Submitted via email to watersense-products@erg.com

May 23, 2024

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

Re: WaterSense® Notice of Intent (NOI) to Revise the High-Efficiency Lavatory Faucet Specification

Dear WaterSense Staff:

The Alliance for Water Efficiency ("AWE") is a stakeholder-based 501(c)(3) organization with more than 500 member organizations dedicated to the efficient and sustainable use of water. AWE provides a forum for collaboration around policy, information sharing, education, and stakeholder engagement. AWE is providing these comments on the Notice of Intent (NOI) to Revise the High-Efficiency Lavatory Faucet Specification ("Faucet NOI"). These comments are based on discussion and feedback among AWE's WaterSense-Water Efficient Products Advisory Committee, which met once to discuss this topic and shared their perspectives by email.

AWE is focusing primarily on those aspects of the Faucet NOI with the largest potential impact on water efficiency – reducing the maximum flow rates for private lavatory faucets and kitchen faucets. AWE recognizes that there are many important technical aspects of this Faucet NOI, and we urge WaterSense to carefully consider the many detailed comments submitted by those with experience in plumbing codes and standards, premise plumbing design and engineering, plumbing manufacturing, plumbing services, and other relevant professional backgrounds.

In submitting these comments, AWE's goal is to convey perspectives of its members and highlight both available data and gaps in the data. At this time, AWE is not taking a position on the efficiency levels of private lavatory faucets and kitchen faucets, but AWE does anticipate doing so later in part based on the additional data and information submitted by others in commenting on the Faucet NOI.

A. Faucets and End Use Data. Many sources of end use data do not breakdown private lavatory and kitchen faucet use separately. For example, residential faucet use is combined and analyzed as a single category in the Residential End Uses of Water, Version 2 (Water Research Foundation Report #4309b). AWE is not aware of similarly large national studies that break down the use of private lavatory and kitchen faucets separately. At a state level, some data has been compiled, estimated, and assumed for the breakdown of faucet end use data for California-related rulemaking. The most recent report was for Codes and Standards

Enhancement (CASE) Initiative for PY 2013: Title 20 Standards Development titled *Analysis of Standards Proposal for Residential Faucets and Faucet Accessories* (July 29, 2013). Table 5.4 from this report breaks down per unit water use separately for lavatory and kitchen faucets. This table is included as Attachment A to this letter.

B. Faucets and Anticipating Water Savings. While the general perspective remains that reducing the max flow rate for faucets will save water, there are at least three factors that may offset anticipated water savings to some extent. First, most faucet valves can be opened incrementally to adjust the flow of water. This means that users may be opening the valve until the flow is satisfactory to them. As a result, the savings anticipated from decreasing the max flow rate could be offset in part by users opening the valves further than they previously did under higher max flow rates. Second, given that hot water is desired for many faucet uses, lowering the max flow can, depending on the type of water heater, result in longer wait times for hot water and, therefore, at least partially offset the anticipated water savings. Third, with kitchen faucets especially, some uses are fixed-volume tasks like pot filling while others are less volume- and flow-dependent like handwashing and dish rinsing. AWE is not aware of national data addressing user behavior and use patterns related to these three topics. Nonetheless, common sense and behaviors everyone has observed, like letting the water unnecessarily run while using a faucet, support the concept that there will be at least some water savings from lowering the maximum flow rate.

C. Private Lavatory Faucet Max Flow Rates. Most of AWE's committee members did not express concerns related to lowering the max flow rate to 1.2 gpm for WaterSense given the sense that the market appears to have already substantially shifted to this flow rate. However, some of our manufacturing members are of the opinion that EPA should maintain the current requirement of 1.5 gpm for private lavatory faucets because of the lack of underlying studies and evidence related to water savings. Members have even more mixed views on whether the max should be lowered to 1.0 gpm. Some expressed concerns about the limited number of models on the market and potential impacts to performance, user satisfaction, and manufacturers. Others observed that users could compensate for lower flows by opening private lavatory faucets control valves all the way and, therefore, offsetting potential water savings. Other members recognized the potential for a lower max flow rate to save water and the potential energy benefits given that private lavatory faucets are a major user of hot water. It was also noted that hot water use is a very important topic for zero energy homes.

