniques. • Participant provides photos of technologies.

<p>Processing Water Treatment and Reuse</p>	<ul style="list-style-type: none"> • Auditor reviews records of recycled water treatments and application. 	<ul style="list-style-type: none"> • Participant provides records of recycled water treatments and application.
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4. Program Water Conservation Measurement

The NCGSA Water Conservation Certification Program is intended to achieve measurable reductions in groundwater pumping across the Napa Valley Subbasin. The partner certification program(s) will be required to collect and summarize data, some of which are submitted to the NCGSA for program tracking purposes.

4.1 Data Reporting

The NCGSA Water Conservation Certification Program requires data and reporting. Data collection comes from two levels—the participant (certified vineyard or winery) and the partner certification program.

Participant data reporting. Participants are required to submit data to the certification program and third-party auditor. This includes current season water use in addition to historical water use.

During the first year in the program, participants complete an onboarding process, which includes sharing five years of historical water use data. If the participant has water meter(s) installed, these data should come from meter records. However, it is unlikely that every participant will already have meters installed, maintained correctly, and accurate records. Participants may instead provide alternative historical water use data for baseline⁵ years (and the three-year transition period into metering). Data used for the calculations shall be submitted on paper, electronically, or provided during an in-person interview. Water data can include:

- Remote sensing of ET and an estimate of irrigation efficiency.
- Irrigation timing and specifications and application of a formula to calculate total irrigation water application.
- Well electricity records and specifications and application of a formula to calculate total irrigation water application.

Some participants may not have these data available. The program or a third-party auditor will review available data to determine water use of certified areas.

Participants will report data directly to their selected partner certification program each year to meet certification standards. At a minimum, the reported data include vineyard acres enrolled, wineries enrolled, practices completed with year of implementation, and water use measurement data for both baseline and current periods. To ensure data confidentiality, the program’s data management would be

⁵ See Section 4.2: Measuring Water Conservation for definition.

required to meet the highest standards for confidentiality. Individual participant’s data would not leave the program unless aggregated and anonymized for reporting purposes or within the confines of a confidentiality agreement for analysis with a third party.

Partner certification program data reporting. The partner certification program will be responsible for managing, analyzing, and submitting reports to the NCGSA. The certification program maintains confidentiality of participant water use data.

The certification program will summarize, aggregate, and report water use metrics annually to the NCGSA. The partner certification program may either report calculated water savings to NCGSA or engage a third-party for calculating water savings from all participants in the Subbasin. The certification program will submit data in a standardized format. Data include:

- Number of wineries and vineyards enrolled
- Acres enrolled
- Water conservation practices implemented
- Baseline water use, which identifies groundwater and/or surface water uses separately
- Current period groundwater use, and any reported surface water use
- Calculated groundwater savings.

NCGSA will use this information to estimate water savings and analyze the impact of the program over time. Program participant data are held by the certification program and only reported to the NCGSA in aggregate. The minimum level of reported data aggregation is the American Viticulture Area (AVA).

4.2 Measuring Water Conservation

Implementing water conservation practices is intended to reduce gross, and ideally, net water use. To measure or estimate the impact of these practices, the certification program(s) (or a third party) will calculate and estimate water conservation using the method outlined below.

1. Calculate baseline water use. Water use can include one or both gross (applied) and net (consumptive) water use.
 - a. The baseline is defined as average annual water use over a five-year historical period prior to certification or with a more limited number of water conservation practices implemented in the operation.
 - b. The baseline is also calculated separately for different water year (precipitation and weather) conditions that affect gross and net water use. Each year is classified by Water Year type (WY) as: very dry, dry, average, wet, or very wet using the Napa Watershed Water Year Classification Methodology.⁶ This is based on the average rainfall recorded at a station on the valley floor each year.
 - c. The resulting baseline will define average annual water use (gross and/or net) as the:
 - i. Five-year (simple) average annual water use

⁶ https://www.napawatersheds.org/managed_files/Document/6838/WaterYear_Methodology.pdf

ii. Five-year average annual water use by WY type

This definition of baseline water use accounts for both investments in water conservation practices and variability in precipitation that affects gross and net water use. Historical data from participants are likely to be limited for many operations. The certification programs will work with participants to develop this information over time. If data are not available, regional average data can be used to approximate an initial baseline, which would be refined as additional data are available over time.

Water use will be measured on a gross and/or net basis. The reporting period will be a water year (October 1 – September 30). Gross water use measures the total water applied, or how much water was pumped and applied to the land or used in the winery. If utilizing meter data, gross water use is already available. Net water use measures the total water consumed, or how much water was evaporated and transpired by a crop.

