



# WATER CONSERVATION PLAN

2018

**TACOMA**  **WATER**  
TACOMA PUBLIC UTILITIES

## **Background**

Since the 1980s, Tacoma Water has been committed to implementing an effective conservation plan as part of the overall Tacoma Water resource plan. Past plans have included customer education, incentives, and utility-focused water loss reduction. In 2001, Tacoma Water and other utility partners signed an agreement with the State of Washington requiring a 10% reduction in per capita water use between 2000 and 2010. Tacoma Water surpassed its goal, achieving an over 30% reduction in per capita water use. Another goal was established for the 2011-2017 timeframe to reduce per capita use by 8.4%, using 2010 as a baseline. As we reach the end of this goal period, a new strategy is needed to frame our water conservation program.

## **Current program**

Tacoma Water's current conservation program includes programming for residential and commercial customers. For residential customers, Tacoma Water offers giveaways in the form of efficient (2 gallons per minute) showerheads, kitchen sink aerators (2 gallons per minute), and bathroom sink aerators (1 gallon per minute). Additional offerings include home water walk-throughs to assess home-specific water efficiency opportunities, and a multitude of educational outreach materials and presentations (e.g. Know Your H2O booklet, Natural Yard Care flyers, EnviroHouse workshops, community events).

For commercial customers, Tacoma Water offers a water conservation rebate program. This rebate is based on the expected amount of savings over the lifetime of new fixtures. The customized rebate can be used on any fixture that uses water, while the fixed rebate (in collaboration with Tacoma Power and other regional utilities) is designed for specific purchases of commercial kitchen equipment.

Over the past six years, it is estimated that over 30 million gallons of water were saved due to these conservation efforts.

## **New Strategy**

Tacoma Water currently has an abundant supply of water and is far from reaching its full capacity for delivering that supply. Despite this abundance, Tacoma Water has a desire to encourage efficient water use, recognizing that water resources are vital for the prosperity of all life in the Puget Sound region. Tacoma Water desires a long term vision that promotes the selling of water and supports its efficient use.

## Development

The following questions and answers were developed to guide the development of this new strategy:

1. *Why does Tacoma Water have a conservation plan?*
  - We are required by law: Washington Administrative Code 246-290-830
  - Conservation is used as a customer service tool

- In line with our strategies of Customer Focus (**Enhance customer relationships through effective communications and engagement, Ensure supply security for our customers**), by providing relevant conservation programming that will continue to offset the need for new supply sources.
  - Customers value water conservation
    - Customer surveys in 2014, 2015, and 2016 reported an average rating of 7.8, 8.0, and 8.1 out of 10 on the importance of water conservation in the community.
    - Surveys following home water walkthroughs received overwhelmingly positive responses.
    - This continues our strategic goal of **Working with our customers' best interests in mind**.
  - Conservation can be the cheapest source of new supply
    - This speaks to our strategic goal of **Ensuring financial stability and effectively managing costs**.
    - We will continue to evaluate the economic viability and background of our conservation programming
2. *What is the long term vision for Tacoma Water's conservation plan?*
- To provide guidance on programming as we move forward
  - To maintain a focus on peak, which has been identified by numerous stakeholders as a high priority
    - From a customer perspective: we have received customer input that we should move in this direction, and there is appetite for programming in this area.
    - From a financial perspective: reduction in peak use (rather than base use) would have a smaller impact on revenue, and do the most good in terms of prolonging supply.
  - To continue improvement of programming as we go through changes in customer needs, supply scenarios, and improvements in technology (e.g. AMI)
    - Our strategic goal to **Leverage technology** also comes into play when we are able to use new tech such as AMI to improve the customer experience (faster leak detection, water use alerts, etc.).

Tacoma Water's vision is to sell more water while promoting its efficient use. The existence of a water conservation plan demonstrates that the agency and its customers recognize water as a vital resource for the prosperity of the region, as well as provide tools for improved customer service.

3. *What influences Tacoma Water's conservation plan?*

This table shows influencers and stakeholders in the first column and assumptions regarding their influence or value of water conservation plan in the second column.

