

February 29, 2024

U.S. Environmental Protection Agency  
WaterSense Program  
1200 Pennsylvania Avenue NW  
Washington, DC 20004

**Re: WaterSense Draft Specification for Spray Sprinkler Nozzles**

To whom it may concern:

On behalf of the approximately 1,300 member companies of the Irrigation Association, we appreciate the opportunity to respond to the Agency's *WaterSense Draft Specification for Spray Sprinkler Nozzles*.

The IA represents experts in all aspects of irrigation, including agriculture, landscape, turfgrass and golf, and serves as the unifying voice of the diverse companies and professionals within the industry. As stewards of water resources, irrigation professionals and companies recognize the important role we serve in ensuring water resources are accessible for future generations. Our industry and our members are committed to investing in continuous improvement, technology advancements, innovation, research and new product development and adoption, all while contributing expertise to encourage dialogue and successful solutions that have a lasting impact on the sustainability of our water resources.

We support the goals and objectives of the WaterSense program, and we are committed to working with EPA and the WaterSense program to ensure workable specifications for the industry, communities, utilities and ultimately consumers. As many utilities are already rebating a variety of "high efficiency" nozzle products, we appreciate the Agency's interest in pursuing the development of a specification for spray sprinkler nozzles. We appreciate the dialogue the Agency has engaged in over the course of this process, and we provide the following comments to further that dialogue. These comments were developed with the input of a diverse group of IA members, which includes irrigation manufacturers, distributors, designers, contractors, water agencies, educators and end users.

**General comments**

**1. Pursue the development of a voluntary, consensus-based American National Standards Institute standard.**

It is critical that any WaterSense specification be developed via a collaborative stakeholder-driven process and be based on sound science, robust data and industry best practices. To that end, we reiterate our recommendation from April 2023 that the most appropriate path forward for these

products is the development of a voluntary, consensus-based American National Standards Institute standard that defines spray nozzles efficiency that could then be used as a basis for a WaterSense specification. This process would forge consensus and help resolve issues IA members have raised in their individual comments on this NOI. During our own review process of the draft specification, it became clear that there are diverse perspectives even within the IA's membership on some elements of this proposal. A standard-setting process would allow for a more robust, inclusive and diverse stakeholder process that would ultimately improve the end result.

To this end, we are prepared to engage with an organization such as the American Society of Agricultural and Biological Engineers to facilitate the development of such a standard. Further, we recognize this recommendation requires a commitment of time and resources on the part of the IA, and we are prepared to bring such a process to a successful conclusion.

## **2. A voluntary specification will become a legal requirement in many states.**

While this would be a voluntary specification, we know that many states will eventually mandate in law that products covered by the specification bear the WaterSense label. Previous experience with spray sprinkler bodies and irrigation controllers indicates this voluntary specification will, in practice, become mandatory regulation in significant portions of the country. This will result in very prescriptive requirements for products that can be used in those states.

We note in particular that this would have significant implications on the retrofit market. A multi-stream, multi-trajectory (MSMT) nozzle or a nozzle with differing precipitation rates cannot simply be “swapped in” to replace an existing spray nozzle due to different pressure and/or run time requirements. This would require significant — and potentially costly — system upgrades just to replace a broken nozzle. Instead, it is more likely retrofits, repairs and upgrades would be delayed, undermining the water conservation goals of a WaterSense specification. A robust, consensus-based ANSI standard would help avoid these future problems.

We also note that the specific sprinkler/nozzle combination that should be used is best determined by the system design professional as they are best equipped to determine the allowable precipitation rate based on available site information which includes: plant material, soils, water pressure, slope, wind, the area to be irrigated and water window time restrictions. A prescriptive approach to nozzle choice limits the designer's ability to provide the nozzle best for the site when all factors are considered.

