Summary of WaterSense® Specification Review Webinar for Weather-Based Irrigation Controllers Manufacturers

May 16, 2019, 1:00 to 3:00 p.m. Eastern

Meeting Summary

The U.S. Environmental Protection Agency's (EPA's) WaterSense program is considering revising the *WaterSense Specification for Weather-Based Irrigation Controllers*. The EPA organized this meeting with industry and manufacturer partners as part of the revision determination process.

The main objectives for this meeting were as follows:

- Present information the EPA has collected as part of its specification review.
- Summarize issues and considerations the EPA must address if it decides to revise a specification.
- Review public comments received to date on the *Notice of Specification Review* as they relate to weather-based irrigation controllers (WBICs).
- Solicit additional feedback and information from manufacturer stakeholders.

The EPA did not intend to decide whether to move forward with a specification revision during this meeting.

A PDF of this presentation can be reviewed on the WaterSense website at www.epa.gov/watersense/product-specification-review. A full list of the attendees and a list of presenters are provided in Appendix A. The presentation discussion and participant questions and comments are summarized below.

1.0 Introduction

Stephanie Tanner, the EPA WaterSense program's Lead Engineer, welcomed everyone to the meeting, clarified how to use the webinar software, and reviewed the meeting agenda and purpose. The purpose of this meeting was not to determine whether to revise the specification, but rather to present data and solicit feedback about whether the EPA has collected sufficient information to make a determination.

The EPA intends to conduct the specification review analysis during summer 2019 and develop a recommendation by December 31, 2019. Therefore, feedback must be submitted by June in order to be considered in the EPA's review.

2.0 WBIC Specification Considerations

Ms. Tanner summarized background on the *WaterSense Specification for Weather-Based Irrigation Controllers*, including certification trends and the number of product models certified to date. She also provided an overview of the current specification scope, test method and requirements. The WaterSense specification references the eighth draft of the Smart Water

Application Technologies (SWAT) test protocol but includes several modifications. The performance criteria are:

- Irrigation adequacy must be at least 80 percent for each zone;
- Irrigation excess must be less than or equal to 10 percent for each zone; and
- Average of the irrigation excess scores calculated across the six zones must be less than or equal to 5 percent.

Ms. Tanner noted that, at the time of the webinar, no feedback had been received regarding suggested revisions to the specification scope, the test method or the performance criteria.

Test Method and Criteria Considerations

Ms. Tanner explained that the EPA, as part of programmatic oversight efforts, conducted an audit of licensed certifying bodies (LCBs) that certify WBICs in 2016. No major issues were identified, but the EPA found two potential weaknesses in the current test method:

- Not all controllers irrigated in each zone during the test period; and
- Some controllers being programmed with several small irrigation events result in schedules that are unrealistic in the field.

Ms. Tanner reviewed several possible resolutions. The test method could be revised to require irrigation adequacy fall below 80 percent for a number of zones and/or place additional requirements on irrigation events, such as a longer minimum runtime, maximum cycle soak events/day, and maximum soak time. Alternatively, the EPA could place a minimum irrigation amount (i.e., 0.1 inch) on irrigation events or implement a watering restriction during testing.

Joanna Kind of Eastern Research Group, Inc. (ERG), a WaterSense contractor, discussed the American Society of Agricultural and Biological Engineers (ASABE) *X627 Weather-based Landscape Irrigation Control Systems* test method, which is currently under development. She summarized the history of the standards committee and WaterSense's involvement. She also noted that several controllers were tested using this method in summer 2018, and the results were shared with the standards committee. Continued testing is anticipated during this growing season. The EPA is currently assessing the test method and the potential impacts on test scores and will consider adopting the test method when a final standard is published.

Ms. Kind then discussed the EPA's efforts to engage WBIC manufacturers and utilities in the specification review process. Regarding feedback on the test method, the EPA found manufacturers are generally not in support of revising the test method; they noted the specification is compatible with their products and they are satisfied with its ability to test performance. There is also no evidence that consumers are dissatisfied with product performance. Utilities are also generally not in support of a test method revision, largely because they do not think the market is saturated enough yet with WBICs currently on the market to warrant an increase in performance levels. Ms. Kind also noted that the EPA wants to ensure that it has sufficient feedback from all interested stakeholders and asked if there were any additional subjects or issues for the EPA to consider.

