PDWC84826

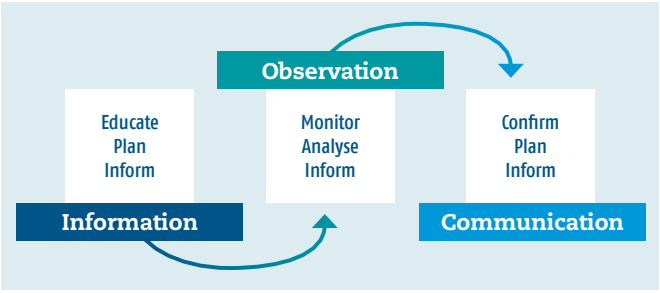
Water Conservation and Efficiency Plan 2011

Absolutely Positively Wellington
Me Heke ki Pōneke
Wellington City Council

Introduction

Water is a fundamental need and we ensure a steady supply of clean, safe, drinkable water is available to Wellingtonians at all times.

A city cannot function without a safe, reliable water supply – it's a fundamental need. Water is critical for the health, well-being and prosperity of Wellington's residents and businesses



Contribution to community outcomes

The water supply activity contributes to the community outcome 'Wellington's long-term environmental health will be protected by well planned and well maintained infrastructure'

Managing our water use

Limited supply options and the likelihood of increased demand for water in Wellington require us to consider two primary responses:

- increased supply capacity
- reduced demand.

In October 2009, the Council considered these issues and reached a number of decisions. Specifically it was decided to:

- Adopt "an interim target of stabilising water consumption in acknowledgement of the goal:

  "To accommodate Wellington city's population growth through to 2025 with the same amount of water we have available to us now."
- Agree to a phased approach to water demand management whereby education and the more easily achieved water efficiencies are undertaken first prior to more expensive or onerous options being considered.

This plan outlines the path we will follow in order to manage our demand in the face of a growing population, uncertainty over the changes in our climate[1] and an increasingly changing built environment.

The cornerstones of this approach are 'conservation' and 'efficiency' – that is, using less and, where we do need to use water, making sure we use it efficiently. Ensuring that water conservation knowledge and information is correct, relevant, understood and communicated are key components of the plan and achieving results.

Conservation is where we do fewer things that use water, such as not water the garden as frequently, not washing the car, only running the dishwasher when it's full, or using the shower less often or for shorter periods. Conservation usually involves people changing their behaviour. As a consequence sustaining water conservation can be difficult over long periods of time, but if this can be achieved then conservation measures are generally low cost and can be implemented straight away. Conservation is also be a very important tool when water supplies become unusually low, such as in severely dry summers or after natural events that disrupt water supplies. In these circumstances some water conservation measures may be imposed by the council and may be compulsory. Ensuring that water conservation knowledge and information is correct, relevant, understood and communicated are key components of our implementing the plan and achieving results.

Efficiency on the other hand is when we use new hardware or management techniques to get the same level of benefits from using water, but we need less water in order to get those benefits. Examples of water efficiency measures include installing low-flow shower heads, front loading washing machines, applying mulch to gardens, fixing leaks, and low or dual flush toilets. Rainwater tanks and grey-water systems are also examples of efficiency measures. Water efficiency measures are more sustainable over time, since people generally do not need to change their behaviour for them to be effective. However, they tend to be more expensive and take longer to implement.

[1] Climate change is expected to bring less rainfall but with events of greater intensity with increased extremes.

Background

Wellington's water supply is known as a 'run-of-the river' system – effectively the water that passes through our water supply catchments today provides the water we consume tomorrow. Very little of our water demand is met by water stored in a bulk supply.

This means that the supply can be significantly affected by climatic conditions and spikes in consumption – or peak demand. Addressing peak demand is one way in which we can maintain a level of consumption in the short term. However in the medium to longer term only increased efficiency and changes in our water use behaviour will ensure that we can live within our means.

The city's water demand has been tracking downwards over the past four years. This is believed to be a combination of increased apartment dwelling, favourable weather conditions, the increasing numbers of water efficient technologies, increased active leak detection on the public network and increased public awareness of water conservation issues.

We believe that the downward trend is likely to plateau in the near future and demand will then rise incrementally with increases to the population and the city's growth. The activities listed in this plan are intended to introduce a culture of conservation and efficiency based on increased knowledge within our communities about the issues, options and potential outcomes for a water efficient city.

Identifying demand

The graph to the right shows Wellington's annual gross consumption, the daily average and also the peak daily demand for the months of December, January and February. When we think about the infrastructure we need to ensure a secure supply of water, the key factor is not the total annual demand, but the peak demand during dry periods.

