

## DOCKETED

<b>Docket Number:</b>	15-WATER-03
<b>Project Title:</b>	Water Energy Appliance Rebate Program
<b>TN #:</b>	204984
<b>Document Title:</b>	Plumbing Manufacturers International's Comments: WATER APPLIANCE REBATE PROGRAM
<b>Description:</b>	N/A
<b>Filer:</b>	System
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*Comment Received From: Matt Sigler*

*Submitted On: 6/11/2015*

*Docket Number: 15-WATER-03*

**Plumbing Manufacturers International's Comments - WATER APPLIANCE  
REBATE PROGRAM**

Please refer to attached comments.

*Additional submitted attachment is included below.*



June 11, 2015

California Energy Commission  
Dockets Office, MS-4  
1516 Ninth Street  
Sacramento, CA 95814-5512

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**RE: DOCKET NO. 15-WATER-03 - WATER APPLIANCE REBATE PROGRAM**

Dear Commissioners:

Plumbing Manufacturers International (PMI) appreciates this opportunity to provide comments to the California Energy Commission (CEC) in regard to the Water Appliance Rebate Program the CEC is developing within Docket No. 15-WATER-03.

PMI is an international, U.S.-based trade association representing 90% of plumbing products sold in the United States. It has made the promotion of water efficiency and safety a top priority and has included it in its mission statement.<sup>1</sup> PMI's members are industry leaders in producing safe, reliable and innovative water efficient plumbing technologies and have supported water efficiency legislation and codes in California, as well as the voluntary US EPA WaterSense® program.

PMI supports the CEC in its efforts to develop and implement an appliance rebate program in the State of California as directed by the Governor's April 1 Executive Order B-29-15 that aims to save water, increase enforcement to prevent wasteful water use, streamline the state's drought response and invest in new technologies that will make California more drought resilient. An effective appliance rebate program should promote WaterSense® products such as:

- Toilets – 1.28 maximum gallons per flush [gpf]
- Urinals – 0.5 gpf
- Residential lavatory faucets – 1.5 gpm @ 60 pounds per square inch [psi] / 0.8 gpm @ 20 psi
- Shower heads – 2.0 gpm @ 80 psi
- Commercial pre-rinse spray valves – 1.28 gpm

Promoting WaterSense® products through a robust state rebate program will save tremendous amounts of water while ensuring customer satisfaction and the protection of public health. Even though WaterSense levels have been mandated in California since the 2010 version of the CALGreen regulations [California Green Building Standards Code, Part 11 of Title 24, California Code of Regulations] for new construction, only **6 percent** of California homes and businesses have WaterSense toilets, only **22 percent** of California homes have WaterSense® residential lavatory faucets, and only **24 percent** of California homes have WaterSense® showerheads, according to research conducted by GMP Research, Inc. (refer to research data included at the end of this letter).

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<sup>1</sup>PMI's Mission: To promote the water efficiency, health, safety, quality and environmental sustainability of plumbing products while maximizing consumer choice and value in a fair and open marketplace. To provide a forum for the exchange of information and industry education. To represent openly the members' interests and advocate for sound environmental and public health policies in the regulatory/legislative processes. To enhance the plumbing industry's growth and expansion.

An aggressive rebate program encouraging further market penetration would contribute to significant water savings; PMI would be more than happy to promote such a program.

Furthermore, unlike the 1.2 gpm residential lavatory faucets and 0.125 gpf urinals that are mandated by the CEC's 2015 Appliance Efficiency Regulations, WaterSense® products are widely available today in many retail stores and distributors throughout the state.

Finally, PMI encourages the State of California to adopt a single rebate program under the direction of a single agency, and we urge the CEC and the Department of Water Resources [DWR] to work together with retailers and distributors, as well as PMI, to develop a simple, unified rebate program. Experience confirms that a rebate program must be easy for consumers to use. Enabling consumers to gain rebates directly through the retailer or seller, rather than through the CEC or DWR, will encourage greater consumer participation.

In California, the future is now – a time when steps to sustain an ever-precious resource must be taken. As good stewards of the environment, PMI wants California residents to know that using WaterSense® plumbing products is an immediate action that can be taken to save water. There have been tremendous advancements in the technology and efficacy of plumbing products. Just as you wouldn't use a 20-year-old cell phone, it doesn't make sense to use 20-year-old plumbing technology.

Using WaterSense® products is common sense. There is no need to postpone water savings by waiting for new products to be developed, tested, certified and distributed. PMI encourages the CEC to include WaterSense® products within the Water Appliance Rebate Program so that consumers can begin to replace older plumbing products immediately. Start saving water today.

Sincerely,



Matt Sigler  
Technical Director  
Plumbing Manufacturers International  
Office 847-217-7212  
msigler@safep plumbing.org