Supplemental Features

Ms. Kind reviewed the current listing of supplemental capability requirements included in the specification. She explained that in the specification review process, the EPA seeks to confirm whether these features are still relevant and should remain. She noted, however, that during initial outreach, the EPA did not receive any feedback about specific features. The EPA heard one request from a manufacturer cautioning against this list of supplemental capabilities becoming a means for utilities to request features that only pertain to their specific regions. This could increase the cost of products and result in products that include features that are unlikely to be used by most customers.

Packaging and Product Documentation Requirement Considerations

Ms. Kind explained that the specification has requirements for packaging and labeling, because these products are more complicated than most plumbing fixtures and fittings that earn the WaterSense label. This product category allows for standalone controllers, plug-in devices and add-on devices. She reviewed these requirements and explained that the goal is to ensure customers receive a labeled product when they think they are purchasing one.

Ms. Tanner responded to the following questions submitted by attendees during the webinar.

Participant Questions and Comments

Q: Will this presentation be available for download later?

A: Ms. Tanner explained that a PDF will be available, and all materials related to this webinar will be posted on the WaterSense website shortly.

Q: I'm seeing rebate applications for WaterSense labeled hose faucet timers that have weather-based scheduling functionality. This seems to be a new product category that should be separate from traditional irrigation controllers. Has there been any discussion of creating a new WaterSense product category for these products? Utility rebate programs will need to adapt, and a new product category could help reduce consumer confusion.

A: Ms. Tanner responded that weather-based hose bib timers began appearing on the market two years ago. The EPA is aware of these products and discussed similar product types with manufacturers during the specification development process. These products now pass the current test method by using more than one product in series during the performance test. The EPA is satisfied with how these products are meeting the specification as written and do not think that they warrant a separate specification. Utilities are free to exclude products from their rebate programs based on their individual needs.

Q: Does “independent, zone-specific programming” mean that each zone must have the ability to be programmed separately from all the rest of the zones, or is a program-based scheme acceptable?

A: Ms. Kind noted that the EPA might need more clarification on the question; however, each zone needs to be able to be programmed to water the zone’s landscape accordingly. Zones

can significantly vary in their irrigation needs and the criteria are intended to ensure that the controller can handle these disparate conditions.

Q: Do the WaterSense labeled hose faucet timers meet all of the supplemental capability requirements?

A: Ms. Tanner responded yes.

Ms. Kind continued to discuss the considerations related to product packaging and documentation. Over the past several years, WaterSense has received several inquiries from consumers and utility partners expressing confusion about controller packaging and labeling, mostly specific to add-on and plug-in devices and base controllers. In July 2018, WaterSense issued technical clarifications related to this issue, published a compatibility list, and held a webinar last fall for manufacturers to help resolve the confusion. The EPA maintains the compatibility list for these products on the WaterSense website. She explained that the EPA has not received additional complaints, nor received additional input from manufacturers or utilities on how these packaging requirements and clarifications are working for them. She urged participants to let the EPA know if they have any additional feedback or approaches the EPA could consider. Ms. Kind also noted that the number of WaterSense Helpline inquiries related to labeled WBICs has decreased since the clarifications and compatibility list issues were addressed, indicating these actions helped reduce confusion.

Definitions

Ms. Kind reviewed the definitions used in the current specification; this includes the terms “add-on device,” “plug-in device” and “stand-alone controller.” She reviewed the definition used for the term “base controller” and noted that the label should not appear on this product packaging. Ms. Kind noted that there has been confusion in the past over the which product types can bear the label. She also explained that the EPA is aware that plug-in and add-on devices could no longer be “physical” devices, but software, and that the EPA is considering a revision to those definitions to incorporate this shift in the market. However, the EPA has not received any stakeholder feedback on these definitions to date.

Ms. Tanner responded to the following questions.

Participant Questions and Comments

Q: Does that mean that hose timer controllers must be included with at least six hose timers in a single box or bundle since that is how the unit was tested?

A: Ms. Tanner clarified that these products can be labeled and sold individually. The purpose of testing them together is to ensure that all six zones in the specification are tested at the same time. But within a landscape these products might not be used this way or could operate independently.

