

<b>DOCKETED</b>	
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<b>Project Title:</b>	Appliance Efficiency Regulations for Water Closets
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<b>Document Title:</b>	Metropolitan Water District of Southern California Comments - Metropolitan Water District Regional Rebate Program Toilet Activity and Household Water Use Study
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*Submitted On: 3/29/2023*  
*Docket Number: 22-AAER-05*

**Metropolitan Water District Regional Rebate Program Toilet Activity  
and Household Water Use Study**

*Additional submitted attachment is included below.*



THE METROPOLITAN WATER DISTRICT  
OF SOUTHERN CALIFORNIA

*Office of the General Manager*

March 29, 2023

California Energy Commission  
715 P Street  
Sacramento, CA 95814

Re: Docket No. 22-AAER-05

Project Title: Appliance Efficiency Regulations for Water Closets

Metropolitan Water District of Southern California (MWD or Metropolitan) is providing information to offer context for the RFI issued by the California Energy Commission regarding the market share of gravity tank-type water closets based on flush volume. We show the number of rebates provided through the regional rebate program “SoCal WaterSmart” and recent data analysis done for MWD by Flume Data Labs.

Metropolitan is a large regional wholesale water agency providing about half of all water served in Southern California. Metropolitan covers a 5,200 square mile area from Ventura County to the southern border, and inland to parts of Riverside and San Bernardino Counties. MWD runs regional rebate programs to support our 26 member agencies including a baseline incentive, and administrative support for Member Agencies who wish to add funding to provide higher rebates in specific service areas.

### **Metropolitan Toilet Incentives**

MWD provides incentives for residential and commercial water users to improve efficiency beyond plumbing code requirements. MWD began providing rebates for toilets in the early 1990s, starting with incentives for Ultra-Low Flush Toilets (ULFT) which used 1.6 gallons per flush (gpf). When ULFTs became the highest flush volume toilet that could be purchased in California, MWD shifted focus to incentivize higher efficiency models, following a policy of incentivizing people to install devices beyond the new efficiency standards. By 2006, MWD had phased out the rebate for ULFTs and began providing incentives for High Efficiency Toilets (HET), the term used for toilets with a flush volume of 1.28 gallons. Similarly in 2014, when 1.28 gpf became the highest flush volume toilet per California water code, MWD phased out incentives for HET, and began offering incentives only for Premium High Efficiency Toilets (PHET).

Since 2014, MWD has rebated on nearly 400,000 residential and commercial Premium High Efficiency Toilets (PHET), the term used for toilets with a flush volume of only 1 gallon. For context, between 1991-2007, over 2.5 million incentives were provided for ULFTs, and between 2006-2017 over 900,000 provided for HET. There is still much ground to cover to bring current 1.6 gpf toilets to the current code of 1.28 gpf.

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**Table 1: MWD Regional Rebate Program Toilet Rebates Provide**

	1991-1995	1996-2000	2001-2005	2006-2010	2011-2015	2016-2020	2021-Present	Total Rebates Issued/Units Distributed
Ultra-Low Flush Toilets (ULFT)	553,426	1,152,951	734,834	141,360				2,582,571
High Efficiency Toilets (HET)				275,436	580,199	45,451	6	901,092
Premium High Efficiency Toilets (PHET)					88,419	280,003	31,536	399,958

**Flume Data Labs Analysis**

In 2020, Metropolitan partnered with Flume Data Labs (FDL) to look at water use in single-family homes across the service area. FDL uses real-time data monitoring to collect and understand how residential water is used. There are over 14,500 devices in the Metropolitan service area. Like the data loggers used in past numerous residential water end-use studies, the data contains ‘signatures’ that indicate what device is being used. Flume analyzed almost 24 million flush events from January 2020 through December 2022 and found the average flush volume of toilets was 2.0 gpf and a median volume 1.6 gpf. Flume was also able to provide the information in Table 2 indicating the average flush volume of Flume user toilets. Note that households who install a Flume device may not represent the typical household in Southern California. The use of a Flume device implies that the household is interested in their water use and, thus, may have already converted to more efficient devices.

**Table 2: Toilet Flush Volume from Flume Analysis**

Flush Volume (GPF) [% makeup of all events]	
≤ 1.0	9%
1.0 - 1.5	32%
1.5 - 2.0	24%
2.0 - 3.0	20%
3.0 - 5.0	12.5%
≥ 5.0	2.5%

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### **Product Availability**

Metropolitan has been performing outreach work across service area in the past two years, where a vendor visits 'big box' and other retail stores and places point of purchase materials directly next to eligible water saving devices such as toilets to promote available rebates. During store visits, the vendor observed low availability of PHET. For example, if there were ten toilets on display at a Home Depot, generally only one PHET model was available and eligible for Metropolitan's rebate. This means consumers would need to have pre-knowledge about higher efficiency models and seek out PHET, rather than accessing what is readily available in the market.

Supply chain issues during the pandemic impacted incentive program activity, specifically the multifamily property toilet replacement programs. Contractors struggled to obtain product to complete projects, and experienced overall shipping container cost increases which also impacted project completion. Anecdotally, these issues seem to be resolved, but more recently, inflation costs have impacted adoption.

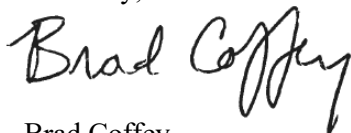
### **Observations**

If activity in the regional rebate program is any indication, adoption of PHET has been slow by single family residential consumers. Nearly 80 percent of the residential toilets for which we provided incentives were installed in or purchased by multifamily property owners, or more likely by contractors that are utilizing incentive programs to buy down the cost of directly installing the PHET in multifamily properties. HETs were much more evenly split between single family and multifamily residential properties; and with ULFTs 96 percent of the market was single family homes. These data are supported by recent analysis done by Flume Data Labs on flow-monitor devices installed in the MWD service area.

The Flume data shows that 32 percent of the flush events were from toilets using between 1-1.5 gpf, most likely 1.28gpf toilets or HET. The data also shows that 24 percent are 1.5 – 2.0 gpf, most likely 1.6gpf or ULFT. Another 20 percent between 2 and 3 gpf, often an older ULFT that is flushing at a higher volume due to older internal components. Through MWD's inspection program, we have found many toilets labeled as 1.6 gpf that flush around 2.2 gallons. And finally, 15 percent of all flush events were for toilets using 3 gallons or more, which represent older toilets still not replaced since the 1990s.

If you would like further information on Metropolitan's regional toilet rebate program, please contact Elise Goldman at [egoldman@mwdh2o.com](mailto:egoldman@mwdh2o.com).

Sincerely,

A handwritten signature in black ink that reads "Brad Coffey". The signature is written in a cursive, flowing style.

Brad Coffey

Manager, Water Resource Management