Our water demand sits in three key areas or groupings – residential, commercial (which includes the Council's usage for housing, parks and gardens) and un-accounted for water (which includes public and private leaks, fire-fighting, unauthorised connections, theft, un-metered commercial usage and network operations).

We intend to realise the potential for reducing demand in all three of these categories.

Experience both in New Zealand and overseas indicates that a combination of approaches is necessary to manage increased demand. Accordingly we have structured a two-year plan designed to raise community awareness on water conservation issues. This will provide a greater level of water conservation and efficiency knowledge across the Council, businesses and the city's residents; ensure that waste is minimised; and work towards sustainable water management.

Vision

Managing our water use

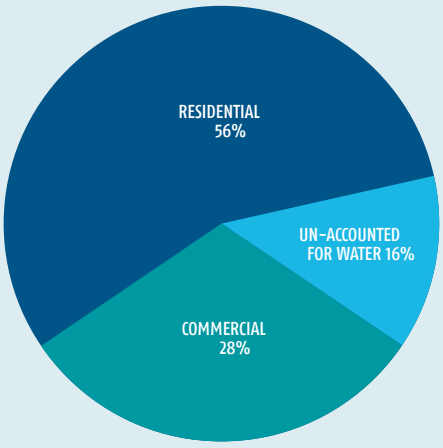
Objectives

Efficiency / Conservation

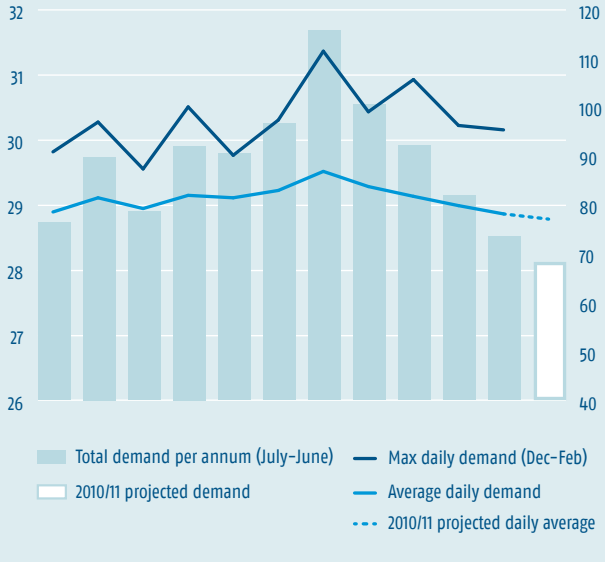
Principles

Sustainability / Fairness / Transparency

WELLINGTON'S WATER CONSUMPTION SPLIT



WELLINGTON CITY WATER DEMAND (TOTAL ANNUAL/DAILY PEAK AND AVERAGE)



Planning our future

The following activities are planned for implementation over the next two years. There are seven activities designed to reach different parts of our community at different levels.

The focus is primarily on education, informing the community and ensuring provisions are in place to advance conservation and efficiency while addressing wastage.

Activity #1	Impact area	Action	Outcomes
Community engagement, education and information programme	■ Council ■ Residents ■ Commercial users	■ Implement education, engagement and information programmes to raise community awareness of water conservation and efficiency. ■ Implement programmes to actively promote efficiency options to homes and businesses.	■ Increased knowledge of water issues and conservation options across all water users. ■ Increased participation in water conservation and efficiency programmes. ■ Gross water consumption maintained at 2010 levels. ■ Water 'surveys' confirm effects of conservation and efficiency initiatives at selected or nominated sites.
Timeframe	2011 start		
	2013 review		
Reporting	Annual report of survey results		

This activity is intended to increase the awareness of the water conservation and efficiency issues facing Wellington – it will provide information to businesses, schools, clubs and residents as to what technologies are available to meet their individual needs. We recognise that different options are not always suitable solutions across the city and will endeavour to target our engagement to specific communities as much as we can.

The development of community workshops that incorporate sustainable practices with water conservation and efficiency will allow information to be tailored and presented in ways relevant to different community structures.

This will allow Wellington's residents to get information about:

- how mulch and water-efficient plants and irrigation tools can reduce the water needs of their lawns and gardens
- how water-efficient appliances such as front-loading washing machines can reduce water consumption and save money on power
- how bathroom fittings can save water without reducing the enjoyment of a relaxing shower
- how simple actions around the home and business can save water and potentially energy costs
- what options are available for rainwater harvesting, grey-water recycling and what steps need to be followed
- how to check for leaks around the house
- how to report leaks to the Council
- how to calculate their own water consumption or see how efficient their shower is
- where to find information on water conservation and efficiency or purchase water-efficient goods and services.