Q: Are base controllers and stand-alone controllers the same product?

A: Ms. Tanner clarified that a base controller is defined as a controller lacking weather or "smart" capabilities. In essence, it is a clock timer, but it can have some of the supplemental features listed in the specification. When attached to a plug-in or add-on device, the base controller, in combination with the device, has all of the capabilities required by the WaterSense specification. Stand-alone controllers are controllers with all of the capabilities required by the WaterSense specification.

Water Savings

Ms. Kind reviewed the current water savings estimates described in the *WaterSense Specification for Weather-Based Irrigation Controllers Supporting Statement*. She noted that while these numbers do not impact the EPA's decision to revise the specification, the EPA is currently in the process of researching more recent data. The current 15 percent water savings estimate is based on research pre-dating the publication of the specification in 2011. She explained the EPA did not receive any additional studies from partners and urged attendees to submit more recent publications and data if they have them to share.

3.0 Stakeholder Feedback

In December 2018, WaterSense issued a *Notice of Specification Review* to inform the public of the specifications under review and to invite stakeholders to provide feedback. WaterSense encouraged all partners, from manufacturers to utilities and the public, to gather input for the specification review process.

Manufacturer Feedback

On individual calls, most manufacturers provided positive feedback and generally were not in favor of any major specification revisions, especially not any that would increase the price of the product. Several manufacturers noted that a lower price point is likely a major contributor to the current rapid uptake in the market, and an increase in price for features that might not be used by the average consumer could depress adoption rates. Multiple manufacturers expressed a desire to keep products simple and straightforward to use, noting that the more steps there are in the set-up process, the less likely an end user is to execute programming properly upon installation. One manufacturer encouraged WaterSense to continue testing for the "end result" using performance testing, rather than a prescriptive list of features or specific method of scheduling. Ms. Kind urged attendees to submit any information or data they have on this topic.

Ms. Tanner responded to the following questions submitted by attendees during the webinar.

Participant Questions and Comments

Q: Can you share the data used to come up with the 100 billion gallons and $1 billion in costs saved?

A: Ms. Kind noted that all information used to calculate savings estimates are included in *WaterSense Specification for Weather-Based Irrigation Controllers Supporting Statement*.

Q: Where would you like the additional savings data sent?

A: Ms. Tanner said studies could be submitted to watersense-products@erg.com.

Utility Feedback

Ms. Kind noted that the EPA only received one comment during the official specification review comment period from utilities on WBICs, which expressed concern about end users' ability to opt in or out of weather-based control settings on the product. The commenter noted that a revised specification could possibly address this concern. During individual partner calls, utilities seemed satisfied with the current specification and did not urge the EPA to revise the specification at this time. In general, utilities cautioned against increasing performance thresholds within the specification until there is more significant market penetration of WBICs in the marketplace. No utilities reported any performance issues with labeled products.

Moreover, in discussion with the EPA, utilities generally acknowledged that water savings are correlated to previous water use, with higher savings realized for high water users and the possibility of increased water use with deficit irrigators. Utilities in the eastern and southeastern United States acknowledged deficit irrigation occurs nationwide, but noted that in their regions, overwatering is much more prevalent, and they do not have concerns over WBICs increasing water use in their regions. Utilities in drier regions acknowledged deficit irrigation and the potential for increased water use when a WBIC is installed in their regions, but said they are pleased with the savings they are seeing from their current rebate programs. WaterSense also confirmed that utilities are not generally adding requirements when rebating WaterSense labeled WBICs.

Request for Additional Feedback

Ms. Kind reviewed all of the questions and subjects upon which the EPA is requesting feedback. This mainly concerned revising the scope, test method and performance thresholds, changes to the test method or supplemental capabilities list, and receipt of updated water savings studies on WBICs.

4.0 Questions and Discussions

Ms. Tanner reviewed the questions participants had submitted during the presentation.

Participant Questions and Comments

Q: Are there any estimates on the percentages or numbers of WBIC and clock timer controllers sold?

A: Ms. Tanner responded that while WaterSense does collect this information on an annual basis from manufacturer partners, that information is considered confidential business information (CBI) and may not be published.

