



Comments on Draft Version 1.1 WaterSense® New
Home Specification

June 11, 2012

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Commenter: Greg Chick

Affiliation: Contractor, SME, Green Plumber Trainer (IAPMO), Task group member for IAPMO, IA, ASABE

Comment Date: March 24, 2012

Template for Public Comment Submission on WaterSense Documents

Commenter Name: Greg Chick

Commenter Affiliation: Contractor, SME, Green Plumber Trainer (IAPMO), Task group member for IAPMO, IA, ASABE.

Date of Comment Submission: 03-24-12

Topic: Irrigation Audit

Comment: Last item on second page is verifying operating pressure (Dynamic) to be within 10% of Mfgr. Spec. Static Pressure is not “controlled” or limited. 80 or 90 psi is an excepted max.

Rationale: Velocity and water hammer causing damage to valves in mainline is probable,. PVC Mfgs. Limit velocity to <10fps. Leaks are common from over pressurization. EPA has limits as well. 35 plus years as a Contractor, Irrigation and Plumbing is where I come from as well as IAPMO has <80 for bldg. ASPE has references as well.

Suggested Change (or Language): Add one more item to check, regarding “ Max. Static Water Pressure 90 psi or less.”

Commenter: Bill Klapproth
Affiliation: None
Comment Date: March 26, 2012

Hi,

My name is Bill Klapproth and I've attached my public comment form with an addition to the WaterSense New Home specification Draft.

Thank you!

Bill Klapproth
Vice President
Next Level
bill@reachthenextlevel.com
D. 847-749-1321

Template for Public Comment Submission on WaterSense Documents

Commenter Name: Bill Klapproth

Commenter Affiliation: none, concerned with water conservation

Date of Comment Submission: 3/23/12

Topic: New topic "Sump Pumps"

Comment: I would like to see the included language added

Rationale: During rainstorms, groundwater beneath people's basements builds up and is funneled into basins called "sump pits." From there, a sump pump, pumps this dirty groundwater outside the house. The problem occurs when the power goes out and the primary sump pump (that's plugged into the wall) no longer works. That's when people use a water-powered sump pump to get the rising water out of their sump pit before it overflows.

Depending on efficiency, lift and city water pressure, most water-powered sump pumps draw up to 600 gallons of **fresh drinking water** per hour. Based on a conservative estimate of 300,000 water-powered sump pumps in the U.S., if on average each one wastes 2,400 gallons per year, (based on two, four hour power outages a year where the pump is only activated half that time = 4 hours x 600 gallons per pump, equals 2,400 gallons per year), that equals 720,000 million gallons of water wasted: 720 million gallons of fresh drinking water!

I think a category on sump pumps should be added with the below language included.

Suggested Change (or Language): If the home uses a sump pump, a water powered or water driven pump should not be used as a primary or backup sump pump.

Commenter: Chris McTaggart
Affiliation: Building Efficiency Resources
Comment Date: March 28, 2012

Please see attached comments to draft WS New Homes standard.

Thank you,

Template for Public Comment Submission on WaterSense Documents

Commenter Name: Chris McTaggart
Commenter Affiliation: Building Efficiency Resources
Date of Comment Submission: 3/28/12

Topic: MF building story requirement

Comment: I don't believe there should be any requirement for buildings to be under a certain height or have individual unit equipment as long as the units meet the performance testing requirements for all single family specs.

Rationale: Really the only point that needs to be met in my opinion that would be a challenge with common systems would be item 3.3. However, if the system can perform to this standard, what is the logic for excluding a unit for qualification? I understand this was maybe created in order to be uniform with ENERGY STAR New Homes, but it just does not make sense for WaterSense. What point criteria of WS relates to space heating and cooling? Nothing (other than evaporative coolers I suppose). Therefore I just do not understand the logic of this. Buildings that are 3 stories with common systems could just as easily fail pt 3.3 as could larger buildings. To me the ultimate metric of success for this point is delivering the temperature rise by the time 0.6 gallons is met, not the 0.5 gallons within the piping system, as 3 story buildings with common systems will likely not meet the 0.5 gallon within piping requirement.

Suggested Change (or Language): Remove reference to building stories entirely. Instead state that any units in MF buildings may be labeled, so long as they meet the performance requirements for all items of the program.

Topic: irrigation audit

Comment: I think that this is a major barrier to the program that hasn't been addressed. I think empowering the inspectors to do a light audit on the irrigation system would be a better option than just giving the builder a waiver for not doing it.

Rationale: Right now the WS inspector testing protocol is kind of a joke. Would be better to empower the inspector to learn more about irrigation systems and do perform some sort of light audit on the irrigation system in the event that there is no WS irrigation partner available to do an actual audit on the system

Suggested Change (or Language): Change the language that says a waiver will be given for the audit to saying that in the event there are no auditor companies available to perform audit, inspector will do a light audit of the system to ensure basic system performance.

Topic: WS certification system

Comment: WS inspectors should have a real role and title so that providers may better develop relationships between raters and the watersense program

Rationale: This program can become taken more seriously and utilized more in the future, but EPA needs to leverage the rater community more to do this. There needs to be an actual designation that an inspector can earn similar to the certified HERS Rater designation.

Suggested Change (or Language): WS Certification System needs to be addressed appropriately to reflect this change.

Commenter: Aaron Boulton-Chaykowski
Affiliation: City of Calgary, Water Services
Comment Date: March 29, 2012

Please find the comment template attached.

Regards,

Aaron Boulton-Chaykowski, B.Sc.
ICI coordinator, Water Resources
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Template for Public Comment Submission on WaterSense Documents

Commenter Name: Aaron Boulton-Chaykowski
Commenter Affiliation: City of Calgary, Water Services
Date of Comment Submission: April 3, 2012

Topic: New Homes Specification

Comment: Furnace-mounted humidifiers should be required to meet a WaterSense standard for new homes.

Rationale: Although a WaterSense standard does not currently exist for this fixture, it is a relatively common fixture in homes across North America and specifically in Canada. Inefficient versions of these fixtures can waste significant amounts of water (100-200 litres per day) when in use during 6-8 months of the year.

Suggested Change (or Language): A furnace-mounted humidifier must not flush to sewer continuously when in operation. Water not used for providing humidity directly to the home must be minimized for daily cleaning of the unit. All other water which is not contributing to humidity in the home must be recycled through the unit or captured for reuse.

Commenter: Andy Smith
Affiliation: WaterSense Partner
Comment Date: March 29, 2012

To Whom It May Concern:

Please see my comments below and attached:

Template for Public Comment Submission on WaterSense Documents

Commenter Name: Andrew Smith

Commenter Affiliation: Water Sense Partner

Date of Comment Submission: 3/29/12

Topic: WaterSense Specifications and Program

Comment: Eliminate the entire specification and the entire WaterSense Program

Rationale: In the current budget environment one should carefully consider which programs are vital to basic functions of government. The WaterSense program has been quite controversial amongst materially affected stakeholders in its first iteration and this revision clearly indicates EPA's desire to expand the agencies reach through this program, despite the lean budget environment. As many worthwhile programs are being cut, including transportation, education, agriculture, national security and infrastructure, I cannot support this program any longer, let alone an expansion of this program's applicability.

Suggested Change (or Language): As an original program partner, as a materially affected stakeholder and as a taxpayer, I suggest the elimination of this specification and this program in its entirety.

--

Andy Smith
irrigation.andysmith@gmail.com
231-753-6023

Commenter: Ken Mauser
Affiliation: Independent Consultant from Las Vegas, NV
Comment Date: April 9, 2012

Template for Public Comment Submission on WaterSense Documents

Commenter Name: Ken Mauser

Commenter Affiliation: Independent Consultant from Las Vegas, NV

Date of Comment Submission: April 6, 2012

Topic: Outdoor Water Conservation

Comment: Saving water indoors is great. Most water saved indoors now days is also reclaimed and recycled thru a waste water plant. But water used outdoors is generally lost because there is no way to capture that water in a turf or landscape situation. So any way we can save water in our irrigation process is a huge net savings of water. In new home construction specs there is usually a design for the irrigation system around the house. I suggest that an injector be included in that spec so many different products can be applied to the turf and landscape thru that injector. One product that can be applied is a soil surfactant. Using soil surfactants is a normal process on golf courses and can save the operation up to 40% on their water usage. There is no reason the same can't be done in a residential or commercial setting.

Rationale: Saving water outdoors is a larger net gain on water conservation than saving indoors because water used indoors is usually captured thru the waste water treatment plants and recycled to other uses like golf courses.

Suggested Change (or Language): Include an injector in the landscape and turf irrigation design and suggest the use of soil surfactants.

Commenter: Mike Cudahy
Affiliation: Plastic Pipe and Fittings Association
Comment Date: April 12, 2012

Thank you for your consideration of our comments.

Mike Cudahy
PPFA

Template for Public Comment Submission on WaterSense Documents

Commenter Name: Michael Cudahy

Commenter Affiliation: Plastic Pipe and Fittings Association (PPFA)

Date of Comment Submission: April 13th, 2012

Topic: Hot water waste volume determination.

Comment: The conservation of hot water saves both energy and water and a critical way to do this, from the start of a home's construction, is to utilize intelligent hot water distribution piping layouts that minimize waste and wait times for hot water. PPFA strongly supports the continued use of the table found in Appendix B of the WaterSense program, as it is the only method that determines the actual volume.

There are significant differences in piping materials hot water volume. Other methods may be proposed for inclusion in the program that short cut the calculation, resulting in "average pipe volumes" that result in significant errors in actual waste.

Rationale: Other approaches for hot water volume calculations fail to correctly determine volumes accurately and should not be encouraged.

Suggested Change (or Language): We encourage the EPA to maintain the Table in Appendix B, "Internal Volume of Various Water Distribution Tubing", found in many other green building programs, including The NAHB NGBS, LEED-H, IAPMO GPMS and the International Plumbing Code.

Topic: Alternative Water Sources

Comment: The WaterSense program is clearly lacking in promoting "alternative" water sources as a way to conserve resources. Rainwater harvesting for clothes washing,

irrigation and/or flushing water closets is one way to reduce the consumption of potable water significantly in homes, meeting the 20% reduction goals of the program, and is not a difficult system to encourage or include. We recommend EPA develop sections to encourage the installation of rain water harvesting systems to reduce the consumption of treated, transported, energy intensive potable water.

Rationale: Other sources of water should be encouraged in WaterSense, and rainwater harvesting is an easy place to start.

Suggested Change (or Language):

4.2 Irrigation System – Irrigation systems are not required. Irrigation systems that are financed, installed, or sold through the homebuilder must meet the following criteria:

Option 1: Irrigation systems are supplied by a rainwater harvesting system, and are not connected to the potable water supply,

OR

Option 2: Meet the following requirements;

Topic: Appendix B Table Update.

Comment: Polyethylene, raised temperature (PE-RT) is a new hot water piping material that should now be included in the table. It has the same dimensions as PEX.

Rationale: Data for some new hot water piping has been developed.

Suggested Change (or Language): Add a column for PE-RT to the table.

<u>PE-RT</u>
<u>SDR 9</u>
<u>0.64</u>
<u>1.18</u>
<u>2.35</u>
<u>3.91</u>
<u>5.81</u>
<u>8.09</u>
<u>13.86</u>

Topic: Appendix B Table Update.

Comment: Polypropylene (PP) is a new hot water piping material that should now be included in the table. It is made in three SDR sizes.

Rationale: Data for some new hot water piping has been developed.

Suggested Change (or Language):

<u>PP SDR 6</u>	<u>PP SDR 7.3</u>	<u>PP SDR 11</u>
<u>0.91</u>	<u>1.09</u>	<u>1.24</u>
<u>1.41</u>	<u>1.68</u>	<u>2.12</u>
<u>2.23</u>	<u>2.62</u>	<u>3.37</u>
<u>3.64</u>	<u>4.36</u>	<u>5.56</u>
<u>5.73</u>	<u>6.81</u>	<u>8.60</u>
<u>9.03</u>	<u>10.61</u>	<u>13.47</u>
<u>14.28</u>	<u>16.98</u>	<u>21.39</u>

Commenter: Charles DeSmet
Affiliation: FloLogic Inc
Comment Date: April 12, 2012

Greetings,

Attached please find our comment(s) for inclusion in the teleconference April 19th

Sincerely,

Charles R. DeSmet

President

Template for Public Comment Submission on WaterSense Documents

Commenter Name: Charles De Smet

Commenter Affiliation: FloLogic Inc

Date of Comment Submission: April 12, 2012

Topic: Draft WaterSense New Home Specification (Version 1.1) Section 3.1

Comment: Leak testing on new home construction is a snapshot in time and provides no assurance that a leak will not develop shortly thereafter. We believe leak detection devices such as FloLogic System 3.0 should be deployed to monitor water flow for leaks that subsequently develop. The FloLogic System is a flow based System that begins monitoring water flowing into a structure at flow rates as low as 0.5oz/min and will shut the water off to the structure after a designated period of time. By EPA estimates 13.8% of water used in homes across America is attributed to plumbing leaks. The AWWA reports this number as 14.2% from their studies.

Rationale:

Suggested Change (or Language):

Commenter: Sam Thayer
Affiliation: Maxijet, Inc./Mister Landscaper, Inc.
Comment Date: April 18, 2012

Attached is the comments I have on the Draft and not sure whom I should email this to.
Thank you for your help with this.
Sam

Samuel S. Thayer, President
Mister Landscaper, Inc. / Maxijet, Inc.
Phone: 800-654-4086

Template for Public Comment Submission on WaterSense Documents

Commenter Name: Samuel Stuart Thayer

Commenter Affiliation: President of Maxijet, Inc / Mister Landscaper, Inc.

Date of Comment Submission: April 18, 2012

Topic: 4.2.9 Microirrigation systems – At a minimum, microirrigation systems shall be equipped with pressure regulators, filters, and flush end assemblies.

Comment: My concern is the requirement for” flush end assemblies”.