# California Installed Toilets

California Installed Toilets by End Use				End Use Applications										Total Residential + Commercial Toilets	
				Single Family + Multi Family Dwellings	Light Commercial										
California	Total Residential Toilets	% of Residential Toilets	SF + MF Homes	Hotel	Restaurant	Nursing Home	Other Health Care	Retail Wholesale	Gov. Building	Gas Station	Manuf.	Other Commercial	Residential + Commercial Toilets	% of Total Residential + Commercial Toilets	
	Residential Toilets	5.0 gpf	1,586,960	5.50%	1,496,335	27,255	6,670	23,225	7,235	20,500	240	440	5,060	1,586,960	4.74%
3.5 gpf		6,924,980	24.00%	6,529,470	118,920	29,110	101,350	31,570	89,485	1,060	1,930	22,085	6,924,980	20.67%	
1.6 gpf		16,605,500	57.55%	15,657,120	285,160	69,810	243,020	75,700	214,570	2,535	4,625	52,960	16,605,500	49.56%	
1.28 gpf		937,755	3.25%	884,200	16,105	3,940	13,725	4,275	12,115	145	260	2,990	937,755	2.80%	
1.6 gpf pressure		1,904,360	6.60%	1,795,605	32,700	8,000	27,870	8,680	24,610	290	530	6,075	1,904,360	5.68%	
1.28 gpf pressure		403,960	1.40%	380,890	6,940	1,700	5,910	1,840	5,220	60	110	1,290	403,960	1.21%	
Dual Flush		490,530	1.70%	462,500	8,420	2,070	7,180	2,235	6,345	75	140	1,565	490,530	1.46%	
Total Residential Toilets		28,854,045	100.00%	27,206,120	495,500	121,300	422,280	131,535	372,845	4,405	8,035	92,025	28,854,045		
% of Residential Toilets		100.00%		94.29%	1.72%	0.42%	1.46%	0.46%	1.29%	0.02%	0.03%	0.32%			
Commercial Toilets	Total Commercial Toilets	4,653,043		0	55,276	249,900	46,920	15,161	41,427	490	893	10,225	4,232,752	4,653,043	
	% of Commercial Toilets	100.00%		0.00%	1.19%	5.37%	1.01%	0.33%	0.89%	0.01%	0.02%	0.22%	90.97%		
All Residential + Commercial Toilets	33,507,088		27,206,120	550,776	371,200	469,200	146,696	414,272	4,895	8,928	102,250	4,232,752	33,507,088	100.00%	
% of All Residential + Commercial Toilets	100.00%		81.22%	1.65%	1.07%	1.40%	0.44%	1.24%	0.01%	0.03%	0.31%	12.63%	100.00%		

86.12%

13.88%

## Observations:

- There are 33.5 million toilets installed in the state of California. 86.1% are residential toilets and 13.9% are commercial spud toilets (floor or wall mount ).
- Residential toilets are found in single family homes and multi-family dwellings (94.3%) , and light commercial applications (5.7%)
- 5.5% of **ALL** installed toilets (residential + commercial) are HET Toilets.
  - 2.8% are 1.28 GPF or Less Gravity Fed Toilets
  - 1.2% are 1.28 Pressure Assist
  - 1.5% are Dual Flush Toilets
- 6.4% of all installed **RESIDENTIAL** toilets are HET Toilets.
  - 3.3% are 1.28 GPF or Less Gravity Fed Toilets
  - 1.4% are 1.28 Pressure Assist
  - 1.7% are Dual Flush Toilets

Source: GMP Research Field Interviews 03/2015



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# Low Flow and WaterSense Lavatory Faucet and Showerhead Market Penetration

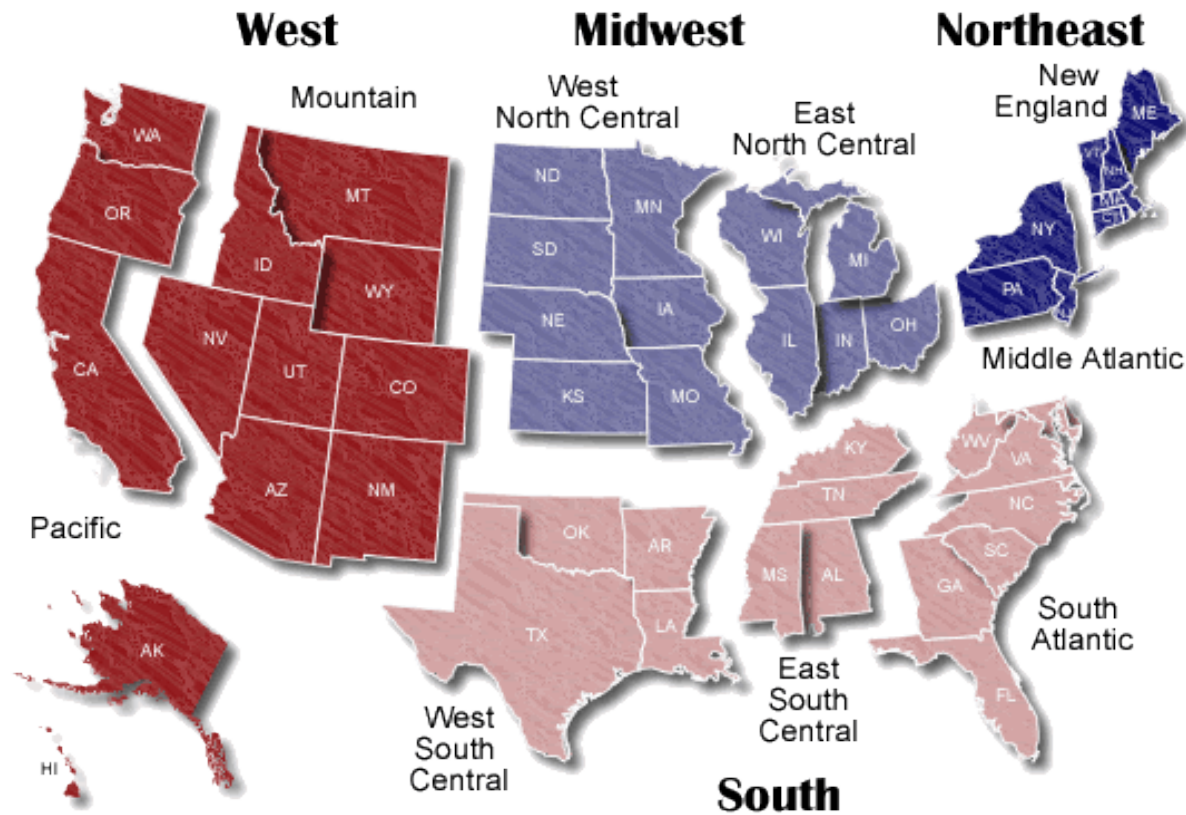


110 telephone and email interviews in all 9 US Census Regions  
22 calls into California / 16 water utilities + 6 manufacturers



