

FINAL REPORT

South Metro Water Supply Authority Qualified Water Efficient Landscaper Certification Pilot Program

PREPARED FOR



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List of Abbreviations

CEU	Continuing Education Unit
CWCB	Colorado Water Conservation Board
Members	Members of the South Metro Water Supply Authority
QWEL	Qualified Water Efficient Landscaper
PCO	Professional Certifying Organization
Phase 1	Regional Landscape Certification Program Investigation
Phase 2	QWEL Pilot Program
SMWSA	South Metro Water Supply Authority
Sonoma-Marin	Sonoma Marin Saving Water Partnership

ACKNOWLEDGEMENTS

This report summarizes the South Metro Water Supply Authority (SMWSA) Qualified Water Efficient Landscaper (QWEL) Certification Pilot Program, prepared through a collaborative effort between the South Metro Water Supply Authority (SMWSA) staff, ELEMENT Water Consulting, Inc. (ELEMENT), and SMWSA members (Members) including the Regional Conservation Subcommittee (Conservation Subcommittee). The project team would like to thank the Colorado Water Conservation Board (CWCB) for their support in the development of this project through a Colorado Water Plan grant as well as Douglas County for its financial and in-kind contributions. SMWSA contracted with ELEMENT for technical and project management assistance in completing this project.

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-
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1. BACKGROUND

1.1 SMWSA REGIONAL CONSERVATION

The South Metro Water Supply Authority (SMWSA) is a regional authority formed from the Douglas County Water Resource Authority, which started in 1992, and the South Metro Water Supply Study Board, formed in January 2000, when other larger water providers requested to work with one regional entity. Today, SMWSA's 13 water provider members (Members) represent about half of Douglas County and 10% of Arapahoe County, based on land area (see **Figure 1**). Together, SMWSA and its Members are executing a plan to provide a secure and sustainable water future for the region.

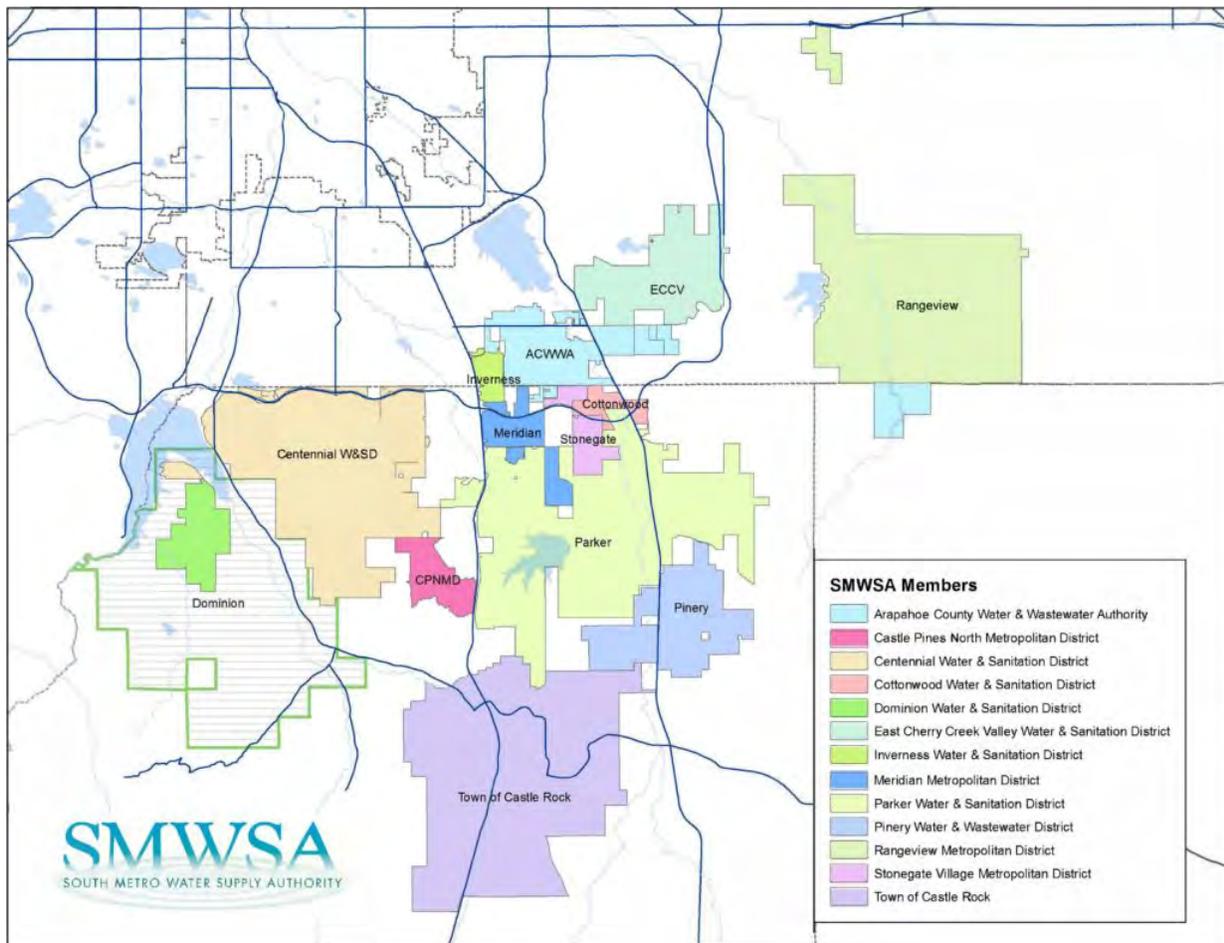


Figure 1: South Metro Water Supply Authority Membership.

In 2014, SMWSA staff met with each member (see **Table 1**) individually to discuss Member needs and begin developing a cohesive vision for regional conservation. Resoundingly, individual members stressed the importance of local, independently operated water conservation plans and systems. However, there was also a strong desire for regional collaboration on larger-scale conservation and efficiency projects,

sharing of information and experience, potential for funding opportunities, and benefits from economies of scale through partnering. From this, a Regional Conservation Subcommittee (Conservation Subcommittee) was formed to be led by SMWSA staff with participation from Member staff. The primary purpose of this Conservation Subcommittee is to pursue water conservation and efficiency projects and programs that are more impactful on a regional basis.

Table 1. SMWSA Members.

MEMBER NAME
Arapahoe County Water and Wastewater Authority
Castle Pines North Metropolitan District
Centennial Water & Sanitation District (serving Highlands Ranch)
Cottonwood Water & Sanitation District
Dominion Water & Sanitation District
East Cherry Creek Valley Water & Sanitation District
Inverness Water & Sanitation District
Meridian Metropolitan District
Parker Water & Sanitation District
Pinery Water & Wastewater District
Rangeview Metropolitan District
Stonegate Village Metropolitan District
Town of Castle Rock

In 2015, SMWSA partnered with Douglas County to identify outdoor water conservation and water efficiency efforts that could benefit the region, to promote regional partnering, and to better understand the nexus between water and land use planning. From this effort, a Model Regional Water Efficient Landscape and Irrigation Ordinance (Model Ordinance) was developed by the Conservation Subcommittee to support consistent, locally-vetted landscape and irrigation practices for utilization by any of the Member organizations, in whole or in part, under their own local ordinance. The Model Ordinance, completed in 2017, recommends involvement from certified professionals in the following areas:

- **Landscape design plans** - signature of a licensed landscape architect, licensed/certified landscape contractor, or any other person authorized to design a landscape.
- **Irrigation design plans** - signature of a qualified irrigation professional such as licensed landscape architect with irrigation credentials, certified irrigation designer, licensed/certified landscape contractor, or any other person authorized to design an irrigation system within the jurisdiction.
- **Landscape irrigation audits** - conducted by a third-party certified landscape irrigation auditor. The local entity will need to determine the acceptable certification criteria.

Certification through the QWEL Program could satisfy some or all of these requirements, as determined by a local entity implementing a water efficient-oriented ordinance. For example, the Town of Castle Rock currently requires industry professionals, including designers, installers and maintenance contractors performing commercial landscape and/or irrigation work within the Town limits to be registered through

the Town and has indicated interested in potentially supplementing or replacing their current program with QWEL.

The concept of developing a certification program was broadly recommended by SMWSA Members, as well as Douglas County, with a directive to focus the program on education and training to implement agreed-upon best management practices. Water providers indicated that a regional collaborative certification program would be preferable to the utilities developing individual programs because, among other benefits, it could promote standardized messaging and reduce utilities' administrative requirements for program operation and maintenance.