Rationale: The key is for the consumer to be able to flush their micro spray or drip irrigation system. They can do this manually by removing a cap on and end fitting or if using a figure 8 style end fitting then can easily slide it forward and un crimp the tubing allowing the line to be flushed. For automation they can use an automatic flush valve with an interior spring and plunger that works with the water pressure to open and close allowing the line to flush.

To insist on a flush end assembly gives me concern because we see the problems in the field with flush valves. Ants and other insects can enter the flush valve device and create a problem once the system is turned on and the insects trapped in the tubing can clog micro sprays and drippers. The other issue; even though there is a filter, a piece of debris can still get in the line and if it gets in between the plunger and inside wall of the valve, it will create a gap which causes the flush valve to leak while in operation. For those consumers in areas that have these issues with flush valves, I believe they should be given the opportunity to use an end fitting with a removable cap. (Also, to give you some background on our experience, we have been manufacturing, selling, and using in our own citrus groves thousands of these flush valves devices over the last 23 + years.)

Suggested Change (or Language): Keep the wording for 4.2.9 except for deleting “flush end assemblies” and replacing with “removable end fitting or end flush valve device.”

Commenter: Tom Reynolds
Affiliation: Water Balance, LLC
Comment Date: April 19, 2012

Please consider the attached comments

Tom A. Reynolds

Water-Balance email

Tempe, AZ

602-463-5072

Template for Public Comment Submission on WaterSense Documents

Commenter Name: Tom Reynolds

Commenter Affiliation: Water Balance, LLC

Date of Comment Submission: April 18, 2012

Topic: General

Comment: Among WS Partners, independent professional designers stand apart, some would say on slightly elevated ground.

The addition of multi-family buildings is logical from a few perspectives, but not justified from the majority of differences (exterior water use generally over 60% of whole facility water use.

Certainly, efficient plumbing fixtures can be adopted by the hundreds at a time. But turf grass in storm water retention basins irrigated with 2" control valves, and 300 gpm system flows changes the design requirements. Furthermore, many multi-home developments will be designed with central irrigation control. Possibly 2-wire systems. Wire-sizing alone would normally demand a Certified Irrigation Designer's involvement.

Rationale: Comparing apples with oranges will always be challenged

Suggested Change (or Language): Either add some caveats for system flow rates, control capabilities, and higher design and construction standards, or do not add multi-family homes to the existing new home specification.

All following comments refer to the slide set distributed from WaterSense in prep of the Webinar; Topics = slide (page) numbers.

Topic: Side 13

Comment: possibly not all reasons provided

Rationale: No mentions of lobbying efforts by multi-family developers

Suggested Change (or Language): Modifications are necessary because multi-home developers appealed to the EPA seeking the WS label provisions for their projects.

Topic: Slide 15

Comment: “Consistent approach....” not always reasonable

Rationale: Many would argue you should probably NOT take a 2-seater Cessna’s design and operation manual and apply it to a Boeing 747.

Suggested Change (or Language): If this goes forward, then as consolation use something like “...attempts to leverage some of the existing new, single home’s inspection/sampling protocol, carefully in the right hands, where appropriate.”

Topic: Slide 19

Comment: This “Scope” expansion disregards differences for residential versus commercial. If this change to the existing specification is allowed, you should also add new commercial and industrial developments. Add churches, schools, city parks, and sports fields.

Rationale: The leap from residential irrigation to commercial irrigation system requirements is only partially acknowledged with “sub-metering” and “water pressure outside of the unit” below. That leaves several other aspects inadequately addressed.

Suggested Change (or Language): Irrigations systems of single family homes and separately irrigated townhomes. Without more rigorous requirements placed upon irrigation elements of the WaterSense project, multi-family homes are not added; this scope expansion is dropped.

Deal with this in Commercial/Institutional Facility WaterSense Certification

Topic: Slide 21

Comment: The draft language is good. It leaves higher pressures outside of building envelopes for high-pressure irrigation system requirements.

Rationale: The draft provision is only partially adequate for large, commercial irrigation systems

Suggested Change (or Language): "Whereas static service pressure for single-family and multi-family inside the unit is to be 60 psi or less, static water pressure for multi-family WaterSense irrigation, at the dedicated water meter(s) is to be minimum 75 psi. Further, municipalities will provide assurance that this pressure at construction will be maintained for the life of the project, or booster pumps will be provided at no cost to the current multi-family development owners.

Topic: Slide 25

Comment: Front yard versus whole property?

Rationale: Your intention here, a worthy as it is, requires several adjustments, and they could be heavy burdens upon developers. Firstly, we know that residential backyards are the homeowner's prerogative; so we merely presume good water use efficiency in front yards bleeds to good water use efficiency in the back yards? Seems at this juncture you are forced to look backward, and reassess your backyard exception.

Something is not logical here. Backyard water waste is minimized by good front-yard design, maybe.

I believe WaterSense could simply require that back-yards shall eventually conform to front-yards irrigation design performance criteria. A compact with owners who have proven to care enough about water use efficiency to pay premiums for their new homes.

Making this change helps your "all improved upon common use areas" for this modification.

Suggested Change (or Language): (not sure I can word-smith this; call me for a consult)

Topic: Slide 26

Comment: Proposed are logical changes for common swim pools.

Rationale: All water use partitions need this deliberate attention.

Suggested Change (or Language): In general, give more discrete places for waste/beneficial use.

Include “Common pools save water.” Then add, “Central irrigation control with flow monitoring trending to save much more water.”

Topic: Slide 27

Comment: Sub-metering is, by itself, rarely proof of anything, I appreciate the fact that at least sub-metering provides the potential of water management, but so would installation of a temperature and soil moisture sensors. You must provide a statement of “Intended purpose for the “independent meter”. The meter is there. So what?

Rationale: Sub-metering, without intended purpose means nothing.

Suggested Change (or Language): additional paragraph:

Certified irrigation auditors determine system capacity and projected, annual landscape water requirements. But regular system performance assessments are necessary. These periodic assessments attempt to describe rootzone response to irrigation schedules...these studies should be considered mandatory for multi-family landscapes. After year 2 to 4 establishment of a new landscape monitoring by certified professionals, it is conceivable that on-site water managers can keep water use efficiency above board.

Topic: Slide 31

Comment: Weather-based controllers demand periodic ground-truthing.

Rationale: EPA seems uninformed closed-loop control logic and technology can maintain active root zones within a justifiable range.

Suggested Change (or Language): Call for consult.

Topic: Slide 34

Comment: Water budget tool would fail at my residence. I have far below the 40% turf area, but even with high water management practice, the model requires I redesign my landscape. I don't appreciate EPA telling me my landscape needs redesign.

Just a glimpse:

My Feb water use. 2 adults, 2 kids, is about 8500 gals. My July water use is 34,000 gals. I have a typical 12,000 SF lot. But I have several very large trees that cool very large areas and welcome upwards of 0.25 inches per day during peak use period. The trees alone beneficially use over 12,000 gals per month.

Rationale: There appears to be some cracks in the budget tool model....haven't attempted to resolve them...can only say that, at this juncture, certainly the model is conservative.

Suggested Change (or Language): Testing will of sites in the irrigated west will be conducted.

Topic: Slide 35

Comment: The tools does not consider expanding canopies, nor does it consider that for the budget to fit, significant agronomy and irrigation science is required.....and that generally demands monitoring and a data base to routinely analyze.

I don't think the water budget can reward.

Rationale: simple deduction.

Suggested Change (or Language):

- **Provides a window into new construction landscape water demands, given the landscape design**
 - **With more development, and in the right hands, can be applied universally**
-

Commenter: Larry Acker
Affiliation: ACT Inc. D'MAND Systems
Comment Date: April 20, 2012

Comments on Webinar conference

As I pointed out on the webinar the current suggested "distance from the water heater to the fixture shall not be more than ½ gallon of water" is much too long. Since every branch line from a loop or recirculation return line will be not more than ½ inch in size this would represent about 50 ft. of pipe and the fact that the branch line is generally never insulated, the time delay will not be acceptable to the user. What will happen is they turn on the water and let it run and in most cases will not return to the fixture until long after the hot water arrives.

If our goal is to save water, this is going the wrong direction and I highly suggest a review and options in regard to the 50 ft. distance.

Larry,

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Commenter: Douglass Phillips, Jr.

Affiliation: FloLogic, Inc.

Comment Date: April 23, 2012

Please find enclosed my comments on the wording of the DRAFT Specification for WaterSense designation of new homes. Based on EPA statistics reporting the 13.8% of the water consumed in the average home is lost due to leaks, it's an oversight not to include continuous, real-time leak detection to identify leaks as early as possible. FloLogic has been working in the green building space to enable the pro-active discovery and termination of plumbing leaks since 2001. I hope you will use this document to stimulate the conversation around the role of automated leak detection systems as part of the WaterSense toolkit. Once a year attention via Fix-a-Leak Week may provide some awareness, but real progress in stopping the loss of one trillion gallons annually will only begin when homeowners become aware of leaks as soon as they develop.

Regards,

Doug

Douglass Phillips
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Template for Public Comment Submission on WaterSense Documents

Commenter Name: Douglass Phillips, Jr.

Commenter Affiliation: FloLogic, Inc.

Date of Comment Submission: April 20, 2012

Topic: Section 3.1 Leaks

Comment: Monitoring for plumbing leaks should be continuous and automatic, not limited solely to pressure loss testing and visual inspections during or after construction

Rationale: EPA statistics cite 13.8% of the average home's water use is due to leaks. These leaks normally develop over time as the building, pipes and plumbing appliances age. A low-level leak of 2.5 ounces per minute due to a leaky hose bib or defective toilet fill valve will waste 28 gallons a day or 10,265 gallons per year. Real-time identification leaks will result in accelerated corrective action.

Suggested Change (or Language): Leaks – There shall be no detected leaks from any water-using fixtures, appliances, or equipment. Compliance prior to occupancy shall be verified through pressure-loss testing and visual inspection. Continuous, real-time monitoring for leaks after occupancy shall be enabled by the provision of a flow-sensing, leak detection system capable of detecting leaks beginning at a flow rate of 2 ounces (60 ml) per minute or less per minute. Beginning on XX.XX.201X, deployed leak detection systems must be able to stop any detected leak by automatically turning off the water.

Topic: Section 7.0 Definitions

Comment: There is no standard definition of a leak.

Rationale: While it may seem obvious that a leak is any unintended usage of water; the term needs to be defined to characterize at what point it needs to be addressed.

Suggested Change (or Language): Leak Any unintended escape of water due to a failure in a component of the plumbing system or a connected plumbing appliance. Also, any user error resulting in the persistent loss of water over time. Adequate detection of leaks requires the ability to monitor water flow for the entire structure beginning at flow rates of 2 ounces (60 ml) or less per minute.

Topic: Appendix D Additional Criteria for Multi-Family Buildings - Section 3.9 Metering

Comment: Sub-metering or occupant water usage monitoring and reporting should include leak detection and reporting.

Rationale: EPA statistics cite 13.8% of the average home's water use is due to leaks. These leaks normally develop over time as the building, pipes and plumbing appliances age. A low-level leak of 2.5 ounces per minute due to a leaky hose bib or defective toilet fill valve will waste 28 gallons a day or 10,265 gallons per year. Individual apartment dwellers that are not billed separately for water based on their consumption have little incentive to conserve water. Leak detection will result in

positive action on the part of the occupant and building owner to resolve leaks in a timely fashion.

Suggested Change (or Language): Metering – Each unit must be individually metered or equipped with an alternate technology capable of tracking water use and making information available to the homeowner. Real-time monitoring for leaks shall be enabled by the provision of leak detection hardware capable of detecting leaks beginning at a flow rate of 2 ounces (60 ml) per minute or less. Beginning on XX.XX.201X, deployed leak detection systems must be able to stop any detected leak by automatically turning off the water.

Commenter: Timothy Malooly
Affiliation: Water in Motion, inc.
Comment Date: April 23, 2012

Hello WaterSense Team,

Attached you will find comments on version 1.1 of the WSNH specification.

Please let us know questions.

Cordially,



Timothy Malooly: CID, CIC, CLIA, MN Licensed Water Operator
EPA WaterSense Partner of the Year 2008!
President at Water in Motion, Inc.
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Award-Winning Professionals in Origination, Design, Consulting & Water Management

Template for Public Comment Submission on WaterSense Documents

Commenter Name: Timothy Malooly CIC, CID, CLIA, Licensed Water Operator, EPA WaterSense Partner, 2008 WaterSense Partner of the Year

Commenter Affiliation: Water in Motion, inc.

Date of Comment Submission: April 23, 2012

Topic: Section 3.9 Metering

Comment: Add single-family homes to the water metering requirement

Rationale: The WSNH program is voluntary. Including a requirement for water metering technology on single-family homes whether required or not by a local water purveyor is an important tool for training or re-enforcing to the end-user, the (program) goals of measurable reduced (potable) water use. The additional cost to install (commonly-used and available) water meter equipment is negligible to the cost of construction. If training

on the use of a metering device is included in the homeowner's user manual, this can be a handy and practical tool for the end user to measure impact of water-use practices.

Suggested Change (or Language): Metering – All WSNH projects shall include metering technology capable of tracking water use of the single-family home or in the case of multi-family buildings, individual domiciles, and shall include appurtenances that make the information available to the owner or resident via display, remote display or other means.

Topic: 4.1 Landscape – paragraph 2

Comment: Add a third paragraph to section 4.1, introducing a procedure to identify a not-yet-labeled project. This provision with corresponding guidelines, will enable marketing/advertising of the intent-to-be-labeled project without negative impact upon the WS program itself.

Rationale: Creating and promulgating language or labeling options to a builder/developer of a project that aspires to the WS label will enable a WS builder/developer to market the project without claiming the WS status until that status has been officially achieved. The result may include increased sales among buyers who look for water efficient projects to purchase in the early phases of planning or construction.

