



A partnership program of the
U.S. Environmental Protection Agency

June 4, 2021

Ms. Sheri Looper
Bureau of Reclamation

RE: Comments on Draft Eligibility and Evaluation Criteria for Water and Energy Efficiency Grants

Dear Ms. Looper,

The U.S. Environmental Protection Agency's (EPA's) WaterSense® program thanks the Bureau of Reclamation for the opportunity to comment on the Draft Eligibility and Evaluation Criteria presented for the Bureau of Reclamation's WaterSMART program. WaterSense is a voluntary EPA partnership program that labels water-efficient products and services and promotes efficient water use throughout the United States. The WaterSense label is intended to easily identify products and services that use 20 percent less water, save energy, and perform as well as or better than standard models on the market. WaterSense has developed specifications for various plumbing and irrigation product categories, including tank-type toilets, flushometer-valve toilets, urinals, showerheads, lavatory faucets and faucet accessories, landscape irrigation spray sprinkler bodies, weather-based irrigation controllers, and most recently, soil moisture-based irrigation controllers. WaterSense has also developed additional specifications for homes and irrigation professional certification programs.

WaterSense's goal in submitting comments to the Bureau of Reclamation is to encourage the reference to and subsequent use of WaterSense labeled products through the WaterSMART Water and Energy Efficiency Grants as a means to achieve the Bureau of Reclamation's water conservation goals. WaterSense labeled products are third-party certified for water efficiency and performance. Ensuring performance is vital for maintaining the WaterSense program's integrity. If end users are satisfied with the performance of WaterSense labeled products, they are less likely to replace them with less efficient models and are more likely to pursue other water-efficient products in the future. Assuring performance also provides confidence that the products can achieve their intended use efficiently and that consumers will not be required to operate the product more than previously required by a less efficient model, which could negate water savings.

WaterSense encourages the Bureau of Reclamation to also consider referencing ENERGY STAR certified appliances in its WaterSMART Water and Energy Efficiency Grants. ENERGY STAR

certified products, including water-using appliances such as dishwashers and clothes washers, similarly undergo third-party certification to ensure consumer confidence. Water utilities across the country rely on the WaterSense and ENERGY STAR labels to help them readily identify and rebate/direct install appliances and fixtures that will provide lasting water and energy savings.

The comments below summarize WaterSense's suggested revisions to help strengthen the Bureau of Reclamation's water conservation programs, along with the associated rationale. EPA appreciates the Bureau of Reclamation's consideration of these suggestions for incorporation into the Eligibility and Evaluation Criteria for Water and Energy Efficiency Grants.

Comments on Irrigation Measures

Suggested Revisions

Within Attachment C: Water and Energy Efficiency Grants, WaterSense suggests the following revisions to the eligible water conservation products section (Section C.1 under "Eligible Projects").

"Irrigation Measures: Projects that provide water savings by reducing outdoor water usage. These measures include turf removal, ~~Smart~~ WaterSense labeled irrigation controllers (weather- or soil moisture-based), WaterSense labeled spray sprinkler bodies, and high-efficiency nozzles (sprinkler heads). These measures are typically promoted by water entities through rebates or direct-install programs. Projects include, but are not limited to:

- Removing turf
- Installing ~~Smart~~ WaterSense labeled irrigation controllers (weather or soil-moisture based)
- Installing WaterSense labeled spray sprinkler bodies with integral pressure regulation
- Installing high-efficiency nozzles (e.g., sprinkler heads)"

Within Attachment C: Water and Energy Efficiency Grants, WaterSense suggests the following revisions to the evaluation criterion (Section C.3 under "Evaluation Criterion A, Sub-bullet 4)(5) "Smart Irrigation Controllers and High-Efficiency Nozzles").

"(5) ~~Smart~~ WaterSense Labeled Irrigation Controllers, WaterSense Labeled Spray Sprinkle Bodies, and High-Efficiency Nozzles: Applicants proposing ~~smart~~ WaterSense labeled irrigation controller, WaterSense labeled spray sprinkler bodies, or high-efficiency nozzle projects should address the following:

- a. How have average annual water savings estimates been determined? Please provide all relevant calculations, assumptions, and supporting data.
- b. Was historical water consumption data evaluated to estimate the percent reduction in water demand per unit area of irrigated landscape? If so, did the evaluation include a weather adjustment component?
- c. What types (manufacturer and model) of devices will be installed and what quantity of each?
- d. Will the devices be installed through a rebate or direct-install program?
- e. Will site audits be performed before and after installation?
- f. How will actual water savings be verified upon completion of the project?"

Rationale

WaterSense Labeled Irrigation Controllers

WaterSense labels two types of “smart” irrigation technologies – weather-based irrigation controllers and soil moisture-based irrigation controllers – that can help homeowners and businesses make their irrigation systems more water-efficient using local weather and landscape conditions to tailor irrigation schedules.