Members agreed that there was a general lack of national, representative data on the market share of the flow rates of new faucets being sold today that use 1.0 gpm, 1.2 gpm or higher. WaterSense has data on the number of new models being certified by flow rate that shows that most new models use 1.2 gpm or less, but this leaves some uncertainty about their relative market share of new products sold especially related to faucets using 1.0 gpm or less. Having market share and shipment data would provide more information to confirm the general sense that the market has already transitioned to 1.2 gpm and insights as to the feasibility and water savings if WaterSense specified a 1.0 gpm flow rate. There are several limited sources of retail product availability data that also support the fact that most private lavatory faucets offered for sale use 1.2 gpm or less even in places beyond states like California where they are required.

An article from the *Georgia Operator Magazine* reports that only 1 of 63 private lavatory faucets available on the shelves in metro Atlanta used more than 1.2 gpm even though 1.5 gpm private lavatory faucets were allowed under Georgia's code. See Attachment B to this letter. This data from Georgia was

published in the summer of 2020, almost four years ago, suggesting that at least at a retail level the market transformation was well advanced. A simple search on Lowe's retail website in April 2024 from an AWE staff member located in Ohio shows a wider of range of products are available to be shipped to stores, but the private lavatory faucets still overwhelmingly have a max flow rate of 1.2 gpm or less. See screenshots of these flow rates in Attachment C to this letter.

D. Kitchen Faucet Max Flow Rates. Many members expressed their support for WaterSense labeling for kitchen faucets. There were no concerns expressed related to establishing a flow rate of 1.8 gpm for WaterSense given the sense that the market appears to have already substantially shifted to this flow rate. Some of our manufacturing members take the position that since this would constitute a brand-new EPA specification for kitchen faucets, EPA WS should work with the product standards committee ASME A112/CSA B125 to determine a standard kitchen faucet flow rate (e.g. 2.2 gpm Federal EPAct) prior to developing a specification for efficient kitchen faucets at 1.8 gpm which would be in line with a 20% reduction from the current EPAct federal requirements.

Members have mixed views on whether the max should be lowered to 1.5 gpm. Some expressed concerns about potential impacts to performance, user satisfaction, and manufacturers. Others observed that the lower the flows get, the longer fixed volume tasks like pot filling would take without a temporary override. Other members recognized the potential for water savings of going lower and the potential energy benefits given that kitchen faucets are a major user of hot water.

Members agreed that there was a general lack of national, representative data on the market share of the flow rates of new faucets being sold today that use 1.5 gpm, 1.8 gpm or 2.2 gpm. Because WaterSense has not previously labeled kitchen faucets, it does not have certification data like it does for private lavatory faucets. Having market share data would provide information to evaluate the general sense that the market has already transitioned to 1.8 gpm and insights as to the feasibility of moving to 1.5 gpm. There are several limited sources of retail product availability data that support the fact that most kitchen faucets offered for sale use 1.8 gpm or less even in places beyond states like California where this flow rate is required.

AWE has obtained some kitchen faucet data from the Residential Energy Services Network or RESNET (www.resnet.us/about/us/), which is a non-profit, national standards-making body for building energy efficiency rating and certification systems in the United States. The data they provided is from their HERS H20 water efficiency rating system, which is an approved certification method used for WaterSense Homes certification. RESNET provided the following data on kitchen faucets being installed in HERS H20 rated homes in 2023, which are generally located in Southwestern states:

%

Kitchen Faucet Flow Rate (gpm)	Number of Homes (2023)
1-1.25	226
1.26-1.5	3433
1.51-1.75	69
1.76-2	177
>2	13

These data show that kitchen faucets using 1.5 gpm or less are the most popular choice in water efficient homes seeking the WaterSense homes certification. RESNET did not collect detailed data on private lavatory faucets.