2. Compile water use (gross or net) information from each participant. The availability of data for measurement will determine if gross and/or net water use is utilized for each participant. There are four data measurement options to calculate water use from.
 - a. Groundwater well meter data. This is a measure of gross (applied) water.
 - b. Remote sensing of ET. This provides an estimate of consumptive water use. Gross water application can be calculated from remote sensing estimates if it is combined with irrigation efficiency and effective precipitation data, which are typically drawn from other public data and studies.
 - c. Irrigation timing records can be used to estimate gross (applied) water when combined with irrigation system specifications.
 - d. Well electricity usage records or timing records. These can create proxy data for water use, but would require well specifications (pump energy use, well and pump efficiency, depth to water, etc.) and other data to be an effective measurement method.

The NCGSA Water Conservation Certification Program requires meters after a period of three years. As vineyards and wineries transition into the Program there will be sufficient data to calculate gross (applied) water. The last step in the process is calculating the water savings attributable to the certification program. It is important to differentiate between groundwater savings and surface water savings, where possible/feasible to do so. The steps below describe methods for calculating water savings. It is understood that water savings here refers to both groundwater and surface water savings, reported separately.

3. Calculate water savings by subtracting current year water use from the baseline defined in Step 1. This calculation is made for each individual participant.
 - a. If calculating from an average baseline, the current water use may be averaged over a given period and compared to the baseline with a similar composition of water years.
 - b. If calculating for a single year, that year can be compared to the historical average annual water use by WY type.

The certification program (or its designated third-party) will apply the steps outlined above to calculate water savings. The certification program will aggregate water conservation for each of the individual participants to the level of an American Viticultural Area (AVA) and submit a report to the NCGSA each year. The report will include:

- Number of wineries and vineyards enrolled
- Total acres enrolled
- List of water conservation practices implemented
- Baseline groundwater and surface water use in acre feet
- Current period water use in acre feet
- Calculated water conservation in acre feet

The certification program maintains individual participant data. An aggregated report is submitted to the NCGSA, which is used to evaluate program performance and ensure that water conservation objectives are being met.

Impact evaluation is a set of evidence-based economic tools that assess the changes in outcomes attributed to a particular project, program, or policy. The NCGSA will track reporting over time and apply tools to measure program outcomes.

5. Program Costs, Incentives, and Funding

The NCGSA Water Conservation Certification Program is voluntary. It is anticipated that incentives will be offered to both encourage partner certification programs and encourage participants to join the Program. Program incentives will be targeted to Program participants and partner certification programs. A separate document⁷ will describe incentives. This NCGSA Certification Program document provides an initial overview of Program incentives and opportunities.

5.1 Certification Program Costs

Partnering with existing certification programs is expected to cost significantly less overall than developing a stand-alone program. Programs may need to modify standards, require certain elective practices, or modify certain certification tiers to meet the requirements of the NCGSA Water Conservation Certification Program. Since most existing programs have these water conservation practices included in some form, program administration costs are not expected to change significantly. The resulting costs may be absorbed by the program administration, accounted for with minor changes in fees, or offset with other funding sources (e.g., incentives).

5.2 Program Participant Costs

Vineyards and wineries that choose to become certified will incur costs. This includes paying the certification costs, implementation costs, and other administrative costs.

⁷ See Section 6.1: Outreach and Education Timeline for an overview of when materials will be available.

Under existing sustainability certification programs in Napa Valley, program costs for participating businesses vary by program. Most programs, apart from CSWA, have an initial cost for the application and certification process. Fees are typically per acre (vineyard) or per gallon of wine produced (winery). All programs have an annual cost for continued certification that varies by winery or vineyard size. These are generally between \$500 and \$3,000. A third-party audit is required after initial certification every three to five years, with reported audit costs between \$500 and \$2,000 depending on the size of the operation and complexity of the audit. Discounts are available for participants that audit more than one property or type of business or who join concurrent education programs. Annually, a 200-acre vineyard operation can expect to pay a total cost between \$500 and \$5,000 in audited years and between \$0 and \$2,700 in non-audit years, depending on the program and level of complexity. For wineries, a small 40,000 case winery can expect to incur a total cost between \$1,000 and \$5,000 in audited years and \$1,000 and \$2,500 in non-audit years, depending on the program and level of complexity.

Other costs for participants to remain in compliance might increase if now required to include new practices to meet a modified standard. For example, the NCGSA Water Conservation Certification Program requires participants to meter all water sources, requiring individuals to purchase, calibrate, and maintain water meters on properties. This is a significant expense for growers and wineries and may create resistance to the program changes, a factor to be addressed through outreach and incentives.