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# U.S. Census Regions




Map by the Indiana Business Research Center, Kelley School of Business, Indiana University



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# US Housing Stock by Type of Home and by US Census Region

in million units – by dwelling type

Region	States	Single Family	Duplex	3-4 Unit Town House	5-9 Unit Apartment or Condominium Building	10-19 unit Apartment or Condominium Building	20 or More Unit Apartment or Condominium Building	Mobile Home	Other	Total
										a+b+c+d+e+f+g
		a	b	c	d	e	f	g	h	
New England	CT, MA, ME, NH, RI, VT	3.261	0.584	0.712	0.550	0.441	0.615	0.301	0.178	6.642
Mid Atlantic	NJ, NY, PA	10.404	1.498	1.082	0.795	0.66	2.623	0.464	0.008	17.534
South Atlantic	DC, DE, FL, GA, MD, NC, SC, VA, WV,	17.069	0.537	0.805	1.249	1.409	2.184	2.366	0.948	26.567
East North Central	IL, IN, OH, MI, WI	14.779	0.892	0.920	1.029	0.792	1.344	0.828	0.005	20.589
West North Central	IA, KS, MN, MO, ND, NE, SD	6.949	0.246	0.315	0.319	0.350	0.647	0.468	0.004	9.298
East South Central	AL, KY, MS, TN	5.909	0.225	0.277	0.375	0.274	0.285	1.02	0.003	8.368
West South Central	AR, LA, OK, TX	10.36	0.342	0.490	0.654	0.791	0.994	1.353	0.026	15.010
Mountain	AZ, CO, ID, MT, NM, NV, UT, WY	6.838	0.195	0.400	0.448	0.455	0.669	0.813	0.012	9.830
Pacific	AK, CA, HI, OR, WA	12.444	0.496	0.987	1.101	0.978	2.105	0.879	0.005	18.995
USA		88.013	5.015	5.988	6.520	6.150	11.466	8.492	1.189	132.833
% of total		66.3%	3.8%	4.5%	4.9%	4.6%	8.6%	6.4%	0.9%	100.0%

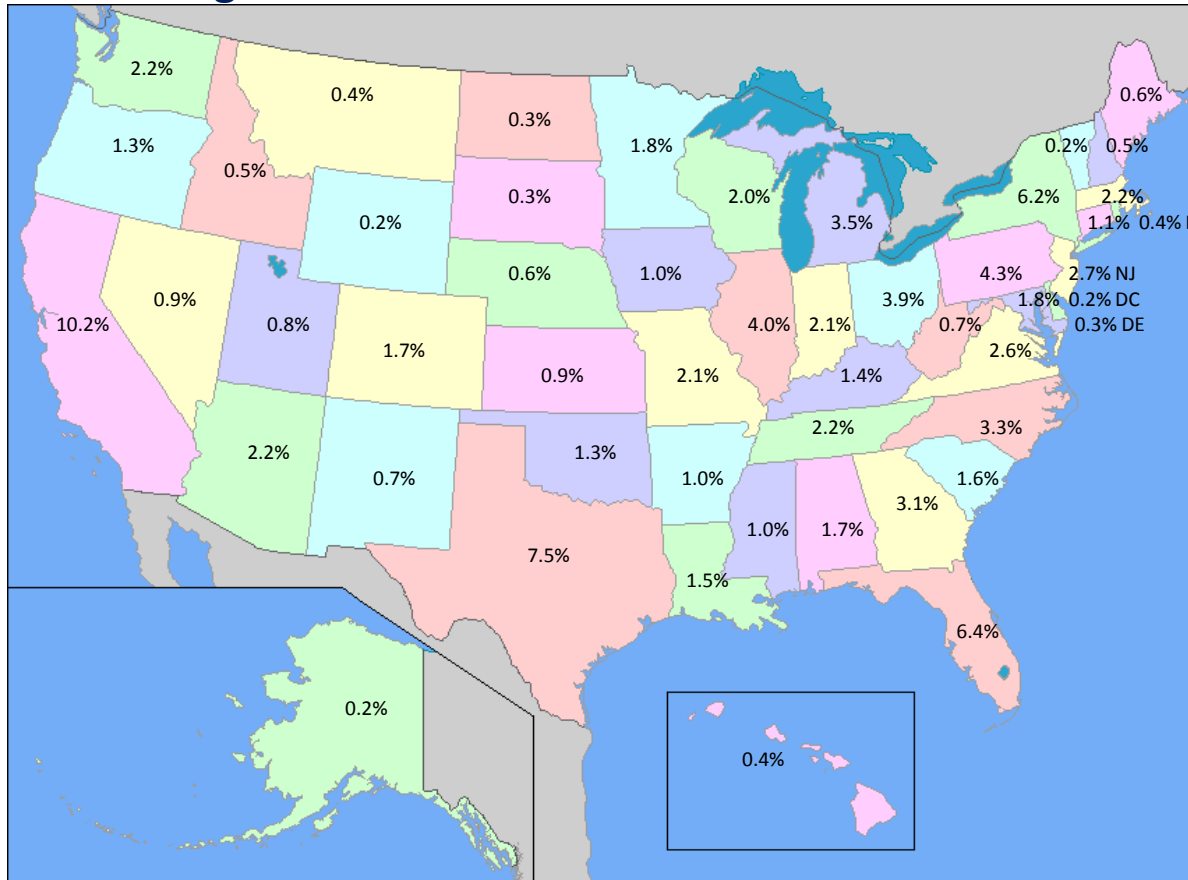
Sources: US Census Bureau / American Fact Finder



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# US Housing Stock – Concentration of Homes