To earn the WaterSense label, weather-based and soil moisture-based irrigation controllers are independently certified to meet specific criteria for efficiency and performance. The specification requirements and test methods were developed through close coordination with industry and utility stakeholders and reference or are aligned with American National (ANSI) standards developed by the American Society of Agricultural and Biological Engineers (ASABE). The performance thresholds were established based on field and laboratory studies and set at levels that demonstrate water savings and the ability to maintain a healthy landscape.

Further, irrigation controllers that earn the WaterSense label must meet a set of supplemental capability requirements such as the zone-by-zone control to separately manage watering needs of individual areas of the landscape, the ability to accommodate watering restrictions, and the ability to interface with a rainfall device. WaterSense developed the supplemental capability requirements through coordination with utility stakeholders who indicated that controllers should have certain features (in addition to meeting performance criteria) to promote greater long-term water savings and support their ability to manage outdoor water use.

There are currently more than 780 labeled models of WaterSense labeled irrigation controllers available on the market (see <https://www.epa.gov/watersense/watersense-products>), with more to come since the recent addition of soil moisture-based irrigation controllers to the suite of

WaterSense labeled products earlier this year. “Smart” irrigation controllers that are not WaterSense labeled do not provide the certified assurance of efficiency and performance and may not contain important, utility supported supplemental features that ensure long-term water savings.

For details on the WaterSense specifications for weather-based and soil moisture-based controllers, including the performance criteria and specification development process see: <https://www.epa.gov/watersense/watersense-labeled-controllers>.

WaterSense Labeled Spray Sprinkler Bodies

EPA is also suggesting the Bureau include the installation of WaterSense labeled spray sprinkler bodies as a project listed under the potential irrigation measures. For background, a spray sprinkler body is the exterior shell that connects the irrigation system piping and houses the spray nozzle that applies water to the landscape. Some spray sprinkler bodies can control water pressure, and subsequently flow rate at the inlet to the nozzle, allowing it to operate at its ideal performance. Most sprinklers available on the market have an operating pressure range between 15 and 70 pounds per square inch (psi), with a recommended operating pressure of 30 psi. In many cases, sprinklers are installed at sites where the system pressure is higher than the recommended operating pressure. High operating pressure can result in system inefficiencies, including excessive flow rates, misting, fogging, and uneven coverage (e.g., dry spots or pooling water). WaterSense labeled sprinkler bodies have a built-in (i.e., integral) pressure-regulating feature that can compensate for high inlet pressure. These products can maintain and provide a constant flow at the nozzle across a range of inlet pressures, reducing excessive flows and water waste that would otherwise occur at high pressures. Additionally, when the sprinkler body maintains the pressure at or near its optimal operating pressure, the connected nozzle can generate the appropriate water droplet size and provide for more uniform distribution of water across the landscape. For irrigation systems with supplied water pressure greater than 30 psi, EPA estimates that WaterSense labeled sprinkler bodies can save between 5 and 24 percent compared to sprinkler bodies without pressure regulation, depending on the incoming water pressure.¹

Per the Appliance Standards Awareness Project, WaterSense labeled spray sprinkler bodies are now required for new installations within seven (7) states, including California, Colorado, Hawaii, and Washington²—states eligible under the Water and Energy Efficiency Grants

¹ See Table A1 in Appendix A of the WaterSense Specification for Spray Sprinkler Bodies Supporting Statement (<https://www.epa.gov/sites/production/files/2017-09/documents/ws-products-support-statement-ssb.pdf>).

² State Adoption of Energy Efficiency Standards. <https://appliance-standards.org/states>

program. There are currently more than 340 labeled models of WaterSense labeled spray sprinkler bodies available on the market (see <https://www.epa.gov/watersense/watersense-products>).

More information on WaterSense labeled spray sprinkler bodies can be found at <https://www.epa.gov/watersense/spray-sprinkler-bodies>.

High-Efficiency Nozzles and Other Irrigation Technologies

WaterSense does not currently label high-efficiency nozzles; however, EPA is initiating research to determine if a specification is feasible. Further, WaterSense is always looking to expand the products categories eligible for certification and labeling. During future revisions to the Water and Energy Efficiency Grant eligibility and evaluation criteria, EPA suggests that the Bureau of Reclamation review WaterSense's current list of labeled irrigation products and consider referencing any labeled product categories not currently listed.

Comments on High-Efficiency Indoors Appliances and Fixtures

Suggested Revisions

Within Attachment C: Water and Energy Efficiency Grants, WaterSense suggests the following revisions to the eligible water conservation products section (Section C.1 under "Eligible Products").

"High-Efficiency Indoor Appliances and Fixtures: Projects that promote installation of WaterSense labeled fixtures (e.g., toilets, showerheads, lavatory faucets and faucet aerators, urinals), ENERGY STAR certified appliances (e.g., clothes washers, dishwashers), and other high-efficiency indoor appliances and fixtures to provide water savings for municipal water entities where there is significant potential for replacing existing non-efficient indoor appliances and fixtures. This is typically promoted by water entities through rebates or direct-install programs."