An article from the *Georgia Operator Magazine* reported that only 2 of 133 kitchen faucets available on the shelves in metro Atlanta used more than 1.8 gpm even though 2.0 gpm were allowed under Georgia's code. See Attachment B to this letter. A simple search on Lowe's retail website from an AWE staff member located in Ohio shows a wider of range of products are available to be shipped to stores, but the kitchen faucets still overwhelmingly have a max flow rate of 1.8 gpm or less. See screenshots of these flow rates in Attachment D to this letter.

E. Kitchen Faucet Temporary Override Valves. AWE members were generally supportive of maintaining and allowing the temporary override to allow for higher flow rates up to 2.2 gpm for things like pot filling and other fixed-volume tasks. Members were also encouraged by the efforts to define further how this override feature should work and to ensure it does not remain permanently in the override setting.

F. WaterSense's Purpose – Identifying and Promoting Water-Efficient Products. Recognizing that it is part of WaterSense's statutory purpose to identify and promote water-efficient products, some members questioned whether labeling a private lavatory faucet using 1.2 gpm or a kitchen faucet using 1.8 gpm would fulfill this purpose given their apparent dominance in the marketplace. If nearly all private lavatory faucets already use 1.2 gpm and many kitchen faucets use 1.8 gpm, then would the WaterSense label convey meaningful information to consumers about the product's water efficiency? Others noted that water savings calculations for any revised specification should take into account the fact that many new faucets being sold already have flow rates far lower than the federal or prior WaterSense maximum.

AWE and its members appreciate this opportunity to comment and provide information for the Faucet NOI. We will continue working with stakeholders to learn more about the questions raised with this NOI and to be prepared to submit comments on any future draft specification.

Sincerely,

Ron Burke
President and CEO
Alliance for Water Efficiency

Attachment A

Table Showing Kitchen and Lavatory Use Separately; Source: Codes and Standards Enhancement (CASE) Initiative for PY 2013: Title 20 Standards Development titled *Analysis of Standards Proposal for Residential Faucets and Faucet Accessories* (July 29, 2013)

Table 5.4 Assumptions Used to Calculate Annual per Unit Water Use

Metric	Value	Source
Number of Kitchen Faucet Events per Household per Day [a]	41.6	CASE Team analysis
Faucet Events per Household per Day	57.4	Aquacraft 2011
Lavatory Faucet Events per Household per Day	13.8	See Section 5.2.1
Number of Kitchen Faucets per House [b]	1.04	CASE Team analysis
Installed Kitchen Faucets (2010)	13,357,895	See Section 6.1.1
Number of Homes (2010)	12,885,684	See Section 6.1.1
Average Duration of Faucet Event	37 seconds	Aquacraft 2011
Daily water used to fill pots and basins	3 gal/day-faucet	assumption
Flow rate derating factor for non-qualifying products	0.67	Aquacraft 2000
Market share of non-qualifying products		
2.2 gpm	77%	See Section 6.1.2
1.81 – 2.19 gpm	23%	See Section 6.1.2
Average flow rate (actual) of non-qualifying product	1.4 gpm	CASE Team analysis

a. 57.4 events total – 13.8 lavatory faucet events

b. Installed faucets ÷ total houses

MARKET RESEARCH SHOWS CURRENT GEORGIA PLUMBING FIXTURE EFFICIENCY REQUIREMENTS ARE OFTEN EXCEEDED

By Andrew D. Morris, Celine Mollet Saint Benoit, and Jacob Whitacre, Metropolitan North Georgia Water Planning District

The Metropolitan North Georgia Water Planning District (the 'Metro Water District') is frequently presented with the following question from utilities and other stakeholders: *"With Georgia already a national leader on water efficiency, how much more efficient can residential customers become?"*

Georgia's national leadership over the past two decades is unquestionable. For example, Georgia is ranked as the forth best state for water efficiency and conservation in the Alliance for Water Efficiency's 2017 report titled, 'The Water Efficiency and Conservation State Scorecard: An Assessment of Laws.' Only Arizona, California, and Texas scored better than Georgia on this scorecard. Exemplifying this success, the Metro Water District withdraws 10% less water today than in 2000, despite a 1.3 million increase in population.