Source: US Census Bureau



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# US Housing Stock by Age of Home

in million units – all dwellings



Region	States	1939 or earlier	1940-1949	1950-1959	1960-1969	1970-1979	1980-1989	1990-1999	2000-2009	2010 or later	Total
		76 years or older	66-75 years	56-65 years	46-55 years	36-45 years	26-35 years	16-25 years	6-15 years	5 years or less	
New England	CT, MA, ME, NH, RI, VT	1.675	0.387	0.766	0.696	0.853	0.851	0.566	0.569	0.279	6.642
Mid Atlantic	NJ, NY, PA	4.286	1.466	2.59	2.102	2.012	1.591	1.362	1.397	0.728	17.534
South Atlantic	DC, DE, FL, GA, MD, NC, SC, VA, WV,	1.527	0.95	2.138	2.637	4.233	4.746	4.733	5.106	0.497	26.567
East North Central	IL, IN, OH, MI, WI	3.548	1.38	2.794	2.423	3	1.931	2.546	2.331	0.636	20.589
West North Central	IA, KS, MN, MO, ND, NE, SD	1.482	0.503	1.016	0.992	1.475	1.046	1.207	1.271	0.306	9.298
East South Central	AL, KY, MS, TN	0.513	0.384	0.751	0.956	1.432	1.218	1.504	1.428	0.182	8.368
West South Central	AR, LA, OK, TX	0.647	0.64	1.335	1.589	2.668	2.518	2.249	3.005	0.359	15.01
Mountain	AZ, CO, ID, MT, NM, NV, UT, WY	0.488	0.282	0.688	0.783	1.76	1.533	1.875	2.245	0.176	9.83
Pacific	AK, CA, HI, OR, WA	1.594	1.126	2.32	2.388	3.498	2.816	2.367	2.515	0.371	18.995
USA		15.760	7.118	14.398	14.566	20.931	18.25	18.409	19.867	3.534	132.833
% of total		11.9%	5.4%	10.8%	11.0%	15.8%	13.7%	13.9%	15.0%	2.7%	100.0%

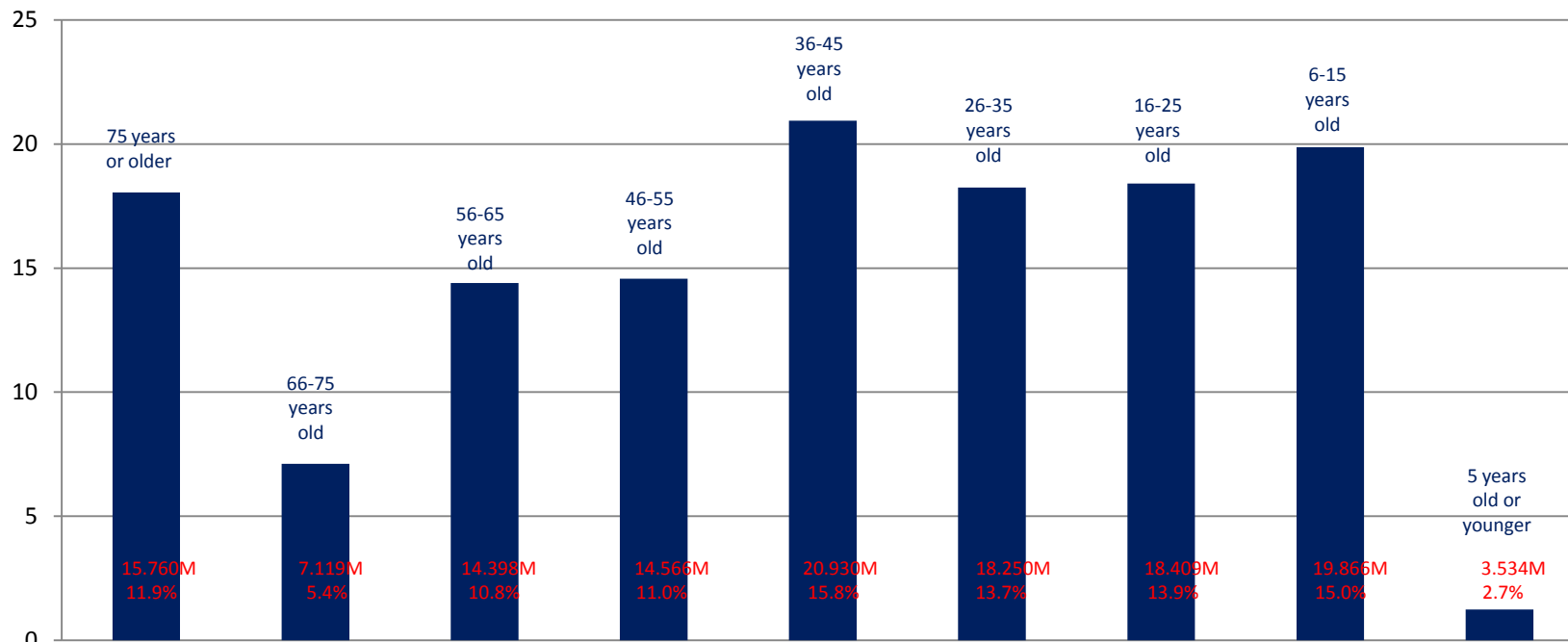
Sources: US Census Bureau / American Fact Finder