The Water Conservation Workplan⁸ includes a summary of capital and operating expenses for different water management technologies and practices.

5.3 Incentive Opportunities

NCGSA may offer incentives to encourage voluntary participation in the water conservation certification program. These incentives will be designed to address barriers to entry, defray costs, or offer value for participation. Incentives can be offered to programs for meeting standards, participants for actively implementing practices, or a combination of both.

Incentive mechanisms may include cost shares, direct payments, grants, or other non-financial options.

Potential incentives for partner certification programs include but are not limited to:

- Cost share for administering new water conservation standards, offsetting the costs to integrating practices into standards, change resources, or request approval from governing bodies. The expected scale of this cost varies across programs and depends on the final standards of the program; however, based on current outreach, it is not expected to be significant.
- NCGSA could offer a direct payment to assist programs with expanding staff and resources to handle the influx of certifications expected from establishing this Program. This could take the form of a single lump sum or payment per certified business each year. Several programs have

⁸ See Section 3: Voluntary Approaches to Reduce Groundwater Pumping
<https://www.countyofnapa.org/DocumentCenter/View/30301/Napa-County-Water-Conservation-Workplan-PDF?bidId=>

asserted that the fees they charge do not cover the costs to certify businesses, and this payment could make up for that difference.

- Other incentive options would be to offer partner programs promotion and marketing in the valley, which could scale in size with the campaign.

While engaging partner programs is essential, the overall goal is meant to encourage growers and vintners to actively sign up or continue certification while coming into compliance with standards for water conservation. However, they face significant barriers to meeting these expectations. Potential incentives for vineyards and wineries include but are not limited to:

- Direct payments for auditing costs. Auditing costs are a significant portion of certification for participants, with the greatest cost occurring at initial certification and every five years afterwards. This fee may be paid to a third-party auditor, the program, or a combination of both, depending on the program and year of certification. Offering a cost share on audits would incentivize participants to engage with the program. Determining a scale is difficult, as costs will vary with program, year, and operation, but current audit costs range from \$500 to \$2,000 per business.
- Direct payments for certification costs. Another incentive could offer a cost share of the annual certification fees over a defined period. These fees are typically paid by the grower or winery directly to the program at initial certification and each year after, creating regular, stable revenue for the program. Fees range from \$500 to \$3,000 each year, a similar scale to audit costs but with more consistency.
- Grant funding and cost-share for water conservation practices. For example, groundwater well meters are an expensive investment, and with the proposed practices, participants will be required to install them to remain in compliance. NCGSA could offer grants or direct payments for producers that install a meter as part of the Program, which could also be facilitated through existing grant programs.
- Wineries and vineyards that become certified save costs for NCGSA. An incentive program could include forgoing any GSP implementation fees or similar service fees.

Financial incentives could be reimbursed through payment to a program for invoiced costs or directly to producers who apply.

5.4 Funding Opportunities

To create incentives or cost shares attached to the Program, NCGSA may pursue grant funding opportunities. Funds may come from a variety of sources. These may include existing funding sources, regulatory or property fees established through Water Code §10730, grants from state and federal sources, or alternative mechanisms such as special taxes and benefit assessments. A separate GPR program incentives report is being prepared that will more fully address funding opportunities.

6. Program Implementation

The NCGSA Water Conservation Certification Program will be implemented concurrently with other components of the GPR Workplan implementation. This includes education and outreach, a benchmarking program, incentives, and water measurement technology.

Continued education and outreach are a core component of the GPR implementation, including this Water Conservation Certification Program. These activities create opportunities to receive feedback, improve the Program’s design, partner with other organizations, and educate water users.

During initial Program development, most input and feedback is discussed during one-on-one meetings with existing certification programs. Implementation is expected to include outreach with:

- **Local certification programs.** Since these programs are likely to become partners and administrators for this certification, their experience and knowledge is key to ensuring the Program’s success. Significant questions about practices, structure, data collection/sharing, incentives, and water savings calculations have been reviewed with several programs so far, with additional meetings upcoming.
- **Local agriculture, wine, and water industry representatives.** Additional one-on-one outreach will engage Napa Valley Grapegrowers, Napa Valley Vintners, Napa County Farm Bureau, and other local organizations for their perspective and input on the Program and develop connections to growers and vintners in the region who may be willing to provide input.
- **Wine industry member meetings to review Program design.** Meetings with growers in either one-on-one or facilitated group settings can be set up in late November 2024. Harvest will be complete, and gaining a better understanding of stakeholders’ enthusiasm or hesitation to participate would be invaluable. Growers would have opportunities to review the Program in a complete form and give direct feedback to be incorporated before the NCGSA selects one or more partner programs. Outreach will continue through informational resource meetings with the public to answer questions, receive commentary, and update stakeholders on the process.
- **Program feedback.** Feedback will be received through public processes including during scheduled Technical Advisory Group (TAG) meetings and other stakeholder meetings for additional feedback at various stages of Program development and implementation.