Suggested Change (or Language): Projects having not yet earned the WS label may use designated language and symbols illustrating the goal to be WaterSense labeled...

Topic: 4.1.1 Landscape Design

Comment: Support for removal of the 40% Turf Limitation

Rationale: We consider the 40% Turf limitation arbitrary and without substantial, defensible merit. We support removal of the 40% Turf limitation in favor of a workable water budget tool approach.

Suggested Change (or Language): Support for the removal of the 40% Turf limitation

Topic: 4.1.1 Landscape Design

Comment: Remove the prescription that pools, spas and other water features be treated as turfgrass.

Rationale: We consider inanimate amenities separate from the living landscape and request consideration by WaterSense that the two to be kept separate and non-related.

Pools, spas and similar although elective and (perhaps) located outside the structure of a domicile are not plant material and have no bearing (other than individual tastes) upon plant selection or corresponding plant water use and should not be included in prescription of calculations affecting the plant pallet. There are often other considerations contained in local ordinances (generally related to hardscape/softscape or permeable/impervious ratios) placed upon new construction which may independently impact a decision to include pools, spas and other water features. If left in place, unintended negative consequence(s) of the current prescription upon plant material selection may result. If this call-out is somehow related to regions of the United States that are more water-starved, then we suggest study and promulgation of language on this topic that is geographically focused and not related to plant material selection.

Suggested Change (or Language): Remove reference of “pools, spas and other water features” from section 4.1.1.

Topic: 4.2.7.4 Rainfall device

Comment: Require all landscape irrigation systems to have installed, tested and placed in service, rain-sensing/rainfall interruption technology.

Rationale: Rain sensing/rainfall interruption technology should be included in any automatic landscape irrigation system control package installed upon a WSNH. Interrupt technology enables action, automatically and within a reasonable amount of time of a rain event, to interrupt or contribute to the interruption of an irrigation cycle. This requirement should not exempt soil moisture sensing controllers. A rain event whether (light or downpour) that occurs during or near an irrigation cycle should be taken into account upon the cycle itself as well as near-term subsequent irrigation cycle scheduling. Do not assume that all weather or soil-moisture based landscape irrigation controls have integral, rain sensing technology that will interrupt an irrigation cycle. Prescribing (properly installed and tested) rain sensing technology upon all automatically controlled landscape irrigation systems will help ensure maximum water efficiency with little impact upon the overall cost of system installation.

Suggested Change (or Language): The controller shall be capable of interfacing with rainfall sensing and interrupt technology and shall have such technology installed, tested and placed into service.

Topic: 4.2.7.x - Syringe-cycle option

Comment: Insert a call-out that a controller must be capable of syringe-cycle programming.

Rationale: Many but, not all landscape irrigation controllers contain this feature.

Syringe-cycle programming is a handy and useful tool in managing irrigation water application to reduce or minimize runoff, maximize efficient utilization of water by plants and to enable flexibility in scheduling of irrigation events. Many but, not all landscape irrigation controllers contain this feature. This feature is a water-delivery method and is independent of weather or soil-moisture scheduling technology.

Suggested Change (or Language): The controller shall be capable of syringe-cycle irrigation water delivery, whether by station feature or by program feature or both.

Topic: 4.2.11 – Metering -add language

Comment: Add language to assure a meter has a display or other means of examining operation that is available to any interested party.

Rationale: Some metering technology does not contain a display and is only “read” by special instrumentation (that is commonly used by a water purveyor for purposes of periodic reading and/or billing). Calling-out a display will enable an interested party to examine water use without special tools or equipment. Including a visible reader does not add significant installation or maintenance cost to commonly-installed meter brands/types and does not generally inhibit inclusion of more advanced meter-read technologies where required.

Suggested Change (or Language): Metering – If an irrigation system is installed in a multi-family building, the system shall be independently metered and shall include an appurtance to make the information available to an interested party via display, remote display or other means.

Topic: 5.1.1 and 5.3.1 – Adjust call-out language and add requirements for common and expected Maintenance and Operation tasks

Comment: Add a call-out for regular, periodic mechanical (landscape irrigation system) maintenance procedures or guidelines.

Rationale: The current call-out does not specifically include a requirement for basic, proactive system maintenance procedures or guidelines. Independently of the region of the United States a system is installed, landscape irrigation systems require regular, periodic mechanical inspections and/or maintenance to deliver consistent performance. Often overlooked when delivering orientation and operating manuals, omitting such a call-out misses important factors related to long-term system efficiency, reliability and costs of ownership. Unlike many indoor plumbing fixtures, landscape irrigation systems have many moving parts that are influenced by many outside factors (often on a weekly basis such as mowing activities). In many regions of the United States, seasonal changes cause shallow-level earth shifts, affecting irrigation distribution and delivery

components.) The landscape is a living system and fixed irrigation components must be moved or adjusted periodically to accommodate a maturing and changing landscape. Including a checklist of basic system maintenance procedures (and parts to have on hand) can be accomplished to the benefit of the do-it-yourself owner/operator as well as to provide a basis for an owner/operator to select a qualified maintenance vendor. Cost considerations to require a maintenance and operation component to the irrigation system operating manual are minimal and can easily be customized by a responsible designer or installer to fit a particular installation.

Suggested Change (or Language): Irrigation System – If an irrigation system is installed, the builder shall, in a professional and workmanlike fashion, provide the owner or owner’s representative with a scale record drawing (i.e. schematic) of the system, an itemized list and quantities of irrigation components, copies of suggested or expected irrigation schedules by week or month, information about programming or reprogramming the controller (and related input technologies) and a maintenance and operation guideline that includes common and expected tasks to perform upon the irrigation system and time intervals to complete such tasks. This information shall be included in the landscape irrigation system operating manual prior to or at the time of final system walkthrough and turnover.

Topic: FOR FUTURE CONSIDERATION – soil types, amendments and preparation

Comment: The WSNH Specification should include at least basic requirements for activities related to soil composition or improvements and preparation.

Rationale: The soil and condition of the soil that plants are placed directly affects any plant’s ability to thrive which in turn, affects the need (real or perceived) and frequency in which supplemental water might be applied. We suggest WaterSense explore the workability of calling-out general guidelines related to soil conditions, amendments and preparation in future iterations of the WSNH Specification. Where science may be lacking, commonly published best practices can be furnished to WaterSense for consideration and public comment. Educational institutions and the professional community will be excellent starting points to open dialogue and obtain information toward creation of this important but overlooked element of the outdoor portion of the WSNH Specification.

We acknowledge that addition of such a requirement may add measurable cost to the construction of a WaterSense New Home but, doing so is defensible and arguably expected by the consuming public. The lack of soil preparation practices of late, has occurred not through recommendations, technological innovation or sound science but, as a consequence of poor behavioral practices. To our knowledge, installing a landscape upon a compacted or poor quality soil condition is not defensible for any reason other than expedience and cost savings. We know of no plant scientist, horticultural professional, environmental engineer, nursery professional, reasonably educated

landscape industry practitioner or fertilizer manufacturer that does or would promote, encourage or endorse installation of plants in poor or poorly prepared soil.

Suggested Change (or Language): We are willing to participate in the development of language.

Topic: FOR FUTURE CONSIDERATION

Comment: Translate the WSNH Specification and all related materials into additional languages, beginning with Spanish.

Rationale: Many indoor and outdoor business owners in the construction and maintenance fields and their employees are not native-born Americans. Translation of the WSNH Specification into additional languages will help ensure program success.

Suggested Change (or Language): **Conduct Spanish translation of the WSNH Specification as soon as possible. Promote the translated materials among WaterSense Partners and Partner organizations.**

Commenter: Mary Ann Dickinson
Affiliation: Alliance for Water Efficiency
Comment Date: May 4, 2012

Hello,

Please accept the attached as public comment on the EPA WaterSense Draft New Homes Specification (Version 1.1). Thank you for the opportunity.

Kind regards,

~ Jeffrey

=====
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Public Comment Submission on WaterSense Draft New Home Specification (Version 1.1)

Commenter Name: Mary Ann Dickinson

Commenter Affiliation: Alliance for Water Efficiency, Chicago, Illinois

Date of Comment Submission: Friday, May 4, 2012

Topic: Appropriateness of expanding scope of specification to multi-family residential three stories or less in size and residential units in mixed use buildings.

Comment: The Alliance for Water Efficiency (AWE) supports expanding scope of specification to multi-family residential three stories or less in size and residential units in mixed use buildings.

Rationale: According to the National Homebuilders Association, since the inception of the WaterSense in 2006, 180,000 multi-family units have been built per year on average. Construction in the multi-family residential building sector is likely to increase as land for

single-family becomes less available over time thus increasing the importance of installing the water efficient technologies now available for this robust residential sector.

Suggested Change (or Language): None

Topic: Affirm appropriateness of WaterSense edits to hot water delivery systems

Comment: The proposed language improves the specification

Rationale: By including language specifying what is acceptable in contrast to what is unacceptable, the specification is clarified

Suggested Change (or Language): None

Topic: Appliances – If the following types of appliances are financed, installed, or sold as upgrades through the homebuilder, they shall meet these criteria:

Comment: The qualifying language “as upgrades” is unnecessarily wide.

Rationale: Any appliance sold through the WaterSense builder regardless of whether it is an upgrade or not should be ENERGY STAR® labeled.

Suggested Change (or Language): 3.7 Appliances – If the following types of appliances are financed, installed, or sold ~~as upgrades~~ through the homebuilder, they shall meet these criteria:

Topic: 3.7.2 Include ENERGY STAR Commercial Clothes Washers link to the specification

Comment: The only link provided in the specification is for ENERGY STAR home-grade clothes washers.

Rationale: Home-grade clothes washers are not generally sturdy enough to work well in a multifamily common laundry room.

Suggested Change (or Language): Include ENERGY STAR Commercial Clothes Washers link to the specification in addition to the ENERGY STAR Home-grade clothes washer link.

www.energystar.gov/index.cfm?fuseaction=find_a_product.showProductGroup&pgw_code=CCW

Topic: 3.8.1 Evaporative Cooling Systems

Comment: WaterSense should develop language that further clarifies that the specification is not for buildings that utilize cooling towers to support cooling systems serving living areas.

Rationale: The evaporative cooling systems efficiency requirements appear to assume that if there is an evaporative cooler it is a swamp cooler. This is a reasonable assumption for single-story homes, but there are multi-family dwellings less than three stories that can have cooling towers. Whereas language in the third bullet seems to effectively address the limits of the specification, the second bullet has no such limiting language. It is important that WaterSense not inadvertently end up allowing in facilities with cooling towers in this specification as there are no water efficiency provisions in the current version of the specification covering cooling towers and it would damage the specifications credibility if this situation occurred.

Suggested Change (or Language): Add language under the bulleted sections “Residential areas served by cooling systems utilizing cooling towers are not applicable for this specification.”

Topic: Add “Furnace Mount Humidifiers” to 3.8 Other Equipment

Comment: Humidifiers may have been addressed in previous drafts, but there is no mention of them in Draft Version 1.1 WaterSense New Home Specification.

Rationale: According to the U.S. Census Bureau, an average of 400,000 furnace-mount humidifiers were installed in the U.S. annually over the past 5 years. That’s 2,000,000 new units installed since 2006. When humidifiers operate as designed, they discharge about 4 gallons of water per hour, 96 gallons per day that is not utilized for humidification. Significant water savings are possible by encouraging new technology.

Suggested Change (or Language): That a WaterSense specifications be developed for furnace-mount humidifiers for future insertion in section 3.8 based on studies and tests done in Canada where humidifier rebate programs have been implemented in several areas for several years. The WaterSense threshold of at least 20% reduction of water use in the case of furnace mount humidifiers would be met by equipment that discharges 77 gallons per day or less. The example below shows that product is readily available that meets this criterion: 2011 Water-Efficient Furnace Mounted Humidifier Rebates in Markham, Ontario

The Regional Municipality of York has announced a rebate program for water-efficient furnace mounted humidifiers for eligible residents of York Region including the Town of Markham.

The residential humidifier rebate program offers:

- \$30 rebate for an approved, furnace mounted humidifier that sends 10 to 50 litres [2.6 to 13.2 gallons] of water to the drain per day
- \$70 rebate for an approved, furnace mounted humidifier that sends less than 10 litres [2.6 gallons] of water to the drain per day

There are a number of terms and conditions that must be followed. Only eligible models qualify. Purchases must be made between January 1, 2011 and December 31, 2011 and submission deadlines must be met.

The application forms and complete details are available at the York Region Water for Tomorrow website at www.waterfortomorrow.ca/en/athome/humidifierrebates.asp

For further information about the rebate program, call 1-888-967-5426

Topic: 3.9 Metering— In multi-family buildings, each unit must be individually metered or equipped with an alternate technology capable of tracking water use and making the information available to the residents of the individual unit.

Comment: The meter is a primary water conservation tool therefore it must be accurate and should be accessible to the resident without special arrangements.

Rationale: Meters and alternate technologies have a variable performance record therefore an accuracy expectation should be included in the specification.

Suggested Change (or Language): 3.9 Metering – In multi-family buildings, each unit must be individually metered or equipped with an alternate technology capable of accurately tracking water use. Any measurement technology or meter must meet or exceed AWWA metering accuracy standard C700 or the AWWA standard for the type of meter used. ~~and making the information available to the r~~Residents of the individual unit must be able to read the meter without requesting access from manager or building owner.

Topic: 4.1.1 Landscape design – Design of the landscaped area shall be developed using the *WaterSense Water Budget Tool*. The tool and *WaterSense Water Budget Approach* can be found at www.epa.gov/watersense/water_budget for single-family homes, pools, spas, and other water features shall be treated as turfgrass.

For multi-family buildings, common-use pools/spas and all areas that are reserved for private use of a particular residence/unit (such as areas deeded, identified as limited-use common elements, or otherwise restricted by building management) are excluded from the landscapable area. Additional criteria apply to pools/spas in section 4.1.4.

