

## Summary of Draft WaterSense® Labeled Homes Program, Version 2.0 Stakeholder Meeting

May 14, 2019, 1:00 to 4:00 p.m. Eastern

### Meeting Summary

The U.S. Environmental Protection Agency (EPA) WaterSense program recently released the draft WaterSense Labeled Homes Program, Version 2.0. The EPA organized this meeting with stakeholders to describe the revised program and solicit feedback.

The main objectives for this meeting were as follows:

- Describe the updated technical requirements that homes will need to meet to earn the WaterSense label.
- Present the organizational requirements for prospective Home Certification Organizations (HCOs).
- Explain the process that will be used to evaluate water savings associated with a prospective HCO's certification method.
- Solicit feedback on the draft revision from stakeholders.

A PDF of this presentation can be reviewed on the WaterSense website at [www.epa.gov/watersense/homes-specification#version2homes](http://www.epa.gov/watersense/homes-specification#version2homes). A full list of the attendees and presenters is provided in Appendix A. The presentation discussion and participant questions and comments are summarized below.

### 1.0 Introduction and Background on WaterSense Labeled Homes Program, Version 2.0

Amanda Forsey of Eastern Research Group, Inc. (ERG), a WaterSense contractor, welcomed everyone to the meeting and noted that the presentation PDF would be posted on the public website following the webinar.

Olga Cano of the EPA provided an overview of the webinar agenda. She polled attendees on the types of organizations or services they represent. The results of the poll are shown in Figure 1.