Comment: General feedback about WBIC product category: the requirement to audit manufacturing plants periodically to quality for the WaterSense label perhaps is more needed for a faucet manufacturer or another product category where manufacturing tolerances, etc., make a difference to product performance. Not quite sure if this requirement has any practical utility to irrigation controllers. This requirement adds

unnecessary WaterSense qualification costs to the manufacturer. Perhaps clarify what use we are gaining by periodic manufacturer audit.

A: Ms. Tanner explained that the purpose of certification, and not just product testing, is to ensure that a manufacturer is capable of continuing to produce a product that meets the specification over time. This requirement concerns quality operations at the plant and is covered under the ISO/IEC 17065:2012 *Conformity assessment -- Requirements for bodies certifying products, processes and services*. When the specification was first published, utilities felt there was a lot of product and manufacturing differentiation and were pleased to have these criteria instituted. This could be of higher concern for smaller manufacturing firms.

Q: Where can we get a list of requirements for testing hardware controllers for certification?

A: Ms. Tanner explained that the specification and all of its requirements are posted on the WaterSense website. The spreadsheet that is used during the product test can be obtained from the WaterSense Helpline. Guidance can be obtained from LCBs.

Q: How are soil moisture sensors, which match savings from WBIC, and are easier to understand and run, being included?

A: Ms. Tanner explained that soil moisture sensors are outside the scope of this specification. However, the EPA has been working since 2006 to get an agreed-upon test method for soil moisture sensors, and this, hopefully, should be happening later this year. The EPA is working with an ASABE *X633 Testing Soil Moisture Sensors for Landscape Irrigation* standard committee. Ms. Kind clarified that some performance testing is currently being conducted to generate performance data the EPA can use to develop a specification.

Poll Questions

Ms. Tanner polled attendees on whether they believe WaterSense has enough information to determine whether to revise its specification for WBICs. The results are shown in Figure 1.

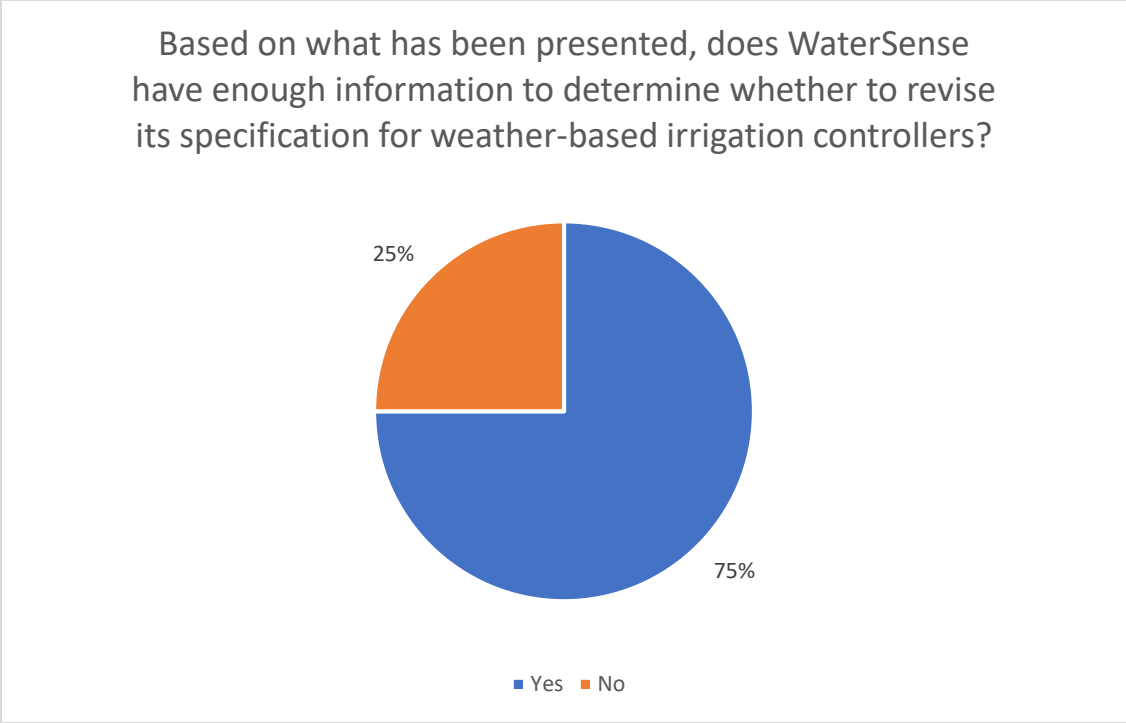

Figure 1. Poll Question #1

Ms. Tanner asked attendees to provide feedback on what pieces of the *WaterSense Specification for Weather-Based Irrigation Controllers* the EPA should revise. Results of the poll are shown in Figure 2.

