

# EPA Promotes Efficient Water Use

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Does the U.S. Environmental Protection Agency (EPA) have an opinion about the water features you build and the landscapes you design and install? You bet it does. Its WaterSense program, a voluntary labeling program similar to the Leadership in Energy and Environmental Design (LEED) program, promotes water-efficient design and construction in new homes - and includes an outdoor portion that relates to landscape design, water features and irrigation systems.

In May 2009, the EPA issued a revised draft of its proposed inspection guidelines for WaterSense - labeled new homes. It is expected that following the guidelines should result in homes being about 20-percent more water efficient than homes designed using existing methods.

Why the concern for water efficiency? The EPA reports that each American uses the equivalent of 100 glasses of water a day. This demand has stressed supply and distribution systems to the point that 36 states - and possibly more - are anticipating water shortages, to some extent, within the next five years.

Excessive water usage also contributes to pollution, because water that moved over the ground draws along with it pollutants that contaminate ground water. Even the use of cold water requires energy output. Using less water in the landscape results in less usage to treat wastewater, for example.

The WaterSense program recommends water-saving methods including: xeriscaping; topdressing and incorporating compost into topsoil to improve water retention; reducing non-permeable hardscapes; using mulch to reduce evaporation; installing drip irrigation systems; and collecting grass clippings and other landscape debris to be composted.

The outdoor portion of the WaterSense code relates to landscape design and irrigation systems. Homes build to WaterSense specifications will be subject to a general site inspection and verification by a third party to confirm that WaterSense criterion has been met. Aspects of outdoor landscaping detailed in the code include landscape design, turfgrass, slopes, mulching, pools and spas, ornamental water features and irrigation systems.

Some concern has arisen over restrictions to water features in the code. (It should be stressed that this a voluntary program and not a requirement.) According to item 4.1.6. of the revised code, ornamental water features "financed, installed, or sold as upgrades by the homebuilder must recirculate water and serve a beneficial use." In addition, the water surface area shall be deducted from the turfgrass allowance under Landscape Design Options as specific in the code.

The revised draft, according to an EPA cover letter, includes the following changes to earlier drafts: Revised the criterion that the entire yard be landscaped in all cases; Redefined "landscapable areas"; Changed the water adjustment factor (Kwa) of 60-percent to an evapotranspiration adjustment factor (ETAf) of 70-percent; Revised the criterion for ornamental water features; Revised the criterion for designing, installing, and auditing irrigation systems; Developed a distribution uniformity criterion for irrigation

systems; and developed a criterion for the requirement of a rain shut-off device.

So what does this mean to landscape contractors?

Landscaping the yard

WaterSense received comments arguing against a uniform requirement that the entire yard be landscaped. Some say this requirement would greatly reduce the potential for builders to participate in WaterSense in markets where the prevailing practice is to landscape only the front yard of new homes.

To research this issue further, EPA conducted telephone focus groups of various size with 40 builders across the country to discuss their standard landscaping and irrigating practices.

Based on this research and other conversations with builders and developers, EPA determined that most builders landscape the front of the house using primarily turfgrass. Although custom homebuilders tended to landscape the entire yard more often than larger builders. There did not appear to be any geographic link to the landscaping practices.

EPA also learned that many builders do install irrigation systems in their landscapes.

To encourage maximum builder participation and to work within the current landscaping practices of most builders, EPA has revised the landscape design criteria to require that every home seeking the WaterSense label must landscape the front yard to meet its criteria. However, to address builders who are landscaping the entire yard as part of their standard package or are installing pools, spas, water features, and/or irrigation systems, EPA is requiring that the entire yard be landscaped to meet the criteria in these instances.

WaterSense also receive comments on setting a minimum lot size for the landscape design criteria. EPA agrees that on very small lots, such as those associated with some townhomes, it would be difficult to allow for a useable amount of turfgrass and still meet the landscape design criteria. Therefore, EPA has exempted lots with less than 1000 square feet of usable area from the landscape design criteria.

Definition of landscapable area

EPA also revised the definition of "landscapable area." Since the release of the first draft of the specification, WaterSense has received numerous comments on areas of the lot that should or should not be subject to the landscape design criteria.

EPA agrees that the definition that the definition should exclude areas designated as rights-of-way, drainage or utility easements, and septic drainfields. Therefore, EPA conducted research on definitions used by other green building programs to see if they had addressed these areas of concern.

EPA says that the definition included in this revised draft specification (i.e., "buildable lot area excluding area under roof"), which is based on the LEED program's definition of the "designed landscape," is simple and sufficiently broad to address the long list of non-buildable areas that may be encountered at a given site.

### Ornamental water features

EPA received hundreds of comments on the beneficial uses of water features commonly installed on homesites. Several conference calls were conducted with key stakeholders representing this industry to better understand the type of water features installed in new homes. It was recommended that EPA treat water features in the same manner as pools and spas.

