



Water for Wellington

DRAFT CONSERVATION AND EFFICIENCY PLAN

For consultation September–October 2010



The Te Marua Lakes

Introduction

Wellington is fortunate in that the region receives plenty of rainfall to supply the water needs of the city. The challenge is that our rainfall is not evenly distributed throughout the year or between years. During dry summers the available water can be less than that needed to meet the needs of the region. This is also the time when demand for water is at its highest. Storage facilities – like the Stuart Macaskill lakes at Te Marua, north of Upper Hutt – make up the shortfall during these dry periods.

As demand increases with population growth over the coming years, shortfalls are likely to be more acute. During particularly dry years additional water restrictions may be needed to manage the water supply and demand balance.

At some point we will be faced with a major decision about how to manage such shortfalls.

We will have three main choices:

- Live with the shortfalls and accept more regular, longer and more stringent restrictions on water use
- Increase supply – probably with a major dam to increase storage capacity, but there are other options

- Aggressively reduce demand – probably with water meters and tariffs – but there are other options.

The latter two choices would cost Wellington City and the region many millions of dollars.

A decision on these choices is not required for a few years – but in the meantime the City Council is working on a draft Water Conservation and Efficiency Plan to reduce water consumption. The focus at this stage will be on less-expensive and/or onerous measures – the Council wants your views on how this should be done. This consultation document is a brief summary of the issues involved. It also gives you a chance to have your say. See page 6 for details on how to get hold of the draft Plan and to make your views known.

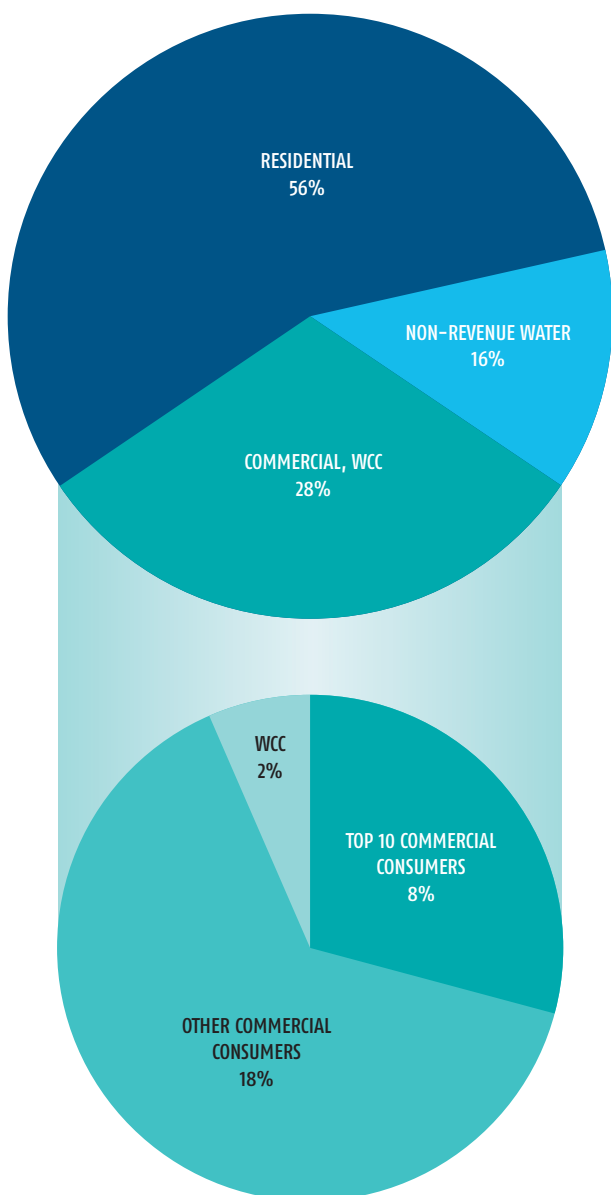
The issues

How we use water

As can be seen in the graph below, residential users consume 56% of the water supplied to Wellington City. This covers all activities – ranging from showers and toilet flushing to washing clothes and watering gardens. It is based on an average daily consumption of 230 litres per person. Collectively the city's commercial users and Council operations account for an additional 28% with the remaining 16% of consumption being considered 'non-revenue' water.

Non-revenue water use includes leaks from the public network, leaks on properties where a water meter is not used, firefighting and unauthorised consumption.

WELLINGTON CITY WATER CONSUMPTION – BY USER



Facts and figures

- 195,500 people in Wellington City
- About 30 billion litres of water consumed per year.

