



June 4, 2021

California Department of Water Resources  
Water Use Efficiency Branch  
P.O. Box 942836  
1416 9th St.  
Sacramento, CA 95814

Re: IRWUS REPORT COMMENT LETTER

To Whom it May Concern:

The California Water Efficiency Partnership is a statewide non-profit member-based organization representing over 220 California water agencies, businesses, and other organizations. Collectively our water agency members provide services to over 6.6 million connections across the state. With a mission and commitment to maximize water efficiency, CalWEP has a deep history working on customer side conservation and efficiency programs. We believe that data-driven conservation and efficiency are paramount to ensuring that California has a reliable and resilient water future.

CalWEP appreciates the opportunity to review and comment on the Indoor Residential Water Use Study (Study). We believe the Study provides a helpful snapshot of indoor residential water use in California, along with useful information that can inform how the indoor residential water standard is set. The Study also clearly indicates where there are still big gaps in our understanding of household water use and what it will take to achieve various levels of water use efficiency on a per capita basis across the state.

As noted, CalWEP supports maximizing urban water efficiency and conservation and thus appreciates how the Study summarizes the findings of several technical studies which contain water use data and information to evaluate where we are with regard to indoor water use, and what it may take to lower our statewide average indoor water use substantially in coming years. The Study is expected to include the "information necessary to support a lower indoor residential water use standard that appropriately reflects best practices" (Water Code §10609.4(b)(1)). This focus on an evidence-based approach includes information on the ways the best practices implemented by water suppliers (such as fixture and appliance rebate programs, conservation education, and leak detection programs) -- combined with changes in customer behavior -- has resulted in reduced indoor water use statewide.

But it is also clear from this study that actual indoor water use continues to vary across the state geographically, by residence type and age, due to other factors that this report was not able to identify. This results in significant variation in the average indoor gallons per capita per day (GPCD) of water suppliers statewide.

CalWEP is concerned that the issues of technical feasibility and local cost effectiveness have not been adequately addressed in this study. We believe that the study does clearly lead to a conclusion that achieving an average indoor use of 42 GPCD at a utility scale by 2030 will require the vast majority of residences in the state to be equipped with a 1.28 gallon per flush toilet or better, and high-efficiency clothes washers. In addition, residential leaks will need to be substantially reduced, requiring almost universal use of high-frequency flow monitoring technologies (and/or advanced metering infrastructure) by water suppliers by 2030, and the subsequent action by customers to address the leaks identified.

Further, we have examined the cost for implementing a revised indoor standard. **The total anticipated cost range for reasonably complying with a 2030 standard in which all providers achieve a residential indoor per capita volume of 42 GPCD by 2030 is likely between \$2.8 and \$4.6 billion.** See the attachment for further information on how we calculated this.

**Thus, we request that the Study be submitted to the Legislature without a recommendation for a reduced indoor residential standard at this time.** We believe that a more complete analysis of the cost and benefits of a reduced standard is needed, along with more study of other factors causing higher indoor use in some areas. Also needed to be examined carefully are the necessary stakeholder contributions regarding technical and local cost-effectiveness and rate affordability. After this work is done, a recommendation to reduce the indoor standard -- along with needed funding assistance for implementation -- may well be justified.

Thank you for the opportunity to comment. This is an important and potentially costly decision for the State of California if not done carefully. CalWEP looks forward to partnering with the State to ensure that we establish data-driven standards that maximize urban water use efficiency in a manner that also takes into consideration cost for local suppliers and ultimately ratepayers. Please contact Tia Leberz, Executive Director External Affairs, if you have any questions regarding this information ([tia@calwep.org](mailto:tia@calwep.org)).

Sincerely,



Justin Finch, Chair  
California Water Efficiency Partnership  
Moulton Niguel Water District

cc: Charlotte Ely, California State Water Resources Control Board

## DETAILED COMMENTS FROM THE CALIFORNIA WATER EFFICIENCY PARTNERSHIP

The Indoor Residential Water Use Study does not attempt to evaluate feasibility and cost associated with fixture replacement and leak repair or examine other potential reasons for variable indoor water use. We have examined the question of feasibility and cost, and offer the following points:

