

## DOCKETED

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|-------------------------|--|
| <b>Docket Number:</b>   | 15-WATER-03  |
| <b>Project Title:</b>   | Water Energy Appliance Rebate Program  |
| <b>TN #:</b>            | 204851   |
| <b>Document Title:</b>  | Matt Sigler Comments: California WaterSense Penetration Numbers for Residential Lavatory Faucets and Showerheads |
| <b>Description:</b>     | N/A  |
| <b>Filer:</b>           | System   |
| <b>Organization:</b>    | Matt Sigler  |
| <b>Submitter Role:</b>  | Public   |
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| <b>Docketed Date:</b>   | 6/2/2015   |

*Comment Received From: Matt Sigler*

*Submitted On: 6/2/2015*

*Docket Number: 15-WATER-03*

## **California WaterSense Penetration Numbers for Residential Lavatory Faucets and Showerheads**

Plumbing Manufacturer's International (PMI) wanted to share this recent data compiled by GMP Research, Inc. in regards to the percentage of WaterSense fixtures and fittings installed in the State of California:

• Residential lavatory faucets = 21.1% (U.S. Installed Residential Lavatory Faucets and Shower heads - 2015, pg. 17)

• Shower heads = 23.9% (U.S. Installed Residential Lavatory Faucets and Shower heads - 2015, pg. 17)

Considering that WaterSense levels have been mandated for new construction since the adoption of the 2010 version of CALGreen, it is apparent that a lot more can be done through an aggressive rebate program to encourage further market penetration; PMI would be more than happy to promote such a program. Additionally, I believe this data supports PMI's position that immediate water savings could happen today if WaterSense products were utilized versus adopting arbitrary flow rates on January 1, 2016 such as 1.2 gpm residential lavatory faucets.