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# US Housing Stock by Age of Home

in million units – all dwellings



Sources: US Census Bureau / American Fact Finder



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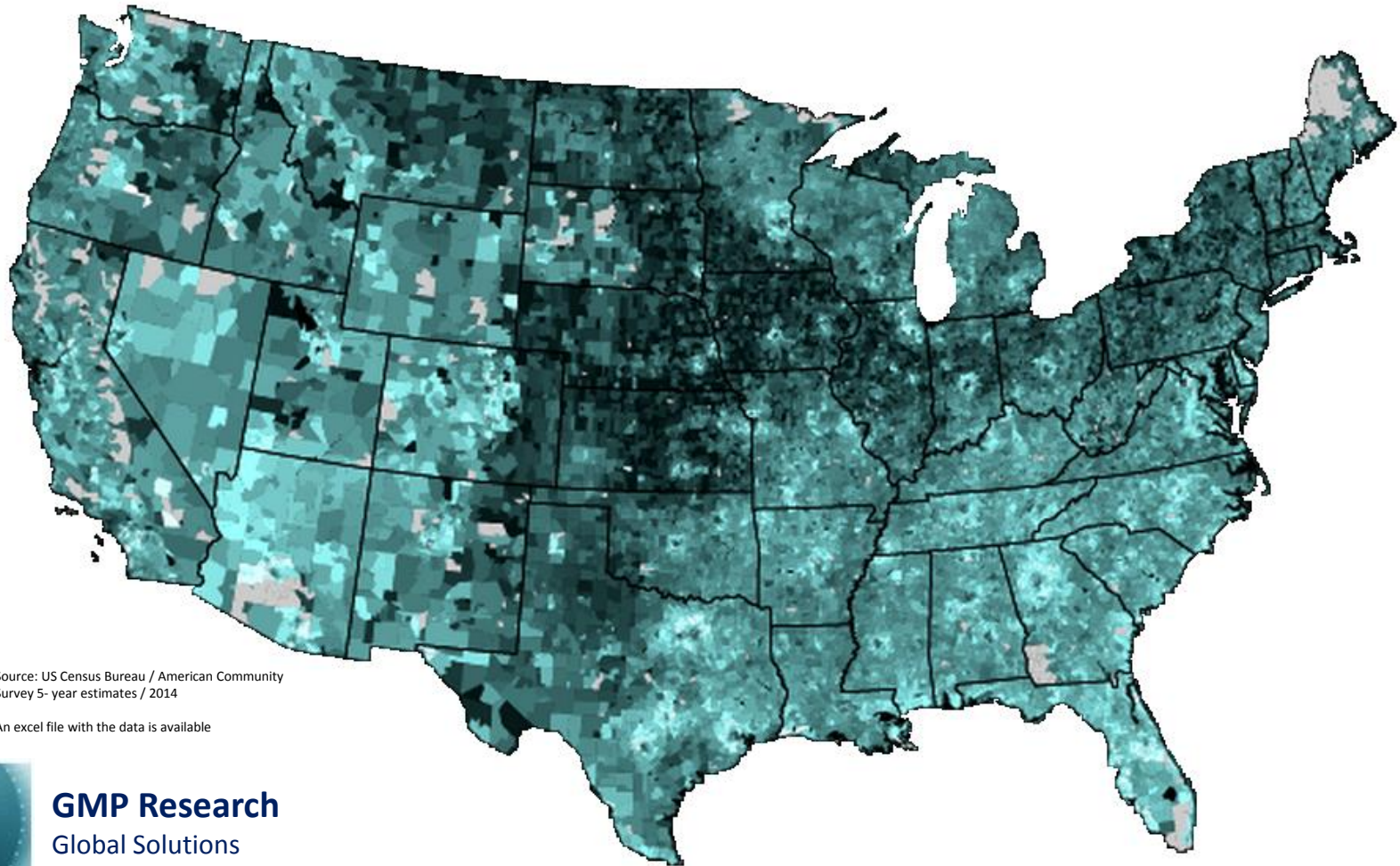
# US Housing Stock

Median Age of Housing Units by Zip Code

< 10 years



75+ years



Source: US Census Bureau / American Community Survey 5- year estimates / 2014

An excel file with the data is available



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## US Metropolitan Areas with the Largest Share of Housing Units Constructed before 1940 (older than 74 years)

Rank	Metropolitan Area	Share of Housing Stock Built before 1940	Rank	Metropolitan Area	Share of Housing Stock Built before 1940
1	Boston, MA	35.7%	16	Baltimore, MD	14.4%
2	Providence, RI	33.1%	17	Portland, OR	13.1%
3	Buffalo, NY	30.5%	18	Columbus, OH	12.5%
4	New York, NY	28.9%	19	Louisville, KY	12.3%
5	Rochester, NY	28.8%	20	Indianapolis, IN	12.1%
6	Pittsburgh, PA	27.2%	21	Los Angeles, CA	12.0%
7	Milwaukee, WI	23.3%	22	Detroit, MI	12.0%
8	Cleveland, OH	22.7%	23	Kansas City, MO	11.9%
9	Chicago, IL	21.3%	24	New Orleans, LA	11.7%
10	Philadelphia, PA	21.2%	25	Seattle, WA	11.1%
11	San Francisco/Oakland, CA	20.4%	26	Richmond, VA	9.0%
12	Hartford, CT	19.3%	27	Salt Lake City, UT	8.9%
13	Cincinnati, OH	17.2%	28	Washington DC	8.6%
14	St. Louis, MO	15.8%	29	Denver, CO	7.1%
15	Minneapolis, MN	15.0%	30	Birmingham, AL	6.8%

Source: America's Oldest Cities | [www.newgeography.com](http://www.newgeography.com)



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# US installed Base of Lavatory Faucets and Shower Heads

## Assumptions:

1. Number of Lavatory Faucets and Shower Heads installed per bathroom

Number of Bathrooms	1	1 1/2	2	3	4	5	6	7
Lavatory Faucets	1.0	2.0	4.0	5.0	6.0	7.0	9.0	10.0
Shower Heads	1.0	1.0	2.0	3.0	4.0	5.0	6.0	6.0

2. A lavatory faucet is replaced every 15 years. A shower head is replaced every 12.5 years
3. 15% of the homes that were built before 1992 have not replaced either a lavatory faucet or a shower head
4. All lavatory faucets and shower heads installed after 1992 were Low flow fittings as per EPA 1992 regulations
5. 98% of all lavatory faucets and shower heads installed after 2007 were WaterSense faucets or shower heads
6. Shower heads include those installed with a bath tub using a tub/shower mixer and in a showering area using a shower only mixer. Whirlpool baths were not included in the shower head count, as they typically are not installed with a tub/shower mixer.
7. Body sprays and hand showers were not included in the shower head count.