## **3. Concerns regarding the lack of data and real-world verification of test methods.**

We are concerned the Agency is moving forward with a specification with significant data gaps, particularly with respect to distribution uniformity, as well as the absence of real-world verification of test methods. We encourage the Agency to collaborate with industry, the research community and other stakeholders to close these gaps and ensure any specification is based on robust science. To this end, the

IA is prepared to proactively engage the industry and its stakeholders to facilitate and support measures to bridge these data gaps.

#### **4. The Importance of education, outreach and qualified professionals.**

We underscore the important role qualified irrigation and landscape professionals — and educated end users — play in advancing water conservation on landscapes. Unlike many products with WaterSense specifications, spray nozzles are fundamentally different in that they are elements of a complex system designed with the specific climate, plant material, soils, water pressure, slope and the area to be irrigated in mind. A successful landscape depends on proper design, installation and maintenance. Qualified personnel are essential and every level to achieve these water savings.

#### **Comments on specific aspects of the draft specification**

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##### **Topic: 1.0 – Scope and Objective**

**Comment:** The specification’s scope would include both spray nozzles and MSMT nozzles. Including both under the same specification is problematic. Spray sprinkler nozzles and MSMT nozzles are fundamentally different products and defining and establishing test methods for both under the same specification presents significant challenges. An efficient irrigation system considers dozens of variables and is an engineered system. Utilizing the wrong component can negatively affect its performance and potentially negate any water savings or result in waste to try and correct. This is particularly relevant with respect to testing. Currently, per ASABE 802 Table 303.5.4.1, MSMT nozzles are tested via single-leg catchments, rather than the use of a full grid as contemplated in this draft specification.

**Suggested Change (or Language):** We recommend the Agency clarify the definition so that at a minimum the two products are defined separately and to engage in robust dialogue with stakeholders to determine whether these two product types should be handled under two entirely separate specifications.

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##### **Topic: 3.1.1 -- Water Efficiency and Performance Criteria: Arc Settings**

**Comment:** The draft specification calls for testing at both the minimum arc and maximum arc settings. We question the feasibility of testing at these minimum and maximum settings — which in some cases could be 45 degrees and 360 degrees. Is the Agency aware of a DU model that would account for these radii?

**Suggested Change (or Language):** We recommend testing fixed and partially adjustable arc nozzles at factory settings across the series. We recommend testing fully adjustable arc nozzles at 180 degrees, the most common use case.

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**Topic: 3.3.4 -- Application Rate: Criterion**

**Comment:** The specification would establish that the average application rate be 1.2 inches per hour or less. Significant aspects of the industry are challenged by this restrictive rate. Additional information is needed regarding the underlying data that is used to support this requirement and how a 1.2 inches per hour or lower precipitation rate was calculated and achieved.

The most efficient design for a given landscape is impacted by any number of factors from soil, weather, geography, plant types, quality of source water, etc., and the most efficient nozzles in a given application are not always those with the lowest precipitation rate. We note that California considered the use of a precipitation rate requirement in the state's 2015 MWELO standard. However, after stakeholder input, the state ultimately adopted the use of DU for nozzle installation (with the exception on slopes, in which cases were limited to 0.75 inches per hour as per MWELO title 23 section 492.7(v)).

**Suggested Change (or Language):** Because of the broad challenges to stakeholders with the 1.2 inch per hour application rate (especially in the context of the geographic ramifications of such standard) and the lack of robust, defensible data, we recommend the Agency to (1) convene a diverse group of stakeholders around this specific topic to identify an appropriate path forward, and (2) provide additional data to justify the use of this (or other) application rate.

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Thank you for your consideration of these comments. We are committed to working with the Agency and impacted stakeholders to advance both the WaterSense program and water conservation across the country. Please contact Nathan Bowen ([nathanbowen@irrigation.org](mailto:nathanbowen@irrigation.org)), IA advocacy and public affairs vice president, for questions or additional information.

Sincerely,



Natasha L Rankin, MBA, CAE  
Chief Executive Officer