

## Notification of Intent to Modify the WaterSense Final Specification for Single Family New Homes

### I. Introduction

EPA released its [Final Specification for Single Family New Homes](#) on December 10, 2009. Since that time, the WaterSense program has continued to grow its suite of labeled products, gathered additional information about typical building practices, and received additional feedback from stakeholders. Builder partners, licensed certification providers, inspectors, irrigation partners, and others have also been able to provide valuable feedback as they have built and labeled homes in accordance with the specification and the [WaterSense New Homes Certification System](#).

As a result, EPA believes it is appropriate to reexamine some areas of the specification. The purpose of this notification of intent (NOI) is to seek comments and feedback on areas of the WaterSense specification that have been identified as potential areas for modification. All interested parties are encouraged to submit written information and comments regarding any of the concepts or issues presented in this NOI or other areas of the specification to [watersense-homes@erg.com](mailto:watersense-homes@erg.com). All comments and information on the issues presented in this NOI are welcome and will be considered as WaterSense considers modifying the WaterSense Specification for Single Family New Homes.

The specific modifications that WaterSense is considering are described in the sections that follow.

### II. Section 1.0: Scope & Objective

Section 1.0 of the specification establishes the scope of buildings that are eligible for the WaterSense label.

*This specification establishes the criteria for water-efficient new homes under the U. S. Environmental Protection Agency's (EPA's) WaterSense® program. It is applicable to newly constructed single-family homes and townhomes, three stories or less in size. A new home must be built by a WaterSense builder partner and meet all of the identified criteria to become a WaterSense labeled new home*

Over the last 18 months, WaterSense has received multiple inquiries from builders seeking the label for multi-family residential buildings. Technical reviews of these projects have suggested that most or all of the criteria for WaterSense labeled new homes could be applied to and met by these homes.

In addition, WaterSense believes it is beneficial that its specification complements the agency's labeling program for energy efficiency, ENERGY STAR. The ENERGY STAR for Homes guidelines allow multi-family buildings that are:

- *Single family homes; OR*
- *Units in multi-family buildings with 3 stories or less; OR*
- *Units in four- or five-story multi-family buildings, including mixed-use buildings, that have their own heating, cooling, and hot water systems, separate from other units.*

As a result of this difference between the two programs, not all projects pursuing ENERGY STAR qualification are eligible to receive the WaterSense label, which limits opportunities for multiple labels and leads to market confusion.

WaterSense believes that most of the criteria for a WaterSense labeled new home can be applied to a majority of low-rise multi-family buildings and is considering modification of the scope as stated in Section 1.0 to allow for multi-family buildings three stories or less and multi-family buildings of four or five stories under certain circumstances.

### **III. Section 3.6: Showerheads and Shower Compartments**

EPA released the final specification for showerheads on March 4, 2010. Since that time, nearly 400 models of showerheads from dozens of different manufacturers have earned the WaterSense label. WaterSense is considering modification of the specification for single family new homes to require the installation of WaterSense labeled showerheads. Adding this requirement will increase the water savings features in a labeled home while ensuring that high performing products are used.

### **IV. Section 4.1.1: Landscape Design**

The final specification for single family new homes includes two options for complying with the landscape design criteria:

*Option 1 – Design of the landscaped area shall be developed using the WaterSense Water Budget Tool...*

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

Of these two options, the Water Budget Tool (option 1) is recognized as the preferred option as it takes into account local weather patterns/climate and encourages builders to plant locally appropriate, water-efficient landscapes.

Option 2, the turfgrass limitation retained in the final specification, was based on an attempt to harmonize WaterSense with other codes and green building programs. This was done in response to comments received from concerned stakeholders who believed that the Water Budget Tool, in its existing spreadsheet form, was too complicated for many users and that a

simpler, straight-forward alternative was needed. WaterSense retained the option, but explained in its response to comments that, as use of the Water Budget Tool became more widespread, the program would revisit the on-going need for the option in future versions of the specification.

Since the release of the final specification, WaterSense has educated many stakeholders including prospective builders on the proper use of the Water Budget Tool. As a result, the majority of homes labeled to date have used Option 1, the Water Budget Tool, to meet the outdoor requirements of the specification. To the extent that Option 2 has been used, it is only in areas where local or state laws and ordinances (or sometimes other local restrictions) have been the driving force behind choices in landscape design and installation. WaterSense believes that Option 1 would also be a viable alternative in these circumstances, and the final landscape would continue to be driven by adherence to local code and ordinance.