Activity #2	Impact area	Action	Outcomes
Establish a water supply bylaw	■ All water users	■ Introduce water supply bylaw ■ Review structure of existing water restriction programme ■ Promote reasons for water restrictions and the way they are implemented.	■ Surveys confirm widespread knowledge of Wellington's water restrictions and their application. ■ Widespread acceptance and compliance with restrictions. ■ Little or no punitive action in response to breaches.
Timeframe	2011 start		
	2012 Survey		
Reporting	Annual report of survey results and recorded breaches		

Wellington operates year round garden watering restrictions that allow for:

- Use of garden sprinklers is only allowed on alternate days between 6am–8am and 7pm–9pm. If you have an even-numbered address you can use garden sprinklers on even days of the month (2nd, 4th, 6th etc) and if you have an odd-numbered address you are allocated odd days of the month

You may use a hand-held hose or watering can at any time.

This is intended to ensure that watering restrictions are effective but also equitable. Studies into the application of the use of restrictions show that short-term demand can be reduced by as much as 40% – the enforcement of restrictions means that complying households or businesses are not disadvantaged by anyone that chooses not to 'do their bit' towards managing peak demand.

The use of a water supply bylaw will allow the efficient application and administration of watering restrictions as well as provide for a consistent approach across the Wellington Region.

The existing Water Charter will be updated to enable the simple dissemination of the roles and responsibilities of the Council and its customers in regard to supplying and accessing the city's reticulated water supply. It will also include details about installing rainwater tanks and the use of grey-water systems.

Activity #3	Impact area	Action	Outcomes
Analysis and publication of Wellington's water consumption figures	■ All water users ■ Council	■ Analysis and publication of water consumption by geographical area.	■ Ability to target conservation messages by area. ■ Recognition of water savings and the success of water conservation initiatives. ■ Increased knowledge of water consumption patterns and behaviours.
Timeframe	2011		
	2012 Survey		
Reporting	Annual report of survey results		

This activity is intended to augment Activity #1 and provide an increased understanding of the city's water consumption. It will also provide a published report on the effectiveness of initiatives as they are introduced – this will allow initiatives to be developed further or reduced in line with their respective levels of success.

The following three activities run alongside the three primary tasks outlined above. These are intended to allow gains in water conservation and efficiency to be made through a 'business as usual' approach.

Activity #4	Impact area	Action	Outcomes
Engage retailers and service providers in order to advance water efficiency and conservation goods and services	■ All water users ■ Council	■ Develop working relationships with retailers and service providers that can increase awareness of, and access to, water conservation and efficiency appliances, fittings and services. ■ Development of initiatives to increase the attractiveness and application of water-efficient technologies and practices.	■ Increased knowledge of Water Efficiency Labelling Scheme (WELS) regulations. ■ Surveys confirm uptake of water-efficient technologies and practices.
Timeframe	2011		
	2013 Survey		
Reporting	Annual report of survey results		

This activity is intended to maximise the level of information available to consumers about technologies and services available in the Wellington region. Work has already been done by Greater Wellington Regional Council with its 'Be the Difference' programme and this will dovetail with that initiative. Although the replacement of older less-efficient water fittings and appliances will follow a natural course, it will require an increased level of participation if there is to be an acceleration of this process. The introduction of dual-flush or low-volume toilets, low-flow showerheads, front-loading washing machines, efficient dishwashers, rainwater harvesting, grey-water recycling and designed irrigation systems has resulted in the possibility of water and energy savings being attractive to different water consumers.

It is important that opportunities to conserve water and energy are recognised across the community. We will work with retailers and service providers across the city to make sure we maximise the potential for efficient technologies to be implemented.

We expect this initiative will lead to consumers seeing the benefits of making a conscious decision to investigate water efficient fittings and appliances for their home or business.

Several submissions received as a result of our consulting with the community on the introduction of a Water Conservation and Efficiency Plan mentioned the desire to see some form of subsidy, rebate or financial assistance for the purchase of rainwater tanks, grey-water recycling systems or water efficient technologies.

We will work with retailers and service providers across the city to make sure we maximise the potential for efficient technologies to be implemented.

Activity #5	Impact area	Action	Outcomes
Investigating the scope and options for supporting the implementation of water conservation initiatives.	■ All water users ■ Council	■ Establish scope and options for supporting commercial or private water conservation or efficiency initiatives. *[Note: this does not imply that this will result in subsidies or incentives]*	■ Report to Council
Timeframe	2011		
Reporting	Report to Council 2012		

This activity will allow Council to explore new initiatives as they become known with a good understanding of the costs and benefits to the City and how an initiative might affect other areas of the water supply operation.