Comment: The multi-family exemption of outdoor pools and spas from inclusion in the landscape ET water budget calculation is problematic from a water conservation perspective.

Rationale: Separate metering does not compensate for water lost to evaporation from pools or spas in light of the fact that they will likely not be covered even when not in use so that the pool/spa is available for use by residents during daylight hours.

Suggested Change (or Language): 4.1.1 Landscape design – Design of the landscaped area shall be developed using the *WaterSense Water Budget Tool*. The tool and *WaterSense Water Budget Approach* can be found at www.epa.gov/watersense/water_budget For single-family homes, pools, spas, and other water features shall be treated as turfgrass.

~~For multi-family buildings, common-use pools/spas and all areas that are reserved for private use of a particular residence/unit (such as areas deeded, identified as limited-use common elements, or otherwise restricted by building management) are excluded from the landscapable area. Additional criteria apply to pools/spas in section 4.1.4.~~

Topic: 4.1.1 and 4.1.1.2 Landscape design

4.1.1 Landscape design - Design of the landscaped area shall be developed using the *WaterSense Water Budget Tool*. The tool and *WaterSense Water Budget Approach* can be found at www.epa.gov/watersense/water_budget. For single-family homes, pools, spas, and other water features shall be treated as turfgrass.

~~4.1.1.2 Option 2 – Turfgrass shall not exceed 40 percent of the landscaped area.~~

Comment: WaterSense should exercise great care in considering exclusive use of the Water Budget for purposes of determining landscape design. The most pressing consideration is the lack of clear definitions of plantings respective water use. Without clear definitions, the potential risk of compromising water savings is quite real. Turfgrass can currently be classified a low water use plant using the online water budget tool, yet there is no supporting evidence that true low water use grasses (with crop coefficients in the 0.3 range) are used as turf in the United States.

Rationale: The AWE is neutral with respect to WaterSense’s decision to remove the uniform turfgrass limitation option but suggests great care if pursuing this path to avoid compromising program water savings. Some of the suggested language below can help to avoid this outcome by minimally bounding plant water use classifications, but careful consideration of the range of possible ways to address landscape design is advisable. Simpler approaches may further extend the program’s interest to a wider range of potential stakeholders. Note that alongside this change, the online version of the tool would require slight modification to prevent such misclassifications as well.

Suggested Change (or Language): 4.1.1 Landscape design - Design of the landscaped area shall be developed using the *WaterSense Water Budget Tool*. The tool and *WaterSense Water Budget Approach* can be found at

www.epa.gov/watersense/water_budget. For single-family homes, pools, spas, and other water features shall be treated as turfgrass. Under no circumstances shall turfgrass be classified as a low water use plant unless third-party testing data demonstrating a particular variety has a summer crop coefficient of 0.3 or less is submitted to and approved for such use by WaterSense. No cool-season grasses shall be classified as other than high water use unless thirdparty testing data demonstrating a particular variety has a summer crop coefficient of 0.7 or less is submitted to and approved for such use by WaterSense.

Topic: 4.1.1 and 4.1.1.2 Landscape design

4.1.1 Landscape design - Design of the landscaped area shall be developed using the *WaterSense Water Budget Tool*. The tool and *WaterSense Water Budget Approach* can be found at www.epa.gov/watersense/water_budget. For single-family homes, pools, spas, and other water features shall be treated as turfgrass.

~~4.1.1.2 Option 2—Turfgrass shall not exceed 40 percent of the landscaped area.~~

Comment: WaterSense should exercise great care in considering exclusive use of the Water Budget for purposes of determining landscape design. The most pressing consideration is the lack of clear definitions of plantings respective water use. Without clear definitions, the potential risk of compromising water savings is quite real. Scientifically determined crop coefficients do not exist for most plantings at this time meaning the great majority of determinations of plant water use are subjective decisions. A simplified water budget option may yield similar outcomes at a fraction of the subjectivity and correlate program risk.

Rationale: The AWE is neutral with respect to WaterSense's decision to remove the uniform turfgrass limitation option, but suggests great care if pursuing this path to avoid compromising water savings. Some of the suggested language below can help to avoid this outcome, but careful consideration of the range of possible ways to address landscape design is advisable. Simpler approaches may further extend the program's interest to a wider range of potential stakeholders.

The following option provides for similar outcomes to fair and judicious use of the water budget in most if not all parts of the country without the subjectivity and risk of having to rely on user inputted water demand classifications for site plantings. The same source evapotranspirational data estimation architecture that currently exists for the WaterSense online budget tool is easily applied to this alternative compliance option.

Suggested Change (or Language): 4.1.2 Simplified landscape design option - High Demand Areas¹ allowance shall be based upon the Estimated Supplemental Irrigation Demand (ESID) percentage. ESID is the net difference between historic monthly evapotranspiration (ET) rates in the region and historic average precipitation and shall be calculated using the High Demand Areas¹ Allowance Table. Where ESID percentage is 60 or more, the property shall be allowed to have up to 40 percent of the installed landscape

areas as High Demand Areas¹. In no cases shall the property have more than 80 percent of the installed landscape areas as High Demand Areas¹.

HIGH DEMAND AREAS ALLOWANCE TABLE

MONTH	HISTORIC EVAPOTRANSPIRATION RATE (HET _o) OR (INCHES/MONTH OR MM/MONTH)	NORMAL PRECIPITATION (NP) (INCHES/MONTH OR MM/MONTH)	ESTIMATED SUPPLEMENTAL IRRIGATION DEMAND ESID=(HET _o) (INCHES/MONTH OR MM/MONTH)
January			
February			
March			
April			
May			
June			
July			
August			
September			
October			
November			
December			
Sum Columns			
ESID Percentage = (SUM ESID / Sum HET _o OR NPE)			
High Demand Areas ¹ Allowance (1-ESID Percentage)			

High Demand Areas¹ include areas with irrigated turfgrass, pools, spas, and other water features.

Topic: 4.1.5 Ornamental water features – Ornamental water features financed, installed, or sold as upgrades by the homebuilder must recirculate water and serve a beneficial use.

Comment: Beneficial use is a vague term. Now that the specification has been widened to include multi-family properties, this needs to be defined more specifically.

Rationale: Size of ornamental water features were somewhat limited due to single-family residential lot size.

Suggested Change (or Language): 4.1.5 Ornamental water features – Ornamental water features financed, installed, or sold as upgrades by the homebuilder must recirculate water and serve a beneficial use.

The total water use or surface area of outdoor ornamental water features on a multi-family building site shall not exceed a catch basin volume of 100 gallons or 25 square foot surface area. No automated make-up water connection may be allowed.

Topic: 4.1.2 Slopes – Slopes in excess of 4 feet of horizontal run per 1 foot vertical rise (4:1) shall be vegetated.

Comment: It is odd that this specification would require vegetation. Perhaps this section was intended to disallow turfgrass in steeply sloped areas. [Related: See following comment regarding rise over run vs. run over rise.]

Rationale: If this requirement is due to a concern about erosion, there are other ways to mitigate other than vegetation. In fact, one could argue that vegetation is the last choice for erosion control in areas with very steep slopes. Alternatively, if this section is not about erosion control, we recommend deletion.

Suggested Change (or Language): 4.1.2 Slopes – Slopes in excess of 4 feet of horizontal run per 1 foot vertical rise (4:1) shall ~~be vegetated~~ be landscaped to prevent erosion. Vegetation plantings on such slopes must utilize erosion prevent techniques that will remain in place until vegetation is established.

Topic: 4.1.2 Slopes – Slopes in excess of 4 feet of horizontal run per 1 foot vertical rise (4:1) shall be vegetated.

and

4.2.8 Sprinkler irrigation – Sprinkler irrigation, other than as a component of a micro-irrigation system, shall not be used to water plantings other than maintained turfgrass. Sprinkler heads shall have a 4-inch or greater popup height and matched precipitation nozzles. Sprinkler irrigation shall not be used on strips of turfgrass less than 4 feet wide nor on slopes in excess of 4 feet of horizontal run per 1 foot vertical rise (4:1).

Comment: The slope in both sections should be noted as rise over run rather than run over rise.

Rationale: Mathematical and engineering conventions indicate the formula as rise over run.

Suggested Change (or Language): 4.1.2 Slopes – Slopes in excess of ~~4 feet of horizontal run per 1 foot vertical rise (4:1)~~ 1 foot vertical rise per 4 feet of horizontal run (1:4) shall be vegetated.

and

4.2.8 Sprinkler irrigation – Sprinkler irrigation, other than as a component of a micro-irrigation system, shall not be used to water plantings other than maintained turfgrass. Sprinkler heads shall have a 4-inch or greater popup height and matched precipitation nozzles. Sprinkler irrigation shall not be used on strips of turfgrass less than 4 feet wide nor on slopes in excess of ~~4 feet of horizontal run per 1 foot vertical rise (4:1)~~ 1 foot vertical rise per 4 feet of horizontal run (1:4).

Topic: 4.2 Irrigation System, Section 4.2.8 Sprinkler Irrigation

Comment: Although the language recognizes the need for pop-up heights greater than 4 inches for turf species in some regions it could be incorrectly interpreted to mean a minimum of 4 inches is appropriate. [Related: See preceding comment regarding rise over run vs. run over rise.]

Rationale: For grass species that can exceed 4 inches between mowing (i.e. tall fescue in northern California) the language should be clear that a minimum 6 inch (or greater) pop-up height is appropriate to prevent spray pattern blockage.

Suggested Change (or Language): 4.2.8 Sprinkler irrigation – Sprinkler irrigation, other than as a component of a micro-irrigation system, shall not be used to water plantings other than maintained turf grass. Sprinkler heads shall have a 4-6-inch or greater popup height (based on the sprinkler clearing the maximum turf height between mowing) and matched precipitation nozzles. Sprinkler irrigation shall not be used on strips of turf grass less than 4 feet wide nor on slopes in excess of 4 feet of horizontal run per 1 foot vertical rise (4:1).

Topic: 7.0 Definitions – Hot water source – The container in which water is stored and/or heated such as a hot water heater or a demand-controlled recirculation loop.

Comment: The water heater heats cold or cool water, not hot water.

Rationale: This would be a more accurate description of the equipment.

Suggested Change (or Language): Hot water source – The container in which water is stored and/or heated such as a hot water heater or a demand-controlled recirculation loop.

Topic: 7.0 Definitions – Front yard – Use local code definitions when available. Otherwise, the front yard means the portion of the lot extending across the full width of the lot between the front lot line and the front walls of the house.

Comment: As currently defined, the front yard is the front yard.

Rationale: A more accurate description would be helpful.

Suggested Change (or Language): Front yard – Use local code definitions when available. Otherwise, the front yard means the portion of the lot extending across the full width of the lot between the ~~front~~ lot line and the ~~front~~ walls of the ~~house~~ building that are parallel to the public right of way.

Topic: 7.0 Definitions – Micro-irrigation system - The frequent application of small quantities of water on or below the soil surface as drops, tiny streams, or miniature spray through emitters or applicators placed along a water delivery line. Micro-irrigation encompasses a

number of methods or concepts such as bubbler, drip, trickle, mist, or spray and subsurface irrigation. For purposes of this specification, micro-irrigation includes emission devices that have flow rates less than 30 gallons per hour (113.6 liters per hour).

Comment: This definition is much too wide to be an accurate definition of water efficiency expected of micro-irrigation systems. “Frequent” is an irrigation management term, not a hardware term.

Rationale: A bubbler, drip, trickle or subsurface irrigation product rated at 30 gallons per hour would apply 0.5 gallons per minute per emitter. Micro-spray irrigation emitters must apply greater gallons per minute than products that apply water directly to the soil or under the soil, but also cover much more area.

Suggested Change (or Language): Micro-irrigation system - The frequent application of small quantities of water on or below the soil surface as drops, tiny streams, or miniature spray through emitters or applicators placed along a water delivery line. Micro-irrigation encompasses a number of methods or concepts such as bubbler, drip, trickle, mist, or spray and subsurface irrigation. For purposes of this specification, emitters that apply water directly to the soil, within four inches of the soil/mulch or subsurface shall have flow rates equal to or less than 4 gallons per hour; microirrigation includes emission devices that micro-spray products shall be installed at least four inches from the soil/mulch surface and shall have flow rates less than 30 gallons per hour (113.6 liters per hour)..

Topic: APPENDIX D: Section 3, 3.7.2 Include ENERGY STAR Commercial Clothes Washers link to the specification

Comment: This link in the multi-family building appendix is to the residential ENERGY STAR clothes washer search engine.

Rationale: Home-grade clothes washers are not generally sturdy enough to work well in a multifamily common laundry room.

Suggested Change (or Language): Include ENERGY STAR Commercial Clothes Washers link to the specification in addition to the ENERGY STAR Home-grad clothes washer link.

www.energystar.gov/index.cfm?fuseaction=find_a_product.showProductGroup&pgw_code=CCW

Topic: APPENDIX D: Section 3, 3.9 Metering – In multi-family buildings, each unit must be individually metered or equipped with an alternate technology capable of tracking water use and making the information available to the residents of the individual unit.

Comment: The meter is a primary water conservation tool therefore it must be accurate and should be accessible to the resident without special arrangements.

Rationale: Meters and alternate technologies have a variable performance record therefore an accuracy expectation should be included in the specification.

Suggested Change (or Language): 3.9 Metering – In multi-family buildings, each unit must be individually metered or equipped with an alternate technology capable of accurately tracking water use. Any measurement technology or meter must meet or exceed AWWA metering accuracy standard C700 or the AWWA standard for the type of meter used. and making the information available to the rResidents of the individual unit must be able to read the meter without requesting access from manager or building owner.

Commenter: Karen Hobbs
Affiliation: Natural Resources Defense Council
Comment Date: May 7, 2012

Attached please find comments from the Natural Resources Defense Council (NRDC) re: Notification of Intent to Modify the WaterSense Final Specification for Single Family New Homes.

If you have any questions, or need additional information, please do not hesitate to contact me.

Thank you.