- About 5 million inefficient residential toilets are estimated to still be in use in the state<sup>1</sup> and with a natural replacement rate of 4% per year, 2.7 million toilets will still need to be replaced by 2030. Those inefficient toilets are likely to be in older, rural and/or disadvantaged communities, multifamily housing, and other traditionally hard to reach areas. Increased incentives and direct install programs will be required to reach these customers, however significant challenges will still exist to achieve the high levels of customer participation needed. Current program models show that with an average cost of \$350 per toilet this would cost an estimated **\$945 million dollars between now and 2030**. (Table 1)
- There are an unknown number of older style top-loading clothes washers in residences that use an average of about 40 gallons per load<sup>2</sup>, and since these are significantly less expensive than efficient models there will continue to be a mix of both efficient and inefficient machines installed. But given a useful life of only about 13 years, almost 1 million washers are replaced annually. If 20% of future clothes washer sales are substantially incentivized between now and 2030 the result could meet the residential water use reduction needed to achieve the 42 GPCD standard. At an incentive cost in the range of \$300-\$500 per washer sold (note that this is significantly higher than many current programs), **this would cost between \$500-834 million dollars between now and 2030**. (Table. 2)
- Residential leakage (after the meter) accounted for 7.9 GPCD and 14% of indoor use in the 2016 Residential End Uses of Water Study.<sup>3</sup> In general, most residential leakage is associated with a relatively few homes having significant leakage. The only proven approach to address household leakage at the utility scale is to implement high-frequency flow monitoring through the water meter and to alert customers when they have a leak. The cost of high-frequency flow monitoring for leak detection is at least \$200 per customer with potentially ongoing fees using advanced metering infrastructure (AMI) or any other product or method currently available. Assuming only half of California households are served by suppliers that have AMI, **the cost for such leak detection capabilities to serve the remaining residences would be between \$1.4 and \$2.8 billion between now and 2030**. (Table 3)
- **The total anticipated cost range for reasonably complying with a 2030 standard in which all providers achieve a residential indoor per capita volume of 42 GPCD by 2030 is likely between \$2.8 and \$4.6 billion**. (Table 4)

The Study provides strong evidence that most California communities are generally on track to meet the existing indoor residential standard of 50 GPCD by 2030. But if the standard is lowered to the proposed

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<sup>1</sup> Koeller, J. 2017. A Saturation Study of Non-Efficient Water Closets in Key States. Alliance for Water Efficiency and Plumbing Manufacturers International

<sup>2</sup> Mayer, P. et. al. 1999. Residential End Uses of Water. American Water Works Association Research Foundation. Denver, Colorado.

<sup>3</sup> DeOreo, W., P.Mayer, et. al. 2016. Residential End Uses of Water, Version 2. Water Research Foundation. Denver, Colorado

level of 42 GPCD by 2030, the result would be an annual reduction of water use statewide of about 354,000 AF per year at a significant cost.

Conservation and efficiency are a critical strategy to ensuring communities have long-term, reliable water supplies. CalWEP's mission is to maximize water efficiency through sound data-driven policy and cost-effective strategies. Numerous reports show that efficiency is often one of the most cost-effective ways to ensure adequate supply; however, as our estimates show, the 42 GPCD recommended standard by 2030 may prove to be cost-prohibitive at the local level.

We believe that many of the communities in which this effort will necessarily need to be targeted may find that it will not be affordable to meet the proposed standard. Water affordability is already a concern in many parts of the state. The communities which can least afford to meet this standard will have to rely on significant state and local funding to implement it, which must be included in the recommendation proposed by the Study. The Study cites Australia's recent experience achieving substantial indoor use savings during Australia's millennium drought. It should be noted that this achievement was made possible through billions of dollars in Australian federal funding.

See the attached Tables for our calculations.

*Table 1: Estimated cost of replacing inefficient toilets in California*

# of Inefficient Toilets	Incentive Per Toilet	Cost of Toilet Replacement (\$)
2,700,000	\$350	\$945,000,000

*Table 2: Estimated cost of clothes washer incentives required to meet California indoor efficiency goals, 2021 - 2030*

Category	Value	Reference
<b>Housing Units in California</b>	14,180,000	2019 US Census data
<b>% of home with a clothes washer</b>	85%	<a href="https://www.prnewswire.com/news-releases/us-census-bureau-daily-feature-for-october-26-washing-machines-300343533.html">https://www.prnewswire.com/news-releases/us-census-bureau-daily-feature-for-october-26-washing-machines-300343533.html</a>
<b>~ # of Clothes Washers installed in CA</b>	12,053,000	
<b>% of CW sales that must be incentivized</b>	20%	
<b>Cost of Incentive per washer</b>	\$300 - \$500	Estimated range based on existing washer programs.
<b>~ Clothes washer sales/year in California</b>	927,154	Assumes a 13-year useful life.
<b>~ Cost of Clothes Washer Incentives, 2021 – 2030.</b>	<b>\$500,663,077</b>	<b>Low</b>
	<b>\$834,438,462</b>	<b>High</b>

*Table 3: Estimated cost of household leak detection to meet California indoor efficiency goals*

Category	Value	Reference
<b>Housing Units in California</b>	14,180,000	2019 US Census data
<b>% of home leak detection</b>	25 - 50%	Estimate
<b>Cost of Incentive per Housing Unit</b>	\$200	Low-cost estimate based on current technology.
<b>~ Cost of Household Leak Detection.</b>	<b>\$1,418,000,000</b>	<b>Low</b>
	<b>\$2,836,000,000</b>	<b>High</b>

*Table 4: Estimated total cost of meeting proposed California indoor efficiency goals*

Category	Low Estimate	High Estimate
<b>Toilet incentives</b>	\$945,000,000	\$945,000,000
<b>Clothes washer incentives</b>	\$500,663,077	\$834,438,462
<b>Leak detection monitoring</b>	\$1,418,000,000	\$2,836,000,000
<b>Faucets and Showers</b>	\$0	\$0
<b>Total</b>	<b>\$2,863,663,077</b>	<b>\$4,615,438,462</b>