Source: GMP Research field inputs from the various faucet manufacturers and plumbing wholesale, detailed architectural plans for homes with 0-5 bedrooms



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# US installed Base of Lavatory Faucets and Shower Heads

## Installed Base of Lavatory Faucets and Shower Heads

In million units

Number of Bathrooms per Home

	1	1 1/2	2	3	4	5	6	7	Total
Number of Bathrooms	44.167	20.783	43.973	11.955	7.439	0.225	0.212	4.079	132.833
Lavatory Faucets	44.167	41.566	175.892	59.775	44.634	1.575	1.908	40.790	410.301
Shower Heads	44.167	33.207	87.946	35.865	29.756	1.125	1.272	24.474	245.388

### Lavatory Faucets

- According to our field research, there are 410.301 million lavatory faucets installed in the United States.
- According to our field research, from 2007-2014, there were 106.343 million lavatory faucets sold, of which 23.8% were sold into new residential construction and 76.2% were sold as replacements.
- 98% of these faucets were WaterSense qualified lavatory faucets (104.216 million WaterSense lavatory faucets)
- There were 260.172 million low flow faucets installed with a flow rate of 2.2 GPM
- There were 45.913 million lavatory faucets that had a flow rate of more than 2.2 GPM.

### Shower Heads

- According to our field research, there are 245.388 million lavatory faucets installed in the United States.
- According to our field research, from 2007-2014, there were 71.863 million shower heads sold, of which 24% were sold into new residential construction and 76% were sold as replacements.
- 98% of these showerheads were WaterSense qualified (70.426 million WaterSense showerheads with a flow rate of 2.0 GPM )
- There were 148.718 million low flow shower heads installed with a flow rate of 2.5 GPM
- There were 26.244 million shower heads, that had a flow rate of more than 2.5 GPM.

Source: GMP Research field inputs from the various faucet manufacturers and plumbing wholesale, detailed architectural plans for homes with 0-5 bedrooms



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# Market Penetration USA - Installed Base of Lavatory Faucets and Shower Heads

in million units

Based on field interviews with faucet manufacturers and with plumbing wholesale, we believe the following is an accurate reflection of the market penetration of Low Flow and WaterSense Lavatory Faucets and Shower Heads:

	Lavatory Faucets installed in the USA			Shower Heads installed in the USA		
	Flow Rate	Million Units	Lavatory Faucets	Flow Rate	Million Units	% of Total
Before Energy Policy Act of 1992 Installed base	> 2.2 GPM	45.913	11.2%	> 2.5 GPM	26.244	10.7%
Energy Policy Act of 1992 installed base	2.2 GPM	260.172	63.4%	2.5 GPM	148.718	60.6%
WaterSense Installed Base	1.5 GPM	104.216	25.4%	2.0 GPM	70.426	28.7%
Total Installed Base in Million Units		410.301	100.0%		245.388	100.0%

Source: GMP Research field inputs from the various faucet manufacturers and plumbing wholesale, detailed architectural plans for homes with 0-5 bedrooms



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## Regional and State Market Penetration - New England and Mid Atlantic Installed Base of Lavatory Faucets and Shower Heads

in million units

Region	State	Total Lav Faucets Million Units	WaterSense Lav Faucets with 1.5 GPM Flow Rate		Low Flow Lav Faucets with 2.2 GPM Flow Rate		Other Lav Faucets with flow rates > 2.2 GPM		Total Shower Heads Million Units	Water Sense Shower Heads with 2.0 GPM Flow Rate		Low Flow Shower Heads with 2.5 GPM Flow Rate		Other Shower Heads with flow rates > 2.5 GPM	
			Million Units	%	Million Units	%	Million Units	%		Million Units	%	Million Units	%	Million Units	%
New England	CT	4.466	0.566	12.7%	3.344	74.9%	0.556	12.4%	2.671	0.362	13.6%	1.893	70.9%	0.416	15.6%
	MA	8.611	1.266	14.7%	6.653	77.3%	0.692	8.0%	5.150	0.859	16.7%	3.772	73.2%	0.519	10.1%
	ME	2.278	0.547	24.0%	1.640	72.0%	0.091	4.0%	1.362	0.371	27.2%	0.938	68.9%	0.053	3.9%
	NH	1.936	0.446	23.0%	1.375	71.0%	0.115	5.9%	1.158	0.303	26.2%	0.785	67.8%	0.070	6.0%
	RI	1.475	0.193	13.1%	1.243	84.3%	0.039	2.6%	0.882	0.130	14.7%	0.703	79.7%	0.049	5.6%
	VT	0.830	0.159	19.2%	0.567	68.3%	0.104	12.5%	0.496	0.108	21.8%	0.323	65.1%	0.065	13.1%
Mid Atlantic	NJ	11.114	1.956	17.6%	7.816	70.3%	1.342	12.1%	6.647	1.327	20.0%	4.447	66.9%	0.873	13.1%
	NY	22.638	3.351	14.8%	18.938	83.7%	0.349	1.5%	13.539	2.273	16.8%	10.726	79.2%	0.540	4.0%
	PA	18.190	2.774	15.3%	12.745	70.1%	2.671	14.7%	10.879	1.881	17.3%	7.236	66.5%	1.762	16.2%