Karen Hobbs
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Template for Public Comment Submission on WaterSense Documents

Commenter Name: Karen Hobbs
Commenter Affiliation: Natural Resources Defense Council
Date of Comment Submission: May 7, 2012

Topic: 1.0 Scope and Objective

Comment: We support extending the WaterSense label to multi-family residential buildings.

Rationale: The share of new residential construction in multi-family configurations has grown, and is expected to grow further, making coverage by WaterSense even more important and useful.

Suggested Change (or Language):

Topic: 3.4.2 Urinals

Comment: The specification should allow WaterSense residential buildings to include urinals that operate without water.

Rationale: The language of section 3.4.2 as proposed could be read to preclude the installation of any non-water using urinal. This would be an inappropriate and unjustified step for the WaterSense program to take. This is not an argument to require the installation of non-flushing urinals, but rather to write the specification to allow them.

Suggested Change (or Language): Revise the first sentence of section 3.4.2 to read: “Urinals – All flushing urinals, if installed, shall be WaterSense labeled flushing urinals.”

Topic: 3.9 Metering

Comment: We strongly support the proposed requirement for multi-family buildings to install the capability to measure water delivered to each dwelling unit. However, the resulting data should be used for recovering water and sewer utility charges from building occupants, not simply for occupants’ “information”.

Rationale: Data on water volumes is important, but far less useful to building occupants when their water and sewer charges are not based on the level of consumption reflected in the data. When used for allocating the cost of water and wastewater service to individual dwelling units, submetering ensures that occupants receive an appropriate signal regarding the volume and cost of their water use, and thus incentivizes residents to undertake responsible water use and prompt reporting of fixtures and fittings in need of repair.

The National Multiple Family Sub-metering and Allocation Study (2004), sponsored by EPA and thirteen public water suppliers in different parts of the country, demonstrated that sub-metering reduces indoor water consumption substantially, by about 16% or 7,960 gallons per household unit per year, as a mid-range estimate. Nationwide, an estimated 5.9 million additional households will be living in multifamily housing by 2030 compared with 2015 (US Energy Information Agency, *Annual Energy Outlook 2011*, Residential Sector Key Indicators and Consumption, Reference Case). If beginning in 2016 all new multifamily housing is equipped with sub-meters used for billing allocation, even a conservative savings estimate of 3,110 gallons per unit per year (the value at the lower bound of the confidence band of the 2004 National Study estimate) yields water savings of 388 million gallons per day by 2030.

Suggested Change (or Language): Before the period at the end of section 3.9, add the following: “and to the manager of the building or the manager’s designee for recovering water and sewer utility charges from building occupants based upon measured use”.

In Appendix D, section 3.9, strike the word “homeowner” and insert the following: “residents of the individual unit and to the manager of the building or the manager’s designee for recovering water and sewer utility charges from building occupants based upon measured use”.

Topic: 4.1.1 Landscape Design

Comment: NRDC strongly objects to the removal Option 2 as a compliance path. With such a limited number of labeled homes to date, the program simply needs more time to determine the best approach. Eliminating this option at this point would be premature. And, while the Water Budget Tool has improved, it is still far more complicated to use than a simple calculation of the percentage of landscaped area devoted to irrigated turf.

Rationale: While many builders and landscape contractors in the western part of the country are familiar with water budgets, there is little infrastructure in other parts of the country to support this analysis and design landscapes within water budgets. WaterSense, as a national program, must offer a simplified compliance path that doesn't discourage builders in other parts of the country unfamiliar with these terms and programs from participating in WaterSense for New Homes.

A 40 percent turf limitation is a simple calculation that a builder need only do once. The information is not complicated and the dimensions and data are easy to obtain. WaterSense should not ignore the large amounts of water necessary to maintain turf, and the coincidence of this demand with the peak demand on community water systems. In addition to supplemental water, turf grass installation often results in extensive use of fertilizers, pesticides, herbicides, and fungicides. These chemicals can run off and contaminate nearby lakes, streams, estuaries, and even drinking water supplies. EPA estimates that each weekend, about 54 million Americans mow their lawns, using 800 million gallons of gasoline per year and producing tons of air pollutants. Lawn equipment engines, which have had unregulated emissions until the late 1990's, emit high levels of carbon monoxide, volatile organic compounds and nitrogen oxides.

Turf grass limitations are among the most effective water conservation and efficiency measures and should be accepted by WaterSense as such. The issue is not obviated by the use of alternate water sources, such as reclaimed water, harvested rainwater, or graywater, but rather involves making the most efficient use of any water source.

Suggested Change (or Language): Retain the language of section 4.1.1.

Commenter: Carol Ward-Morris
Affiliation: Arizona Municipal Water Users Association
Comment Date: May 7, 2012

Dear WaterSense,

Please find attached comments on the EPA WaterSense Draft New Homes Specification (Version 1.1). We appreciate this opportunity to provide input.

Best wishes,

Carol

<<2012 draft version WS New Home spec comments - amwua - 120507.docx>>

*Carol M. Ward-Morris, Program Manager
Demand Management and Sustainability
Arizona Municipal Water Users Association
One for Water™*

(602) 248-8482

cwardmorris@amwua.org

Comments Re: EPA WaterSense Draft New Homes Specification (Version 1.1)

Commenter Name: Carol M. Ward-Morris
Commenter Affiliation: Arizona Municipal Water Users Association
Date of Comment Submission: May 7, 2012

Topic: 1.0 Scope and objective

Comment: AMWUA applauds the expansion of the scope of the Draft Version 1.1 WaterSense New Home Specification to establish criteria for newly constructed multi-family buildings. This is an excellent opportunity to raise the bar and encourage additional builders and stakeholders to increase water-use efficiency.

Rationale: n/a

Suggested Change (or Language): n/a

Topic: 4.1.1 Landscape Design

Comment: Pools and spas should not be excluded from the landscapable area for multi-family development.

Rationale: Considering evaporation and maintenance practices, such as backwashing filters, these features use significant amounts of water.

Suggested Change (or Language):

4.1.1 Landscape design – Design of the landscaped area shall be developed using the *WaterSense Water Budget Tool*. The tool and *WaterSense Water Budget Approach* can be found at www.epa.gov/watersense/water_budget .www.epa.gov/watersense/nhspecs/water_budget_tool.html and www.epa.gov/watersense/nhspecs/water_budget_approach.html EPA has developed two options for designing the landscape of WaterSense labeled new homes; builders shall choose and implement one of these options. ~~For single-family homes,~~ Pools, spas, and other water features shall be treated as turfgrass under both options.

~~For multi-family buildings, common-use pools/spas and all areas that are reserved for private use of a particular residence/unit (such as areas deeded, identified as limited-use common elements, or otherwise restricted by building management) are excluded from the landscapable area. Additional criteria apply to pools/spas in section 4.1.4.~~

Topic: 4.1.1 Landscape design, elimination of 40% turf option

Comment: AMWUA appreciates the elimination of the 40% turf option for meeting landscape water use efficiency.

Rationale: As we have pointed out in comments on the prior specification, such an option could negatively impact practices in areas such as ours where considerably less turf area is

acceptable. It could also negatively affect regions where more turf would be acceptable due to higher precipitation.

Suggested Change (or Language): n/a

Topic: 4.1.1 Landscape design, water budget calculator

Comment: AMWUA supports the use of a water budget calculator as a more equitable tool to account for landscape water requirements across differing regions; however, the water budget tool continues to be problematic and will require further refinement before it can meet the intended goals. The current irrigation allowance provided by the budget tool significantly exceeds what we would consider appropriate in the greater Phoenix area.

Rationale:

An example:

A landscape area of 5,000 square feet was input into the water budget calculator as an example. The water budget calculator returned an allowance of 28,971 gallons for the peak ET month of June based on an ETo of 13.28". This amount would adequately irrigate 6,000 square feet of Bermuda turf in the Phoenix area while still accounting for reasonable irrigation system efficiencies.

The water budget calculator lists Bermuda turf, the most commonly used turfgrass in the Phoenix area, as a low-water-use turfgrass with a crop coefficient of .6. This would allow 3,750 square feet of the 5,000 square feet of landscapable area to be planted in turfgrass and meet the criteria for a WaterSense labeled home. In other words, in its current form, the water budget calculator would allow 75% of the landscapable area to be planted in turfgrass in a desert environment, significantly exceeding the 40% turfgrass allotment that was an option in the prior version of this specification. This cannot be considered water-efficient.

Compounding this problem is the fact that Bermuda turfgrass falls dormant in the winter in the Phoenix area. It is a common practice to "overseed" the dormant Bermuda turf with perennial ryegrass seed, resulting in a situation where a "low-water-use" turfgrass is grown in the summertime and a high-water-use turfgrass in the winter. The water budget calculator has no way to accommodate this. If turfgrass is present in Phoenix and similar regions, it must be budgeted as if it would be overseeded.

Regardless, even when the turfgrass selection input is set to "high-water-use" in an attempt to account for higher water consumption caused by overseeding, the water budget calculator would still allow for 2,800 square feet—56%—of the landscapable area to be turfgrass.

Accounting for the difference between plant water requirements and irrigation water requirements due to irrigation system inefficiency is the standard practice; however,

doubling the reference ET is excessive. Not only will this negate savings achieved in the interior of the homes, we are concerned that it will undermine the credibility of the WaterSense label.

The ETo rate provided in the water budget data finder far exceeds the actual ETo of the greater Phoenix area, yielding a result of 13.28" for the peak month of June in a Phoenix area zip code. An 8-year June ETo average for an AZMET weather station located in Phoenix is 8.6". The Beta version of the water budget calculator automatically inserts the water allowance without indication of the ETo utilized, but based on the allowance given, it appears that the 13.28" ETo value is used.

The excessive ETo may result from the equation used. AZMET ETo is calculated using the standardized version of the modified Penman-Monteith equation adopted by the Irrigation Association. We recommend this version of the equation be used for the budgeting tool.

The siting of the weather stations from which this data is derived may also affect the ETo. Proper siting of a weather station is critical for achieving the correct ETo calculations. If the ETo is derived from improperly sited weather stations, a standardized means to modify the sensor data must be utilized.

The calculator would be more effective if there were reliable data classifying the water demands of landscape plant materials. The calculator requires users to input the water demand of their plant material as "low," "medium," or "high" and refers them to resources to assist them in determining the category. This is certainly a step in the right direction. However, we are aware of no research that has determined crop coefficients for landscape plant materials, lists classifying the water needs of plants are subjective, and the availability of such lists varies. Since it is unlikely that there will be research on the crop coefficients of landscape plants, perhaps it would be possible to encourage the development of reliable regional plant lists designating landscape plant materials as "low," "medium," and "high" water use.

Suggested Change (or Language):

- Establish an agreed-upon method of addressing the difference between plant water requirements and irrigation requirements caused by irrigation system inefficiencies. This must be tied to average local rainfall to increase limitations on high water use plants in areas with little precipitation where the majority of the water will come from irrigation. This will also allow locations with higher amounts of average rainfall to be less restricted in their plant material choices.
- Utilize the standardized version of the modified Penman-Monteith (FAO 56) equation adopted by the Irrigation Association to calculate ETo.

- Establish and utilize an agreed-upon method of modifying the sensor data to account for improperly sited weather stations.

Topic: 4.2.5 Distribution uniformity

Comment: The specification appears to require that only the largest spray-irrigated area is actually audited, and it doesn't appear to require drip irrigation zones to be audited. All zones, spray and drip, should be audited.

Rationale: The entire irrigation system should be audited to ensure proper efficiency in all zones. Drip irrigation has the potential to be highly efficient, but with poor design or installation it can be unacceptably inefficient. An audit is necessary to ensure efficiency.

Suggested Change (or Language):

4.2.5 Distribution uniformity – **Overhead** irrigation systems shall achieve a lower quarter distribution uniformity (DU_{LQ}) of 65 percent or greater. **Drip irrigation systems shall achieve a low quarter emission uniformity of 85 percent or greater.** ~~Distribution uniformity shall be measured on the largest spray-irrigated area during the post-installation audit.~~ **All irrigation zones shall be audited.**

Topic: 4.2.8 Sprinkler irrigation

Comment: The specification should include a requirement for pressure management of sprinkler systems.

Rationale: Sprinklers running at pressures higher than the manufacturer's specifications are very common, and the resulting water waste from the misting that occurs is significant.

Suggested Change (or Language):

4.2.8 Sprinkler irrigation – Sprinkler irrigation, other than as a component of a micro-irrigation system, shall not be used to water plantings other than maintained turfgrass. Sprinkler heads shall have a 4-inch or greater popup height and matched precipitation nozzles. **Sprinkler systems shall be designed and installed to operate at the manufacturer's operating pressure specifications, using pressure regulators or sprinkler heads with pressure regulating stems where needed.** Sprinkler irrigation shall not be used on strips of turfgrass less than 4 feet wide nor on slopes in excess of 4 feet of horizontal run per 1 foot vertical rise (4:1).

Topic: 4.2.9 Micro-irrigation systems

Comment: Pressure compensating drip emitters should be required.

Rationale: Non-pressure compensating emitters can have output flows much different than their GPH rating and typically their emission uniformity is much lower.

Suggested Change (or Language):

4.2.9 Micro-irrigation systems – At a minimum, micro-irrigation systems shall be equipped with pressure regulators, filters, **pressure compensating emitters**, and flush end assemblies.

Commenter: Kevin Morrow and Larissa Mark
Affiliation: National Association of Home Builders
Comment Date: May 7, 2012

Good afternoon,

Attached you will find NAHB's comments on EPA's WaterSense draft specification for multifamily new homes. Please do not hesitate to contact us with any questions.