6.1 Implementation Timeline

Table 5 presents the timeline for implementation and outreach activities for the NCGSA Water Conservation Certification Program.

Through December 2024, activities have centered around cultivating feedback from existing certification programs, local organizations, and growers during Program development. The Program framework will go before the TAG for feedback in November and December, and it may receive final approval from the group in February 2025. In the interim, the document will be revised to its final version while other GPR program components are developed (e.g., incentives, benchmarking, and continuing education and

outreach). Full NCGSA Water Conservation Certification Program rollout can begin once final NCGSA approval is received.

Similar to the development of this framework, input and feedback from stakeholders will continue to shape the Program’s implementation. Program education and outreach developed in partnership with local organizations and individuals will offer interested certification programs opportunities to understand the framework and prepare growers and vintners for certification. These workshops and presentations at public forums will begin in February 2025 post-approval and continue through the next phases of implementation. The NCGSA will begin working with interested partner certification programs in the Spring of 2025. Education and outreach would continue during this period while certification programs adjust standards to meet Program requirements. Once partner certification programs are prepared, the Water Conservation Certification Program would be released to the public for participation, potentially as early as Quarter 2 of 2025.

Table 5: Implementation Timeline

Timeline	Actions
August 2024	Certification program development Meet with certification programs for feedback Meet with grower/vintner groups for feedback and contact discovery
September 2024	Present annotated outline of program to Technical Advisory Group (TAG) Refine program based on feedback Meet with certification programs for feedback Meet with grower/vintner groups for feedback and contact discovery
October 2024	Refine program based on feedback Meet with certification programs for feedback Meet with grower/vintner groups for feedback and contact discovery Initiate contact with growers for one-on-one meetings Host or one-on-one meetings with growers for feedback
November/December 2024	Present full draft of NCGSA Program document to TAG Continue one-on-one meetings with growers and vintners for feedback Develop partnerships for Program education and outreach Develop incentive analysis document
January 2025	Finalize full NCGSA Program document based on feedback Initiate Program education and outreach Implement targeted outreach to certification programs and growers Host facilitated or one-on-one meetings with growers for feedback
February 2025	Present NCGSA Program for TAG approval Host informational resource meetings Host meetings with growers for feedback and insights Develop and present incentive analysis report
March/April 2025	Present NCGSA Program for NCGSA approval Begin identifying partner programs Establish partnerships with certification programs Continue outreach and education

<p>May-July 2025</p>	<p>Support certification programs in processes to adjust program standards Release Water Conservation Certification Program with partner programs Develop process for measuring water savings Continue to define program incentives Continue outreach and education</p>
<p>Q3 2025 and beyond</p>	<p>Continue outreach, education, and partnership building Refine incentives Pursue potential grant opportunities to support Program implementation Conduct periodic evaluation of the Program Modify Program (adaptive management) as needed</p>

6.2 Ongoing Program Implementation and Evaluation

The Water Conservation Certification Program will be evaluated and periodically updated. This will include evaluating funding opportunities, partners, participation, and measurable outcomes from Program implementation. These activities will be developed and presented through the public process, including at periodic TAG meetings, NCGSA Board meetings, and other public workshops.

Measurable outcomes from the Program will be evaluated, including but not limited to water savings attributable to the Program. This will ensure that the Program is effective, and any financial incentives are providing an acceptable return on investment.

Evidence based impact evaluation methods will be applied. This will evaluate what changes can be directly attributed to the actions taken using evidence gathered and analyzed through the duration of the Program. For the Water Conservation Certification Program, the main outcomes of interest are reductions in groundwater pumping and annual water use in acre feet. Program impacts will be measured using data provided by the partner certification program (aggregated groundwater use) combined with other GSP and public data. Standard impact evaluation methods will be applied to quantify program water savings by the NCGSA. This impact evaluation can be a standalone analysis or combined with evaluations for other NCGSA programs designed to make changes on similar outcomes.

The Water Conservation Certification Program is part of several programs being developed for GPR implementation. A common theme across all programs is continuing education and outreach to let all water users in the Napa Valley Subbasin and Napa County learn about ways to reduce groundwater use. The NCGSA and its partners will continue to identify opportunities for outreach and engagement under this Program and other GPR programs.