1.2 QWEL PROGRAM SELECTION

In 2016, SMWSA received a Water Conservation Public Education and Outreach Grant through the Colorado Water Conservation Board (CWCB) to develop a Regional Landscape Certification Program. This became Phase 1 of the certification program. Through the Conservation Subcommittee, SMWSA evaluated different landscape and irrigation professional certification programs, which included various certifications offered by the Irrigation Association, QWEL, and the potential for a locally developed program. QWEL was selected due to the broad perspective it provides of how landscape and irrigation techniques work together to optimize efficiencies, practical training and application of irrigation system audits, and the ability to modify curriculum to provide a greater overview of local water supply and demand details along with locally-vetted landscape and irrigation best practices (reflected also in the Model Ordinance) for the metro Denver conditions. QWEL also offers nationally-recognized accreditation, which is attractive to some professionals and contractors.



Administrative and pilot program implementation plans were developed under Phase 1, as summarized in **Figure 2** below.



Figure 2: SMWSA QWEL Implementation and Administration Plan.

1.3 QWEL OVERVIEW

The QWEL program¹ provides landscape professionals and contractors with approximately 20 hours of education on principles of landscape water management including proper plant selection for the local climate, irrigation system design and maintenance, and irrigation system programming and operation. The curriculum is intended to provide practical resources to contractors with varying degrees of experience. To obtain the QWEL certification, an individual must demonstrate their ability to perform an irrigation system audit as well as pass the QWEL exam. QWEL certified professionals are required to complete two hours of continuing education units (CEUs) each calendar year, which can be submitted through an online registry database. The QWEL certification is currently offered in seven states across the nation, with the program being offered in Colorado for the first time in 2018.

The Sonoma-Marín Saving Water Partnership (Sonoma-Marín) in California sponsors the QWEL program. Sonoma-Marín is a partnership between 11 water utilities in California that was formed to implement regional water efficiency projects. QWEL is recognized as an EPA WaterSense-labeled Professional Certification Program for Irrigation System Audits. Upon successful completion, graduates will be listed both as a Certified Professional on the QWEL and EPA WaterSense websites, which provides a nationally-recognized level of certification. Sonoma-Marín is the Parent Professional Certifying Organization (Parent PCO) for the QWEL professional certification. As the Parent PCO, Sonoma-Marín is responsible for maintaining the certification database, supporting materials, and coordinating with EPA. The training materials generally include the following:

- Course syllabus
- Training and program administration guidance materials
- Reference manual
- Training module PowerPoint slides
- Irrigation Audit exercise instructions
- Exam materials

SMWSA was required to become an “Adopting” PCO and agree to adhere to all QWEL Policies and Procedures. Sonoma-Marín requires the Adopting PCO to modify the portion of the curriculum that focuses on local water supplies, but the bulk of the training materials are already prepared and available for use upon being accepted into the QWEL program. SMWSA prepared preliminary modifications to QWEL Module 1, which is entitled “Where Our Water Comes From”, PowerPoint slides and developed a plan for implementation, evaluation, and monitoring under Phase 1. These materials were further refined and utilized for the QWEL Pilot Program under Phase 2, as described in the following sections.

¹ Website with program background and public resources: <https://www.qwel.net/>

2. QWEL TRAINING PILOT PROGRAM

2.1 PROJECT APPROACH

Following completion of the Regional Landscape Certification Program investigation, SMWSA applied to the CWCB for a Water Plan Grant to implement a QWEL Pilot Program. This became Phase 2 of the certification program. SMWSA was awarded the grant in late 2018 and received authorization to proceed in January 2019. Douglas County also provided funding for implementing the QWEL Pilot Program.

The purpose of the QWEL Pilot Program was to further modify QWEL content to reflect local conditions, to host the first SMWSA QWEL training session, and to host a Train-the-Trainer session. The administrative plan developed under Phase 1 (see **Figure 2** above) was closely followed. A timeline showing key milestones for all efforts supporting this Phase 2 is included as **Appendix A**.

2.2 QWEL PROFESSIONAL CERTIFYING ORGANIZATION APPROVAL

In order to conduct local QWEL training sessions, SMWSA was required to be approved as an Adopting PCO. This included payment of an initial “onboarding” fee and submittal of an application to Sonoma-Marín as the QWEL Parent PCO, including modified local content for Module 1 of the QWEL curriculum. Preliminary Module 1 local content was prepared under Phase 1 and then further modified to reflect local information under Phase 2.

SMWSA was approved as a QWEL Adopting PCO in March of 2019 (see **Appendix B**). Following the approval, SMWSA applied to EPA WaterSense for approval and a Professional Certifying Organization Partnership Agreement was finalized (see **Appendix C**). An initial program onboarding fee was paid to QWEL. In recognition of the pilot phase, QWEL agreed to accept an onboarding fee at the retail water agency subscription rate. SMWSA agreed that if it continues to host regional QWEL programs, it will supplement the initial onboarding fee and fully subscribe at the wholesale water agency level. An annual fee based on number of associated certified professionals will be required for ongoing program participation. All other program operation, management, and materials costs are the sole responsibility of SMWSA as the Adopting PCO.

2.3 CONTENT REVISIONS AND COLLABORATION

2.3.1 CONTENT REVISIONS

As part of the application to become a QWEL PCO, a revised Module 1 “Where Your Water Comes From” reflecting local modifications was submitted to Sonoma-Marín. After SMWSA staff participated in a QWEL training held in Aspen, Colorado in July 2018, and upon further Member review of training materials, SMWSA identified additional content throughout all 10 modules that it wanted to revise to reflect state and local conditions. These revisions were identified and tracked via an internally developed content tracking tool, summarizing revisions by Module, PowerPoint slide, and Reference Manual training section, and categorizing each change as either global (would apply to anyone using QWEL), state (Colorado-specific), or local (should be modified based on local specifics). The initial intention of this tracking tool was to clearly annotate and facilitate a review of the recommended content modifications between

SMWSA and Sonoma-Marín. Revised training content was provided to Sonoma-Marín for review and subsequently approved by the Sonoma-Marín Board. A copy of the tracking tool and recommended changes is attached as **Appendix D**. The following QWEL training materials were modified to reflect state and local changes:

- Module PowerPoint Slides
- Reference Manual
- Exam

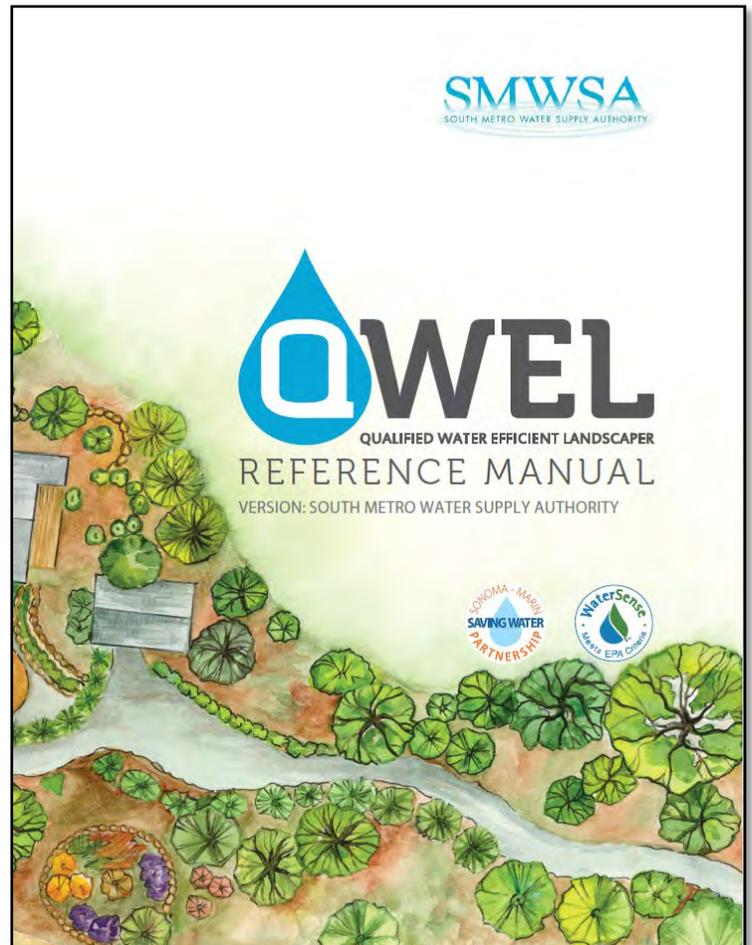
State and local content modifications included:

1. State, basin, and local hydrologic conditions
2. Colorado water rights
3. Colorado and local regulations
4. Colorado Water Plan overview
5. Colorado data resources
6. Local evapotranspiration conditions and associated calculations
7. Background on SMWSA Model Ordinance
8. Plant materials and species conditioned for Colorado's climate
9. Colorado-specific best practices (e.g. sprinkler blowout, mulching, irrigation equipment, etc.)