Cordially,
Kevin Morrow
Senior Program Manager
Green Building

Larissa Mark
Program Manager
Environmental Policy



National Association of Home Builders

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Regulatory

Kevin Morrow
Senior Program Manager – Green Building

Larissa Mark
Program Manager – Environmental Policy

May 7, 2012

Sheila Frace
EPA WaterSense® Program
U.S. Environmental Protection Agency
Office of Wastewater Management (4204M)
1200 Pennsylvania Avenue, N.W.
Washington, D.C. 20460

RE: WaterSense Multi-family New Home Specification

Dear Sheila Frace,

The National Association of Home Builders' (NAHB) is pleased to submit the following comments on the ***WaterSense Multi-family New Home Specification***, released by the U.S. Environmental Protection Agency on March 14, 2012. NAHB is a federation of more than 800 state and local home builder associations nationwide. Our organization has more than 140,000 members including individuals and firms engaged in land development, single and multifamily construction, multifamily ownership, building material trades, and commercial and industrial projects. Over 80 percent of our members are classified as “small businesses” and meet the federal definition of a “small entity,” as defined by the U.S. Small Business Administration. Our members collectively employ over eight million people nationwide. Four out of every five new homes are built by NAHB members and it is anticipated that these members will construct 80 percent of the new housing units projected for 2012. NAHB has encouraged the use of water efficiency tools and techniques since the inception of the publication of the model green homebuilding guidelines in 2005.

On March 22, 2012 EPA released a request for comments on its draft New Home Specification 1.1 which makes multi-family homes eligible for the WaterSense certification. NAHB commends EPA on its active engagement with the regulated community during the development of the WaterSense program and the inclusion of multifamily homes into the program. New multifamily construction usually accounts for one-fifth of all housing starts and play a vital role in the housing market. Further, the NAHB Research Center, which certifies projects to the International Code Council (ICC) 700 National Green Building Standard, reports strong growth in the green multifamily building sector. It should be noted that, to comply with the ICC 700 and earn certification by the Research Center, a building must meet certain requirements focused on water efficiency.

Integration with the ICC 700 Essential

In its *New Homes NOI Public Meeting Summary* and elsewhere in WaterSense program materials, EPA make clear that the WaterSense water budget tool is “harmonized” with the LEED® for Homes 2012 rating system. Given that LEED is a proprietary rating system developed by the US Green Building Council and therefore not a true industry standard, NAHB feels such harmonization should rightly also occur with the ICC 700 National Green Building Standard, which is the only one of the two rating systems and the only residential green rating system to have approval from the American National Standards Institute (ANSI). In carrying such approval, the ICC 700 thus complies with the federal government’s National Technology Transfer and Advancement Act of 1995, which requires federal agencies to recognize and incorporate existing consensus standards in public initiatives.

The current version of the standard (2008) already references WaterSense labeling in measures related to fixture selection – the only component of the WaterSense program in existence at the time it was written in 2006 and 2007. However, the specifications of the ICC 700 are sufficiently similar (e.g. plant selection, irrigation, and landscape design) to the inputs of the Water Budget Tool that integration between the two is possible and should be attempted. Our association would be available to assist in this endeavor.

The ICC 700 is currently undergoing its first maintenance revision in accordance with ANSI requirements. The second draft of the proposed 2012 revision was recently released. The current draft seeks to create even more integration with the WaterSense program by expanding the recognition for using WaterSense labeled products, and providing incentives to hire certified WaterSense Professionals to develop and implement landscape plans and to use the WaterSense water budget tool in establishing turf area limits. The latest draft of the proposed revisions to the ICC 700 is available at <http://www.nahbrc.com/technical/standards/ngbs2012.aspx>.

Given the level of integration of the WaterSense program within the current and draft versions of the ICC 700, it makes sense for EPA to similarly harmonize with that standard as quickly as possible. This will ensure that EPA is encouraging the use of products and procedures that have been reviewed by nationally recognized entities such as the ICC and ANSI.

Individual Metering

On April 19 EPA gave a presentation on the draft multifamily specification and provided details on the differences between the 2008 and 2012 standards. On Slide 24 of that presentation summarizing proposed changes to the WaterSense for multifamily specs, EPA inserted language that “requires that each unit in a multi-famil building be individually metered or equipped with an alternate technology capable of tracking water use and making the information available to the residents of the specific unit.”¹ NAHB feels it is important that the use of submetering be specifically allowed, even if the language would technically allow for it.

¹ EPA WaterSense, 2012. WaterSense® New Homes Notification of Intent Public Meeting Proposed Modification to the WaterSense New Homes Specification. Available at: http://www.epa.gov/watersense/docs/ws_newhomesnoipublicmeetingsummary_508.pdf

Submetering is not synonymous with individual metering. A Submetering system allows a landlord, property management firm, condominium association, homeowners association, or other multi-tenant property to bill tenants for individual measured utility usage. Individual utility meters on the other hand are owned and maintained by the utility company. Installation of individual metering for all units would be cost prohibitive and would deter builders from participating in the WaterSense Multi-family Certification Program. Submetering, on the other hand, is an accepted practice in multifamily projects and accomplishes the goals of this provision. NAHB is concerned that the failure to specifically recognize the difference between the two metering types. As such NAHB recommends that the WaterSense specification specifically insert language encourage the use of submetering as its preferred water efficiency tool in the specification program to avoid undo confusion among program participants.

Thank you for the opportunity to participate in this request for comments on the 2012 draft WaterSense Multifamily New Home Specification. If you have any questions or would like to discuss any of NAHB's recommendations, please do not hesitate to contact me at (202) 266-8375 or Larissa Mark at (202) 266-8157.

Best regards,

Kevin Morrow

Kevin Morrow
Sr. Program Manager, Green Building

Commenter: Tom Delaney
Affiliation: The Professional Landcare Network
Comment Date: May 7, 2012

Here are our comments.

Tom Delaney
Director of Government Affairs

Professional Landcare Network
804 Cole Dr
Lilburn, GA 30047
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E-Mail: tomdelaney@landcarenetwork.org
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Comments of the Professional Landcare Network: 2012 Draft Version 1.1 WaterSense® New Home Specification

Commenter Name: Tom Delaney
Commenter Affiliation: Director of Government Affairs, The Professional
Landcare Network
Date of Comment Submission: 5/7/2012

Topic:
4.1.1 Landscape Design – Removal of the 40% turfgrass limitation

Comment:
The Professional Landcare Network supports the removal of the 40% turfgrass limitation option from the landscape design criteria.

Rationale:

We believe that any national one-size fits all limitation on turfgrass is not an option that promotes water use efficiency in landscape irrigation. We feel the need of more uniform and scientific evaluation which would result in some standardization of procedures for determining available water for landscapes and better estimating landscape water use. As the demand on water resources and the importance of water use efficiency grows, water agencies, regulators, land owners, landscape managers, and others require a standardized process to determine landscape water supply and demands to address local, regional, and national objectives.

Suggested Change (or Language):

None

Topic:

4.1.1. Landscape Design – The use of the .html version of the Water Budget Tool

Comment:

A change the name of the Water Budget Tool to the WaterSense Landscape Design Tool or something similar that makes more sense.

Suggested Change (or Language):

Change the name of the WaterSense Water Budget Tool to the WaterSense Landscape Design Tool.

Topic:

4.2.7 Irrigation Controllers

Comment:

Make sure that language leaves room for adoption of new technology.

Commenter: Deborah Hamlin
Affiliation: Irrigation Association
Comment Date: May 7, 2012

Attached are the IA's comments regarding version 1.1 of the WaterSense® New Home Specification. Please let me know if you have any questions.

John Farner

John R. Farner, Jr.
Government Affairs Director
Irrigation Association

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Comments of the Irrigation Association re: 2012 Draft Version 1.1 WaterSense® New Home Specification

Commenter Name: Deborah Hamlin
Commenter Affiliation: Executive Director, Irrigation Association
Date of Comment Submission: 5/7/2012

Topic:
1.0 Scope and Objective

Comment:
The Irrigation Association supports the expansion in scope of the labeling program to include residential units in multi-family buildings.

Rationale:
Even though the original new home specification only applied to single-family new homes and townhomes three stories in size or less, we feel that the changes set forth in this revision are appropriate for the expansion to include multi-family buildings.

Suggested Change (or Language):

None

Topic:

4.1 Landscape

Comment:

The Irrigation Association supports the criteria that the landscape design requirements apply to all sections of the landscape improved by the builder, including the common areas of multi-family buildings. However, the IA supports this criteria only if all of the proposed changes in the new home specification are incorporated.

Rationale:

The Irrigation Association believes that the WaterSense Water Budget Tool is an appropriate option to use to meet the landscape design criteria requirements set forth in the specification.

Suggested Change (or Language):

None

Topic:

4.1.1 Landscape Design – Removal of the 40% turfgrass limitation

Comment:

The Irrigation Association supports the removal of the 40% turfgrass limitation option from the landscape design criteria.

Rationale:

As the Irrigation Association has stated in previous comments, we believe that any national one-size limitation on turfgrass is not an option that promotes water use efficiency in landscape irrigation. The WaterSense Water Budget Tool is a much better option to promote water efficiency through landscape design, based on local variables.

Suggested Change (or Language):

None

Topic:

4.1.1. Landscape Design – The use of the .html version of the Water Budget Tool

Comment:

The Irrigation Association supports the move to incorporate a web-based version of the Water Budget Tool as part of the specification. Promoting the Water Budget Tool is crucial to the success of the specification. Affording builders and end users the ability to use a friendlier tool is supported by the IA.

The Irrigation Association requests that WaterSense change the name of the Water Budget Tool to the WaterSense Landscape Design Tool.

Rationale:

The term “water budget” is widely recognized as a tool for users of irrigation systems to manage the amount of water that can be applied to a landscape. Though the WaterSense Water Budget Tool sets an allotment of water to a given landscape, the tool itself is then used as a landscape design tool, setting the amount of turfgrass allowed to be installed in the landscape. The current WaterSense Water Budget Tool is also required regardless of whether an irrigation system is installed or not.

Suggested Change (or Language):

Change the name of the WaterSense Water Budget Tool to the WaterSense Landscape Design Tool.

Clarify that the builder of a multi-family new home does not have to input the information regarding common-use pools & spas in multi-family new homes, which are exempt from the landscape design criteria, into the Water Budget Tool. As of now, there is no option for “exempt” areas of a new home’s landscape.

Topic:

4.1.1. Landscape Design – The exclusion of common-use pools & spas and the areas reserved from private use

Comment:

The Irrigation Association supports the exclusion of common-use pools & spas and the areas reserved from private use from the landscape design criteria.

Rationale:

As WaterSense expands the scope of the original single-family new home specification to include multi-family buildings, some variations need to be included. Pools and spas installed in multi-family building settings are designed and used in different ways than those installed in single-family homes.

Suggested Change (or Language):

None

Topic:

4.2.7 Irrigation Controllers

Comment:

The Irrigation Association supports the requirement that WaterSense labeled weather-based irrigation controllers be used. The IA also supports the inclusion of soil moisture sensor based irrigation controllers within the specification, along with all of the capability requirements listed.

The IA requests that WaterSense includes the use of soil moisture sensor add-on and plugin devices, in addition to stand alone soil moisture sensor-based irrigation controllers.

The IA requests that WaterSense clarify within the specification language that if a soil moisture sensor-based irrigation controller that meets all of the capabilities listed in the specification is installed with the irrigation system, the requirement of a WaterSense labeled weather-based irrigation controller is waived.

The IA also requests that WaterSense clarify that once a final specification for soil moisture sensor-based irrigation controllers is completed, assuming that one will come to fruition, the specification will only require a “WaterSense labeled irrigation controller.”

Rationale:

The Irrigation Association supports WaterSense irrigation product labeling and believes that it is appropriate to require the use of these controllers in the specification to promote the use of these technologies in the marketplace.

Suggested Change (or Language):

Clarify the possible waiving the need for WaterSense labeled irrigation controller.

Replace the word “based” with “equipped” as described in the following sentence: “Soil moisture sensor-based equipped irrigation controllers may continue to be used provided they contain the following features capabilities in both smart and standard mode:”

Clarify specification language if/when soil moisture sensor-based irrigation controller specification is final.

Topic:

4.2.11 Metering

Comment:

The Irrigation Association supports the requirement that irrigation systems installed in multifamily buildings are metered and asks that WaterSense expand this requirement to include irrigation systems installed in all WaterSense new homes.

The IA also requests that WaterSense clarify the language to ensure that flow sensors that measure the amount of water used by an irrigation system, as well as the flow, qualify under this requirement.

Rationale:

The IA believes one cannot manage irrigation water use that is not measured. The inclusion of meters for multi-family homes is a positive first step to measuring water use. The IA believes that using measurement as a tool to manage water use is a more efficient way of irrigation management, than the way the WaterSense Water Budget Tool is currently being used for landscape design purposes.

Flow sensors are a great tool to measure water, while controlling the flow of water used by the irrigation system. Not all flow sensors are included under the definition of a “meter,” even though they can measure and record the amount of water used by an irrigation system.

Suggested Change (or Language):

Change language to state all water used by an irrigation system must be measured for all types of new homes (not only multi-family buildings).

Replace all references of metering to “measuring.”

Topic:

5.3.1 Irrigation Systems [for multi-family buildings]

Comment:

The Irrigation Association supports the concept of providing building management all of the information necessary to properly manage the irrigation system.

The IA requests that the record drawing be more specific than just a “schematic.” The record drawing should include measurements and all information necessary to locate buried components.

Rationale:

Detailed information regarding the irrigation system is necessary to effectively manage/maintain an irrigation system. While a schematic is fine for single-family homes, irrigation systems in multi-family buildings may be a bit more complex. The bar of information provided to the building owner/management should be higher than that of single family homes.

Suggested Change (or Language):

Record drawings of the irrigation system for multi-family homes should include the following information:

- Electric valves
 - Gate valves
 - Backflow prevention device
 - Controller
 - Rain shutoff
 - Sprinklers and nozzles
 - Drip tubing
 - Filters
 - Wire routing
 - Point of connection
 - Water meter
 - Wire splices
 - Drains
 - Pressure regulators
 - Pipe routing
 - Sleeving
-

Commenter: William Granger
Affiliation: Otay Water District
Comment Date: May 7, 2012

Dear WaterSense,

Please see our attached comment regarding the draft revision of the specs.