Influencer	Influence on Conservation Plan
Customers/Rate Payers	<ul style="list-style-type: none"> <li>* Assistance with bills</li> <li>* Fluctuations of population</li> <li>* Desire to keep rates low</li> </ul>
Key Account Customers	<ul style="list-style-type: none"> <li>* Assistance with bills</li> <li>* Large changes in use</li> </ul>
Low income customers	<ul style="list-style-type: none"> <li>* Assistance with bills</li> </ul>
Tacoma City Council	<ul style="list-style-type: none"> <li>* Desire for sustainability throughout the city</li> <li>* Positive customer feedback</li> </ul>
TPU Board	<ul style="list-style-type: none"> <li>* Positive customer feedback</li> <li>* Desire for sustainability within the utility</li> </ul>
State Dept of Health	<ul style="list-style-type: none"> <li>* Requirement for compliance</li> <li>* Can change requirements</li> </ul>
Tribes	<ul style="list-style-type: none"> <li>* Water for fishing and potable uses</li> </ul>
Environmental Groups	<ul style="list-style-type: none"> <li>* Sustainable water supply, water conservation</li> </ul>
CoT Office of Sustainability	<ul style="list-style-type: none"> <li>* Sustainable water use and supply</li> </ul>
Plumbing Code	<ul style="list-style-type: none"> <li>* Continuously improving efficiency standards for fixtures; as homes are updated, efficiency improves over time</li> </ul>
Tacoma Power's conservation programming	<ul style="list-style-type: none"> <li>* Partnering on showerhead distribution, small/medium business rebates, and educational outreach</li> </ul>
TPU Customer Service, Market Development, CMS	<ul style="list-style-type: none"> <li>* Tools to help promote conservation through billing, website, and customer interactions</li> </ul>
Climate Change	<ul style="list-style-type: none"> <li>* Has the potential to affect water supply and demand</li> </ul>
Budget billing	<ul style="list-style-type: none"> <li>* Customers lose price signal when not charged monthly or bimonthly for consumption</li> </ul>
Large amount of space in Pierce County for development	<ul style="list-style-type: none"> <li>* Newer homes will have more efficient plumbing being up to code</li> <li>* Population growth could support more commercial growth as well</li> </ul>
Media coverage of drought and water shortage	<ul style="list-style-type: none"> <li>* Customers sometimes have trouble reconciling national/international water issues with details specific to our local water situation</li> </ul>
Relationship between water and sewer consumption	<ul style="list-style-type: none"> <li>* Many customers do not differentiate between drinking water and other water charges (wastewater, surface water, etc.)</li> </ul>
Rates	<ul style="list-style-type: none"> <li>* Rates influence the amount of water consumed, and conservation has the potential to affect rates</li> </ul>

## Conservation Measures

The following measures were considered for inclusion in the new strategy:

		PARTICIPATION		SAVINGS		
		All Customers		Savings For All Customers At Full Implementation (gpd)		Savings For All Customers Over Measure Life
Conservation Measure	Customer Definition	Participating Customers	Devices / Rebates / Audits	Annual Average	Peak Season	CCF
Clotheswashers - Efficient - In Res. Dwelling Unit	Single Family	6,184	6,184	80,392	80,392	500,166
Clotheswashers - Efficient - In Res. Dwelling Unit	Multi Family	1,575	1,575	18,585	18,585	115,628
Clotheswashers - Efficient - In Res. Common Area	Multi Family	1,575	315	18,585	18,585	115,628
Faucets - 1.0 gpm Bathroom Aerators	Single Family	17,158	42,895	43,765	43,765	304,319
Faucets - 1.0 gpm Bathroom Aerators	Multi Family	23,503	35,255	62,302	62,302	433,199
Showerhead 2.0 gpm	Single Family	17,158	34,316	25,737	25,737	178,963
Showerhead 2.0 gpm	Multi Family	24,793	37,190	44,629	44,629	310,319
Toilets - 1.28 gpf High Efficiency Toilets (HET)	Commercial	352	3,215	6,442	6,442	74,659
Urinals - 0.5 gpf Models	Commercial	507	2,316	7,706	7,706	71,449
Clotheswashers - Decrease Partial Loads	Single Family	6,160	0	20,336	20,336	56,564

Clotheswashers - Decrease Partial Loads	Multi Family	7,956	0	23,083	23,083	64,204
Faucets - Decrease Use	Single Family	9,108	0	25,502	25,502	70,933
Faucets - Decrease Use	Multi Family	7,829	0	21,149	21,149	58,824
Showerheads - Decrease Use	Single Family	4,554	0	8,659	8,659	24,084
Showerheads - Decrease Use	Multi Family	7,829	0	14,886	14,886	41,404
Toilets - Decrease Flushes	Single Family	6,831	0	12,988	12,988	36,126
Toilets - Decrease Flushes	Multi Family	9,395	0	15,984	15,984	44,459
Irrigation Controllers - ET Model	Single Family	883	883	7,494	14,987	34,739
Irrigation Controllers - ET Model	Multi Family	71	71	1,831	3,662	8,487
Irrigation Controllers - ET Model	Commercial	53	53	5,997	10,280	27,798
Irrigation Controllers - Rain Sensors	Single Family	739	739	2,091	4,181	9,691
Irrigation Controllers - Rain Sensors	Multi Family	59	89	507	1,014	2,351
Irrigation Controllers - Rain Sensors	Commercial	44	88	1,659	2,845	7,693
Outdoor Irrigation Kits	Single Family	10,390	14,546	14,696	29,392	66,764
Outdoor Audit	Commercial	158	237	4,526	7,758	15,538
Faucets - 2.0 gpm Kitchen Aerators	Single Family	10,295	10,295	8,237	8,237	57,269
Faucets - 2.0 gpm Kitchen Aerators	Multi Family	14,876	14,876	23,802	23,802	165,505

Dishwasher - Efficient	Multi Family	4,481	5,825	16,132	16,132	68,051
Dishwasher - Efficient	Commercial	19	25	348	348	1,467
Combination Oven - Efficient	Commercial	21	21	10,103	10,103	56,202
Ice Maker - Efficient	Commercial	21	27	18,799	18,799	79,304
Steamer - Efficient	Commercial	21	27	4,796	4,796	20,234
CII Rebate	Commercial	10	10	3,918	3,918	237,240

Of these measures, Tacoma Water chose the following to be implemented in the proposed new conservation plan, based on cost effectiveness and a focus on peak demand reduction:

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**Proposed Plan**

We propose a new conservation plan and goal with a focus on peak demand reduction, including a goal of reducing residential and small/medium commercial average daily use in May-October by 0.274 million gallons per day over 10 years. This would be a reduction (combined with non-programmatic conservation) from 39.95 MGD (2017 baseline) to 39.27 MGD in 2027.