*Additional submitted attachment is included below.*

# Low Flow and WaterSense Lavatory Faucet and Showerhead Market Penetration

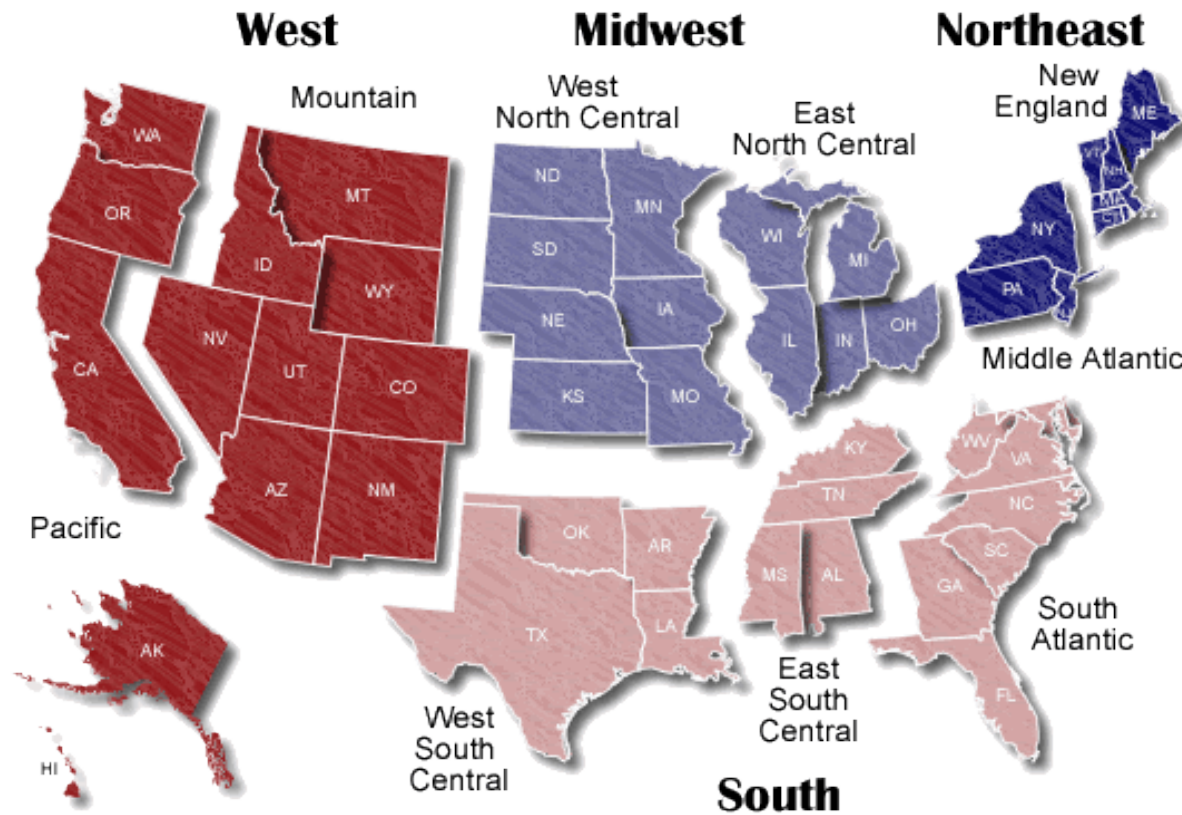


110 telephone and email interviews in all 9 US Census Regions  
22 calls into California / 16 water utilities + 6 manufacturers



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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

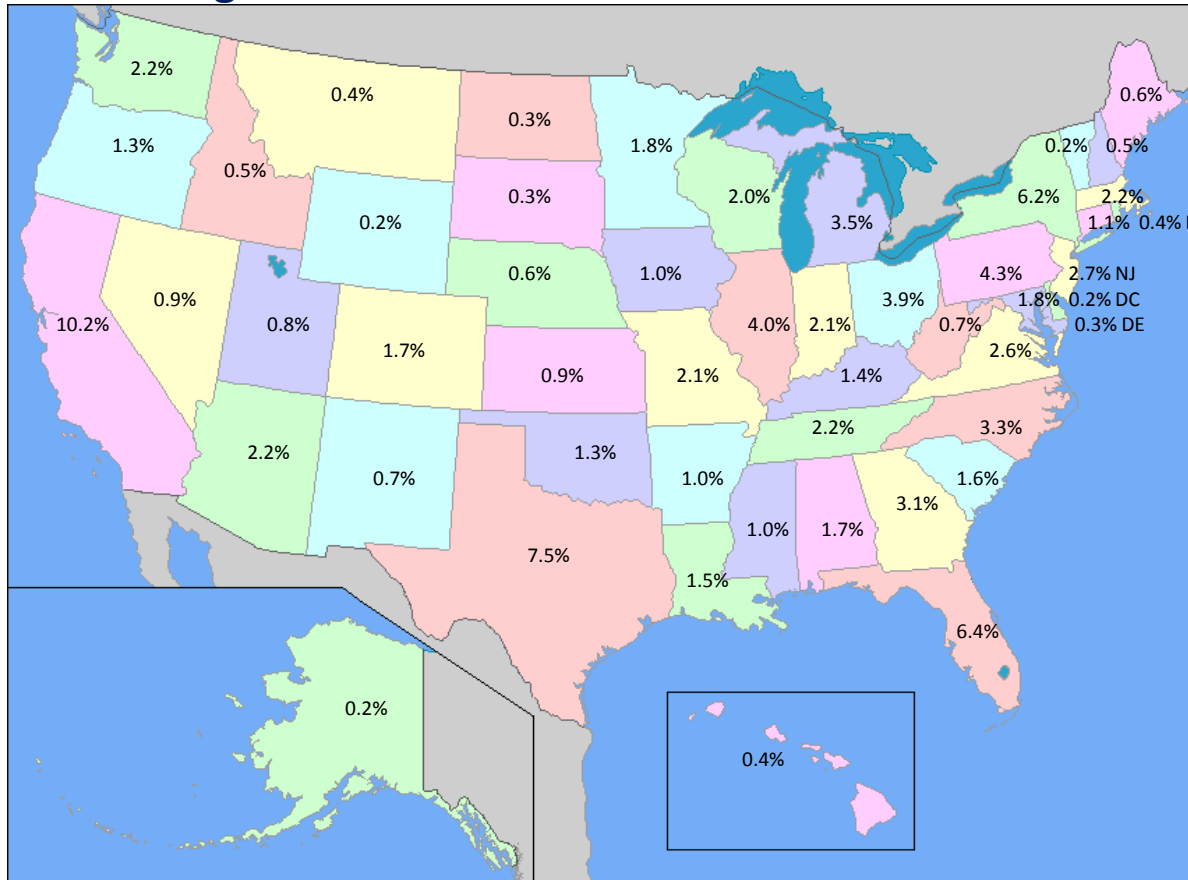
| Region             | States                              | Single Family   | Duplex  | 3-4 Unit Town House   | 5-9 Unit Apartment or Condominium Building   | 10-19 unit Apartment or Condominium Building  | 20 or More Unit Apartment or Condominium Building                                   | Mobile 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%  |