In addition to the revised content in the base QWEL materials, a draft "Module 11" was developed for use by SMWSA Members in future trainings. The concept behind this additional module is to briefly present local-specific land use standards for landscaping and irrigation professionals to be aware of and to provide resources to support these local standards. The Module 11 template was initially populated with information on the Model Ordinance along with some Member website references. This was not presented during the initial training session but rather was provided to SMWSA and may be expanded upon for future trainings.

2.3.2 COLLABORATION

SMWSA is committed to regional collaboration and partnership to benefit its Members. The QWEL program will widely address improvement of outdoor water use efficiency in the south Denver-metro region and beyond. Contractors who receive QWEL training and certification in the SMWSA region may do business elsewhere in the state, benefiting areas outside of the region. Successful operation of this program on a regional basis will create a model for other areas throughout the state and provide opportunity for additional partnerships beyond the region.



This type of collaboration has already begun with the City of Aspen. SMWSA and the City of Aspen (Aspen) have been collaborating over the past several years, learning from each other's outdoor efficiency efforts and experiences in implementing the QWEL program. Aspen was the first Colorado utility to be approved as a QWEL Adopting PCO and hosted their first QWEL training in July of 2018, with the support of ELEMENT² and WaterNow. QWEL Colorado content modifications made for SMWSA under its QWEL Pilot Program were shared with Aspen and subsequently used by Aspen to make content updates for its second QWEL training that was conducted in May 2019. Aspen used revised the Colorado content modified for SMWSA directly and, employing the content modification tracking tool, made targeted and consistent modifications to their local content. SMWSA and Aspen foresee on-going collaboration through shared resources and potentially through coordinated QWEL training opportunities, allowing professionals to attend training sessions at one another's respective locations. Similar to how Aspen invited SMWSA to participate in the training Aspen conducted in 2018, SMWSA invited other Colorado water providers to its 2019 training.

This collaborative experience encouraged SMWSA to update the QWEL content for Colorado conditions in a way that can be utilized broadly across Colorado for any other QWEL Adopting PCO to utilize when revising QWEL content for their own local use. This approach was presented to Sonoma-Marín, who ultimately supported the shared "Colorado version" concept. The content modification tracker tool was formatted to serve as a communication tool for any new Adopting PCO intending to use the Colorado content version as their content baseline, and steps through recommended, QWEL-approved revisions. Aspen made modifications to their full Module set following the content revision tracker and provided very positive feedback, expressing that the ease in using this tracker added great efficiency and clarity. Aspen provided some additional recommended modifications through this tool, which SMWSA in turn made to its local content, showcasing the tracker's effectiveness. This supports the intention to maintain general consistency in training materials and to share resources between Colorado-based PCOs.

2.4 ADMINISTRATIVE LOGISTICS

Hosting a successful three-day training session involves extensive coordination and administrative logistics leading up to and following the training. ELEMENT contracted with WaterNow to assist SMWSA in the training session logistics. Administrative logistics completed by SMWSA and WaterNow to support the three-day training and subsequent Train-the-Trainer session included:

1. Develop SMWSA's QWEL Adopting PCO website landing page³
2. Prepare and distribute training session informational flyer (see **Appendix E**)
3. Prepare and distribute training agenda (see **Appendix E**)
4. Print Reference Manuals and accompanying materials

² ELEMENT has been providing water efficiency program support through consulting services contracted separately to SMWSA and Aspen. Through ELEMENT's relationships and each organizations' expressed interest in sharing information and learning from each other, collaboration and communication between the organizations has been efficient and mutually beneficial.

³ <https://www.qwel.net/pub/pco/SMWSA>

5. Prospective attendee identification and outreach
6. Rent training space
7. Order food
8. Secure irrigation audit location
9. Solicit equipment donations from irrigation companies
10. Manage online class registration
11. Correspondence with enrolled trainees
12. Administer and grade exams
13. Review and summarize attendee feedback
14. Issue letter and certificates to graduates
15. Update internal database of QWEL-certified professionals
16. Project team coordination
17. Solicit and summarize Conservation Subcommittee feedback
18. Provide updates to SMWSA Board
19. Contract administration

2.5 PILOT TRAINING SESSION

The initial three-day training session was held on April 23 through April 25 from approximately 8:00 am to 4:00 pm each day. These sessions included an on-site irrigation system audit and a half-day exam to complete the certification. The training was held at the SMWSA offices and training was led by Chris Reamer, a landscape specialist based out of California who has led a number of QWEL trainings throughout participating states including the initial QWEL training held in Aspen in 2018. An introduction to the training was provided by Lindsay Rogers with WaterNow Alliance, who also provided logistical support during the training. Lisa Darling presented Module 1 materials on Where Our Water Comes From. Clay Kraus with Rachio and Matt Stratton with Hunter Industries were guest presenters during Module 9, Irrigation Controllers. Each presented specific technologies and irrigation controllers offered through their respective companies.



A total of twenty-three (23) members, professionals, and guests were invited to and 22 attended the initial training session. Attendees of the pilot training class were individually invited, in order to manage the class size and ensure representation from a broad group who could provide critical feedback and input on next steps in moving forward beyond the pilot program.

Below is a summary of professionals in attendance:

- Landscape/Irrigation Contractor (9)
- Member Staff (7)
 - Meridian Metropolitan District
 - East Cherry Creek Valley Water & Sanitation District
 - Town of Castle Rock
 - Parker Water & Sanitation District
 - Centennial Water & Sanitation District
 - Rangeview Metropolitan District
- SMWSA Staff⁴ (2)
- Guests (4)
 - Douglas County
 - Denver Water
 - City of Fort Collins
 - Aurora Water



2.6 PILOT TRAINING SESSION FOLLOW-UP

On the third day of the initial training, WaterNow proctored and graded the exams. All but one of the attendees were able to take the test on the initial exam day. SMWSA offered a subsequent exam date, within a week of the initial training, and SMWSA proctored and graded the final exam. All participants received a passing score, approving all attendees to be registered certified QWEL Professionals. Attendees were notified of their passing status and were mailed passing certificates. Records were updated and posted through QWEL's online database. Passing participants are now shown as QWEL Certified Professionals under "All QWEL Pros" on the QWEL website (

Figure 3). Any QWEL Certified Professionals can indicate that they are available for hire and their contact information is available through the QWEL website under "QWEL Pros for Hire". This is provided only as a reference and does not imply any endorsement, recommendation, or promotion by QWEL.

⁴ Includes one full-time staff and contracted Water Ambassador Program Coordinator

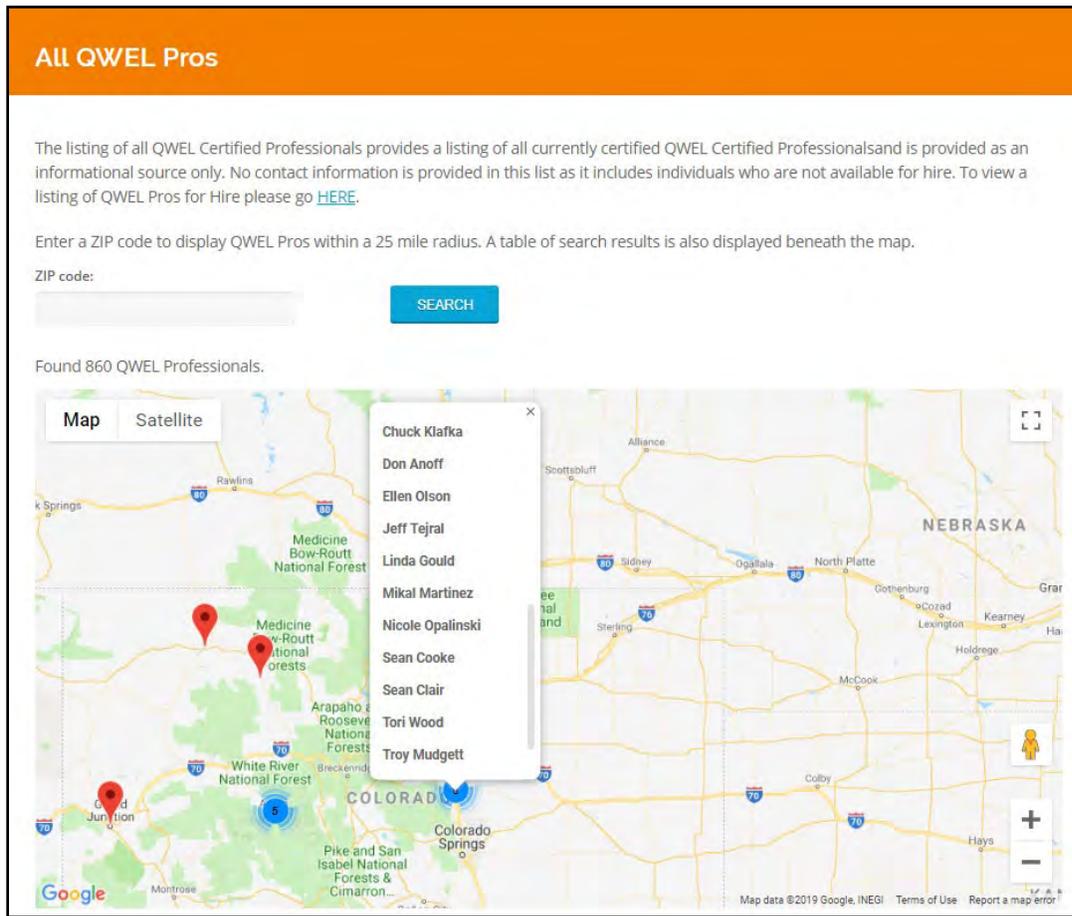


Figure 3: QWEL Certified Professionals Published Map.