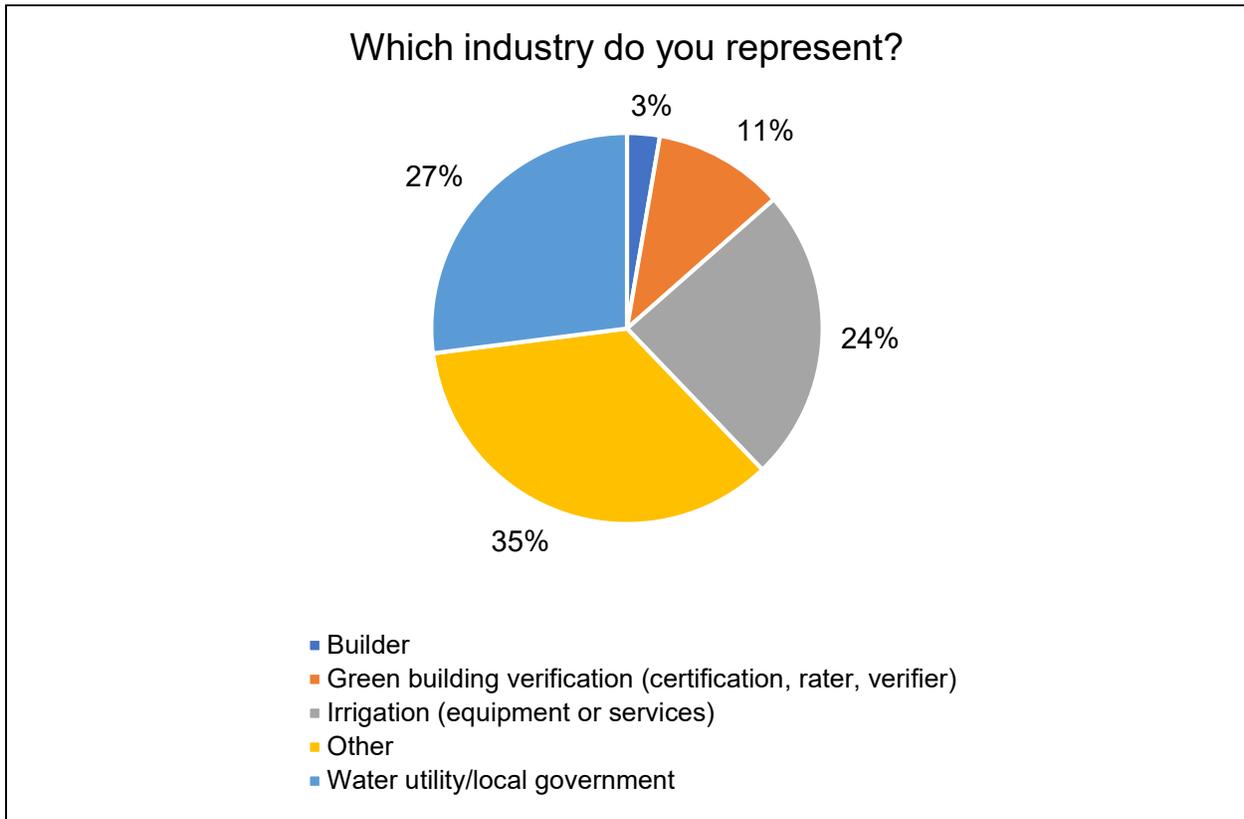


Figure 1. Poll Question #1 Results

Ms. Cano provided background on WaterSense and WaterSense labeled products. She explained the goals of the WaterSense labeled homes program and its role in the WaterSense program. Ms. Cano provided information on the *America’s Water Infrastructure Act of 2018*, including the fact that it requires the EPA to “consider for review and revise, if necessary, any WaterSense performance criteria adopted before January 1, 2012,” which includes the *WaterSense Specification for Homes*. Ms. Cano outlined the goals of Version 2.0 of the WaterSense labeled homes program.

Ms. Cano defined important terminology introduced as part of Version 2.0. She identified the program documents and their application in the revised program structure. Ms. Cano reviewed the procedures for 1) WaterSense approving an HCO and proposed certification method (PCM), and 2) HCOs certifying and issuing the WaterSense label to homes. She then outlined potential benefits of the revised program structure for all stakeholders, which included reducing prescriptive requirements and retaining a focus on saving water.

*Participant Questions and Comments*

Q: Does the EPA have model ordinance language developed to encourage or at least reduce barriers to development approval?

A: Jonah Schein of the EPA explained that WaterSense is a voluntary program and is not set up to develop codes. If the question intended to ask whether the WaterSense structure could be adapted for the basis of a requirement, WaterSense has not currently developed anything for those purposes, but attendees should submit comments if that is something they would like to see.

Q: How many homes were certified under the previous version of the specification?

A: Mr. Schein explained that there has not been strong reporting under the current version of the program, and as a result, WaterSense does not have a good idea of the number of labeled homes. That will hopefully be improved by the revision, since data on certified homes will be submitted directly by the HCOs.

Q: Can you explain the difference between a designee and an HCO?

A: Mr. Schein said that the distinction was created in response to differences in the structures of existing home certification organizations. Some HCOs directly oversee the certification process, whereas others work through a network of quality assurance designees (QADs). In the latter scenario, the QADs play a crucial role in ensuring that certified homes meet certification requirements. WaterSense will not require the use of a designee, but wants to ensure that organizations that do use designees will be able to participate in the revised program.

Q: Will the EPA make the names of organizations who are in the process of becoming HCOs available to the public? This is important to stakeholders like manufacturers, who would like to assist/influence the development of the WACMs in development.

A: Mr. Schein said that the EPA will publicize the list of approved HCOs but will likely not be able to disclose pending information about HCO applicants in any formal manner.

Q: Will there be additional testing required to become a WaterSense verifier if we already are one?

A: Mr. Schein said that the question would likely be answered later in the presentation.

## **2.0 WaterSense Draft Specification for Homes, Version 2.0**

Ms. Cano reviewed the *WaterSense Draft Specification for Homes, Version 2.0*. She described the purpose and scope of the specification and explained the purpose of the Mandatory Checklist, which is included as an appendix to the specification. Ms. Cano displayed the Mandatory Checklist and discussed the categories of criteria included in it. She pointed out that, although the Mandatory Checklist does not include outdoor requirements, the revised WaterSense labeled homes program will still address outdoor water use; homes will likely not meet the water efficiency threshold without incorporating outdoor measures. Ms. Cano illustrated this concept with examples of water use and approaches to water efficiency for homes located in Duluth, Minnesota, and Phoenix, Arizona.