Source: GMP Research field inputs from the various faucet manufacturers and plumbing wholesale, detailed architectural plans for homes with 0-5 bedrooms



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# Regional and State Market Penetration – South Atlantic US installed Base of Lavatory Faucets and Shower Heads

in million units

Region	State	Total Lav Faucets	WaterSense Lav Faucets with 1.5 GPM Flow Rate		Low Flow Lav Faucets with 2.2 GPM Flow Rate		Other Lav Faucets with flow rates > 2.2 GPM		Total Shower Heads	Water Sense Shower Heads with 2.0 GPM Flow Rate		Low Flow Shower Heads with 2.5 GPM Flow Rate		Other Shower Heads with flow rates > 2.5 GPM	
			Million Units	Million Units	%	Million Units	%	Million Units		%	Million Units	Million Units	%	Million Units	%
South Atlantic	DC	0.601	0.107	17.8%	0.423	70.4%	0.071	11.8%	0.359	0.073	20.3%	0.244	68.0%	0.042	11.7%
	DE	1.371	0.455	33.2%	0.663	48.4%	0.253	18.5%	0.820	0.309	37.7%	0.387	47.2%	0.124	15.1%
	FL	23.369	7.744	33.1%	13.527	57.9%	2.098	9.0%	13.976	5.247	37.5%	7.724	55.3%	1.005	7.2%
	GA	14.006	4.418	31.5%	7.179	51.3%	2.409	17.2%	8.377	3.001	35.8%	4.040	48.2%	1.336	15.9%
	MD	8.219	1.703	20.7%	4.865	59.2%	1.651	20.1%	4.916	1.155	23.5%	2.784	56.6%	0.977	19.9%
	NC	13.770	4.446	32.3%	7.871	57.2%	1.453	10.6%	8.235	3.012	36.6%	4.442	53.9%	0.781	9.5%
	SC	6.748	2.164	32.1%	3.808	56.4%	0.776	11.5%	4.036	1.468	36.4%	2.146	53.2%	0.422	10.5%
	VA	11.695	3.209	27.4%	6.376	54.5%	2.110	18.0%	6.994	2.176	31.1%	3.683	52.7%	1.135	16.2%
	WV	2.805	0.623	22.2%	1.926	68.7%	0.256	9.1%	1.678	0.422	25.1%	1.100	65.6%	0.156	9.3%

Source: GMP Research field inputs from the various faucet manufacturers and plumbing wholesale, detailed architectural plans for homes with 0-5 bedrooms



**GMP Research**  
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# Regional and State Market Penetration – East North Central and West North Central Installed Base of Lavatory Faucets and Shower Heads

in million units

Region	State	Total Lav Faucets	WaterSense Lav Faucets with 1.5 GPM Flow Rate		Low Flow Lav Faucets with 2.2 GPM Flow Rate		Other Lav Faucets with flow rates > 2.2 GPM		Total Shower Heads	Water Sense Shower Heads with 2.0 GPM Flow Rate		Low Flow Shower Heads with 2.5 GPM Flow Rate		Other Shower Heads with flow rates > 2.5 GPM	
			Million Units	Million Units	%	Million Units	%	Million Units		%	Million Units	Million Units	%	Million Units	%
East North Central	IL	15.804	3.210	20.3%	11.309	71.6%	1.285	8.1%	9.452	2.178	23.0%	6.447	68.2%	0.827	8.7%
	IN	8.556	2.090	24.4%	5.585	65.3%	0.881	10.3%	5.117	1.417	27.7%	3.202	62.6%	0.498	9.7%
	MI	14.393	2.522	17.5%	10.144	70.5%	1.727	12.0%	8.608	1.711	19.9%	5.771	67.0%	1.126	13.1%
	OH	15.949	2.898	18.2%	11.227	70.4%	1.824	11.4%	9.539	1.966	20.6%	6.391	67.0%	1.182	12.4%
	WI	7.904	1.908	24.1%	5.391	68.2%	0.605	7.7%	4.727	1.294	27.4%	3.086	65.3%	0.347	7.3%
West North Central	IA	4.104	0.956	23.3%	2.694	65.6%	0.454	11.1%	2.454	0.648	26.4%	1.543	62.9%	0.263	10.7%
	KS	3.861	0.822	21.3%	2.457	63.6%	0.582	15.1%	2.309	0.557	24.1%	1.405	60.8%	0.347	15.0%
	MN	7.885	1.833	23.2%	4.759	60.4%	1.293	16.4%	4.716	1.277	27.1%	2.703	57.3%	0.736	15.6%
	MO	8.823	2.244	25.4%	5.452	61.8%	1.127	12.8%	5.277	1.522	28.8%	3.132	59.4%	0.623	11.8%
	ND	1.280	0.397	31.0%	0.712	55.6%	0.171	13.4%	0.766	0.268	35.0%	0.413	53.9%	0.085	11.1%
	NE	2.634	0.592	22.5%	1.600	60.7%	0.442	16.8%	1.575	0.402	25.5%	0.917	58.2%	0.256	16.3%
	SD	1.306	0.388	29.7%	0.720	55.1%	0.198	15.2%	0.781	0.263	33.7%	0.417	53.4%	0.101	12.9%

Source: GMP Research field inputs from the various faucet manufacturers and plumbing wholesale, detailed architectural plans for homes with 0-5 bedrooms