Attendees were offered a questionnaire with opportunity to provide feedback and recommendations for future training sessions. Feedback was generally very positive, with the most common feedback topic being duration and engagement during the presentation, including the expressed interest in more classroom participation and interaction. Feedback themes varied, likely due to whether it was coming from a utility staff or from a landscaping contractor. Feedback and recommendations provided by attendees and trainers were documented and will be considered for future training sessions and future content modification. SMWSA will consider engagement with a local trainer for future training sessions.

2.7 TRAIN THE TRAINER

Directly following the three-day training, a fourth day was scheduled to host a Train-the-Trainer workshop, also led by Chris Reamer. Four professionals attended the Train the Trainer workshop:

- Member Staff (2)
- SMWSA Staff⁵ (2)

The focus of this training was on a review of how the trainings should be approached, trends in what areas of content and portions of the curriculum professionals tend to ask questions or want additional details, and lessons learned, all from the perspective of the contracted trainer.



A sample of trainer recommendations include:

1. Evaluate the test results and if certain questions repeatedly cause problems, consider revising the question or clarifying the content, particularly if it is locally developed content.
2. Generally present at a faster pace than you may be inclined to.
3. Engage the audience. Trainees who ask the least questions often are the ones who exhibit the greatest struggles with the exam.

2.8 CHANGES IN SCOPE

Since the grant application submittal for Phase 2, a few unanticipated changes impacted the scope as initially presented in the application. Some changes resulted in greater project cost efficiencies, while other changes shifted responsibilities to different parties. These changes and impacts are summarized below and in a revised Budget and Schedule (**Appendix F**).

1. As described above in Section 2.3.1, a baseline Colorado version of the QWEL materials was pursued through this effort to support consistent messaging for Colorado-specific information. Some additional costs were incurred through the content development process, development of content modification tracking tool, and through coordination and review of materials.
2. Members and staff were provided the opportunity to attend a half-day Train-the-Trainer session sponsored by the City of Aspen in February of 2019. Because of this, the Train-the-Trainer session covered under this grant was held over one day rather than the originally planned three days. This reduced the cost and duration of this session, resulting in a reduction in cost for this line item.

⁵ Includes one full-time staff and contracted Water Ambassador Program Coordinator

3. The QWEL Training session and the Train-the-Trainer session were held during the same week over consecutive days. This reduced the travel costs required for the QWEL instructor, as the original plan assumed expenses associated with two trips.
4. SMWSA Members and WaterNow worked with Hunter Industries and Rachio to obtain most of the landscaping and irrigation demonstration materials at no cost, reducing the initial estimated cost for these materials.
5. SMWSA was able to secure a room rental at a lower rate than the initial estimate. Costs under this line item still include food and drink.
6. Unexpected staff changes within SMWSA shifted responsibilities within the project team. Impacts due to this staffing change include:
 - a. *Redistribution of administrative and management efforts.* Initially, 50 hours were estimated for efforts associated with a staff Water Resources Engineer. This position was no longer available, so tasks that had been shown under this staff person were distributed among other staff and ELEMENT. SMWSA requested a change in contracting approach, moving contracts with the QWEL instructor and WaterNow to a subcontract under ELEMENT. Additional costs associated with coordination for associated efforts and management of contracts for ELEMENT resulted, but no cost markups were assigned to work completed under these subcontracts.
 - b. *Engagement with WaterNow to assist with QWEL training session logistics.* This included assistance in preparation of training materials and during the 3-day training.
7. Sonoma-Marín is contracting with a Spanish translator to translate the baseline presentations and the Reference Manual into Spanish for participating PCOs. The timeline for completion has not been finalized. This led to a delay in SMWSA's ability to prepare the local content Spanish translation. Therefore, the Spanish translation subtask was removed from Phase 2 and costs were redistributed within Task 1.
 - a. Overall project duration was shortened, and training was held earlier than originally anticipated. Removing the Spanish translation from the scope allowed the Phase 2 project to be completed by May 31, 2019, six months earlier than originally scheduled.

2.9 MATCHING COMMITMENTS

Throughout the duration of the project, SMWSA staff and Members contributed to the project's advancement and success. SMWSA's cash and in-kind matches ultimately exceeded the required match of 50% of the total project cost, as shown in the revised budget worksheet (**Appendix F**). More than half of the matching funds were in the form of cash with the remaining match in the form of in-kind services.

3. CONCLUSIONS

Certification of landscape professionals generally raises the level of awareness of the importance of outdoor water management and landscaping and irrigation best management practices not only for the SMWSA Members, but also for landscape professionals working throughout the metro Denver area. While it is difficult to quantify and measure specific water use savings for education-based programs like QWEL, SMWSA does anticipate savings to occur as a result of this program through a more educated collection of landscaping professionals, resulting in increased efficiency in design and installation of irrigated landscaped areas as well as through ongoing maintenance and management of those irrigated landscaped areas.

Operating the QWEL training program on a regional scale supports consistent messaging and will reduce individual utility's outreach and administrative requirements associated with operation of a certification program. A standardized regional certification program may also provide opportunities to leverage enforcement and compliance across the region regarding proper installation and maintenance for communities with regulatory land-use authority. SMWSA staff and the Conservation Subcommittee have recommended to the Board that it continue the operation of ongoing QWEL certification training sessions and continue to improve and advance the program.

3.1 KEY TAKEAWAYS

The Conservation Subcommittee, many of whom attended the training and are now certified, met on May 16, 2019 to discuss key takeaways from the training and begin formulating recommended next steps. The following is a summary of general observations made:

- The Pilot QWEL training was a success. The training content and materials are good, and the first training was very useful in identifying some areas to improve upon.
- QWEL is good for providing common language and best practices; it is not intended to replace practical experience needed and therefore participants should have some minimum experience required prior to taking the class if using it as a credential.
- Some of the content can be repurposed for developing other types of trainings such as educating HOA's and homeowners. Caution should be taken so as not to brand separate trainings as QWEL certification.
- Three days of training is a large commitment to ask of contractors.
- Feedback from contractors attending is that the certification is valuable in expanding business opportunities. Customers may be more comfortable allowing access to properties when there is a certified professional involved.

3.2 CHALLENGES AND RESPONSES

Prior to the kick-off of Phase 2, staff changes to key SMWSA personnel occurred, impacting the project approach. Scope modifications were made in response, as described in Section 2.8 above. Impacts are expected to only affect this pilot phase and can be planned for during subsequent training sessions.

Some feedback received from the trainee group was that energy levels and engagement during the three days waned at times. One way to mitigate this in future trainings is to utilize multiple trainers each day. This session included multiple guest presenters, but they tended to be grouped within specific training Modules. While this did help engagement, additional consideration may be placed on where guest presenters can be included throughout the training.

SMWSA developed a Colorado-specific QWEL version intended to be available to share with Colorado utilities pursuing the QWEL program in the future. Version control and coordination on Colorado-specific changes will be a challenge moving forward, as any approved Adopting PCO has access to modify materials. A close working relationship with Sonoma-Marin and maintenance of the content modification tracking tool will help to mitigate this challenge.

3.3 RECOMMENDATIONS AND NEXT STEPS

Observation and recommendations based on this initial training session include:

1. The full three-day training agenda planned for longer days than needed, resulting in early releases each day. However, some of the attendee feedback indicated that a desire for more explanation of technical information and small groups with longer time spent on the in-field audit portion of the training. For subsequent trainings, it is recommended that this be considered in the development of the agenda and reflected appropriately, without forcing a timeframe that would be too tight. Working more closely with the trainer and considering the audience (utility staff versus landscaping contractors) in the agenda development will also help the planning process.
2. Having a vetted and experienced QWEL trainer strongly contributed to the ultimate success of this training session. If SMWSA continues the program into the future, it is recommended that a local professional be identified and contracted for ongoing trainings. This will provide a local perspective, ultimate consistency in the content presentation, and reduce costs for travel.
3. Two guest trainers plus Lisa Darling presented during the training sessions. Attendees responded positively to having multiple experts present throughout the training. It is recommended that guest presenters continue to be incorporated for future trainings and SMWSA may consider additional sections that a guest presenter or additional trainer can be incorporated.
4. SMWSA should work with the Conservation Subcommittee and Members to identify the implementation plan for ongoing QWEL training sessions. Identify and work with perspective trainers and modify the administrative structure as needed (e.g. will the next training continue to be contracted, will staff manage all logistics with Members providing the training, will there be a combination of these two, etc.).