Absent from the table above are the numerous educational programs and partnerships associated with Tacoma Water’s conservation program. These programs’ conservation benefits are difficult to accurately quantify. Thus, they were left out of the modelling, but will continue on as the new plan and goal are implemented. These programs include EnviroHouse workshops, public library events, school programming, community meetings, fairs, and many other educational outreach activities.

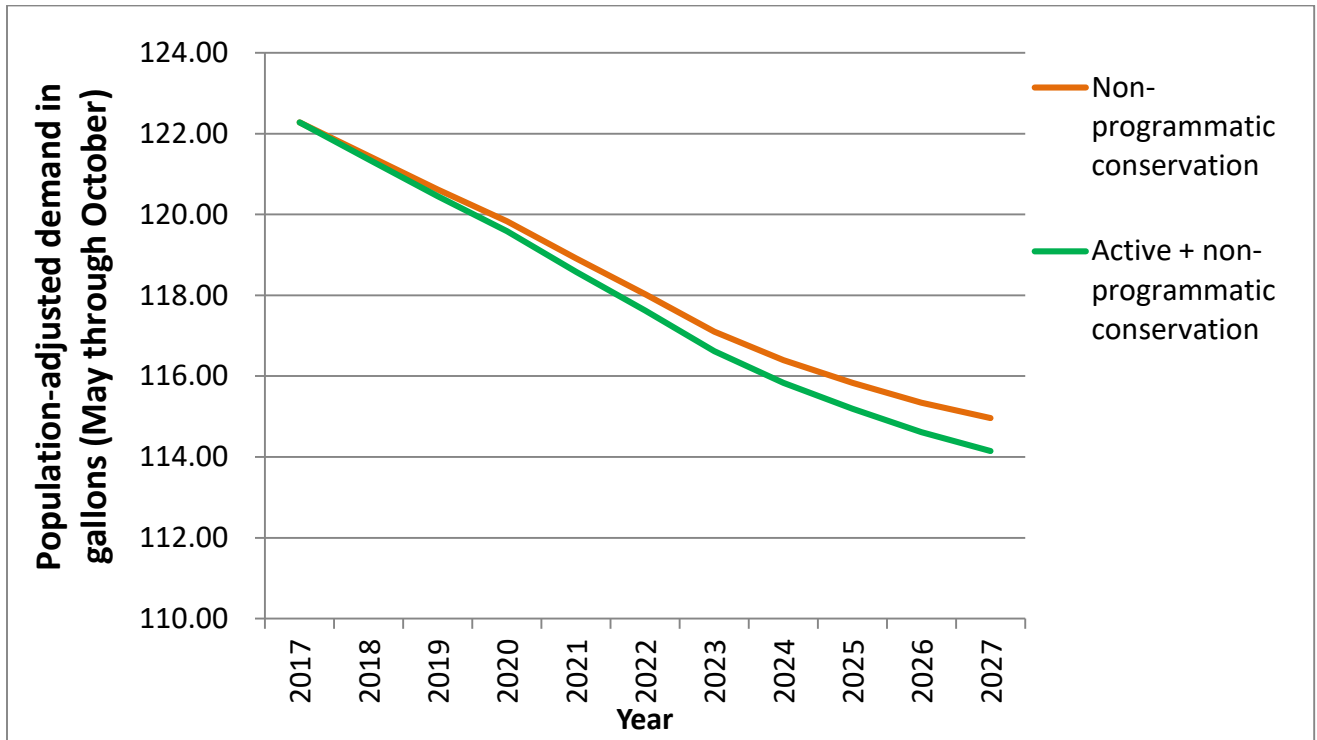
**Proposed Goal**

With the implementation of a new conservation plan, Tacoma Water will also implement a new goal. This goal will focus on peak demand reduction, and the goal was calculated using estimated water savings from the proposed plan measures. Using these estimated savings, Tacoma Water proposes a goal of

**6.65% in peak (May – October) savings over 10 years**



The baseline and progress for this goal will be calculated using total distribution to the system (May through October) and divided by population. It will not include wholesale, second-supply partners, or large volume customers (those using over 1 million gallons/day). Large volume customers will still be eligible for rebate programs and continue to participate in conservation and efficiency discussions, but due to their large effect (positive or negative) on goal progress, they will not be included in this calculation.



Goal progress will be assessed yearly with a Water Use Efficiency report, and measures will be evaluated yearly to determine their participation and effectiveness.