Ms. Cano addressed other topics related to the specification. She reviewed the role of domestic hot water distribution in achieving water savings, and she explained the rationale behind WaterSense’s criteria being based on percent reduction. Ms. Cano described that homes can demonstrate adherence to the water efficiency criteria by certifying to an HCO’s WACM, which will have been approved by WaterSense. She also explained the reasoning behind selecting 30 percent as the water efficiency threshold.

#### *Participant Questions and Comments*

Q: Can you confirm whether the revised specification will include renovated homes?

A: Ms. Cano said that the revision will apply to both new construction and existing homes. Because of its flexibility and the simplified checklist, the revised program should make it more achievable for existing homes to be labeled.

Q: Would toilets, faucets and showerheads that are not WaterSense labeled but are rated to be better in water savings be considered acceptable under this program?

A: Mr. Schein said that the EPA would not consider them to meet the criteria on the Mandatory Checklist, because we cannot speak to the performance of products that are not certified to WaterSense criteria. The EPA wants to make sure that WaterSense labeled homes will meet performance expectations as well as efficiency goals, and requiring the WaterSense label is the best way to do so.

Q: What about a home that has higher than 30 percent savings but has one showerhead that is not WaterSense labeled? Would that count?

A: Ms. Cano said that all plumbing fixtures must be WaterSense labeled in order to meet the certification requirements. Mr. Schein added that this point connects back to user expectations. The EPA wants for the WaterSense label to mean high-performing and efficient with regard to water use.

### **3.0 WaterSense Draft Specification for Homes, Version 2.0**

Kathleen Onorevole of ERG discussed the *WaterSense Draft Home Certification System, Version 2.0*. She reviewed the main roles of the four parties involved in the revised WaterSense labeled homes program, then identified the purpose and content of the certification system. Ms. Onorevole noted that the HCO/PCM application is included as an appendix to the certification system.

Ms. Onorevole discussed the goals and details of each of the six organizational requirements described in the certification system: independent oversight; quality assurance; verifier training and authorization; home verification protocols; impartiality; and messaging and reporting. She described the role of designees and reviewed certification requirements that cannot be delegated. Ms. Onorevole also reviewed procedures that HCOs are required to implement if they use designees.

Ms. Onorevole described the EPA's reasoning for setting requirements for the certification method development process. She reviewed the three acceptable processes for certification method development and discussed the key components of the American National Standards Institute (ANSI) essential requirements.

#### *Participant Questions and Comments*

Q: Could a potential HCO (e.g., a water supplier) develop its own WACM that mirrors the WACM of another HCO (e.g., RESNET), but with say a 5 percent difference? Would this enable the other HCO to act as a designee for the water supplier's WACM, as long as some element is retained by the water supplier HCO?

A: Mr. Schein said that WaterSense would likely approve a jurisdiction adopting a WACM that had already been approved and that was modified with additional requirements or a slightly more stringent water efficiency threshold. This happens frequently in ENERGY STAR; utilities often adopt the ENERGY STAR certification with additional requirements specific to the utility. If the model WACM was substantially changed or if requirements were removed, WaterSense would likely need to reevaluate the PCM.

Q: Does EPA require ongoing training or continuing education beyond initial training?

A: Mr. Schein said that HCOs are responsible for determining the training requirements that are necessary based on their methodology for calculating water efficiency. WaterSense requires that HCOs must develop WACM-specific training, and that they record and monitor verifiers' training records.

*Editor's Note: Later in the presentation, Mr. Schein clarified that WaterSense does not specifically require that HCOs provide or require continuing education. WaterSense does, however, require that HCOs provide ongoing training and updates on any changes to the WaterSense labeled homes program and/or the WACM.*

#### **4.0 WaterSense Technical Evaluation Process for Approving Home Certification Methods, Version 1.0**

Mr. Schein reviewed the *WaterSense Technical Evaluation Process for Approving Home Certification Methods, Version 1.0*. He outlined the purpose of the technical evaluation and the options for PCM scope, including new and existing homes and single-family and multifamily buildings. Mr. Schein defined the "reference home" concept and identified the four types of single-family and multifamily buildings that would be used as reference homes. He also showed tables illustrating the features of each reference home, which included information such as area of the home's footprint, landscape areas, and the number of plumbing fixtures and appliances.

