100% of California is Currently in Extreme Drought or Worse Conditions

U.S. Drought Monitor
West

July 29, 2014
(Released Thursday July 31, 2014)
Valid 8 a.m. EDT

Statistics type: Traditional (D0-D4, D1-D4, etc.)

Drought Condition (Percent Area):

<table>
<thead>
<tr>
<th>Week</th>
<th>Date</th>
<th>Nothing</th>
<th>D0-D4</th>
<th>D1-D4</th>
<th>D2-D4</th>
<th>D3-D4</th>
<th>D4</th>
</tr>
</thead>
<tbody>
<tr>
<td>Current</td>
<td>7/29/2014</td>
<td>27.73</td>
<td>72.27</td>
<td>50.93</td>
<td>44.49</td>
<td>21.66</td>
<td>8.96</td>
</tr>
<tr>
<td>Last Week</td>
<td>7/22/2014</td>
<td>27.30</td>
<td>72.70</td>
<td>50.66</td>
<td>47.17</td>
<td>23.19</td>
<td>6.02</td>
</tr>
<tr>
<td>3 Months Ago</td>
<td>4/29/2014</td>
<td>30.05</td>
<td>69.95</td>
<td>51.43</td>
<td>45.66</td>
<td>19.60</td>
<td>4.66</td>
</tr>
<tr>
<td>Start of Calendar Year</td>
<td>12/31/2013</td>
<td>22.20</td>
<td>77.80</td>
<td>51.44</td>
<td>31.11</td>
<td>7.75</td>
<td>0.63</td>
</tr>
<tr>
<td>Start of Water Year</td>
<td>10/1/2013</td>
<td>25.25</td>
<td>74.75</td>
<td>58.96</td>
<td>34.18</td>
<td>5.57</td>
<td>0.63</td>
</tr>
<tr>
<td>One Year Ago</td>
<td>7/30/2013</td>
<td>12.95</td>
<td>87.05</td>
<td>77.52</td>
<td>57.26</td>
<td>17.59</td>
<td>4.68</td>
</tr>
</tbody>
</table>

View More Statistics

Intensity:
- D0 - Abnormally Dry
- D1 - Moderate Drought
- D2 - Severe Drought
- D3 - Extreme Drought
- D4 - Exceptional Drought

The Drought Monitor focuses on broad-scale conditions. Local conditions may vary. See accompanying text summary for forecast statements.

Author(s):
Brad Rippey, U.S. Department of Agriculture
Drought Has Real Impacts on People and the Economy

- **Water is Begin Curtailed**: For the first time since 1977, state water officials are set to order farmers, cities and other big water users to limit the amount of water they pump from rivers and streams.

- **Farmers Will Leave Fields Idle**: According to estimates by the California Farm Water Coalition 800,000 acres will remain idle this year.

- **Food Prices Will Be Impacted**: The Department of Agriculture warns that “major impacts from the drought in California have the potential to result in food price inflation above the historical average.”
Potable Water Supply & Conveyance Accounts for 20% of California’s Total Electricity Use

California Statewide Electricity Use

- Non-Water related uses 80.9%
- Water-Related Uses ~19.1%
- Water End Uses ~11.4%
- Water Infrastructure 7.7%
- Customer End Uses 2.4%
- Water Treatment 3.9%
- Wastewater Collection and Treatment 0.8%
- Distribution Pumping 0.4%
- Groundwater 0.1%
- Supply and Conveyance Pumps 0.1%

Source: Navigant, Refining Estimates of Water Related Energy Use In California, 2006

Source: Study 1 and Study 2
The impacts of climate change on California’s snowpack are projected to create drier conditions, especially in areas already facing scarce water resources.

On January 17, 2014 Governor Brown proclaimed a State of Emergency and directed all state agencies to take all necessary actions to prepare and respond to drought conditions.

Establishing more stringent efficiency standards is a cost effective intervention to reduce California’s water demand. Water efficiency is less expensive than solutions that aim to increase potable water supply.

