

# Potential Impacts of U.S. Department of Energy Proposed Changes on Texas State Water Planning

Prepared by TWDB Conservation and Innovative Water Technologies staff with assistance from Water Use, Projections, and Planning Staff

September 22, 2020

## Water-efficient showerheads and clothes washers savings

The water savings that result from replacing an older water inefficient showerhead with the current standard showerhead (2.5 gpm) are 5.5 gallons per person per day, as estimated by TWDB Water Use, Projections, and Planning staff.

The first nationwide standards for residential clothes washers took effect in 2007, requiring both top and front-loading machines to use a maximum of 9.5 gallons per cycle, compared to a possible use of 27 gallons in pre-efficiency-standard machines. In 2015, the standards tightened to 4.7 gallons per cycle for front-loader and 8.4 gallons per cycle for top-loading machines. In 2018, top-loading standards decrease to 6.5 gallons per cycle. By estimating the numbers of loads and the composite water savings from front- and top-loading clothes washers, TWDB staff calculated the savings of replacing older washers with the most recent water-efficiency standard models at 6.45 gallons per person per day.

## State water plan projected water savings are substantial

Municipal water demand projections for the 2017 State Water Plan were developed by multiplying the future population by a 'dry-year' per person water use figure (gallons per capita daily or gpcd), minus anticipated savings due to water-efficient fixtures and appliances. Over the 50-year planning horizon, the net per person water use of Texans is projected to decline (except where utilities reach a minimum per person water use and in special cases).

Table 1 contains the estimated of water savings from the primary water saving fixtures and appliances. The sum of these water savings is approximately 6 to 10 percent of the municipal water demand projections throughout the planning period. Without these water-efficiency savings, municipal water providers in 2070 may need additional water management strategies and projects to meet 10 percent of their water demands.<sup>1</sup>

---

<sup>1</sup> [https://www3.twdb.texas.gov/apps/reports/Projections/1-demand\\_state](https://www3.twdb.texas.gov/apps/reports/Projections/1-demand_state)

**Table 1 - 2017 Texas State Water Plan: municipal water demand projections, anticipated water savings, and recommended municipal conservation water management strategies<sup>2</sup> (acre-feet)**

|   | <b>2020</b>    | <b>2070</b>    |
|---|----------------|----------------|
| <b>Municipal water demand projections</b>                             | 5,200,000      | 8,433,000      |
| <b>Anticipated water savings by fixture/appliance</b>                 |                |                |
| Showerheads   | 40,000         | 176,000        |
| Clothes Washers   | 135,000        | 286,000        |
| Toilets   | 76,000         | 336,000        |
| Dishwashers   | 49,000         | 96,000         |
| <b>Sum</b>  | <b>300,000</b> | <b>894,000</b> |
| <b>Recommended municipal conservation water management strategies</b> | 204,000        | 811,000        |

Texas water providers are encouraging customers to replace showerheads and clothes washers to save water.

Water utilities that submit annual water conservation plan reports indicate which water conservation activities they are pursuing and estimate a corresponding water savings. In 2019, 35 utilities reported implementing showerhead and clothes washer replacement incentive programs. The utility-estimated savings from these two programs are show in Table 2. Many more Texans have replaced their showerheads and washers outside of a utility program and saved even more water.

**Table 2 - Estimated savings of showerhead replacement and clothes washer incentive programs by participating water utilities.**

|  | 2017<br>Reported<br>Savings<br>(gallons) | 2018<br>Reported<br>Savings<br>(gallons) | 2019<br>Reported<br>Savings<br>(gallons) | Cumulative<br>Savings<br>(gallons) |
|--|--|--|--|------------------------------------|
| <b>Showerhead, aerator, and toilet flapper retrofit programs</b> | 105,954,361                              | 146,278,111                              | 32,380,346                               | 284,612,818                        |
| <b>Residential clothes washer incentive program</b>              | 3,598,145                                | 2,733,792                                | 3,000,196                                | 9,332,133                          |

<sup>2</sup> <http://www.twdb.texas.gov/waterplanning/swp/2017/index.asp>