EPA has revised the criteria to allow the installation of ornamental water features that recirculate water and serve a beneficial use. This requirement helps differentiate closed system water features that contain and recirculate water from those features that are less efficient. The revised draft specification also requires that the water surface areas of the water features be deducted from the turfgrass allowance and included as landscapable area under the landscape design options (which is also the requirement for pools and spas).

### Planting on slopes

Due to the runoff concerns associated with irrigating turfgrass installed on slopes in excess of four feet of horizontal run per on foot vertical rise (4:1), the first draft specification stated that turf shall not be planted on slopes greater than 4:1. However, EPA did not specify what, if anything should be planted on the slopes. EPA's intent was that the slope would be planted and not left bare. Therefore, EPA has revised the criteria in the specification to state, "Non-irrigated plantings other than turfgrass shall be installed on slopes in excess of four feet of horizontal run per on foot vertical rise (4:1)."

### Irrigation partners

EPA received many comments arguing against the use of WaterSense irrigation partners to design, install, and audit irrigation systems installed at homes seeking the label. It was noted that there are other qualified individuals who can design and install water-efficient irrigation systems, and some questioned the availability of WaterSense irrigation partners.

EPA agrees that there are others who can install water-efficient irrigation systems that meet the criteria for WaterSense-labeled new homes. Through existing partnerships and use of local irrigation professionals, builders may be able to reduce the costs associated with designing and installing irrigation systems. Therefore, EPA has eliminated the requirement that all irrigation systems be design and installed by WaterSense irrigation partners. However, to ensure that the installed systems meet the criteria, EPA has retained the requirement that an irrigation partner must audit each irrigation system.

### Irrigation system standards

EPA received several comments recommending that they require a specific uniformity standard or efficiency percentage for the irrigation system. Suggested distribution uniformity values ranged from 60 to 75 percent. EPA has added to criterion to the revised draft specification that the irrigation system shall achieve a lower quarter distribution uniformity (DULQ) value of 70 percent to help ensure the system is operation efficiently at the time of installation.

### Rain sensors

EPA received numerous comments recommending that they require irrigation systems to be equipped with technology that inhibits or interrupts operation during rainfall. It was agreed that equipping irrigation systems with devices to stop operation during

periods of rainfall would reduce the amount of water wasted during landscape irrigation. Rain sensors can be purchased quite inexpensively, therefore, EPA does not believe this requirement will add significantly to the costs of the irrigation system.

### Homeowner education

Homes that are labeled under the WaterSense program are certified to meet water-efficiency criteria at the time of inspection. EPA understands that after homeowners move into these labeled homes, keeping them water-efficient will require maintenance, especially the irrigation systems. To help educate homeowners on the irrigation systems installed in their homes, EPA is requiring that builders provide the homebuyer with a schematic of the system and copies of the two irrigation schedules developed for their system. The WaterSense materials on efficient indoor and outdoor water use shall also be provided to homeowners.

### Water budget tool

Due to concerns raised about inconsistent approaches used to calculate a water budget, EPA is requiring the use of the WaterSense water budget tool if the builder selects Option 2 to fulfill the landscape design criterion.

### Peak watering month

EPA received many comments recommending that the WaterSense budget tool be based on a peak watering month instead of an annual timeframe in order to better reflect the conditions during the growing season (which is the period of time when plants need the most water and precipitation is utilized by the landscape.) The annual timeframe did not discern between forms of precipitation, such as snow and rain, and allowed natural water falling outside of the growing season to be incorporated into the budget.

To address these concerns, EPA revised timeframe to the peak watering month, which is consistent with other water budget tools used around the country, including USGBC's LEED for Homes water budget tool. Users will base evapotranspiration and rainfall data on the peak month for their area.

Statewide, ILCA and the Illinois Professional Lawn Care Association (IPLCA) have banded together to monitor the WaterSense initiative. Nationally, over 75 other green industry groups are working to educate the EPA on inaccuracies within the current guidelines. There is little doubt that the voluntary guidelines in the WaterSense initiative will creep into state and municipal laws and codes. Therefore, it is essential that these guidelines are based on science and best practices.

Efforts to conserve water are worthy and should be supported. The indoor components of WaterSense, which required water-efficient appliances in new homes, enjoy widespread support. However, numerous groups have expressed serious concerns about the landscape provisions – concerns that have gone unheeded by the agency. If the EPA finalizes the specification in its current form the lawn care and landscape management industry in our state, will suffer severely.

Stakeholders from across the country have attempted to educate the EPA on this shortsighted standard. The EPA does so much good for our country but sometimes they need industry professionals to help make sense of the science and local ramifications of nationwide standards. ILCA and IPLC have accepted that challenge on behalf of our members and joint members.