5. Consider offering training outside of the prime irrigation season to help accommodate professionals' schedules, such as in late October or early November. This may require investing in a mobile irrigation system that could be utilized for the in-field audit portion of the training, after in-ground systems have been winterized.
6. Maintain and manage the content modification tracking tool, as this and the Colorado-specific QWEL version is shared and made available to other Colorado-based PCOs. Maintain close communication with Sonoma-Marín and other Colorado-based Adopting PCOs to support consistency in presenting Colorado-specific and other updated content.
7. Communicate with certified professionals about Continuing Education Units (CEUs) and consider offering regional CEU training opportunities.
8. Explore a potentially expanded role for the CWCB in the future as they may be structured to better facilitate and maintain a Colorado-specific QWEL version.
9. Consider Spanish translation of materials after completing multiple training sessions and incorporating any additional modifications to content.

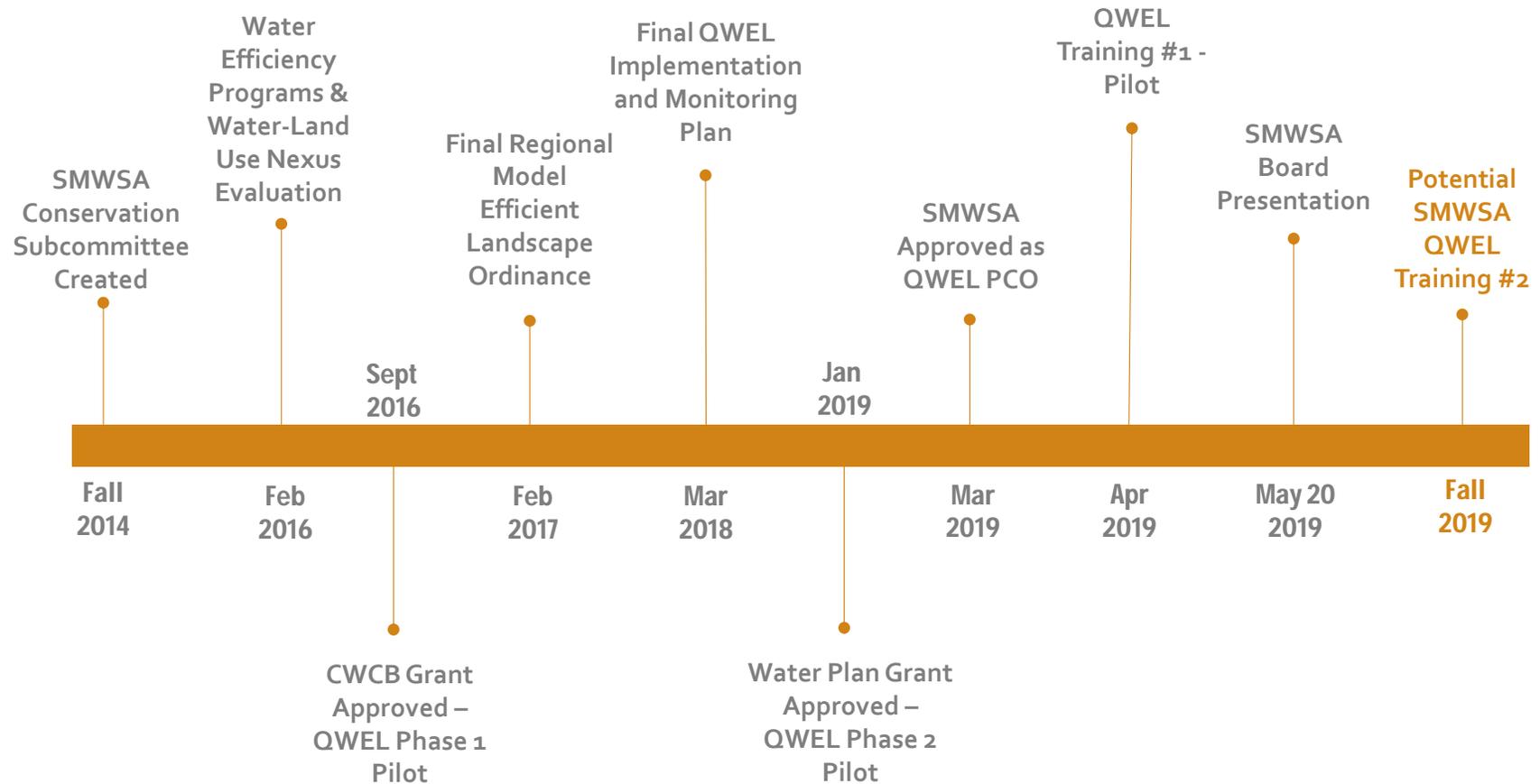


SMWSA staff and the Conservation Subcommittee have recommended to the Board that SMWSA host a second QWEL training session in the fall of 2019. Additional content modification is not anticipated at this time but may be reviewed periodically and updated as needed.

APPENDIX A

Project Timeline

SMWSA Landscape Certification Project History



APPENDIX B

QWEL PCO Approval



QWEL APPLICATION FOR ADOPTING PROFESSIONAL CERTIFYING ORGANIZATIONS

An organization wishing to utilize the Qualified Water Efficient Landscaper (QWEL) training program can initiate adoption by submitting this *Application for Adopting Professional Certifying Organizations (PCO's)* to the Sonoma-Marín Saving Water Partnership (Partnership).

Submit application and attachments to:
Sonoma-Marín Saving Water Partnership
c/o Gregory Plumb
gregory.plumb@scwa.ca.gov
Sonoma County Water Agency
404 Aviation Boulevard
Santa Rosa, CA 95403

Adopting PCO General Information

Type of Organization:

- Retail water agency with 3,000 or less connections, non-governmental organization, or education institution
- Retail water agency with more than 3,000 connections
- Wholesale water agency or regional water utility organization

Organization Name: South Metro Water Supply Authority

Primary Contact Name: Lisa Darling

Primary Contact Address: 8400 East Prentice Avenue, Suite 315

City: Greenwood Village State: CO ZIP: 80111

Billing Address: 8400 East Prentice Avenue, Suite 315, Greenwood Village, CO 80111

Telephone: 720-216-5158 Email: lisadarling@southmetrowater.org

Checklist for Submittal to Sonoma-Marin Saving Water Partnership

Prior to approval the following items must be provided to the Partnership.

- Revise *Section One: Where our Water Comes From* PowerPoint to comply with QWEL Policies and Procedures.
- Names, titles and resumes for each person teaching or administering the QWEL program and the role that they will serve.
- Documentation proving the Adopting PCO is a legal entity or part of a legal entity.
- In the event that the Adopting PCO contracts with another organization for work related to QWEL, provide a copy of the legally binding contract used to ensure the Adopting PCO will take responsibility for contracted work and shall maintain ultimate responsibility for all certification-related decisions.

Program Fees

Onboarding Fee

Invoice sent by Sonoma County Water Agency, payable within 90 days of receipt of invoice.

Type of Organization	Fee
Retail water agency with 3,000 or less connections, non-government organizations, and educational institutions	\$1,000
Retail water agency with more than 3,000 connections	\$2,500
Wholesale water agency or regional water utility organization	\$10,000

Ongoing Fees

Invoiced annually by Partnership, payable within 90 days of receipt of invoice.

Number of Certified Professionals as of December 31	Fee
0 to 100	\$500
101 to 500	\$1,000
501 to 1,000	\$1,500
1,001 to 2,500	\$2,500
2,501 to 5,000	\$5,000

EPA Eligibility Requirements for Adopting QWEL

An organization may adopt a WaterSense labeled program offered by a Parent PCO, provided it is approved by the Parent PCO to meet the following minimum requirements:

- Institutional stability
- Subcontracting
- Management of certified professionals' eligibility requirements
- Security of assessment instruments
- Procedures to revoke certification from certified professionals

The Adopting PCO agrees to adhere to all *QWEL Policies and Procedures*. These procedures ensure that the applicant shall operate in compliance with the *WaterSense Professional Certification Program Labelling System*. Adopting PCO is responsible for the impartiality of their professional certification program activities and not allow commercial, financial, or other interests to compromise their impartiality.

Additionally, the applicant and Adopting PCO each agree to hold the Sonoma-Marin Saving Water Partnership and the Sonoma County Water Agency harmless from and against any and all claims, loss or damage to any property, real or personal, liabilities and costs, including attorney's fees, as a result of participating in the QWEL training program.