Wellington city's water supply network consists of:

- 1020 kilometres of pipeline
- 81 reservoirs and storage dams
- 34 pump stations
- 7850 fire hydrants
- 67,650 residential connections
- 4000 commercial connections.

Facts

- Wellington City uses almost 54% of the region's water.
- Commercial use equates to 28% percent of the city's consumption.
- Wellington City Council itself uses 2% of the commercial usage
- Residents use 56% of the water
- Non-revenue water accounts for 16% of consumption.

Wellington City's annual water use would fill:

- 12,120 Olympic swimming pools
- the Westpac Stadium, to the roof, 43 times.





Existing demand

For most of the year the water available far exceeds Wellington's demands, however over a dry summer, low river flows combined with higher demand means that more water can be flowing out of the system than is available to flow in.

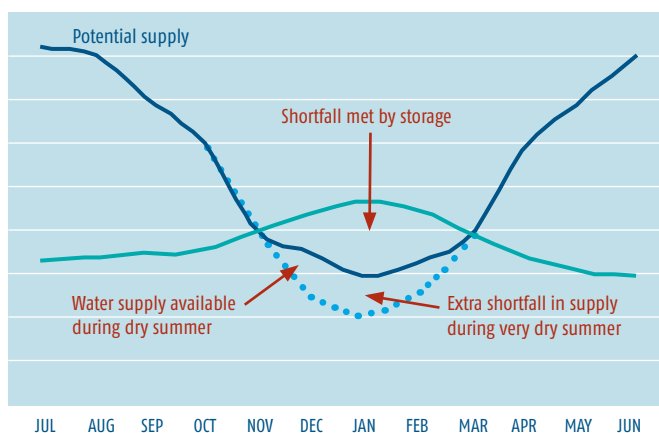
This is when the water stored in the lakes at Te Marua and to a limited extent in the city's reservoirs is used to make up the shortfall.

In a normal year, and with our current population, there is more than enough water available for extraction from rivers and aquifers and/or stored in the lakes to avoid problems with serious shortfalls between availability and demand.

But the situation is less secure when we have long droughts.

The graph below shows what happens when we get a very dry year – for example a one in 30-year drought.

WATER SUPPLY AND DEMAND



How much do we pay for water?

About 90% of the \$13 million spent annually on water by Wellington City Council contributes to Greater Wellington Regional Council's fixed costs of supplying the water – for maintaining its infrastructure such as pipes, pumping stations and reservoirs. The remaining 10% is the amount that can be reduced via efficiencies, conservation, less chemical being used, less electricity for pumping or lower labour costs.

A further \$5 million per year is spent on managing the water supply within Wellington City itself.

Population growth and climate change

An increasing population will increase demand for water and increase the risk of a shortfall in supply over the summer months.

This increased demand makes water restrictions more likely and increases the potential severity and duration of those water restrictions.

Climate change may further add to water supply and demand concerns, though at this stage it is impossible to accurately predict how.

Eventually managing periods of high water demand may force Wellington to either:

- Take aggressive steps to reduce demand (for example water meters and tariffs and/or significant water restrictions over the summer period); or
- Build substantial new water storage infrastructure to ensure any summer shortfall can be supplied from stored water.

The Council believes that, unless a plan is implemented to reduce demand for water very soon, a decision will be needed in about 2014 whether to build storage infrastructure or pursue aggressive demand reduction.

Water restrictions

Any shortfall between supply and demand can be supplied from the Stuart Macaskill lakes at Te Marua for the majority of dry years. But, if the shortfall becomes too great, councils will ask users to conserve water. In severe cases councils may be compelled to impose compulsory water restrictions.

Restrictions can effectively manage short-term demand but are difficult to sustain over extended periods.

Building a dam or installing meters

Constructing a dam or installing water meters right across the city would be expensive.

The cost (net present value) to Wellington City residents of a dam built in 2022 would be around \$70 million. Installing universal meters in the early 2020s would cost an estimated \$52 million.

According to research by the Greater Wellington Regional Council, the cost of building a dam would mean a rates increase of around \$70 per household per year.

The cost of installing and maintaining meters would add an estimated \$50 to the average rates bill each year. In addition to this would be the cost of the water used, less a corresponding reduction in rates.