Efforts by the State of Georgia, the Metro Water District, and utilities have all helped drive down total water withdrawals and per person water demands. The use of high-efficiency plumbing fixtures has played a key role in this progress. In the 2000s, the Metro Water District and its local government partners promoted high-efficiency fixtures through rebates, education, and a variety of other programs. The State of Georgia built on these efforts in 2010 when the Georgia General Assembly passed the Georgia Water Stewardship Act. This act requires, among other things, the use of high-efficiency plumbing fixtures through plumbing code standards for toilets, urinals, and faucets in new and renovated buildings.

Since it's been 10 years since the *Georgia Water Stewardship Act* was passed, a review of current trends in water efficient plumbing fixtures is needed to answer the question of what additional efficiency is feasible today. Therefore, the Metro Water District has taken a data-driven approach to survey today's technology trends and to see how plumbing fixtures in retail stores meet or exceed the State of Georgia's minimum plumbing fixture efficiency requirements.

For the Metro Water District's market research, plumbing fixtures available in stores at The Home Depot, Lowe's, and Walmart retail stores in the Metro Water District were reviewed. Five of each store, for a total of 15 retail stores, were selected at random.

The market research was performed electronically by selecting a specific store location on each retailer's website and then choosing the option to only show products available on the day of the review at the selected store. Fixture data was gathered from retail stores because they provided the most robust and readily accessible data set on plumbing fixture availability, pricing, and customer satisfaction. While many fixtures are sold through other channels to builders and contractors, these sources do not readily provide the same amount and quality of data.

Table 1 shows the current fixture efficiency requirements in the State of Georgia. In the figures below, fixtures listed as meeting current efficiency requirements are those that match exactly the current Georgia efficiency requirements. The retail market data shown in these figures strongly support the conclusion that exceeding current efficiency requirements remains feasible for three reasons.

First, fixtures that exceed the current efficiency requirements are readily available. In fact, the results provided in **Figure 1** show that, except for toilets, there are many more fixtures available in retail stores that exceed the standards than those that meet it.

FIXTURE	GA STATE CODE
Toilet	1.28 gpf
Showerhead	2.5 gpm
Kitchen Faucet	2.0 gpm
Lavatory Faucet	1.5 gpm

Table 1. *Current Georgia Efficiency Requirements*

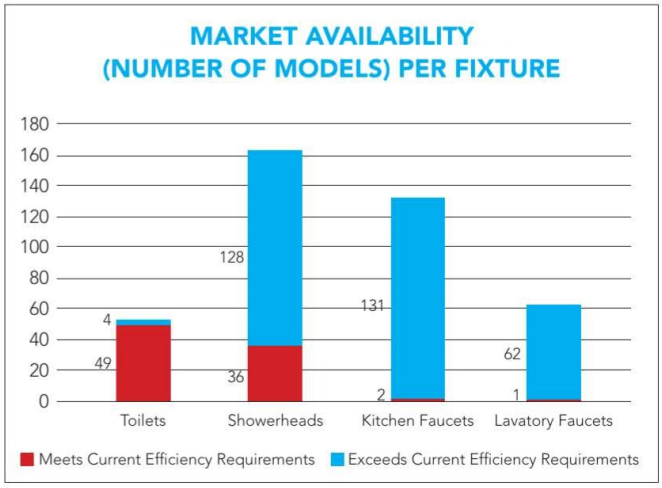


Figure 1. *Market Availability of Fixture Models*

Showerheads and faucets that exceed current requirements are widely available. It's worth noting that while only four toilet models that exceed current efficiency requirements were available in stores, nearly every store carried at least one of these four very popular models that exceed current efficiency requirements. The Metro Water District is exploring additional research avenues to understand what models are available beyond retail store shelves that exceed current efficiency requirements. For example, the MaP voluntary toilet performance testing program has tested more than 100 models that exceed current efficiency requirements (see *www.map-testing.com/map-premium.html*). More research is needed to understand why more models are not available at retail.

Second, customers appear to be very satisfied, and sometimes more satisfied, with fixtures that exceed current efficiency requirements as seen in **Figure 2**. We've excluded faucets from the chart below given how few faucets are available that merely meet the current efficient requirements (two kitchen faucets and one lavatory faucet).