Mr. Schein explained that WaterSense will evaluate a prospective HCO's PCM using home and landscape designs that represent the least efficient home that could still earn the WaterSense label. He displayed the formula used to calculate total water use associated with a PCM's least efficient home. Mr. Schein listed the variety of indoor and outdoor features that could impact water use and savings in a home, and he explained the assumptions and references that

WaterSense used to calculate water usage by feature. He provided examples of these water use calculations for toilets and clothes washers.

Mr. Schein presented two example evaluations for hypothetical PCMs and identified problems that were likely to prevent the PCMs from being approved.

#### *Participant Questions and Comments*

Q: I live and work in a moist climate. Irrigation is not very common. Would simply not having an irrigation system installed count toward the 30 percent reduction from a baseline home?

A: Mr. Schein said that, in the technical evaluation, WaterSense will assume that homes have automatic irrigation, to protect the program. Regardless of the scenario, any program in a cool climate that properly accounts for indoor/outdoor water use will probably not have many requirements for outdoor water efficiency. Outdoor water requirements in cool climates are unlikely to substantially reduce overall water use; there would not be much outdoor water use in the first place compared to homes in more arid regions of the country.

Overall, the revised program should lead to requirements that are more adaptable to climate differences.

Q: For multifamily homes, will all units need to be verified, or just a sampling of them?

A: Mr. Schein said that will depend on the HCO's WACM. However, WaterSense will evaluate whether the HCO's process (whether for individual sampling or a sampling protocol) will accurately identify homes that meet the efficiency requirements. Prospective HCOs should present a reasonable approach for evaluation. WaterSense would accept a sampling protocol for multifamily buildings, but would ask questions such as: How many homes need to be inspected? What's the permissible amount of time between units' completion to be eligible for sampling? What type of records have to be kept? Is there a reasonable degree of randomness, or is it clear to the builder/developer which homes will be inspected?

## **5.0 Estimated Water and Energy Savings**

Mr. Schein then discussed the estimated water and energy savings associated with the revised WaterSense labeled homes program. The average home is expected to save between 30,800 and 77,300 gallons per year, depending on climate. The average home is expected to save approximately 789 kilowatt hours (kWh) of electricity by not needing to heat water saved through increased efficiency. In addition, the average home will save approximately 173 kWh of electricity by not supplying water saved and not treating indoor water saved. Mr. Schein explained that the average home will likely save between \$378 and \$954 per year, accounting for costs associated with water/wastewater and electric or natural gas water heating.

Mr. Schein reviewed non-monetary benefits of the revised WaterSense labeled homes program for WaterSense at large and for some of the stakeholders involved.

There were no questions asked following Mr. Schein's review of estimated energy and water savings.

## 6.0 Partnership and Labeling and Next Steps

Mr. Schein reviewed the procedures for partnership and labeling. He described the steps for builder partners to participate in the program. Mr. Schein explained that verifiers will be referred to as WaterSense home verifiers and will be given a new promotional mark. He reviewed the requirements for HCOs, from submitting an application to participating in the program.

Mr. Schein reviewed the proposed timeline for the revision. He noted that the public comment period be extended to June 18, 2019. Mr. Schein outlined the proposed transition from Version 1.2 to Version 2.0, and encouraged attendees to submit comments, data and questions to [watersense-programs@erg.com](mailto:watersense-programs@erg.com) during the comment period. He said that attendees can also contact the WaterSense Helpline at [watersense@epa.gov](mailto:watersense@epa.gov) or (866) WTR-SENS (987-7367).

Mr. Schein polled the audience on whether they intended to submit comments on the draft WaterSense Labeled Homes Program, Version 2.0. The results are shown in Figure 2.