EPA WaterSense Approval Process

Upon approval of this application, the Partnership (Parent PCO) will provide the Adopting PCO with the following required EPA WaterSense forms:

- Application for Certifying Organization Approval
- Professional Certifying Organization Partnership Agreement

Adopting PCO Approval

By signing this application, I confirm that all the information included in this form is accurate and true, and that the organization named above is structured so as to give confidence in its competence and integrity to offer QWEL.

Print Name: Lisa G. Darling

Title: Executive Director

Signature: Lisa G. Darling

Date: 2.15.19

Parent PCO Approval

By signing this application, I confirm that the Sonoma-Marin Saving Water Partnership has reviewed all the information referenced in this form and affirm that the Adopting PCO named above has met all of the requirements referenced.

Print Name: Grant Davis

Title: General Manager, Sonoma County Water Agency

Signature: [Signature]

Date: 3-6-19

For office use only		
T0304 D034	Date:	Approved by:



March 14, 2019

Lisa Darling
South Metro Water Supply Authority, 8400 East Prentice Ave, Suite 315
Greenwood Village, CO, 80111

RE: LETTER OF APPROVAL TO BECOME A QWEL ADOPTING PROFESSIONAL CERTIFYING ORGANIZATION

Dear Lisa,

Thank you for submitting your application to become an Adopting Professional Certifying Organization for the Qualified Water Efficient Landscaper (QWEL) program. As you know, one of the most cost effective ways to reduce landscape water use is to have an informed landscape professional community that understands water management. To meet this need, the QWEL program was created which is recognized by the United States Environmental Protection Agency as a Professional Certification Program for Irrigation System Audits.

QWEL provides twenty hours of educational materials designed to provide a better understanding of landscape water management for the landscape industry. The program has already proved successful with over 2,000 graduates to date. The Sonoma-Marín Saving Water Partnership continues to expand the QWEL program nationwide in a campaign to improve landscape water management around the country.

The Board of Directors have reviewed your application and revisions to the 'Where Our Water Comes From' section and are pleased to inform you that your application has been approved. We look forward to working with you and your organization to expand and continue the success of QWEL.

Sincerely,

QWEL, Board Co-Chair

QWEL, Program Manager

APPENDIX C

EPA WaterSense Approval



Application for Professional Certifying Organization Approval

Professional certifying organizations (PCOs) seeking the U.S. Environmental Protection Agency's (EPA's) WaterSense® label for a professional certification program should complete this application to document that the organizational eligibility requirements have been met, as listed in Section 5 of the *WaterSense Professional Certification Program Labeling System*.

PCOs applying directly to EPA (EPA Approved PCOs) for organizational approval shall submit Sections 1 and 2 of this application to EPA.

PCOs adopting an existing WaterSense labeled program (Adopting PCOs) shall submit Sections 1 and 3 of this application to EPA.

Mail this form and attachments to:

EPA WaterSense Program
c/o ERG
2300 Wilson Boulevard
Suite 350
Arlington, VA 22201

OR

Email this form and attachments to:

WaterSense Helpline
watersense@epa.gov

PCOs should mark sensitive or proprietary documentation with the term "Confidential Business Information." Please **DO NOT** send confidential business information (CBI) electronically. All CBI should be sent only in hard copy to the address provided above.

For more information, please call the WaterSense Helpline at (866) WTRSENS (987-7367) or email watersense@epa.gov.

Section 1: General Information

Professional Certifying Organization: South Metro Water Supply Authority

Contact name: Lisa Darling

Address: 8400 East Prentice Avenue, Suite 315

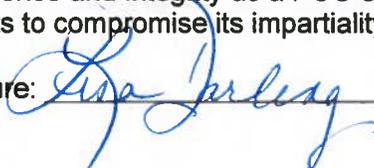
City: Greenwood Village State: CO ZIP: 80111

Telephone: 720-216-5158 Fax: 720-216-5154

Email: lisadarling@southmetrowater.org

Program website (if applicable): https://www.qwel.net/pub/pco/SMWSA

By signing this application, I confirm that all the information included in this form is accurate and true, and that the organization named above is structured so as to give confidence in its competence and integrity as a PCO such that it will not allow commercial, financial, nor other interests to compromise its impartiality.

Signature:  Date: 3/19/19

Application for Professional Certifying Organization Approval

Section 2: EPA Approved PCOs

To gain organizational approval, an EPA Approved PCO may choose one of two paths: third-party accreditation or WaterSense accreditation. Please complete the appropriate section for your organization below.

Section 2.1: Third-Party Accreditation Path

This section should be completed by PCOs that have chosen the third-party accreditation path described in Section 5.2.1 of the *WaterSense Professional Certification Program Labeling System*.

Please list the standard to which your certifying organization is accredited:

Qualified Water Efficient Landscaper program

- Include the certificate of accreditation with your application packet.

Section 2.2: WaterSense Accreditation Path

This section should be completed by PCOs that have chosen the WaterSense accreditation path described in Section 5.2.2 of the *WaterSense Professional Certification Program Labeling System*.

Please submit the following items for each requirement described in the referenced sections of the *WaterSense Professional Certification Program Labeling System*.

Institutional Stability (Section 5.2.2.1)

- Names and titles for each employee providing services to the certification program and justification for how he or she is qualified for the position.
- Documentation and description of the management (e.g., team or person) responsible for each of the managerial elements listed in Section 5.2.2.1. This description can be accompanied by or presented in organizational chart format.
- Documentation proving the PCO is a legal entity or part of a legal entity.

Subcontracting (Section 5.2.2.2)

- Provide a copy of the legally binding contract used to ensure the PCO will take responsibility for contracted work and shall maintain ultimate responsibility for all certification-related decisions.

Independent Oversight of Certification Program Development and Management (Section 5.2.2.3)

- Provide a description of the role, responsibility, and function of the oversight committee within the organization. If available, a copy of the organization's procedures or by-laws pertaining to the oversight committee may be submitted as documentation. The information should address the following topics:
 - How committee members are selected or appointed.

Application for Professional Certifying Organization Approval

- Committee member terms of service, such as duration of appointment or nature of compensation, if any.
- For the current oversight committee, provide each committee member's name, committee position, professional affiliation, and a brief synopsis of expertise relevant to the field to which the certification applies.

Please submit in a separate document(s) your relevant procedures and include below where in your procedures WaterSense can find information related to each requirement described in the referenced sections of the *WaterSense Professional Certifying Program Labeling System*. If the procedures described below are not part of an existing procedural document for the organization, please attach a separate written description and reference appropriately below.

Management of Certified Professionals' Eligibility Requirements (Section 5.2.2.4)

- Procedures to ensure that all eligibility requirements relevant to certified individuals (e.g., experience) are made public and to ensure these requirements are met and maintained by certified individuals as part of the certification process.
- Procedure section or page number: _____

Development and Maintenance of Certification Exams (Section 5.2.2.5)

- Procedures to ensure that the technical content of exam questions and passing scores are established or approved by the oversight committee(s).
- Procedures and the name and address of the independent academic institution or professional testing organization used to review exam material.
- Procedure section or page number: _____

Security of Assessment Instruments (Section 5.2.2.6)

- Procedures to ensure the security, confidentiality, and independent proctoring and grading of exams, including maintaining a record of the name and address of the organization or certified professional that graded each exam.
- Procedures to ensure that all personnel involved in handling and grading examinations and related items are trained in the security procedures established by the PCO.
- Procedure section or page number: _____

Procedures to Revoke Certification From Certified Professionals (Section 5.2.2.7)

- Procedures to implement disciplinary actions, which include handling complaints and defining the terms and conditions for suspending or withdrawing the certification.
- Procedure section or page number: _____

Application for Professional Certifying Organization Approval

Section 3: Adopting PCOs

Title of labeled program being adopted: QWEL or Qualified Water Efficient Landscaper Training

Parent PCO: Sonoma-Marin Saving Water Partnership

Parent PCO representative: Gregory Plumb

Representative's email: gregory.plumb@scwa.ca.gov

Representative's phone number: 707-547-1933

Geographic area(s) (municipality, state, nationwide, etc) in which the above certification program will be offered by the Adopting PCO:

South metro Denver, Colorado

Date the Parent PCO approved and signed the *Application for Adopting Professional Certifying Organizations*, or the Parent PCO's alternative documentation: 3/6/2019



Partnership Agreement: Professional Certifying Organizations

Section I: U.S. Environmental Protection Agency (EPA) WaterSense® Program Goals

EPA's WaterSense program aims to use water resources more efficiently to preserve them for future generations and to reduce water and wastewater infrastructure costs by reducing unnecessary water consumption. Through this program, EPA provides reliable information on high-performing; water-efficient products and practices; raises awareness about the importance of water efficiency; ensures water-efficient product performance; helps consumers identify products and services that use less water; promotes innovation in product development; and supports state and local water efficiency efforts.