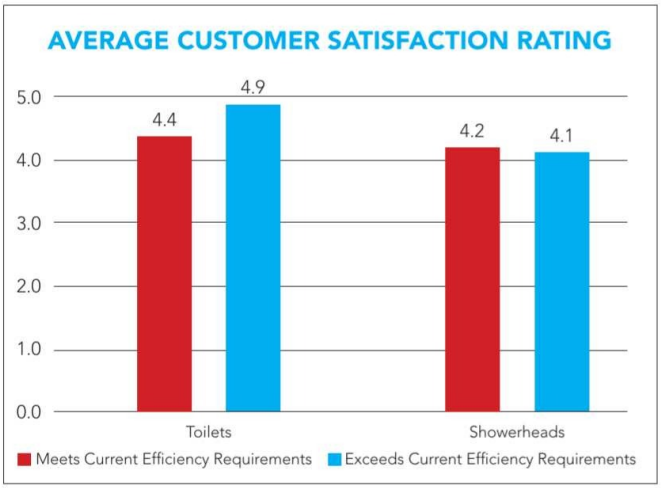


Figure 2. *Customer Satisfaction Ratings of Toilet and Showerhead Fixtures*

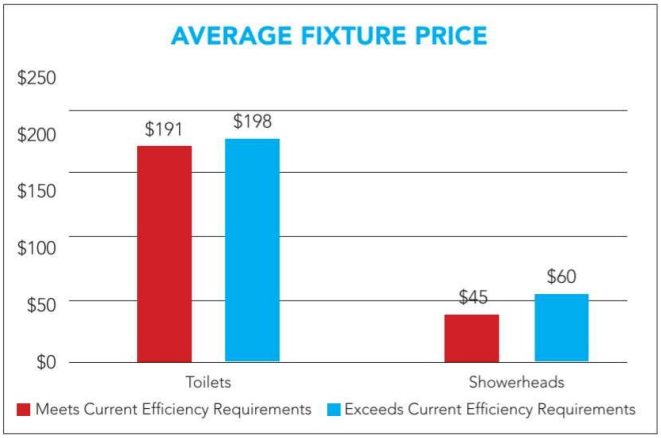


Figure 3. *Average Price of Toilet and Showerhead Fixtures*

Third, fixtures that exceed current efficiency requirements fall within a similar price range as demonstrated in **Figure 3**. Again, faucets have been excluded given the limited number available that merely meet current requirements.

While the average price for showerheads that exceed current efficiency requirements is somewhat higher, the difference in price would be recouped in utility bill savings in less than a year. Compared to showerheads that merely meet Georgia's current efficiency requirements, EPA's WaterSense program estimated the utility bill savings in its March 4, 2010, *Supporting Statement for the WaterSense Specification for Showerheads*, with the WaterSense showerheads exceeding Georgia's current efficiency requirements. The relevant part reads:

> *"The average homeowner retrofitting his or her showerheads with WaterSense labeled showerheads will realize an accompanying $14 savings on water and wastewater costs annually due to lower water consumption. Factoring in the accompanying energy savings, the average household with electric water heating may save an additional $36, for a combined annual savings of $50. The average household with natural gas water heating may save an additional $18 for a combined annual savings of $32."*

Accounting for inflation and average water, sewer, and energy rate increases since 2010, when WaterSense did this analysis, the savings would be even larger today.

Also, if one is looking for the least expensive showerhead options, our data show that five of the 10 least expensive models were models that exceed current efficiency requirements. Clearly, many low-cost showerhead models are available.

In conclusion, the data from the Metro Water District show that plumbing fixture technology and markets continue to advance, and so the question, *"How much more efficient can our residential customers become?"* is one that must be reevaluated from time to time. Based on this evaluation of current technologies available at retail stores in the Metro Water District, exceeding current efficiency requirements remains feasible.

The data also show that, even without code changes, some new and renovated homes will use fixtures that exceed current efficiency requirements based simply on what is already widely available on retail store shelves.

The Metro Water District expects to continue our work to take advantage of new efficiency opportunities through a data driven approach. We would love to hear from you if you have experience or insights on plumbing fixture efficiency that will help us in our research, analysis, and action through the Metro Water District's technical assistance programming and next regional plan update.