Activity #6	Impact area	Action	Outcomes
Targeting 25 top commercial users to establish opportunities to make their operation more water efficient	■ Council ■ Commercial users	■ Identify and establish working relationship with the 25 highest water consumers in Wellington. ■ Identify opportunities to reduce consumption for targeted commercial water users.	■ Reduced consumption across 25 highest users. ■ Transferable process to allow commercial users to 'self-assess' for water efficiency.
Timeframe	2011		
Reporting	Report to Council 2012		

Overseas studies and water conservation literature indicates that water loss from commercial buildings is largely from leakage and inefficiencies – it has been calculated that this could be as high as 26% on average.

This represents an opportunity to identify whether greater levels of efficiency can be introduced to our commercial water customers. In the first stage the 25 highest consumers will be identified and contacted with an invitation to work collaboratively to reduce their water consumption.

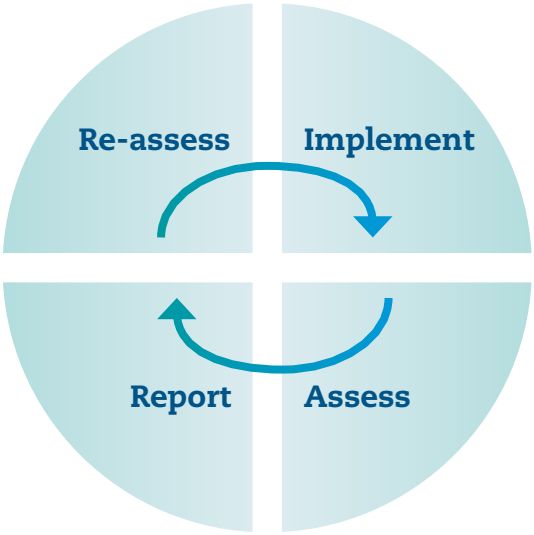
The majority of commercial water customers in Wellington pay directly for the volume of water that their enterprise consumes – accordingly reductions in consumption should provide them a long-term financial benefit as well.

Should this prove successful other commercial customers will be approached or invited to participate in a similar scheme.

We will also focus on commercial premises that are not currently metered for volumetric charging as a means of reducing our un-accounted for water.

Activity #7	Impact area	Action	Outcomes
Ongoing analysis of active leak detection work and cost / benefit for pressure management within the public network	■ Council	■ Increase the annual budget for leak detection to the point where economic return is maximised. ■ Pressure management options assessed for high pressure zones.	■ Active leak detection potential maximised. ■ Optimised pressure reduces leaks, bursts and damage to consumer fittings.
Timeframe	2011		
Reporting	■ Annual reporting of leak detection programme outcomes ■ Annual reporting of water savings due to pressure management		

Assessment and reporting



The ongoing assessment of initiatives and activities is included to ensure that initiatives are both relevant and effective. Where activities are proving to be successful they will be evaluated for use in other areas of the community.

The development and implementation of the 'primary' activities will be reported back to Wellington City Council in August 2012. This report will confirm the implementation of the activities, assess their relative performance in achieving the stated outcomes and identify any further development that might be required within the task to make it more effective.

Reporting will also identify how the activity will be further advanced across the city and provide for updated performance targets or outcomes.

Further information

Further information can be on water conservation and efficiency can be found at the following web addresses.

www.wellington.govt.nz/services/watersupply/index.html
– for Wellington City Council water supply information and conservation tips

www.bethedifference.gw.govt.nz
– for water conservation tips and regional promotions

www.mfe.govt.nz/issues/water/wels-scheme/index.html
- for information on the Water Efficiency Labelling Scheme

Some water facts to consider.....

1. A dripping tap can waste 20,000 litres of water over a year – for a single person using 230 litres per day this equates to 24% of consumption.

   If every second house in Wellington has a single dripping tap we are letting 690 million litres go to waste each year – 2.3% of our annual consumption.
2. A tap aerator could save around 9 litres per minute.
3. A 'WELS' 3-star showerhead used daily for a 6 minute shower will use 20,000 litres less than some of the old showerheads that may use 20 litres each minute.
4. The average frontloading washing machine uses almost 50 litres per wash less than the average top-loading machine.
5. Using your washing machine or dishwasher only for full loads can save both water and lessen your electricity bill.
6. Garden 'mulch' can reduce evaporation by up to 70%.

Some water conservation tips.....

1. Water your lawn only when it needs it. If you step on the grass and it springs back up when you move, it doesn't need water. If it stays flat, it does need water.
2. Adjust sprinklers so only your lawn is watered and not the house, driveway, footpath, or street.
3. Water your plants deeply but less frequently to encourage deep root growth and drought tolerance.
4. Condition your soil to hold water - wetting agents and water storing polymers dramatically improve moisture penetration and retention in soils. These treatments need only be applied once a season.
5. Use liquid fertilisers to promote plant growth without raising salt levels in the soil.
6. Consult with your local nursery for information on plant selection and placement for optimum outdoor water savings.