Regards,

William E Granger

Water Conservation Manager
Otay Water District
619-670-2290

Template for Public Comment Submission on WaterSense Documents

Commenter Name: William E. Granger, Water Conservation Manager

Commenter Affiliation: Otay Water District

Date of Comment Submission: 5/4/12

Topic: Revised new home specs

Comment: The Otay Water District supports the revision to the voluntary WaterSense New Home specifications and will continue to encourage builders within its service area to consider becoming a WaterSense certified Builder

Rationale: n/a

Suggested Change (or Language):n/a

Commenter: Kristen Fefes

Affiliation: Associated Landscape Contractors of Colorado

Comment Date: May 7, 2012

Enclosed are the comments of the Associated Landscape Contractors of Colorado. We appreciate the opportunity to provide input on the WaterSense program and new home specification.

Please contact me with any questions on the attached.

Kristen S. Fefes, CAE
Executive Director
Associated Landscape Contractors of Colorado
1660 S. Albion Street, Suite 831
Denver, CO 80222
303 757 5611

Commenter Name: Kristen Fefes, CAE

Commenter Affiliation: Executive Director, Associated Landscape Contractors of Colorado

Date of Comment Submission: 5/7/2012

Topic:

1.0 Scope and Objective

Comment:

The Associated Landscape Contractors of Colorado (ALCC) supports the expansion in scope of the labeling program to include residential units in multi-family buildings.

Rationale:

Even though the original new home specification only applied to single-family new homes and townhomes three stories in size or less, we feel that the changes set forth in this revision are appropriate for the expansion to include multi-family buildings.

Suggested Change (or Language):

None

Topic:

4.1 Landscape

Comment:

The Associated Landscape Contractors of Colorado (ALCC) supports the criteria that the landscape design requirements apply to all sections of the landscape improved by the builder, including the common areas of multi-family buildings. However, the IA supports this criteria only if all of the proposed changes in the new home specification are incorporated.

Rationale:

ALCC believes that the WaterSense Water Budget Tool is an appropriate option to use to meet the landscape design criteria requirements set forth in the specification.

Suggested Change (or Language):

None

Topic:

4.1.1 Landscape Design – Removal of the 40% turfgrass limitation

Comment:

We support the removal of the 40% turfgrass limitation option from the landscape design criteria.

Rationale:

ALCC believes that a national one-size limitation on turfgrass is not an option that promotes water use efficiency in landscape irrigation and noted this in previously submitted comments. The WaterSense Water Budget Tool is a much better option to promote water efficiency through landscape design, based on local variables.

Suggested Change (or Language):

None

Topic:

4.1.1 Landscape Design – The use of the .html version of the Water Budget Tool

Comment:

We agree with incorporating a web-based version of the Water Budget Tool as part of the specification. Promoting the Water Budget Tool is crucial to the success of the specification. Affording builders and end users the ability to use a friendlier tool is supported by the IA.

We request that the name be changed to the WaterSense Landscape Design Tool.

Rationale:

The term “water budget” is widely recognized as a tool for the landscape industry to manage the amount of water that can be applied to a landscape. Though the WaterSense Water Budget Tool sets an allotment of water to a given landscape, the tool itself is then used as a landscape design tool, setting the amount of turfgrass allowed to be installed in the landscape. The current WaterSense Water Budget Tool is also required regardless of whether an irrigation system is installed or not.

Suggested Change (or Language):

Change the name of the WaterSense Water Budget Tool to the WaterSense Landscape Design Tool.

Clarify that the builder of a multi-family new home does not have to input the information regarding common-use pools & spas in multi-family new homes, which are exempt from the landscape design criteria, into the Water Budget Tool. As of now, there is no option for “exempt” areas of a new home’s landscape.

Topic:

4.1.1 Landscape Design – The exclusion of common-use pools & spas and the areas reserved from private use

Comment:

We support the exclusion of common-use pools & spas and the areas reserved from private use from the landscape design criteria.

Rationale:

As WaterSense expands the scope of the original single-family new home specification to include multi-family buildings, some variations need to be included. Pools and spas installed in multifamily building settings are designed and used in different ways than those installed in single family homes.

Suggested Change (or Language):

None

Topic:

4.2.7 Irrigation Controllers

Comment:

ALCC supports the requirement that WaterSense labeled weather-based irrigation controllers be used and we support the inclusion of soil moisture sensor-based irrigation controllers within the specification, along with all of the capability requirements listed.

We request that WaterSense includes the use of soil moisture sensor add-on and plug-in devices, in addition to stand alone soil moisture sensor-based irrigation controllers.

ALCC requests that WaterSense clarify within the specification language that if a soil moisture sensor-based irrigation controller that meets all of the capabilities listed in the specification is installed with the irrigation system, the requirement of a WaterSense labeled weather-based irrigation controller is waived.

ALCC also requests that WaterSense clarify that once a final specification for soil moisture sensor-based irrigation controllers is completed, assuming that one will come to fruition, the specification will only require a “WaterSense labeled irrigation controller.”

Rationale:

As ALCC supports WaterSense irrigation product labeling and believes that it is appropriate to require the use of these controllers in the specification to promote the use of these technologies in the marketplace.

Suggested Change (or Language):

Clarify the possible waiving the need for WaterSense labeled irrigation controller. Replace the word “based” with “equipped” as described in the following sentence: “Soil moisture sensor-based equipped irrigation controllers may continue to be used provided they contain the following features capabilities in both smart and standard mode:” Clarify specification language if/when soil moisture sensor-based irrigation controller specification is final.

Topic:

4.2.11 Metering

Comment:

ALCC supports the requirement that irrigation systems installed in multi-family buildings are metered and asks that WaterSense expand this requirement to include irrigation systems installed in all WaterSense new homes.

ALCC also requests that WaterSense clarify the language to ensure that flow sensors that measure the amount of water used by an irrigation system, as well as the flow, qualify under this requirement.

Rationale:

We don’t believe that landscape contractors can manage water when it’s not measured. The inclusion of meters for multi-family homes is a positive first step to measuring water use. ALCC believes that using measurement as a tool to manage water use is a more efficient way of irrigation management, than the way the WaterSense Water Budget Tool is currently being used for landscape design purposes.

Flow sensors are a great tool to measure water, while controlling the flow of water used by the irrigation system. Not all flow sensors are included under the definition of a “meter,” even though they can measure and record the amount of water used by an irrigation system.

Suggested Change (or Language):

Change language to state all water used by an irrigation system must be measured for all types of new homes (not only multi-family buildings).

Replace all references of metering to “measuring.”

Topic:

5.3.1 Irrigation Systems [for multi-family buildings]

Comment:

ALCC supports the concept of providing building management all of the information necessary to properly manage the irrigation system.

We request that the record drawing be more specific than just a “schematic.” The record drawing should include measurements and all information necessary to locate buried components.

Rationale:

Detailed information regarding the irrigation system is necessary to effectively manage/maintain an irrigation system. While a schematic is fine for single-family homes, irrigation systems in multi-family buildings may be a bit more complex. The bar of information provided to the building owner/management should be higher than that of single-family homes.

Suggested Change (or Language):

Record drawings of the irrigation system for multi-family homes should include the following information:

- Electric valves
 - Gate valves
 - Point of connection
 - Water meter
 - Backflow prevention device
 - Controller
 - Rain shutoff
 - Sprinklers and nozzles
 - Wire routing
 - Drip tubing
 - Filters
 - Wire splices
 - Drains
 - Pressure regulators
 - Pipe routing
 - Sleeving
-

Commenter: Gerry Coons
Affiliation: Outdoor Power Equipment Institute
Comment Date: May 7, 2012

Dear Veronica,

Thank you for the opportunity afforded us to provide the attached comments to the WaterSense Draft Version 1.1 New Homes Specification.

Gerry

Gerry Coons
VP Industry Affairs
OPEI
341 South Patrick Street
Alexandria, VA 22314

Office - 703-549-7600



**OUTDOOR POWER EQUIPMENT
INSTITUTE**

May 7, 2012

Veronica Blette
U.S. Environmental Protection Agency
Ariel Rios Building
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Mail Code: 4204M
Washington, DC 20460
blette.veronica@epa.gov
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Re: OPEI Comments to the Draft WaterSense New Homes Specification (Version 1.1)

Dear Ms. Blette:

The Outdoor Power Equipment Institute (OPEI) is an international trade association representing the \$15 billion landscape, lawn and garden, forestry and utility equipment manufacturing industry. OPEI is committed to ongoing efforts to ensure consumer safety and access to outdoor power equipment in order to maintain and enhance outdoor landscapes. The association serves as an industry advocate on behalf of its members before federal, state, and international legislative and regulatory bodies.

On behalf of the Outdoor Power Equipment Institute (OPEI), we submit these comments in response to the April 30 e-mail notification and request for comments of the draft WaterSense New Homes Specification (Version 1.1).

The OPEI participated in the web based presentation and review of the proposed changes to the WaterSense New Homes Specification (Version 1.1) held on April 19. We appreciate the opportunity for this type of open review and discussion of proposed and planned changes.

In Version 1.1, the WaterSense Office proposes to delete the 40% turfgrass restriction in the current Water-Efficient Landscape Design – Section 4.1.1.2 (option #2). OPEI strongly supports the proposed deletion.

There is no compelling reason to retain either the 40% turf-restriction option – or any other similarly inflexible option. If such a default option is made available, it will further confuse the stakeholders and make it more likely they select an approach that does not account for regional climate conditions and other factors. We encourage the EPA to also highlight the problems and unintended consequences with any “one size fits all” restriction on the amount of turfgrass.

We also urge the EPA WaterSense Office to brief other departments in the EPA and other contacts on the Interagency Sustainable Working Group (ISWG) developing the Guiding Principles for Federal Leadership in High Performance and Sustainable Buildings Guidance. It is our understanding that this draft guidance currently includes the problematic 40% turf restriction.

As you know, there is a new ANSI-consensus standard initiated to develop a "Landscape Water-Availability Standard." This ANSI process is being developed through the leadership of the American Society of Agricultural and Biological Engineers (ASABE). OPEI would like to recognize and thank the EPA for their engagement and commitment to participate with the proposed ASABE/ANSI standard and the assignment of a resource to participate in the ASABE/ANSI standard process. OPEI and its members look forward to working with EPA and the other valued experts on this ANSI committee to develop a well-supported and comprehensive standard and to educate key stakeholders on the benefits of a water budget and the use of such a tool.

Thank you for the opportunity to comment.

Sincerely,

Gerry Coons
V.P. Industry Affairs
Outdoor Power Equipment Institute (OPEI)

Commenter: Kelly Schoonmaker and Wes Sullens

Affiliation: Alameda County Waste Management Authority (StopWaste.Org)

Comment Date: May 7, 2012

Thank you for the opportunity to comment on the new WaterSense specification for New Homes. Attached are the combined comments from the Bay-Friendly and Green Building Programs at StopWaste.Org.

StopWaste.Org is the Alameda County Waste Management Authority and the Alameda County Source Reduction and Recycling Board operating as one public agency. The Alameda County Waste Management Authority is a public joint-powers agency comprised of the County of Alameda, each of the fourteen cities within the county, and two sanitary districts that provide refuse collection services. Together with its specialized arm, the Alameda County Source Reduction and Recycling Board, the agency offers many programs in the areas of public education, green building, recycled product procurement, waste reduction, and market development.

About Green Building and Bay-Friendly Programs in Alameda County
Debris from construction and demolition projects comprises over 20% of the materials disposed in Alameda County landfills. To reduce this waste, the Green Building in Alameda County and Bay-Friendly Programs have formed a public/private partnership with the construction and building industry. The programs serve three target markets: Alameda County Waste Management Authority's seventeen member agencies; design, construction, and operations/maintenance professionals; and residents of Alameda County.

The key components of the Green Building and Bay-Friendly Programs are:

- Standards and Guidelines
- Technical Assistance and Grants
- Education
- Partnerships
- Policy Development
- Case Studies and Product Directories

If you have any questions, please let us know.

Thanks again,

Kelly Schoonmaker
RLA, LEED AP
Program Manager
Bay Friendly Landscaping
StopWaste.org

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Template for Public Comment Submission on WaterSense Documents

Commenter Name: Kelly Schoonmaker and Wes Sullens

Commenter Affiliation: Bay-Friendly Landscaping and Green Building Programs,
Alameda County Waste Management Authority (StopWaste.Org)

Date of Comment Submission: 5/4/2012

Topic: General – Water Budget Calculator

Comment: Repair Link to Water Budget Data Finder.

Rationale:

Suggested Change (or Language):

Topic: Outdoor Water-Efficiency Criteria 4.1.2 - Slopes

Comment: The EPA WaterSense new home specification requires vegetation on slopes greater than 4:1. Insert language to limit turf to slopes less than 10:1

Rationale: Turf on slopes results in water loss from overspray and increased runoff, which negatively affects water quality, in addition to increasing irrigation requirements.

Suggested Change (or Language): Turf shall be limited to slopes less than 10 feet of horizontal run per 1 foot of vertical rise (10:1)

Topic: Outdoor Water-Efficiency Criteria Section 4.1 – Soil Amendments

Comment: The EPA WaterSense new home specification does not require that compost be used as a soil amendment. Add new credit to specify the use of post-consumer compost as a soil amendment to bring organic matter content to 5%.

Rationale: Soil is comprised of minerals, water, air, and organic matter. Compost is an inexpensive, simple, and effective way to create healthy, disease-resistant, and drought-

tolerant soils. Requiring soil organic matter content to be brought to 5% through the addition of compost will:

- reduce irrigation needs up to 10% in addition to what is required by the Water Budget tool;
- reduce runoff up to 10%; and
- reduce fertilizer needs.