Although action taken now can potentially defer the need for large capital investment, it is important to note that at some point this large capital expenditure is likely to be needed. Increased demand through population growth is eventually likely to outstrip our ability to make efficiency gains. This means that the need for increased storage capacity is unlikely to be avoided indefinitely.

Impact of a new dam

The construction of a new dam would have environmental implications. The proposed site at Whakatikei – in the Akatarawa Forest between Upper Hutt and Paekakariki – is in a catchment area of about 4400 ha. The dam would flood a large area of native forest.

Meters and water bills

Universal water metering has been proven to be an effective means of reducing water use. However introducing meters would have effects beyond just financial implications.

Charging for water based on metered usage can raise concerns about the social impacts of such measures, particularly on low income households and households with large families.

Given that water is a basic necessity of life, any metering and fee regime would have to carefully consider social implications.

Developing a plan to reduce water use

The Council can use a number of methods to cut water use. The more onerous or expensive of these methods will not be considered until other options have been tried and assessed.

Focusing on consumers

In the draft Plan discussion document, consumers are divided into four sectors, each requiring slightly different approaches and resources. They are residents, commerce and industry, central Government and the City Council itself.

Because the majority of commercial premises pay for the water that they use there are commercial gains for a water efficient commercial enterprise.



We want to help businesses to make the right choice in how they can best save water and energy and potentially increase their bottom line.

There is a need to promote water conservation and efficient use across the whole community.

The development of a web-based water conservation and efficiency portal will provide a wide range of information allowing residents, and businesses, to estimate their water consumption.

Because we know that a leak may look small, but can lead to considerable losses, we will also be developing facilities where residents and businesses can seek assistance in locating leaks or getting problems sorted.

A 'free plumbing' service could be considered. It may include some or all of the following options:

- leak detection and repair
- replacement of worn washers in taps or appliances
- assessments of water consumption
- advice on water conservation options and technologies.

The full draft plan discussion document contains extensive information and discussion on a range of possible initiatives including:

- encouraging water-efficient appliances and equipment in the workplace and at home
- legislative or bylaw changes to compel the construction of 'water-efficient' buildings – eg houses fitted or retrofitted with rainwater tanks or able to re-use grey water
- grants or subsidies to encourage the introduction of water-efficient equipment including toilets and showerheads
- installation of 'intelligent' irrigation equipment
- encouraging the purchase and planting of more drought-resistant plants and trees, or native plants suited to the Wellington climate.

Go to the 'public input' section of the Council's website – www.wellington.govt.nz – to read the document.

Fixing the leaks

One important area of Council operations that can be progressed now is leak detection and subsequent repairs. Last year we replaced over 9.5 kilometres of pipes and carried out repairs in response to nearly 4000 reported leaks. The year before we replaced over 9.7 kilometres with repairs carried out on over 3500 reported leaks. The majority (58%) were leaking tobies.

It is important to understand that fixing leaks in the Council network provides only a partial solution, given that a portion of water loss occurs on private property.



Questions

Reducing water use

What are your thoughts on the proposed measures?

Restrictions

In very dry years, the Council may ask users to conserve water and in severe cases the Council may be compelled to impose compulsory water restrictions.

- What activities should be restricted in such cases?
- How often do you think these restrictions should occur
- If restrictions are put in place, what should the Council do to encourage residents to adhere to them?

General

Do you have any other comments on how Wellington should approach water supply and demand issues in the future?

Have your say

We're keen to know what you think we should be doing to conserve water or use it more efficiently.

The full draft Water Conservation and Efficiency Plan discussion document is available:

- by post and email – phone 910 3800 or email waterconservation@capacity.net.nz with your request
- online in the public input section of our website – Wellington.govt.nz

Public meetings

City Council staff will present the plan's outline and answer questions at the following locations:

Central Library (mezzanine floor)

65 Victoria Street

Friday 17 September 1–2pm

Ruth Gotlieb Library (Kilbirnie)

101 Kilbirnie Crescent

Monday 20 September 12 noon–1pm

Monday 20 September 6–7pm

Karori Library

247 Karori Road

Tuesday 21 September 12 noon–1pm

Karori Community Centre

7 Beauchamp Street

Tuesday 21 September 6.30–7.30pm

Central Library (mezzanine floor)

65 Victoria Street

Saturday 25 September 12 noon–1pm

Johnsonville Community Centre

3 Frankmoore Avenue

Monday 4 October 7–8pm

Submissions are required by 5pm on **Friday 15 October 2010** and can be made online via the attached Freepost form, email or by fax. See overleaf.