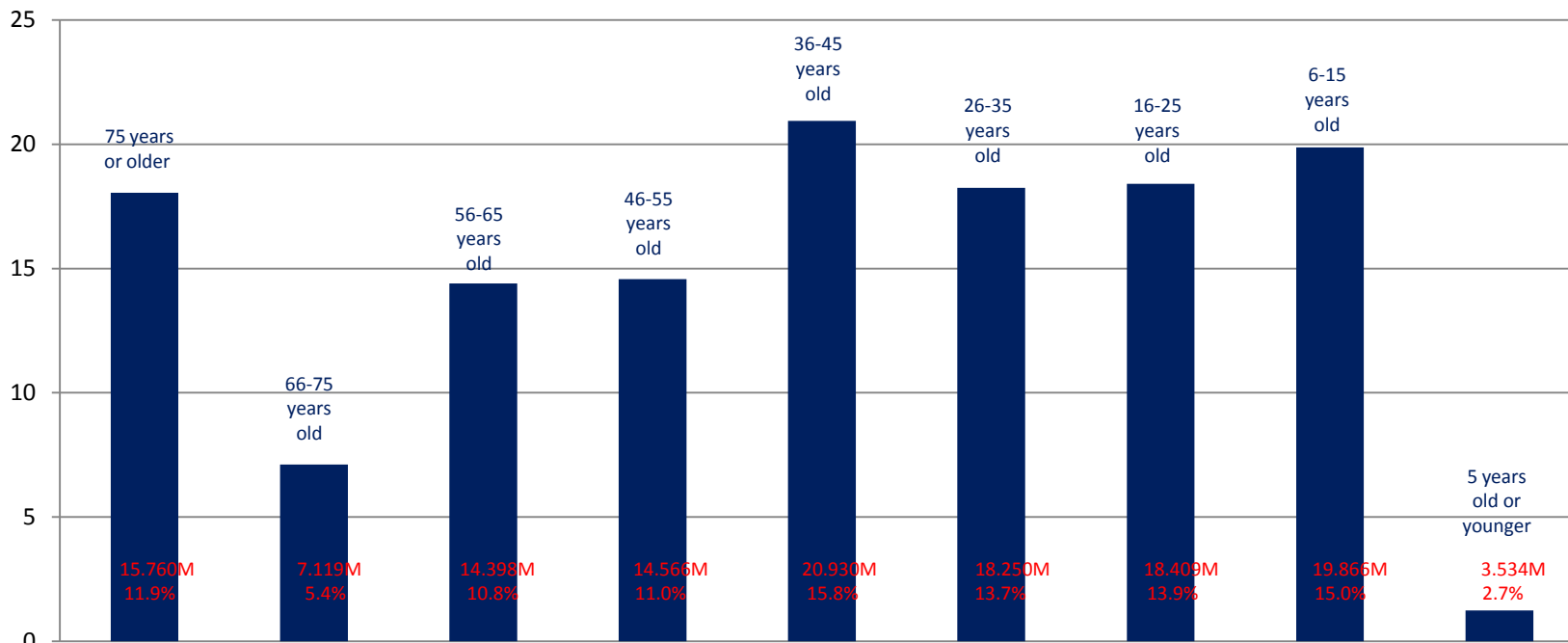
Sources: US Census Bureau / American Fact Finder