Section II: Partnership Pledge

As a WaterSense program partner, South Metro Water Supply Authority (name of organization) shares EPA's goals as outlined above and is proud to commit to the following activities to further these goals:

1. Maintain at least one WaterSense labeled professional certification program in the United States.
2. Promote the value of water efficiency and WaterSense. Inform certification candidates about WaterSense as an easy and desirable option for customers to reduce water use and save money.
3. Make WaterSense materials available to those professionals who earn a certification through a WaterSense labeled program.
4. Maintain a publicly accessible online listing of basic contact and business information for individuals who have earned the organization's WaterSense labeled professional certification(s).
5. Report to EPA on a quarterly basis a comprehensive list of all currently certified professionals using a standardized form to be provided by WaterSense.
6. Report to EPA on an annual basis summary results and statistics about the organization's WaterSense labeled professional program(s).
7. Adhere to all policies and procedures contained in the *WaterSense Program Guidelines*.
8. Adhere to the *WaterSense Program Mark Guidelines* and ensure that authorized representatives, such as advertising agencies, and subcontractors, also comply. Help EPA maintain program integrity by alerting EPA to possible misuse(s) of the WaterSense program marks.
9. Grant EPA's WaterSense program permission to include the partner organization's name on a list of participating partners on the WaterSense website, program materials, and announcements. The partner organization understands that from time to time, EPA will be interested in profiling partner accomplishments in case studies and articles. If selected for such promotion, the partner organization will have the opportunity to provide input and review the final print or Web document before EPA releases it to the public. Further, the partner organization understands that EPA might refer media contacts interested in publicizing water efficiency to the partner organization for information about certification programs and accomplishments.

Section III: EPA WaterSense Program's Commitments to Partners

1. Develop national specifications for water-efficient products and programs through an open, public process.
2. Increase awareness of EPA's WaterSense brand by distributing key messages on the benefits of WaterSense labeled products, programs, and new homes, as well as the importance of water efficiency.
3. Provide current WaterSense program news, information, and reference documents (via the program website, WaterSense Helpline, email, or other means), including a listing of WaterSense labeled products and programs, and a directory of certified professionals, on the website.
4. Provide WaterSense partners with public recognition for their involvement in the program and role in protecting the environment through an online listing of partners, special awards, and other efforts. This recognition includes, but is not limited to, listing partners and WaterSense labeled products and programs on EPA's WaterSense website.

5. Respond swiftly to partner requests for information or clarification on EPA's WaterSense program policies.
6. Review pre-press promotional items, draft websites, or other materials that use the WaterSense program marks, upon request.

Section IV: General Terms and Disclaimers

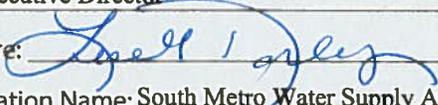
1. The partner will not construe, claim, nor imply that its participation in the EPA WaterSense program constitutes federal government (EPA) approval, acceptance, or endorsement of anything other than the partner's commitment to the program.
2. Nothing in this agreement, in and of itself, obligates the EPA to expend appropriations or to enter into any contract, assistance agreement, interagency agreement, or incur other financial obligations that would be inconsistent with Agency budget priorities. The partner agrees not to submit a claim for compensation for services rendered to EPA or any federal agency in connection with any activities it carries out in furtherance of this agreement.
3. The partner and the EPA WaterSense program will assume good faith as a general principle for resolving conflict and will seek to resolve all matters informally, so as to preserve maximum public confidence in the program.
4. Failure to comply with any of the terms of this partnership agreement can result in its termination and cessation of access to the benefits of the program, including use of the program marks.
5. The EPA WaterSense program will actively pursue resolution of noncompliance related to the use of the program marks.
6. Both parties concur that this agreement is wholly voluntary and may be terminated by either party at any time, and for any reason, with no penalty. Termination will begin effective immediately upon written notice to or from the WaterSense program. Upon termination of this agreement, partners agree to remove program marks in a timely manner, consistent with the *WaterSense Program Mark Guidelines*.

To be completed by partner

Authorized Partner Representative¹ (printed name): Lisa G. Darling

Title: Executive Director

Email: lisadarling@southmetrowater.org

Signature: 

Date: March 15, 2019

Organization Name: South Metro Water Supply Authority

Number of employees: 5

Industry/SIC/NAICS code: membership org of water providers

Website: southmetrowater.org

Number of current certified professionals: 0

State(s) where the labeled program is offered: Colorado

Primary Contact: Dr./Mr./Mrs./Ms. Lisa G. Darling / Mikal Martinez

Title: Executive Director / Executive Assistant

Dept.: _____

Email: lisadarling@southmetrowater.org, mikalmartinez@southmetrowater.org

Address: 8400 East Prentice Avenue, Suite 315

City/State/ZIP: Greenwood Village, CO 80111

Telephone: 720-216-5158

Alternate Telephone: 303-483-3143

How did you find out about this program? Website Referral, Name: ELEMENT Water Consulting

Periodical: _____ Workshop, Sponsor: _____

Mailing: _____ EPA Region: _____ Other: _____

¹The authorized partner representative should be a person in the company with signing authority (e.g., vice president).

To be completed by EPA

Authorized EPA Representative (printed name): Veronica Blette

Title: Chief, WaterSense Branch

Email: watersense@epa.gov

Signature: Veronica Blette

Date: 3/22/2019

Submit the Partnership Agreement (rewriteable PDF) to WaterSense via:

Fax: (703) 841-1440

Mail: WaterSense, c/o ERG, 2300 Wilson Blvd, Suite 350, Arlington, VA 22201

Electronically: If you have Adobe Acrobat, you can complete the form electronically and email it to: watersense@epa.gov.

Please contact the WaterSense Helpline at (866) WTR-SENSE (987-7367) if you have any questions about eligibility, partnership, or for general program inquiries.

After signing, EPA will send partners an executed copy of this agreement.

The public reporting and record keeping burden for this collection of information is estimated to average 8 hours per response. Send comments on the Agency's need for this information, the accuracy of the provided burden estimates, and any suggested methods for minimizing respondent burden, including through the use of automated collection techniques to the Director, Collection Strategies Division, U.S. Environmental Protection Agency (2822T), 1200 Pennsylvania Ave., NW, Washington, D.C. 20460. Include the OMB control number in any correspondence. Do not send the completed Partnership Agreement to this address.

APPENDIX D

Revised Training Content Tracking Tool

South Metro Water Supply Authority

QWEL Presentation General, State, and Local Modifications Summary Matrix

Developed by ELEMENT Water Consulting



last updated: 4/22/2019



SLIDE	TRAINING MANUAL SECTION	GENERAL CONTENT CHANGES	CONTENT CHANGES THAT APPLY THROUGHOUT CO	CO LOCAL CONTENT CHANGES
MODULE 1 - Local content presented by local representative(s) until Section 8.1 on water meters; inform Trainer about changes made to Section 8.1 and beyond.				
2	NA			Local content
3 & 4	NA	QWEL will update slide for new awards and provide for replacement		
5	NA	Changed text to 5 states; shaded CO blue, added City of Aspen & SMWSA logos		
5	NA	Colorado and SMWSA added to slide to be incorporated in general update		
9	NA		Changed reference from CA to CO in #2 and #5	Local content
11	1.1	Added infiltration to picture; added bullet about infiltration/ground water; simplified language in the bulleted text		
14	2		Modified heading from CA to CO	
15	2.1-2.3		General Colorado river basins info	Local content
16	2.2			Local content
17	2.2		Updated drought chart	
18	2.2		Updated drought chart	
19	2.4		Added Colorado Water Plan slide	
20-27	3			Local content
29	4.1-4.3		Relabeled title to Indoor Use and removed bullet about national average outdoor use. Outdoor Use presented in subsequent slide.	
29	4.1-4.3	The numbers in this slide do not match what we have from the AWWAWRF errata. Slide updated.		
30	4.4			Local content
31-36	5-5.5		CO water law and agency content; some of the content prepared for Aspen has been updated	
37-39	5.6-5.8			Local content
41	6.1-6.4		Modified CA to CO content & added CWW logo	
44-45	7.1-7.2			Local content
46	7.2		Modified for CO	
53	8.6	Added "either" to 1st sub-bullet before the 10 gallons or 1 cubic foot"		