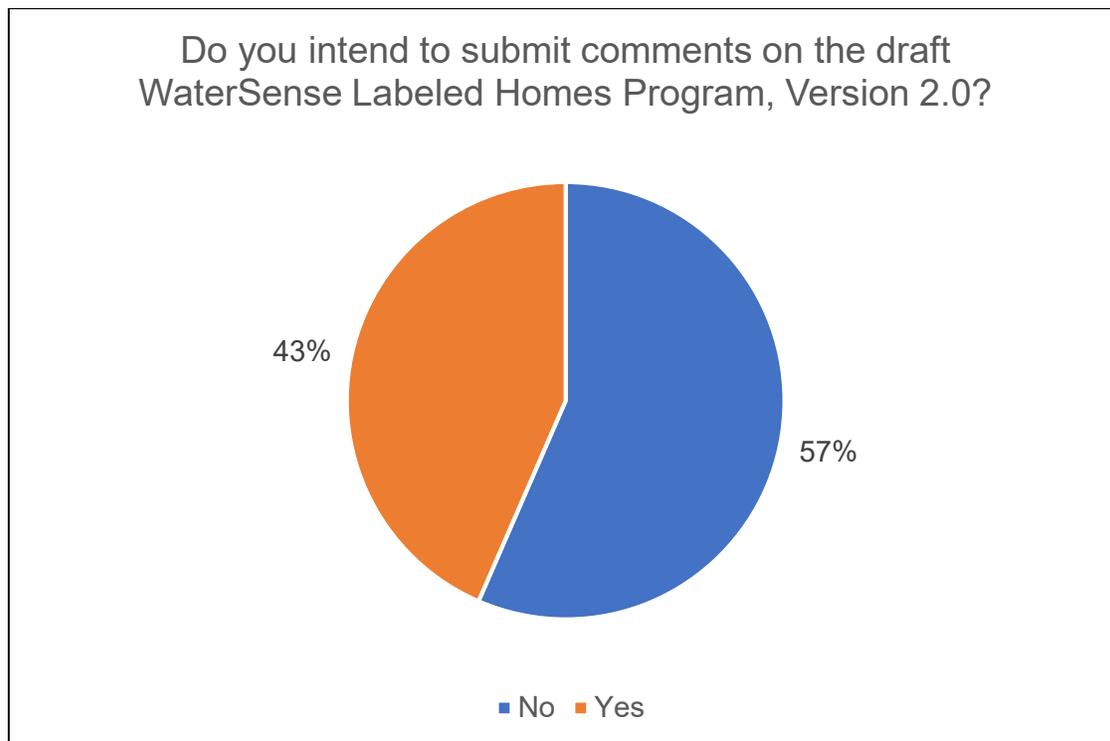


Figure 2. Poll Question #2 Results

### *Participant Questions and Comments*

Q: What was the timeframe to submit comments again?

A: Mr. Schein said that WaterSense planned to take comments through June 18, 2019.

Q: For the 30 percent water savings, is there a certain calculator we should use?

A: Mr. Schein said that, in practice, the HCO would select a water savings calculator that suits its WACM, which allows for tailoring the program to its needs and the marketplace. Attendees can review the technical evaluation protocol, posted on the WaterSense website, to understand how WaterSense will evaluate PCMs to determine whether they achieve the required water savings.

Q: How are the irrigation water use estimates being calculated?

A: Mr. Schein explained that the outdoor water use calculations are included in the technical evaluation. WaterSense has developed two ways to calculate outdoor water use. One is a theoretical irrigation requirement based on data from the Water Research Foundation (WRF) Residential End Uses of Water Study, Version 2. WaterSense has modified the estimated demand of the landscape based on field data, since most residential landscapes are not irrigated to full plant water requirements. The other approach uses flow rate and irrigation technology to calculate outdoor water use. Attendees can review the technical evaluation protocol for more details.

Q: Are there irrigation system efficiency criteria similar to the 0.65 distribution uniformity (DU) that is in the current specification?

A: Mr. Schein said that the only requirements that *must* be completed for homes to be eligible for the WaterSense label under the revised program are in the Mandatory Checklist. An HCO can decide whether to include requirements pertaining to improved DU in its PCM. If it does, the HCO should explain its plan to evaluate water efficiency associated with DU in its application.

Q: Is the Water Budget Tool intended to be used for irrigation water use estimates?