Industry standard soil amendments (such as nitrolized sawdust, a forest by-product commonly used in Northern California) can be unpredictable as they can be biologically unstable, and in the short term can harm beneficial soil organisms. The nitrogen can also leach from the soil via stormwater or irrigation runoff and impair water quality. Compost is biologically stable and adds billions of beneficial organisms to the soil. This recommendation aligns with the US Composting Council's "Strive for 5" percent organic matter campaign.

A second recommendation is to specify that compost contain at least 25% post-consumer recycled content materials. The primary materials used for post-consumer recycled compost are green waste and kitchen scraps. Removing these items from the waste stream will preserve landfill space and support markets for recycled content products in the United States. Recycled compost is usually generated locally and provides an alternative to forest by-product soil amendments, resulting in lower carbon emissions due to fewer vehicle miles traveled. Typically, industry standard forest by-products are considered "post-industrial" or "pre-consumer," hence we recommend specifying that post-consumer recycled content compost be required instead of the industry standard.

Suggested Change (or Language): In planting areas, soil shall be amended with 2 inches of compost or to 5% organic matter content. Compost shall be incorporated into the top 8-12 inches of soil. Compost must contain at least 25% post-consumer recycled content.

Topic: Outdoor Water-Efficiency Criteria 4.1.3 - Mulching

Comment: Add new mandatory measure for the application of at least 3 inches of mulch to non-turf areas of landscapes. At least 75% of mulch must be post-consumer recycled content.

Rationale: Proper application of mulch is a simple and inexpensive way to achieve multiple environmental benefits. Applying a minimum 3" layer of mulch:

- suppresses weed growth by up to 95%;
- reduces irrigation needs up to 70%;
- reduces runoff 70-80%;
- controls erosion 70-80%; and
- will add negligible costs to the landscape budget yet will save substantial amounts of water.

Currently the EPA WaterSense new home specification requires a 2-3 inch layer of mulch. We recommend increasing the mulching depth to a minimum of 3 inches because the benefits of applying mulch increase as the depth of the mulch layer increases. For example, a three-inch layer of mulch retains 1.5x times the amount of water as a two-inch layer of mulch. Adding an additional inch of mulch atop the currently specified 2 inches is simple, inexpensive, does not add time to the project, and further ensures that (even in low spots) at least 2 inches of depth is maintained throughout the landscape.

A second recommendation is to specify that mulch contain at least 75% post-consumer recycled content materials. The primary materials used for post-consumer recycled mulch are arbor waste and chipped-up shipping pallets. Removing these items from the waste stream will preserve landfill space and support markets for recycled content products in the United States. Recycled mulch is usually generated locally and provides an alternative to forest by-product mulch, resulting in lower carbon emissions due to fewer vehicle miles traveled. Typically, industry standard forest by-product mulch is considered “post-industrial” or “pre-consumer,” hence we recommend specifying that post-consumer recycled content mulch be required instead of the industry standard.

Suggested Change (or Language): A minimum three-inch (3”) layer of mulch shall be applied on all exposed soil surfaces of planting areas except in turf areas or applications where mulch is contraindicated. Mulch must contain at least 75% post-consumer recycled content by volume or weight.

Topic: Outdoor Water-Efficiency Criteria 4.2.8 – Sprinkler irrigation

Comment: Increase minimum width of planting area to 8 feet and reduce slope to 10:1.

Rationale: Increasing the width and decreasing the slopes of turf areas reduces water loss due to overspray and surface runoff. This recommendation agrees with proposed changes to section 4.1.2 – Slopes, above.

Suggested Change (or Language): Sprinkler irrigation shall not be used on strips of turfgrass less than 8 feet wide nor on slopes in excess of 10 feet of horizontal run per 1 foot vertical rise (10:1).

Topic: General – indoor water fixtures

Comment: Encourage permanent low-flow fixtures.

Rationale: screw-on aerators are easy to switch-out or dismantle after installed. Consider encouraging in-line conservation devices like flow-control valves or tamper-resistant aerators.

Suggested Change (or Language):

Topic: General – interior fixture flow rates and calculations

Comment: Make consistent with national and state green building codes.

Rationale: The green codes like CALGreen and IgCC have similar but different flow rate thresholds for prescriptive compliance. Consider these thresholds and establish performance metrics that are no-worse (or are better than) these new minimum thresholds.

Suggested Change (or Language):

Commenter: Ralph Egues, Jr.
Affiliation: National Hispanic Landscape Alliance
Comment Date: May 8, 2012

Dear Veronica,

Thank you for the opportunity afforded us to provide the attached comments.

Ralph Egües, Jr.
Executive Director
National Hispanic Landscape Alliance
Telephone (877) 260-7995
Fax: (305) 418-7528
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Leveraging the power of US to achieve a greener future.
More information available at www.masverde.us



May 7, 2012

Veronica Blette
Chief, WaterSense Branch
Office of Water
Environmental Protection Agency
1200 Pennsylvania Avenue, NW
Washington, DC 20460-0001
Via electronic mail to watersense-homes@erg.com

Re: Comments to the Draft WaterSense New Homes Specification (Version 1.1)

Dear Ms Blette:

Thank you for sharing with us the 2012 Draft Version 1.1 WaterSense® New Home Specification. While proposed changes to the WaterSense Specification address a number of topics including expanding the scope of the specification so that some types of multi-family buildings will qualify for the WaterSense label, modifying the landscape design options, and addressing other minor technical issues, we specifically wish to address your intent to modifying the landscape design options.

We are grateful for the opportunity to provide these comments as an interested party. The National Hispanic Landscape Alliance (NHLA) is a trade association organized as a 501(c)(6) corporation. The NHLA facilitates and promotes the advancement of Hispanics as landscape industry professionals and leaders, and provides U.S. Hispanic landscaping professionals a voice in the national dialogue on environmentally responsible landscape practices, and a means through which to advance the interests of their businesses, the livelihood of their employees, and the quality of life in the communities in which they live and work. Being keenly aware of the significant body of academic research findings attesting to a wide range of environmental and human health benefits derived from the use of natural turfgrass, we are opposed to arbitrary limits on its use.

The NHLA is pleased that your office believes that it is appropriate at this time to remove Option 2 from Section 4.1.1: Landscape Design of the WaterSense specification limiting turfgrass to 40% of the landscaped area, and we strongly support your doing so as soon as possible. We believe that creating greater awareness of the many benefits of turfgrass is a key first step in achieving our goal of better educated homeowners who readily adopt sustainable landscaping practices, and that we and others can best accomplish this goal in close collaboration with the EPA.

Veronica Blette
Chief, WaterSense Branch
Office of Water
Environmental Protection Agency
May 7, 2012
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As we remarked during our meeting in September 2011 and have noted in prior correspondence, we applaud the WaterSense program for creating a race to the top among indoor appliance manufacturers and for doing much to raise awareness among consumers and educate them on best practices. The result has been broad popularity of the most efficient manufacturer offerings not only in new construction but in the remodeling of existing homes as well. This success has been the result of a broad collaborative effort which we believe can be duplicated on landscape matters subsequent to the removal of the turfgrass limitation (Option 2) from Section 4.1.1.; a specification which you have pointed out has no scientific basis.

Rather than focusing on one landscape material, we urge the WaterSense program to focus instead on promoting sustainable practices and creating an environment where ever more efficient irrigation system components and landscape materials will be developed and adopted over time. We believe that focusing attention on the most efficient water delivery devices and materials will significantly impact consumer preferences and practices; particularly once they come to better understand the environmental benefits of their landscape choices. More than just a pretty place and refuge the exteriors of their homes can be important oxygen generators and carbon sinks, they can control erosion and capture and filter storm water helping to recharge ground water sources and reducing demand on municipal sewer systems, and they can provide natural cooling that lessens our dependence on solutions dependant on the burning of fossil fuels. Educating consumers to these facts is an important part of the NHLA's mission and we know that we will be more successful if we can work together with the EPA.

We will not detail the significant body of academic finding that have uncovered a wide range of benefits associated with the use of natural turfgrass, but recognize Cockerham, S. T., and Leinauer, B. eds. 2011. Turfgrass Water Conservation. II. University of California Agriculture and Natural Resources Publication 3523 as a useful resource that summarizes more than fifty years of turfgrass research findings. We also note that turfgrass breeding programs have made considerable progress in improving turfgrass performance and adaptation, as a result of greater focus on the production of varieties that are more drought-tolerant, heat-tolerant, and salinity stress tolerant. A WaterSense program that rewards performance, rather than limiting options, encourages the continuation and expansion of such efforts. By removing the turfgrass limitation, equipment manufacturers and developers of landscape materials will both be encouraged to provide a continually evolving array of better choices. Our vision for the future is one where better informed consumers make more enlightened choices fully aware of their impact on our collective well being, and we believe much more will be accomplished with respect to our water conservation goals and other ecological objectives in this fashion than through rationing and limits.

Veronica Blette
Chief, WaterSense Branch
Office of Water
Environmental Protection Agency
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When earlier issuing the related Notice of Intent (NOI) you included a number of questions on which we opined. Those questions and our responses appear below.

WaterSense Question: Which products or criteria mentioned here or in the specification differ substantially between single-family and multi-family dwellings?

The design and installation of the landscaping of a multifamily dwelling, unlike single-family homes, is usually performed (and sometimes required to be performed) by a landscape designer/architect and a landscape contractor. Residential developments sometimes use irrigation system components for dust control, cooling, and other non-traditional applications in a variety of sites including horse riding areas, clay tennis courts, and artificial grass playing surfaces. These applications are most common in multi-family residential projects. We are concerned that the use of a water budget or any other globally limiting water management tool may unintentionally prohibit the use of irrigation equipment for such uses and impede on the ability of our members and others in the construction and green industries to address the specific, unique needs of their client's site needs, we thus agree with others in our industry that accommodations should be made for such uses of irrigation systems on a WaterSense property.

WaterSense Question: Is the Water Budget Tool sufficient as the sole option for meeting the landscape design criteria?

While recognizing that opportunities to make further refinements may present themselves from time to time as a result of a number of factors including the advancement of equipment and materials, and the use thereof, and suggesting that the best solutions available at any point in time should be adopted, we favor the use of a water budget tool as the sole option for meeting the landscape design criteria at this time and urge removal of Option 2. The use of water budgets that recognize local climatologic factors such as rainfall and evapotranspiration (ET) have proven useful in determining the water-use requirements of a landscape. They also allow local landscape experts to design a landscape using climate appropriate plantings that creatively address the needs of homeowners and neighbors; enhancing the marketability of residential properties. Having the single option of a water budget tool minimizes confusion, and facilitates the promotion and adoption of the program and the training of builders and irrigation professionals on program requirements.

Veronica Blette
Chief, WaterSense Branch
Office of Water
Environmental Protection Agency
May 7, 2012
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WaterSense Question: Do you have any suggestions on how we could make the online Water Budget Tool more user-friendly?

We endorse the following improvements also suggested by others:

For turfgrass irrigation: Fixed spray; rotor (needs to be added as a choice); drip (pressure compensating), which would allow for the use of subsurface drip irrigation if chosen, and micro-irrigation, which includes micro-sprays, micro-bubblers, micro-streams, and standard drip which non-pressure compensating, etc.; and no irrigation. Very little “drip” irrigation used in landscape applications is not pressure compensating, and the difference in water requirement between drip (standard) and micro sprays is exactly the same. Fewer categories that are unique would make it more relevant to the marketplace and easier to choose an irrigation method.

For the other plantings: Irrigation choices for other plantings, such as trees, shrubs, ground covers, etc., could likewise be simplified to drip (pressure compensating) and micro-irrigation, as described above, and no irrigation. In addition, it would be nice to have a simple “drop-down” explanation or description of the irrigation terms for those not familiar with the industry’s terminology.

WaterSense Question: Is a simple option similar to Option 2 still required? If so, what should it be?

We maintain that Option 2, while simple, was flawed and encourage the removal of Option 2. We favor the use of a water budget tool as the sole option for meeting the landscape design criteria at this time. Landscape and irrigation design and installation, plant-material selections, and other related matters are complex and rather than offering flawed over-simplified alternatives, we encourage the EPA to adopt the best scientifically-supported solutions and make their adoption as user-friendly as possible.

WaterSense Question: What parties are typically responsible for landscape design for multifamily buildings? What are the standard practices?

The design and installation of landscaping for multifamily developments is typically performed (and often required to be performed) by a professional (i.e. a landscape designer or landscape architect and a landscape contractor.) The use of a water budget tool is appropriate for both single-family homes and multifamily sites.

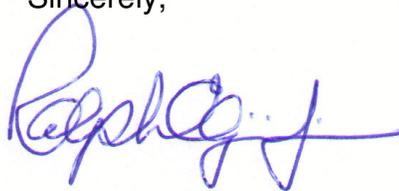
Veronica Blette
Chief, WaterSense Branch
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WaterSense Question: Would requiring WaterSense labeled weather based irrigation controllers unintentionally exclude certain products?

Requiring that only weather based control systems be eligible for use would preclude existing soil moisture based control systems and may stifle R&D on alternative approaches. We suggest that whenever possible, program specifications be goal oriented rather than prescriptive as to acceptable solutions.

Thank you for the opportunity to provide these comments. We are delighted to see progress being made towards the removal of the 40% turf limitation from the WaterSense program. We believe Option 2 of Landscape Design specification to be inconsistent with a WaterSense program that does so much right. There is, we believe, much that we can accomplish together once this obstacle is removed. We look forward to hearing from you again soon, and close by wishing you and yours a greater measure of joy and peace during this holiday season.

Sincerely,

A handwritten signature in blue ink, appearing to read 'Ralph Egües, Jr.', written in a cursive style.

Ralph Egües, Jr.
Executive Director

cc: Jesus "Chuy" Medrano
President, National Hispanic Landscape Alliance
President, Co-Cal Landscapes (Denver, CO)
Via electronic mail to chuy@cocal.com

Raul Berrios
President-elect, National Hispanic Landscape Alliance
President, RulyScapes (Centreville, VA)
Via electronic mail to raul@rulyscapes.com