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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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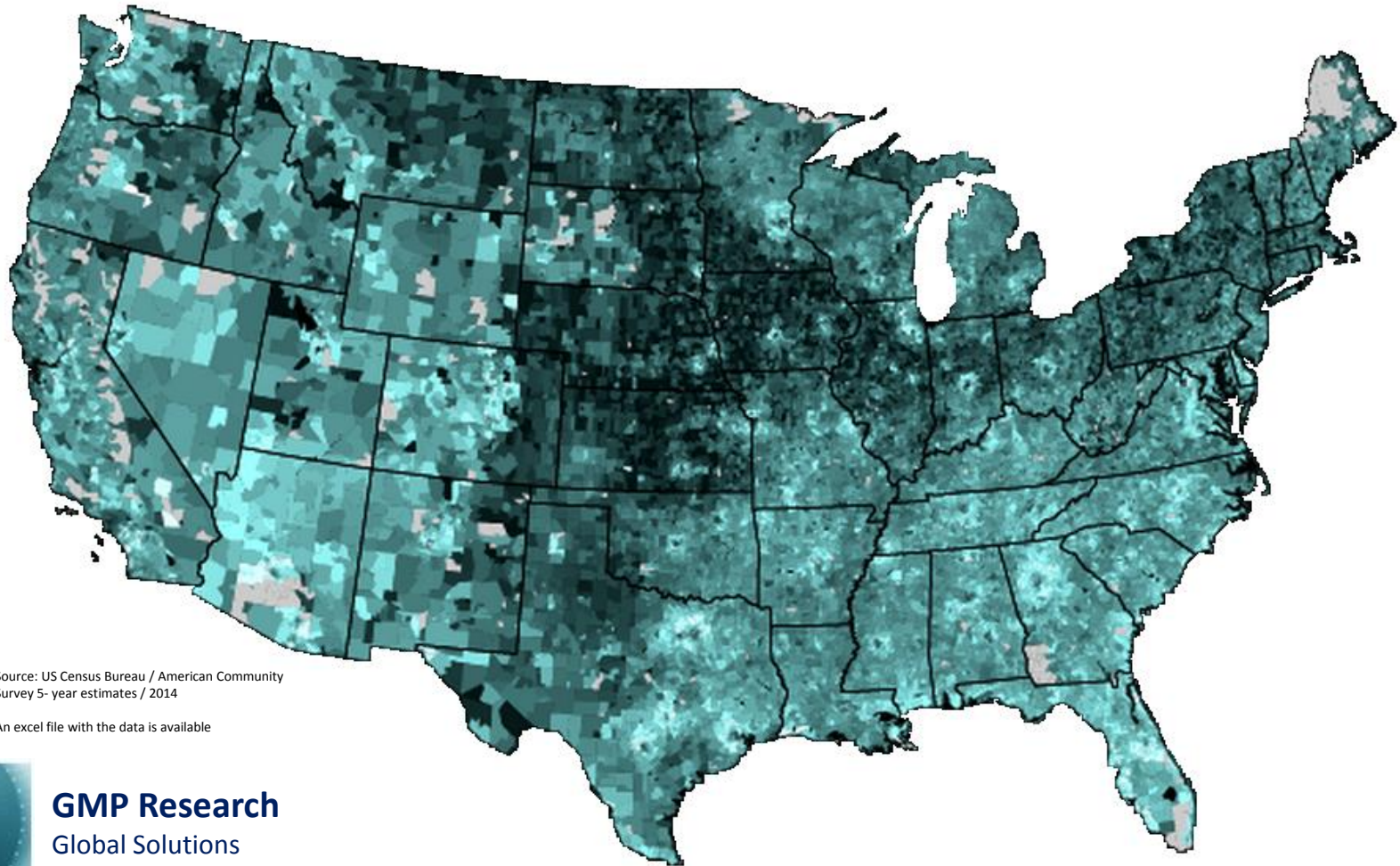
# US Housing Stock

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 |        |         |        |        |       |       |        | Total   |
|---------------------|------------------------------|--------|---------|--------|--------|-------|-------|--------|---------|
|                     | 1                            | 1 1/2  | 2       | 3      | 4      | 5     | 6     | 7      |         |
| 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<br>Faucets<br>Million<br>Units | WaterSense Lav Faucets<br>with 1.5 GPM Flow Rate |       | Low Flow Lav<br>Faucets with 2.2<br>GPM Flow Rate |       | Other Lav Faucets<br>with flow rates<br>> 2.2 GPM |       | Total<br>Shower<br>Heads<br>Million<br>Units | Water Sense<br>Shower Heads<br>with 2.0 GPM Flow<br>Rate |       | Low Flow Shower<br>Heads with 2.5<br>GPM Flow Rate |       | Other Shower<br>Heads with flow<br>rates<br>> 2.5<br>GPM |       |
|--------------|-------|--|--|-------|---|-------|---|-------|--|--|-------|--|-------|--|-------|
|              |       |  | Million<br>Units                                 | %     | Million<br>Units                                  | %     | Million<br>Units                                  | %     |  | Million<br>Units   | %     | Million<br>Units                                   | %     | Million<br>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<br>Faucets | WaterSense Lav Faucets<br>with 1.5 GPM Flow Rate |               | Low Flow Lav<br>Faucets with 2.2<br>GPM Flow Rate |                  | Other Lav Faucets<br>with flow rates<br>> 2.2 GPM |                  | Total<br>Shower<br>Heads | Water Sense<br>Shower Heads<br>with 2.0 GPM Flow<br>Rate |                  | Low Flow Shower<br>Heads with 2.5<br>GPM Flow Rate |       | Other Shower<br>Heads with flow<br>rates<br>> 2.5<br>GPM |       |
|----------------|-------|----------------------|--|---------------|---|------------------|---|------------------|--------------------------|--|------------------|--|-------|--|-------|
|                |       |                      | Million<br>Units                                 | Million Units | %   | Million<br>Units | %   | Million<br>Units |                          | %  | Million<br>Units | Million<br>Units                                   | %     | Million<br>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