A: Mr. Schein explained that the WaterSense Water Budget Tool is an important part of the Version 1.2 requirements for WaterSense labeled homes. He noted that WaterSense does not think that the Water Budget Tool is not an accurate estimator of water use. Mr. Schein said that the Water Budget Tool is reasonably good at estimating the efficiency during landscape planning and irrigation system design, and it was used for this purpose in the current version of the program.

Mr. Schein said that WaterSense does not propose to continue using its Water Budget Tool in Version 2.0 of the program. The Water Budget Tool is valuable for individuals seeking guidance on creating an efficient landscape or irrigation system, and WaterSense plans to continue supporting it in the immediate future, because many WaterSense partners use the tool.

Q: What is the lead time for verifier visits normally? Is the EPA hiring more for this position to meet the demand?

A: Mr. Schein clarified that verifiers do *not* work for WaterSense or the EPA. They are independent, third-party individuals who are not EPA employees or contractors in any way.

Mr. Schein explained that verifiers are usually not given much lead time. There is a very small period of time between the completion of a house and its delivery, and verifiers must conduct verification during that time.

Q: Shouldn't WaterSense include minimum irrigation efficiency standards, since that's where most of the water in a home is used?

A: Mr. Schein said that outdoors is where most of a home's water *can* be used, but is not necessarily where it *is* used. The climate helps determine whether this is the case. When WaterSense evaluates whether to put a feature on the Mandatory Checklist, it asks whether a home can be high efficiency and high performing with regard to water use without that feature. For example, requiring WaterSense labeled toilets is the best way to ensure that toilets will meet user expectations for both performance and efficiency.

In the case of outdoor requirements, WaterSense would ask whether irrigation requirements make sense for a home with a small yard in a cool climate with a short irrigation season. That home could likely be considered high performing and water-efficient without a lot of mandatory outdoor features. Homes in arid regions of the country will have to make substantial reductions in outdoor water use to meet the water efficiency threshold, because a large portion of the home's water use will be outdoors. The percent reduction requirement scales with climate and will effectively force builders to pay attention to outdoor water savings.

Ms. Forsey adjourned the meeting by encouraging attendees to submit comments to [watersense-programs@erg.com](mailto:watersense-programs@erg.com) and thanking everyone for their participation.

## Appendix A: Meeting Participants

Attendee	Organization
Fernando Abruña	Abruña and Musgrave, Architects
Fabio Acosta	Acosta Irrigations & Water Audits
Catalina Alanis	Porcelana Corona de Mexico (Vortens)
Laura Allen	Greywater Action
Evan Auld	ICF
Gabriel Ayala	Enovative Group, Inc.
Gursharan Bains	Alliance for Water Efficiency (AWE)
Nora Beck	Chicago Metropolitan Agency for Planning
Veronica Blette	U.S. EPA
Justin Burks	Santa Clara Valley Water District (California)
Shauna Burnell	Waterkind / City of Kelowna, British Columbia, Canada, Contractor
Scott Campbell	Advanced Conservation Technology, Inc., D'MAND Kontrol Systems
Bernard Cardenas	University of Florida
Aisling Carlson	Flo Technologies, Inc.
Keeli Carlton	City of Winter Haven (Florida)
Steve Carper	Tualatin Valley Water District (Oregon)
Thomas Carroll	Water Engineering, Inc.
Armando Cobo	Armando Cobo, Designer
Elizabeth Coe	Ecoe Company
Cheryl Coltes	Southern Nevada Water Authority
Gerald Coons	Consultant
Kelli Cooper	City of Moscow, Idaho
Stephanie Cote	City of Guelph, Ontario, Canada
Michelle Diller	National Association of Home Builders (NAHB)
Joel Gilbert Duran Chavez	Conserving S.R.L.
Kalani Durham	Santa Barbara County Water Agency (California)
Sean Evensen-Shanley	Viridiant
Jimmy Fera	Steven Winter Associates, Inc.
Michelle Foster	Home Innovation Research Labs
Nathan Fournier	Property Providers, LLC
Rob Furioso	Symmons
Rochelle Gandour-Rood	Tacoma Water (Washington)
Cody Gatland	Green Insight, LLC
Jeffrey Gerbick	Delta Faucet Company
Julie Gillins	Washington County Water Conservancy District (Utah)
Kat Godlewski	ICF

