Regional water conservation programme

Seattle Water Partnership, USA

water scarcity impact

Reduced withdrawal	Main
Reduced consumption	
Improved water quality	
Increased productivity	Main
Net basin benefit	

volumetric impact
13 250 000 m^3/yr

programme cost
$33 000 000

estimated unit cost of water
40 ¢/m^3

Water Stress
Seattle, USA

Arid & low water use
Low (<10%)
Low to med (10-20%)
Med to high (20-40%)
High (40-80%)
Extremely high (>80%)
No data available

Water Stress Map:
Gassert, F., M. Landis, M. Luck, P. Reig, and T. Shiao. 2013. "Aqueduct Global Maps 2.0."

Confidence level
Low Medium High

Water Scarcity Impact Key
Main Minor

Credits
We wish to acknowledge the input of Al Dietemann of the Seattle Water Saving Partnership Team in the preparation of this case study.

Project Overview

The Saving Water Partnership (SWP) is a group of utilities within Seattle & King County formed with the objective of reducing water demands while the economy and population of the region continue to increase. In the year 2000 The Saving Water Partnership implemented a programme called the 'Regional 1% Water Conservation Programme'. The programme promoted a per capita reduction in water use by 1% per year for ten years and covered a service area of 1.3 million people. The first two years of the programme were 'ramp-up years' for programme measures, staffing and funding.

The programme was motivated by the recognition that the cheapest way to ensure future supply requirements are met is to manage demand. The programme achieved its targets and water consumption in the region is at its lowest level for fifty years.

Key Elements

- The main drivers of the programme were to reduce the risk to water supply arising from climate change and the predicted high future cost of water supply.
- The programme was financed by the utilities through water tariff revenue.
- Measures to reduce water use such as low flush toilets and washing machines with lower water consumption.
- Rebates were offered to utility company customers who purchased low water use technology.
- Household water rates were increased for the top 15% of water consumers to encourage the reduction of water use.

Key Outcomes

- Installation of 345 678 low water use fittings by customers between 2000 and 2010.
- Water savings of 3 700m^3/day through use of low water use washing machines.
- Cumulative total of 363 000m^3/day water saving between 2000 and 2010. These savings were calculated using the water savings made from the hardware sold as well as pre and post water bill readings.

Seattle, USA

Intervention Features

¬ Sprinkler irrigation systems ¬ Low flow showerheads ¬ Low flow taps ¬ Low flow toilets
¬ Water saving washing machines ¬ Subsidies for the purchase of domestic water saving appliances
¬ Water tariff management ¬ Education, technical training and capacity building ¬ Stakeholder engagement

Project Levers

(1) Market transformation:

The SWP transformed the local market in terms of water efficient technology. Incentives to purchase were promoted and low water use equipment became widely available throughout Seattle. Individual vendors were appointed and marketed the following:

- high efficiency residential and commercial washing machines;
- low water use residential and commercial toilets and urinals;
- low water use residential shower heads;
- soaker hoses for watering of gardens;
- low water use pre-rinse spray heads used in commercial kitchens.

(2) Residential indoor water use:

A number of small scale programmes were implemented into the 1% Regional Conservation Programme. These included:

- WashWise Programme – Washing machines were sold that offered 60% less energy use and 40% less water than conventional machines. Rebates from the utility company ranged from $50-$100;
- WaterSense Programme – a national labelling programme which certifies products for both water efficiency and performance tests. Customers could claim a $30 rebate if they replaced their conventional toilets with WaterSense toilets. The water savings of between $50-$200 per year on utility bills was used to promote the product.

Customers of the utility company receive newsletters which were used to publicise the new water saving devises and financial savings that can be delivered. Other water savings came from the sale and use of low water use shower heads and aerators as well as multifamily coin operated washing machines.

(3) Commercial and residential landscape water use:

This included a series of lectures to promote good practices in gardening including the application of mulch the addition of compost to soil and the selection of plants based on the sun, shade and soil in individuals' gardens. A water saving 'Garden Hotline' was established as well as training for irrigation professionals, and an online weather data, watering index and irrigation scheduling tool.

(4) Commercial processes:

The SWP encouraged improvements in cooling performance and upgrades of specific water consuming equipment. Financial incentives were offered by the utility company who would cover up to 50% of the costs of the water saving technology. End-use measuring was used for monitoring and to build cost effective conservation recommendations.

(5) Youth education:

Workshops, classroom presentations, curriculum development and watershed tours were given in local schools and youth groups. The SWP developed a computer game, 'Water Busters'. The aim of the game is to discover all the areas in the house where water is being wasted and provide solutions to reduce this waste.

(6) Tiered water rates:

Water rates were raised to encourage the efficient use of water. An adopted tiered tariff that makes excessive water use very expensive was introduced – however the base rate for frugal customers remained the same. Approximately 7% of Seattle's high consuming residential customers pay the highest tier water rate consuming approximately 51 000 litres/month/household.

Outcomes and Challenges

Through the interventions of the Saving Water Partnership, the total water consumption in Seattle since 1990 has decreased by 40% despite an increase in population of 16%. The SWP regional water service area's population grew by 9% throughout the 10-year programme yet total water consumption was reduced by 12% (from 507 000m^3/day in 2000 to 448 000m^3/day in 2010) These savings were calculated using the savings from the hardware equipment sold and the savings from pre and post programme water bills.

A major challenge was the implementation of suitable rebates that would be given to customers who invested in water efficient technology. Providing water efficient measures for free meant the customer felt no ownership over the technology, yet enough rebate had to be offered to ensure people would actively buy the equipment.

The programme was funded through water rates. No outside subsidies from taxes, grants or other sources were received. For the average residential customer, the saving water partnership budget was a small component of their overall water bill - approximately 2%.