CEC has the authority to establish standards for water and energy efficiency.
• Recommended changes will likely be based on:
  – IOU Team’s code change proposal for Title 20 (toilets, urinals, faucets)
  – Moving existing voluntary CALGreen requirements to mandatory sections of CALGreen
  – Existing water efficiency standards in model codes (e.g., ASHRAE 189.1, ASHRAE 191P, IGCC, local water efficiency ordinances)
  – Input from experts and interested parties
IOU Team is Developing Proposal for Water Efficiency Standards in CALGreen

• Recommend updating mandatory and voluntary requirements for both residential and nonresidential buildings (Chapters 4, 5, A4, A5)

• Proposal is still under development

• Preliminary proposal for CALGreen is based on IOU Team’s Title 20 CASE Reports for Toilets & Urinals and Faucets, which are available in T20 docket (12-AAER-2C Water Appliances)
# Preliminary Proposal: Mandatory Requirements for Fixtures and Fittings

<table>
<thead>
<tr>
<th>Product</th>
<th>Existing 2013 CALGreen Standard</th>
<th>Proposed CALGreen Standard</th>
</tr>
</thead>
</table>
| **Water Closets**        | • Single-flush: maximum flush volume of 1.28 GPF  
• Dual-flush: Effective flush volume of 1.28 GPF (2:1 flush ratio)  
• WaterSense performance for tank-type toilets | • All toilets in newly constructed residential buildings must be WaterSense and either: 1) dual flush maximum flush volume of 1.28 GPF; effective flush volume of 1.06 GPF (2:1 flush ratio), or 2) single flush with a max flush volume of 1.06 gpf  
• All toilets in retrofits and other building types must be WaterSense and either: 1) dual flush maximum flush volume of 1.28 GPF; effective flush volume of 1.06 GPF, or 2) single flush with a max flush volume of 1.28 gpf |
| **Urinals**              | Maximum flush volume of 0.5 GPF  | Maximum flush volume of 0.125 GPF (same as LA County)                                        |
| **Lavatory Faucets**     | Max: 1.5 GPM @ 60PSI  
Min: 0.8 GPM @ 20 PSI | Max: 1.0 GPM @ 60PSI  
Min: 0.5 GPM @ 20 PSI   
**New construction**                                               |
| **Lavatory faucets in common and public use areas** | Max: 0.5 GPM @ 60PSI | No change                                                                                   |
| **Metering faucets**     | • 0.25 gallons per cycle in residential buildings  
• 0.2 gallons per cycle in nonresidential buildings | 0.2 gallons per cycle for all building types*                                               |
| **Kitchen faucets**      | Max: 1.8 GPM @ 60PSI; may temporarily increase to 2.2 GPM @ 60 PSI, but must default back to 1.8 GPM | No change                                                                                   |

*Not based on IOU Team’s Title 20 proposal, but rather so residential and nonresidential standard are consistent.
Summary of proposed changes

- **Toilets (new residential)**
  - dual flush based on current maximum flush volumes
  - single flush with approximately same effective flush volume

- **Toilets (all other)** tighten up requirement for dual flush so they have same full volume as single flush

- **Urinals** - match LA County requirements

- **Drop maximum flow rate in lavatory faucets that are applied to new construction**
# First Year Water and Energy Savings of Proposed Mandatory Requirements

<table>
<thead>
<tr>
<th></th>
<th>Water Savings (million gallons per year)</th>
<th>Embedded Electricity Savings (MWh per year)</th>
<th>Electricity Savings from Hot Water Reduction (MWh per year)</th>
<th>Natural Gas Savings from Hot Water Reduction (million Therms)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Water Closet</td>
<td>189</td>
<td>1903</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>Urinal</td>
<td>11</td>
<td>109</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>Residential Lavatory Faucets</td>
<td>198</td>
<td>1989</td>
<td>1034</td>
<td>0.7</td>
</tr>
<tr>
<td>Residential Metering Faucets</td>
<td>No estimate</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td>398</td>
<td>4001</td>
<td>1034</td>
<td>0.7</td>
</tr>
</tbody>
</table>
• Prohibit once through cooling
• ASHRAE Std 189.1-2011
  – 6.3.2.3 HVAC Systems and Equipment
  – Once-through cooling with potable water is prohibited.
• Recommended actions:
  – To Section 110.2 – Mandatory Requirements for Space-Conditioning Equipment add 110.2(g) “Prohibition of Once-through Cooling.”
  – Add new Section 120.6(e) “Mandatory Requirements for Process Cooling”
• The IOU Team encourages CEC to embrace this opportunity to establish more stringent water efficiency standards for CALGreen.
• IOU Team will continue developing a water efficiency proposal for CALGreen.
Questions?

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