SLIDE	TRAINING MANUAL SECTION	GENERAL CONTENT CHANGES	CONTENT CHANGES THAT APPLY THROUGHOUT CO	CO LOCAL CONTENT CHANGES
54	8.7	Added "if access is permitted by utility" to 1st bullet and modified the sub-bullet to reference other hazards rather than animals	Added "if access is permitted by utility" to Notes 1st bullet and modified Slide 1st sub-bullet to reference other hazards rather than animals	
58-59	9		Review Questions #4 and #12 are CO specific	Local content
MODULE 2				
4	1.1		Replaced image with ALCC Green Strategies document cover	
7	2.1-2.3			Local content
8	2.4		Changed slide notes re: Garden\Garden Project example from Santa Monica - consider future modification with local example	
19	3.2		Added slide notes that sheet mulching may not be used as much in CO but introduce as an enviro-friendly option	
26	3.3		Replaced image with Plant Select "Pretty Tough Plants" landscape guide	
31	3.4		Added slide text re: winterization	
44	4	Question #13 low impact development topic - not mentioned throughout Module 2 slides. Question updated to refer to "Green Infrastructure".		
MODULE 3				
14	2.6		Changed soil test report image to CSU	
15	2.7		Changed soil lab reference to CSU	WebSoil Survey map changed for local area
39	5.4		Changed second bullet to include ice melt applications	

SLIDE	TRAINING MANUAL SECTION	GENERAL CONTENT CHANGES	CONTENT CHANGES THAT APPLY THROUGHOUT CO	CO LOCAL CONTENT CHANGES
MODULE 4				
Throughout			Replaced plant images throughout slides with Colorado appropriate plant materials	
Throughout			Removed CIMIS slides 15 & 16 from original QWEL slides; slide numbering below reflects revised version	
14-18	3.4			Local content
14			Changed climate station reference to COAGMET and NOAA	
15-17			Removed CIMIS references (old slides 15 & 16 removed entirely)	
15, 16	3.4			Local content
20	4.3			Local content
21	4.4		Changed reference to CSU and GreenCo	
22			Changed banner images, labels, edible plants reference to apple/crabapple, currant	
31	6.3			Local content
43	9.2-9.5			Local content
46				Local content
MODULE 5				
Throughout			Added new slide 14 to the original QWEL slides; slide numbering below reflects revised version	
11	2.1-2.2	Remove final bullet RE "Rough figure of 0.5 psi per foot of head often used" because could be confusing with actual number being 0.433		
14	3.3		Created a new slide 14 prior to the current one that shows VAN nozzle chart.	
15	3.3		Replaced 210 degree portion of Hunter chart with 360	
17	4.1	Discussed with QWEL: Update diagram to show backflow preventer flipped and "stop and go" for winterization. Image is from Hunter Industries. Greg will follow up, but advises to leave for illustrative purposes.		
20-21	4.5		Changed pressure vacuum breaker sub-bullet because it is not true for CR that old technology not approved for new construction. Removed ASV image and bullets because not an approved form of backflow prevention in the front range	

SLIDE	TRAINING MANUAL SECTION	GENERAL CONTENT CHANGES	CONTENT CHANGES THAT APPLY THROUGHOUT CO	CO LOCAL CONTENT CHANGES
MODULE 6				
4			Modified second bullet to clarify "Landscape maintenance or irrigation management contracts"	
8	2.3	Revised the slide to more closely match the order and tone in the manual.		
10	3.1		Deleted reference to freeze blanket on backflow device and deleted last bullet. Added text for air compressor as option for draining system.	
MODULE 7				
16	3.2-3.3			Local content: Range of precip rate for fixed spray sprinklers lowered to 1.0 due to Castle Rock requirement
21	4.1		Replaced 210 degree portion of Hunter chart with 360	
27	4.4		Added local photo	
MODULE 8				
5	1.2-1.3	Fixed typo on last bullet ("requirements")		
7	1.4		Changed text from "CIMIS Station" to "Example Climate Station"	
8, 10	1.5	Switch image orientation for MAD		
18-21	2.6		Remove all references to CIMIS	Local content
26	3.4			Local content
28-29	3.6			Local content
31-32	3.8			Local content
34-35	3.1			Local content
43	4.5			Local content
MODULE 9				
14	3.5			Local content
21,22, 24	5.1, 5.2, 5.5		Replaced final picture with Rachio Gen 3 flow sensor version, used widely in Colorado	
25-28				Added Rachio presentation slides
34	6.5-6.7	Increased font size for the word "wind" in the title to match		
MODULE 10				
Note:			Discussed with QWEL - recommendation is to leave the real-world example as-is. This module is intended to allow for a deeper-dive if time permits. Opportunity to not present this module and instead present a "Module 11" with local ordinance overview.	

APPENDIX E

Outreach Materials and Agenda

Qualified Water Efficient Landscaper Training

When: April 23rd – 25th, 2019, 8am – 4pm

Where: South Metro Water Supply Authority,
8400 E. Prentice Avenue, 2nd Floor Conference Room, Greenwood Village, CO

Learn More & Reserve Your Seat by emailing Mikal Martinez (below)

This course is sponsored by SMSWA and registration is **free**.

QWEL is an EPA WaterSense labeled Professional Certification Program for Irrigation System Audits. The course provides landscape professionals with hands-on demonstrations and education on proper plant selection for the local climate, landscape water use, irrigation system design and maintenance, controller programming and operation, and sustainable landscaping.

QWEL graduates are certified to perform 3rd party irrigation audits and will be **listed for hire** on the EPA WaterSense and QWEL websites.

This class will be taught by Christopher Reamer, licensed contractor and educator. Space is limited to **20 attendees**.

To pass the QWEL course participants must:

- ✓ Attend all 3 days of the training
- ✓ Complete an irrigation audit
- ✓ Pass the QWEL Exam

Questions?

Mikal Martinez
mikalmartinez@
southmetrowater.org
(720) 216 – 5158

Lindsay Rogers
ler@waternow.org
(415) 259-7978





Qualified Water Efficient Landscaper Training Course
 South Metro Water Supply Authority | April 23rd – 25th, 2019

Agenda

Primary Instructor: Christopher Reamer, Permaculture Landscaper & Educator

Guest Instructors: Lisa Darling, South Metro Water Supply Authority; Matt Stratton, Hunter Industries; Clay Kraus, Rachio

Facilitator: Lindsay Rogers, WaterNow Alliance & Mikal Martinez, South Metro Water Supply Authority

Tuesday, April 23rd 8:00am – 4:00pm

8am – 8:15am	Welcome & QWEL Course Objectives
8:15am – 9:45am	<i>Section 1: Where Our Water Comes From</i> <i>Guest instructor: Lisa Darling</i>
9:45am – 10am	Break
10:00am – 11:45am	<i>Section 2: Sustainable Landscaping</i>
11:45am – 12:45pm	Lunch
12:45pm – 2:15pm	<i>Section 3: Soils</i>
2:15pm – 2:30pm	Break
2:30pm – 4:00pm	<i>Section 4: Landscape Water</i>

Wednesday, April 24th 8:00am – 4:00pm

8:00am – 9:30am	<i>Section 5: Irrigation Systems</i>
9:30am – 9:45am	Break
9:45am – 10:45am	<i>Section 6: Irrigation Maintenance & Troubleshooting</i>
10:45am – 11:00am	Break
11:00am – 12:15pm	<i>Section 7: Irrigation System Auditing</i>
12:15pm – 1:15pm	Lunch
1:15pm – 3:15pm	<i>Fieldwork: Conduct an Irrigation System Audit</i>
3:15pm – 4:00pm	<i>Section 8: Irrigation Scheduling (time permitting)</i>

Thursday, April 25th 8:00am – 4:45pm

8:00am – 8:45am	<i>Section 8: Irrigation Scheduling (cont'd)</i>
8:45am – 10:30am	<i>Section 9: Irrigation Controllers</i> <i>Guest instructors: Matt Stratton, Clay Kraus</i>
10:30am – 10:45am	Break
10:45am – 11:45am	<i>Section 10: Bringing it All Together</i>
11:45am – 12:45pm	Lunch
12:45pm – 1:45pm	Exam Review Session
1:45pm – 4:45pm	Exam (<i>time limit is 3 hrs.; most students will complete between 1 – 3 hrs.</i>)

APPENDIX F

Project Budget and Schedule

Project Budget and Schedule

Date: August 1, 2018, Revised Jun 3, 2019

South Metro Water Supply Authority

Qualified Water Efficient Landscaper Certification Pilot Program

Project Start Date: January 1, 2019

Project End Date: May 31, 2019 (Original End Date: November 30, 2019)

Task No.	Task Description	Original Budget			Modified Budget		
		Grant Funding Request	Match Funding	Total	Grant Funding Request	Match Funding	Total
1	Modify QWEL training content	\$28,460	\$4,200	\$32,660	\$30,306	\$5,788	\$36,094
2	Pilot QWEL training program	\$7,730	\$21,340	\$29,070	\$4,545	\$26,697	\$31,241
3	Evaluate program success and develop plan forward	\$0	\$4,190	\$4,190	\$0	\$4,725	\$4,725
4	Project administration	\$0	\$3,210	\$3,210	\$0	\$3,360	\$3,360
5	Other direct costs	\$4,400	\$10,000	\$14,400	\$4,120	\$0	\$4,120
	Total	\$40,590	\$42,940	\$83,530	\$38,971	\$40,569	\$79,540