<b>Attendee</b>	<b>Organization</b>
James Gordon	Metro Landscape Irrigation
Elliott Granados	Vortens
Doug Greenlund	City of Spokane (Washington)
Robert Hafen	Pinnacle Irrigation & Landscape
Scott Hawthorne	Shine Bathroom Technologies Inc.
Jacob Hooper	Swiftsure Energy Services, LLC
Ed Hoppe	City of Kelowna, British Columbia, Canada
Sarah Hultquist	City of Lewisville (Texas)
Gary Hurley	City Water, Light, and Power (Illinois)
Nicholas Hurst	U.S. EPA
Nikki Jackson	American National Standards Institute (ANSI)
Jim Kemper	Los Angeles Department of Water and Power
Frank Kinder	Northern Colorado Water Conservancy District
Benjamin Knopp	Think Little Home Energy, LLC
John Koeller	Koeller and Company
Karen Koppett	Santa Clara Valley Water District (California)
Julie Kretz	Coachella Valley Water District (California)
Danny Kruse Sr	Certified Irrigation Designs
Robert Laflamme	L'Image Home Products
CJ Lagan	LIXIL Water Technology Americas
Ray Lamovec	IrriGreen
Jess Land	Elevation Inspections
Elena Layugan	Upper District
Beth Livingston	U.S. EPA
Laurel Loftin	Athens-Clarke County Water Conservation Office (Georgia)
Gianna Lombardi	Denver Water
Gina Lombardo	Energy Inspectors
Maureen Mahle	Steven Winter Associates, Inc.
Christine Manitta	Stantec
Megan Marsee	Bernalillo County Water Conservation Program (New Mexico)
Patrick J. Martin	Miami-Dade Water and Sewer Department
Heather McCune	Bassenian Lagoni
Cary McElhinney	U.S. EPA Region 5
Darrel McMaster	Sustainable Homes, Inc.
Brent Mecham	Irrigation Association
Jayant Mehta	23Solar
Richard Mest	Master Water Conditioning Corporation
Mariel Miller	Fort Collins Utilities (Colorado)
Akshay Mishra	ANSI
Shahin Moinian	ICC Evaluation Service (ICC-ES)



<b>Attendee</b>	<b>Organization</b>
Andrew Morris	Metropolitan North Georgia Water Planning District
Robyn Navarra	Zone 7 Water Agency
Tara O'Hare	U.S. EPA
Allie Orrego	Metropolitan North Georgia Water Planning District
Julie Ortiz	San Francisco Public Utilities Commission
Ryan Oswald	Pure Eco
Patricio Pacheco	City of Santa Fe Water Conservation Office (New Mexico)
Thomas Pape	Alliance for Water Efficiency (AWE) / Best Management Partners
Salvador Pena	Fluidmaster
JP Perez	U.S. EPA
Julian Perez	CONSERVEMOS
Robert Pickering	ERG
Jason Puffenbarger	Green Building Consulting
Doug Pushard	HarvestH2o, LLC
Dawn Qualley	ICC-ES
Phill R	Reyes Landscape
Christine Rausch	Columbia Gas of Ohio
Julie Riddle	SiteOne Landscape Supply
Sarah Roth	Irrigation Association
Val Santos	St. Lucie County Utilities (Florida)
Jason Schneemann	Whirlpool
Kirsten Shaw	Lifelong Home Renovations
Brian Skeens	Jacobs
Julie Smitherman	City of Ashland (Oregon)
Rob Starr	The Toro Company
Jaclyn Toole	NAHB
Thea Trejo	Sage Conservation
Sarah Vidra	Incline Village General Improvement District (Nevada)
Ron Wolfarth	Rain Bird Corporation
Pam Worner	Green Dog Enterprises, Inc.
Tony Zaccaria	Masters Supply

<b>Presenter</b>	<b>Organization</b>
Jonah Schein	U.S. EPA
Olga Cano	U.S. EPA
Amanda Forsey	ERG
Kathleen Onorevole	ERG