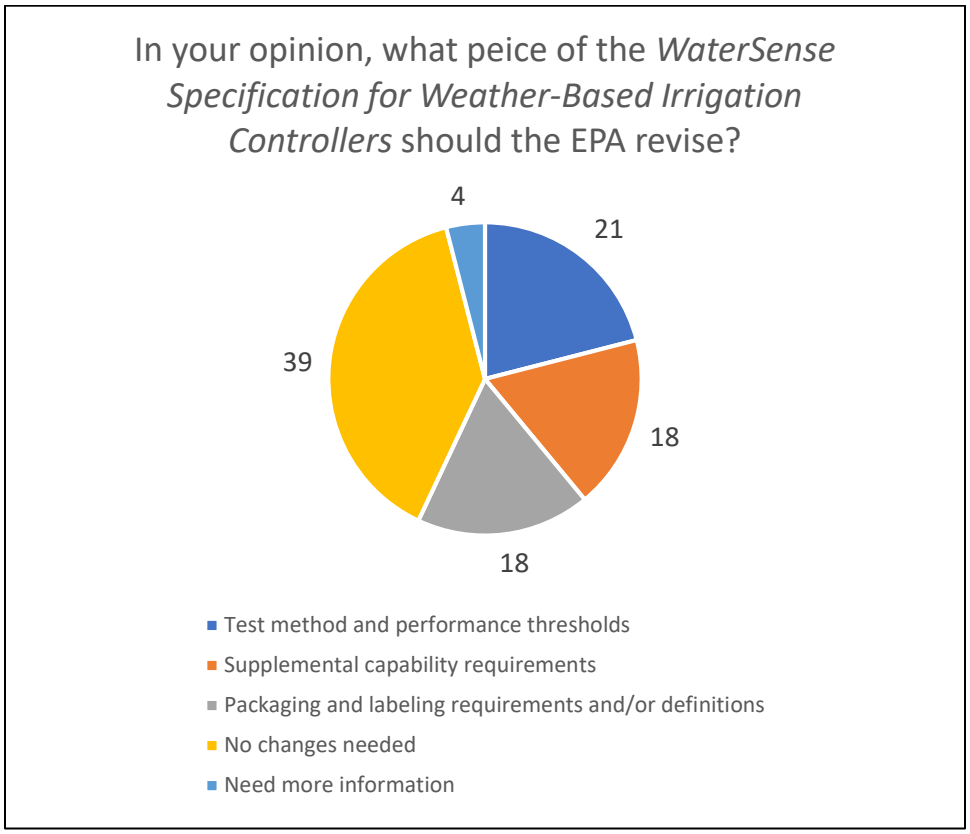

Figure 2: Poll Question #2

Ms. Tanner responded to additional questions from webinar attendees.

Participant Questions and Comments

Q: Are you reaching out to each manufacturer for specs about WBIC and soil moisture sensors?

A: Ms. Tanner clarified that the EPA is not reaching out to all WBIC manufacturers individually. She also explained that typically, WaterSense doesn't reach out to manufacturers individually, but rather encourages partner participation through public meetings and comment periods. The ASABE X627 standard committee is currently developing test methods for soil moisture sensors, and that process is separate from WaterSense's specification review process. She encouraged those with an interest in this product category to become engaged with the ASABE X627 standard committee.

5.0 Related Webinars and Next Steps

Ms. Tanner reviewed the schedule for product-specific industry webinars scheduled in May and June 2019 and noted that these meetings are open to everyone, but they are each targeted for specific audiences. Registration is found at www.epa.gov/watersense/product-specification-review#webinars.