Within Attachment C: Water and Energy Efficiency Grants, WaterSense suggests the following revisions to the evaluation criterion (Section C.3 under "Evaluation Criterion A, Sub-bullet (4)(6) "High-Efficiency Indoor Appliances and Fixtures").

"(6) High-Efficiency Indoor Appliances and Fixtures: Installing WaterSense labeled fixtures (e.g., toilets, showerheads, lavatory faucets and faucet aerators, urinals), ENERGY STAR certified appliances (e.g., clothes washers, dishwashers), and other

high- efficiency indoor appliances and fixtures can provide water savings for municipal water entities where there is significant potential for replacing existing non-efficient indoor appliances and fixtures. Applicants proposing high-efficiency indoor appliance and fixtures projects should address the following:

- a. How have average annual water savings estimates been determined? Please provide all relevant calculations, assumptions, and supporting data.
- b. What types of appliances and fixtures (clothes washers, toilets, shower heads, etc.) will be installed and what quantity of each?
- c. Have studies been conducted to verify the existence of non-efficient appliances and fixtures? Provide published water savings rates for each of these devices and reference the source for each of the device savings rates.
- d. Will the devices be installed through rebate or direct-install programs?
- e. How will actual water savings be verified upon completion of the project?"

Rationale

The WaterSense and ENERGY STAR programs label many indoor appliances and fixtures that have been successfully integrated into water utility rebate/direct install programs across the country. These include but are not limited to WaterSense labeled residential and commercial toilets, urinals, showerheads, and bathroom faucets and aerators, and ENERGY STAR certified residential and commercial clothes washers and dishwashers. As stated above, WaterSense labeled and ENERGY STAR certified products are third-party certified, allowing utilities and consumers to easily identify efficient models and be assured of water savings and performance.

While many participants of the Bureau of Reclamation's Water and Energy Efficiency Grant program are likely utility providers who are familiar with the WaterSense and ENERGY STAR programs and the various products certified under these respective programs, this is not a given. WaterSense has seen examples where utility and non-profit operated programs specifically targeting water efficiency and conservation have left water and energy savings on the table by not installing WaterSense labeled and ENERGY STAR certified products. The Bureau of Reclamation can be assured of water savings by requiring applicable indoor products to be certified under the WaterSense and ENERGY STAR programs or, at a minimum, promoting and educating participants about the WaterSense labeled and ENERGY STAR certified products available.

As shown in the table below, specifying WaterSense labeled fixtures and ENERGY STAR certified appliances can contribute to significant water savings compared to products that meet Federal water efficiency standards. The table also shows the number of models available that have been certified by the respective programs, indicating there is ample availability of labeled



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models available to consumers. Further, the WaterSense and ENERGY STAR programs have resources available to help applicants assess potential water savings that may be associated with the installation of specific labeled products.

Product Category	Federal Standard	WaterSense/ENERGY STAR Water Efficiency Criteria	Estimated Water Savings	Number of Certified Models
Toilets	1.6 gallons per flush (gpf)	1.28 gpf or less	≥20%	Nearly 4,000 tank-type toilet models; Nearly 1,500 flushometer-valve toilet models
Showerheads	2.5 gallons per minute (gpm)	2.0 gpm or less	≥20%	Nearly 11,000 models
Lavatory Faucets and Faucet Aerators	2.2 gpm	1.5 gpm or less	≥32%	More than 19,000 models
Urinals	1.0 gpf	0.5 gpf or less	≥50%	More than 750 models
Residential Clothes Washers	4.7 integrated water factor (IWF) for front loading; 6.5 IWF for top loading	3.2 IWF for front loading; 4.3 IWF for top loading	≥32%	More than 250 models
Residential Dishwashers	5 gallons per cycle	3.5 gallons per cycle	≥30%	More than 750 models

To allow for maximum flexibility for the appliances and fixtures that may be included in eligible projects, WaterSense suggests leaving the reference to WaterSense labeled and ENERGY STAR certified appliances and fixtures open ended, only providing reference to example product types (e.g., toilets, showerheads, clothes washers). For instance, there are ENERGY STAR specifications that address other water-using commercial appliances, including commercial dishwashers, ice makers, ovens, and steam cookers, which potential applicants may want to include. For more information on the full list of ENERGY STAR certified products see: <https://www.energystar.gov/products>. Further both WaterSense and ENERGY STAR are



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continually expanding the suite of products eligible for certification and labeling and that may be of interest for incorporation into the Bureau of Reclamation's Water and Energy Efficiency Grant program when available. See <https://www.epa.gov/watersense/products-development> and https://www.energystar.gov/products/spec?field_status_value%5B%5D=New+Product+Under+Development for more information on product specifications under development.

Thank you again for the opportunity to comment. We look forward to discussing opportunities to collaborate on the Bureau of Reclamation's Water and Energy Efficiency Grant program moving forward. Please contact me at (tanner.stephanie@epa.gov) or the WaterSense Helpline (watersense@epa.gov) to discuss any of the information or suggestions discussed in this comment submission.

Sincerely,
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