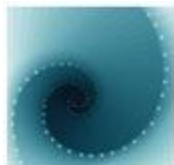
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# Regional and State Market Penetration – East North Central and West North Central Installed Base of Lavatory Faucets and Shower Heads

in million units

| Region                | State | Total Lav<br>Faucets | WaterSense Lav Faucets<br>with 1.5 GPM Flow Rate |               | Low Flow Lav<br>Faucets with 2.2<br>GPM Flow Rate |                  | Other Lav Faucets<br>with flow rates<br>> 2.2 GPM |                  | Total<br>Shower<br>Heads | Water Sense<br>Shower Heads<br>with 2.0 GPM Flow<br>Rate |                  | Low Flow Shower<br>Heads with 2.5<br>GPM Flow Rate |       | Other Shower<br>Heads with flow<br>rates<br>> 2.5<br>GPM |       |
|-----------------------|-------|----------------------|--|---------------|---|------------------|---|------------------|--------------------------|--|------------------|--|-------|--|-------|
|                       |       |                      | Million<br>Units                                 | Million Units | %   | Million<br>Units | %   | Million<br>Units |                          | %  | Million<br>Units | Million<br>Units                                   | %     | Million<br>Units   | %     |
| East North<br>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<br>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



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# 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<br>Faucets<br>Million<br>Units | WaterSense Lav Faucets<br>with 1.5 GPM Flow Rate |       | Low Flow Lav<br>Faucets with 2.2<br>GPM Flow Rate |       | Other Lav Faucets<br>with flow rates<br>> 2.2 GPM |       | Total<br>Shower<br>Heads<br>Million<br>Units | Water Sense<br>Shower Heads<br>with 2.0 GPM Flow<br>Rate |       | Low Flow Shower<br>Heads with 2.5<br>GPM Flow Rate |       | Other Shower<br>Heads with flow<br>rates > 2.5<br>GPM |       |
|-----------------------|-------|--|--|-------|---|-------|---|-------|--|--|-------|--|-------|---|-------|
|                       |       |  | Million Units                                    | %     | Million Units                                     | %     | Million Units                                     | %     |  | Million Units  | %     | Million Units                                      | %     | Million Units   | %     |
| East South<br>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<br>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



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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<br>Faucets<br>Million<br>Units | WaterSense Lav Faucets<br>with 1.5 GPM Flow Rate |       | Low Flow Lav<br>Faucets with 2.2<br>GPM Flow Rate |       | Other Lav Faucets<br>with flow rates<br>> 2.2 GPM |       | Total<br>Shower<br>Heads<br>Million<br>Units | Water Sense<br>Shower Heads<br>with 2.0 GPM Flow<br>Rate |       | Low Flow Shower<br>Heads with 2.5<br>GPM Flow Rate |       | Other Shower<br>Heads with flow<br>rates<br>> 2.5<br>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<br>Faucets<br>Million<br>Units | WaterSense Lav Faucets<br>with 1.5 GPM Flow Rate |       | Low Flow Lav<br>Faucets with 2.2<br>GPM Flow Rate |       | Other Lav Faucets<br>with flow rates<br>> 2.2 GPM |       | Total<br>Shower<br>Heads<br>Million<br>Units | Water Sense<br>Shower Heads<br>with 2.0 GPM Flow<br>Rate |       | Low Flow Shower<br>Heads with 2.5<br>GPM Flow Rate |       | Other Shower<br>Heads with flow<br>rates<br>> 2.5<br>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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