WaterSense has also recently developed an online version of the Water Budget Tool which substantially upgrades the user interface. While the new online application does not change the underlying equations, it does make the tool far more user-friendly and provides improved guidance on how it should be used. A [beta version of the online tool](#) is now available for use.

Due to these combined factors, WaterSense believes that it is appropriate to remove Option 2 from the specification. Homes receiving the WaterSense label would therefore be required to use the Water Budget Tool in order to comply with the landscape design criteria. It is important to note that this change is not intended to indicate that the WaterSense program believes restrictions on turfgrass are inappropriate when made by local decision-makers to address local conditions and concerns.

## V. Section 4.2.7: Irrigation Controllers

Section 4.2.7 of the new homes specification currently requires irrigation controllers that meet a list of criteria:

- 1. Multiple programming capabilities – shall be capable of storing a minimum of three different programs to allow for separate schedules.*
- 2. Multiple start times (cycling, cycle/soak, stackable start times) – shall be capable of a minimum of three different start times to allow for multiple irrigation cycles on the same zone for areas prone to runoff.*
- 3. Variable run times – shall be capable of varying run times, for example one minute to a minimum of one hour.*
- 4. Variable scheduling – shall be capable of interval scheduling (minimum of 14 days) to allow for watering on even day scheduling, odd day scheduling, calendar day scheduling, and interval scheduling.*
- 5. Percent adjust (water budget) feature – shall include a “Percent Up/Down Adjust” feature (or “Water Budget” feature) such as a*

*button or dial that permits the user to increase or decrease the run times or application rates for each zone by a prescribed percentage, by means of one adjustment without modifying the settings for that individual zone.*

*6. Capability to accept external soil moisture and/or rain sensors.*

*7. Non-volatile memory or self-charging battery circuit.*

*8. Complete shutoff capability for total cessation of outdoor irrigation.*

WaterSense will release a final [Specification for Weather-Based Irrigation Controllers](#) by the end of 2011. Once WaterSense labeled weather based irrigation controllers are available, labeled products will be a quick and easy way for builders and irrigation professionals to identify products appropriate for WaterSense labeled homes. As a result, WaterSense intends to modify section 4.2.7 to require the use of WaterSense labeled irrigation controllers.

## **VI. Issues Requiring Further Research/Potential Modification**

Several elements of the specification will require additional consideration in order to make modifications to expand the scope of the specification. WaterSense has identified the following areas that will require additional research and possibly expanded criteria.

### Section 3.2: Service Pressure

Currently the specification allows for a maximum service pressure of 60 pounds per square inch (psi). In larger multi-family buildings, higher water pressure may be required on some floors to ensure that water is adequately provided to all areas of the building and in order to ensure that sufficient pressure is present for the operation of thermostatic mixing valves.

### Section 3.3 Hot Water Delivery System

Homes that receive the WaterSense label are required to store no more than 0.5 gallons of water between the source of hot water and the furthest fixture. For multi-family buildings that utilize central hot water heating, the language will need to be clarified so it is clear that the main hot water line is the “source” of hot water.

### Section 3.8 Other Equipment

Other uses of water such as drinking water treatment systems, water softeners, and evaporative coolers have requirements that differ in multi-family buildings. Additional research is needed to identify additional standards and criteria that may apply.

## **VII. Summary of Outstanding Issues**

Although WaterSense is requesting feedback on all aspects of this NOI, the specific outstanding issues, questions, and concerns that must be addressed prior to the release of any modification are summarized below. All interested parties are encouraged to submit information to [watersense-homes@erg.com](mailto:watersense-homes@erg.com).

**Scope & Objective**

- Are there additional uses of water in low-rise multi-family buildings that should be considered?
- What are the standard practices for heating and delivering hot water in multi-family buildings?
- Which products or criteria mentioned here or in the specification differ substantially between single-family and multi-family dwellings?
- What would be the most appropriate way to ensure appropriate service pressure in a multi-family building?

**Showerheads and Shower Compartments**

- Are WaterSense labeled showerheads easily available in your area?
- Is the current language in section 3.6 regarding shower compartment size and the use of multiple showerheads clear?

**Landscape Design**

- Is the Water Budget Tool sufficient as the sole option for meeting the landscape design criteria?
- Do you have any suggestions on how we could make the online Water Budget Tool more user-friendly?
- Is a simple option similar to Option 2 still required? If so, what should it be?
- What parties are typically responsible for landscape design for multi-family buildings? What are the standard practices?

**Irrigation Controllers**

- Would requiring WaterSense labeled weather based irrigation controllers unintentionally exclude certain products?