**GMP Research**  
Global Solutions

# Regional and State Market Penetration – East South Central and West South Central Installed Base of Lavatory Faucets and Shower Heads

in million units

Region	State	Total Lav Faucets Million Units	WaterSense Lav Faucets with 1.5 GPM Flow Rate		Low Flow Lav Faucets with 2.2 GPM Flow Rate		Other Lav Faucets with flow rates > 2.2 GPM		Total Shower Heads Million Units	Water Sense Shower Heads with 2.0 GPM Flow Rate		Low Flow Shower Heads with 2.5 GPM Flow Rate		Other Shower Heads with flow rates > 2.5 GPM	
			Million Units	%	Million Units	%	Million Units	%		Million Units	%	Million Units	%	Million Units	%
East South Central	AL	7.249	2.251	31.1%	4.036	55.7%	0.962	13.3%	4.335	1.527	35.2%	2.339	54.0%	0.469	10.8%
	KY	5.701	1.628	28.6%	3.520	61.7%	0.553	9.7%	3.410	1.105	32.4%	2.029	59.5%	0.276	8.1%
	MS	4.233	1.404	33.2%	2.305	54.5%	0.524	12.4%	2.532	0.867	34.2%	1.363	53.8%	0.302	11.9%
	TN	9.062	2.976	32.8%	5.169	57.0%	0.917	10.1%	5.420	2.018	37.2%	2.999	55.3%	0.403	7.4%
West South Central	AR	3.902	1.369	35.1%	2.335	59.8%	0.198	5.1%	2.334	0.824	35.3%	1.399	59.9%	0.111	4.8%
	LA	6.054	1.993	32.9%	3.555	58.7%	0.506	8.4%	3.621	1.352	37.3%	2.062	56.9%	0.207	5.7%
	OK	5.153	1.549	30.1%	3.236	62.8%	0.368	7.1%	3.082	1.051	34.1%	1.866	60.5%	0.165	5.4%
	TX	30.634	10.686	34.9%	17.500	57.1%	2.448	8.0%	18.321	7.232	39.5%	9.950	54.3%	1.139	6.2%

Source: GMP Research field inputs from the various faucet manufacturers and plumbing wholesale, detailed architectural plans for homes with 0-5 bedrooms



**GMP Research**  
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## Regional and State Market Penetration - Mountain Installed Base of Lavatory Faucets and Shower Heads

in million units

Region	State	Total Lav Faucets Million Units	WaterSense Lav Faucets with 1.5 GPM Flow Rate		Low Flow Lav Faucets with 2.2 GPM Flow Rate		Other Lav Faucets with flow rates > 2.2 GPM		Total Shower Heads Million Units	Water Sense Shower Heads with 2.0 GPM Flow Rate		Low Flow Shower Heads with 2.5 GPM Flow Rate		Other Shower Heads with flow rates > 2.5 GPM	
			Million Units	%	Million Units	%	Million Units	%		Million Units	%	Million Units	%	Million Units	%
Mountain	AZ	9.144	3.176	34.7%	5.094	55.7%	0.874	9.6%	5.469	2.152	39.3%	2.895	52.9%	0.422	7.7%
	CO	7.629	2.339	30.7%	3.961	51.9%	1.329	17.4%	4.563	1.586	34.8%	2.300	50.4%	0.677	14.8%
	ID	2.401	0.820	34.2%	1.051	43.8%	0.530	22.1%	1.436	0.499	34.7%	0.638	44.4%	0.299	20.8%
	MT	1.781	0.504	28.3%	0.972	54.6%	0.305	17.1%	1.065	0.342	32.1%	0.562	52.8%	0.161	15.1%
	NM	2.856	0.844	29.6%	1.734	60.7%	0.278	9.7%	1.708	0.572	33.5%	1.001	58.6%	0.135	7.9%
	NV	3.777	1.252	33.1%	2.182	57.8%	0.343	9.1%	2.259	0.850	37.6%	1.277	56.5%	0.132	5.8%
	UT	4.575	1.399	30.6%	1.605	35.1%	1.571	34.3%	2.736	0.949	34.7%	0.948	34.6%	0.839	30.7%
	WY	0.897	0.264	29.4%	0.476	53.1%	0.157	17.5%	0.535	0.181	33.8%	0.276	51.6%	0.078	14.6%

Source: GMP Research field inputs from the various faucet manufacturers and plumbing wholesale, detailed architectural plans for homes with 0-5 bedrooms



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## Regional and State Market Penetration – Pacific Installed Base of Lavatory Faucets and Shower Heads

in million units

Region	State	Total Lav Faucets Million Units	WaterSense Lav Faucets with 1.5 GPM Flow Rate		Low Flow Lav Faucets with 2.2 GPM Flow Rate		Other Lav Faucets with flow rates > 2.2 GPM		Total Shower Heads Million Units	Water Sense Shower Heads with 2.0 GPM Flow Rate		Low Flow Shower Heads with 2.5 GPM Flow Rate		Other Shower Heads with flow rates > 2.5 GPM	
			Million Units	%	Million Units	%	Million Units	%		Million Units	%	Million Units	%	Million Units	%
Pacific	AK	0.786	0.231	29.4%	0.504	64.1%	0.051	6.5%	0.470	0.157	33.4%	0.290	61.7%	0.023	4.9%
	CA	41.614	8.775	21.1%	28.325	68.1%	4.514	10.8%	24.888	5.949	23.9%	16.176	65.0%	2.763	11.1%
	HI	1.724	0.434	25.2%	1.033	59.9%	0.257	14.9%	1.031	0.294	28.5%	0.594	57.6%	0.143	13.9%
	OR	5.298	1.470	27.7%	3.305	62.4%	0.523	9.9%	3.169	0.997	31.5%	1.903	60.1%	0.269	8.5%
	WA	9.210	2.865	31.1%	5.265	57.2%	1.080	11.7%	5.508	1.942	35.3%	3.051	55.4%	0.515	9.4%
USA TOTAL	USA	410.301	104.216	25.4%	260.172	63.4%	45.913	11.2%	245.388	70.426	28.7%	148.718	60.6%	26.244	10.7%

Source: GMP Research field inputs from the various faucet manufacturers and plumbing wholesale, detailed architectural plans for homes with 0-5 bedrooms



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