Ms. Tanner reminded attendees to submit comments, data and questions on this product specification review process to watersense-products@erg.com. She reiterated that comments should be submitted by June 2019 to be considered within the EPA's specification revision process. WaterSense intends to summarize information collected as part of this process by the end of 2019. At this point, the EPA will issue a decision on whether to move forward with a specification revision for each relevant product category. Even comments explaining what data are missing from the decision-making process are relevant. All comments received that are not confidential business information (CBI), as well as the presentation recordings are posted on the WaterSense website. Ms. Tanner also requested that participants refrain from submitting comments or information that they have already brought to the EPA's attention.

Ms. Tanner also stressed that, if a specification revision is deemed necessary, the new specification will not be completed by the end of this year. If needed, the slightly-accelerated specification revision process would encompass all of the procedural steps partners have come to expect from the WaterSense program, including draft and final specification revisions and public comment opportunities.

She reviewed final participant questions.

Participant Questions and Comments

Q: Feedback for supplemental features: Drop the requirements for historical fallback for cloud-based controllers; this is not applicable for cloud-based controllers. Add a requirement to have the ability for the end user to opt for deficit watering and control the deficit for each zone.

A: Ms. Tanner thanked the commenter.

Q: If the specification is revised, will formerly certificated products be required to be recertified?

A: Ms. Tanner responded that, if the test method of the criteria for receiving the label are revised, then currently certified products will need to be retested and recertified. If this occurs, the revised specification would be referred to as Version 2.0. If this is required, WaterSense would establish a transitional period to allow manufacturers to shift their products to the new criteria. If only minor revisions are made that do not affect product testing, this edition would be referred to as Version 1.1 and would not require product re-certification.

Q: Do you have data of what customers are looking for when purchasing WBICs? Can you share?

A: Ms. Tanner clarified that WaterSense does not collect this data; however, some utilities do.

Ms. Tanner adjourned the meeting by encouraging those with outstanding questions to contact the WaterSense Helpline at watersense@epa.gov or (866) WTR-SENS (987-7367) and thanked everyone for their participation.

Appendix A: Meeting Participants

Attendee	Organization
Hermilo Aguilar	Reciprocity
Erik Birkfeld	Calsense
Debra Burden	Citrus County Utilities (Florida)
Maribel Campos	ICC Evaluation Service, LLC
Peter Carlson	Hydropoint Data Systems, Inc.
Steve Carper	Tualatin Valley Water District (Oregon)
Darik Chandler	Hunter Industries
LuAnne Chorkaluk	Spartan Distributors
Ian Coughlan	Banyan Water
Mark Crookston	Northern Colorado Water
Kathy Davis	Tucor Inc.
Shirley Dewi	IAPMO R&T
Michael Dukes	University of Florida
Julius Duncan	U.S. Environmental Protection Agency (EPA)
Jonathan Gannon	Denver Botanic Gardens (Colorado)
Sean Golden	James River Design, LLC
Mark Guthrie	Seattle Public Utilities (Washington)
James Harris	Rain Bird Corporation
Ben Johnson	Banyan Water
Ziad Khallouf	Schumacher Companies
Erusha Kongara	DripCube Inc.
Marc Kovach	Kovach Design Solutions, LLC
Danny Kruse Sr	Certified Irrigation Designs
Ray Lamovec	IrriGreen
Joseph Marshall	Barnstable Public Works
Brent Mecham	Irrigation Association (IA)
J. David Musselwhite	International Accreditation Service (IAS)
Gary Okafuji	The Toro Company
Sean Penn	HydroPoint
Sanjay Ray	Truesdail Laboratories. Inc.
Julie Riddle	SiteOne Landscape Supply
Bill Savelle	Weathermatic
Dave Shoup	Hunter Industries
Wen Tseng	Aeon Matrix
Prashant Upadhyay	Calsense
Jon Vann	IAPMO R&T

Attendee	Organization
Ron Wolfarth	Rain Bird Corporation
Xinyuan Zheng	Netro Inc
A.J. van de Ven	Calsense
Joe Wallace	Baseline

Presenter	Organization
Stephanie Tanner	U.S. EPA
Amanda Forsey	Eastern Research Group (ERG)
Joanna Kind	ERG
Tessa Roscoe	ERG