Note: copies of the retail data are available by emailing *amorris@northgeorgiawater.com*.

https://www.lowes.com/search?searchTerm=bathroom%20sink%20faucets

AWE COMMENTS - ATTACHMENT C

Max Flow Rate

- [ ] 0.35 GPM(1.3 LPM) (7)
- [ ] 0.5 GPM (1.9 LPM) (166)
- [ ] 1.0 GPM (3.8 LPM) (201)
- [ ] 1.2 GPM (4.5 LPM) (4350)
- [ ] 1.5 GPM (5.7 LPM) (641)
- [ ] 1.6 GPM (6.1 LPM) (8)
- [ ] 1.75 GPM (6.6 LPM) (3)
- [ ] 1.8 GPM (6.8 LPM) (27)
- [ ] 2.0 GPM (7.6 LPM) (37)
- [ ] 2.1 GPM (8.0 LPM) (2)
- [ ] 2.2 GPM (8.3 LPM) (159)
- [ ] 2.4 GPM (9.1 LPM) (64)
- [ ] 2.5 GPM (9.5 LPM) (23)
- [ ] 3.7 GPM (14.0 LPM) (1)
- [ ] 0 GPM (0 LPM) (3)

— See Less

Handle Type

Spout Type

Style

allen + roth

Harlow Matte Black Widespread 2-Handle WaterSense Handle Bathroom Sink Faucet with Drain

Shop the Collection

$119.00

★★★★☆ 439

10% OFF WITH BULK SAVINGS

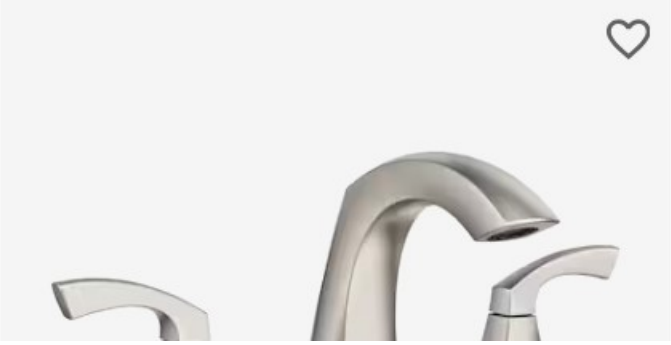
Installation Available

Pickup
Ready by Wed, Apr 10 at Steubenville Lowe's

Free Delivery to 43952
Get it by Sat, Apr 6

Add to Cart

Compare



https://www.lowes.com/search?searchTerm=kitchen%20sink%20faucets%20one%20hole&catalog=

AWE COMMENTS - ATTACHMENT D

$159.00 ★★★★½ 1641

~~$179.00~~ Save $20.00 Ends Apr 5

Installation Available

Pickup
Ready within 3 hrs | 3 in Stock at Steubenville Lowe's

Free Delivery to 43952
As soon as Tomorrow

Add to Cart

Compare

Max Flow Rate

- [ ] 0.5 GPM (1.9 LPM) (19)
- [ ] 1.0 GPM (3.8 LPM) (14)
- [ ] 1.2 GPM (4.5 LPM) (41)
- [ ] 1.5 GPM (5.7 LPM) (547)
- [ ] 1.6 GPM (6.1 LPM) (1)
- [ ] 1.7 GPM (6.4 LPM) (17)
- [ ] 1.75 GPM (6.6 LPM) (161)
- [ ] 1.8 GPM (6.8 LPM) (1686)
- [ ] 2.0 GPM (7.6 LPM) (43)
- [ ] 2.2 GPM (8.3 LPM) (66)
- [ ] 2.5 GPM (9.5 LPM) (4)
- [ ] 2.6 GPM (9.8 LPM) (3)
- [ ] 3.0 GPM (11.36 LPM) (5)
- [ ] 4 GPM (15.2 LPM) (128)
- [ ] 5.5 GPM (20.8 LPM) (1)

— See Less

Valve Type

Commercial/Residential

Maximum Kitchen Faucet Height (Inches)