

# **Proposal for a Wellington Water Management Plan**

## **1. Introduction**

The Wellington area is fortunate that it has land set aside for water supply purposes. About half the catchment land held by the Greater Wellington Regional Council is currently used with the remainder available for the future. These catchments collect water that flows into other river systems that are utilised by the community for many purposes. For example, recreation. Accordingly, the allocation of water is controlled through the Greater Wellington Regional Council's Freshwater Plan.

Infrastructure to harvest and treat the water for public supply is built in discrete "lumps". The time is approaching when further infrastructure is required and planning should start for the work to follow that.

Hence, it is an appropriate time to consider a demand side response as well as a supply side. This paper considers the demand side aspect.

## **2. Background**

In the 1980s, the Stuart Macaskill Lakes, the Te Marua water treatment plant and associated pumping station were completed. Then in 1993, the Wainuiomata water treatment plant was commissioned. No significant new infrastructure has been built since them, apart from the Ngauranga reservoir which allowed the Karori open reservoir to be decommissioned, resulting in a considerable reduction in treated water storage.

## **3. The issues**

### **3.1 Water availability**

Greater Wellington Regional Council adopted its Freshwater Plan in 1999. This specifies the amount of water that can be abstracted from various rivers and aquifers. Greater Wellington Water then applied for resource consents to take water for public water supply purposes. These consents were granted but in some cases did not equate to the water that could previously have been taken. For example, no water is available when the flow over the Kaitoke weir falls below 600 litres/second (L/s), previously there was no requirement for a residual flow.

Resolution of the resource consents process now provides near certainty of water availability and planning can proceed with some confidence.

### **3.2 Population**

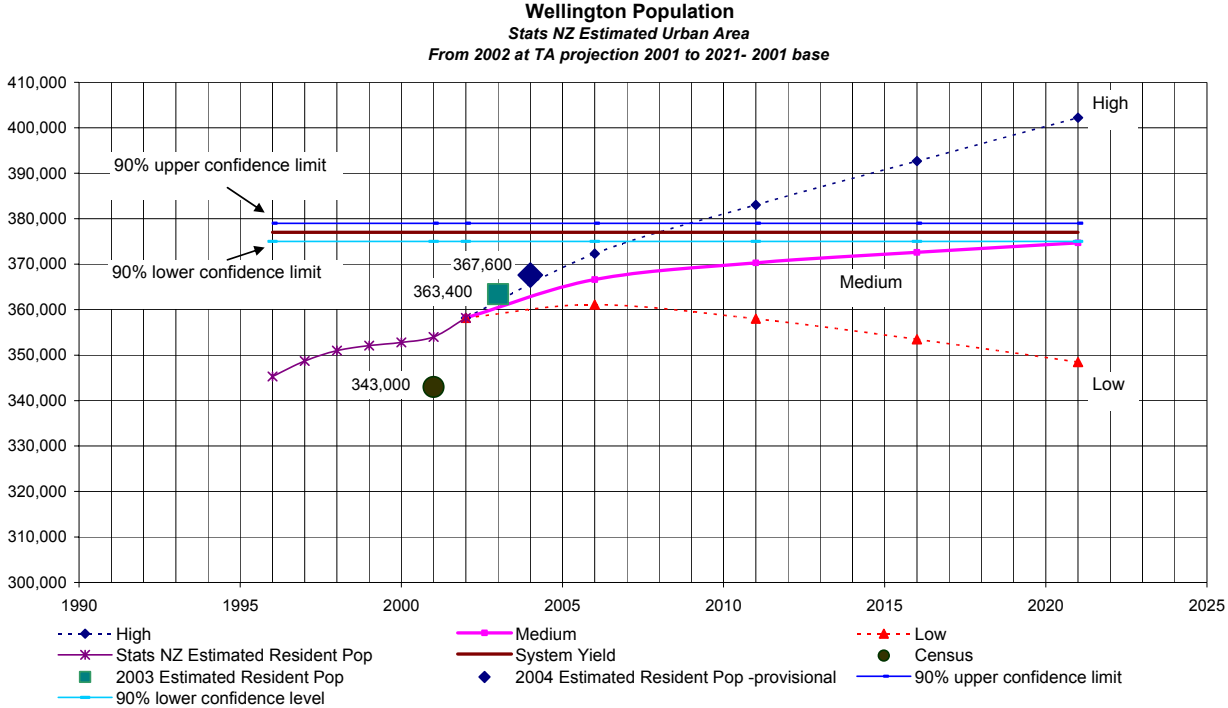
Changing population is the main driver for when a new water source is required. Statistics New Zealand produces population projections, the most recent was in November 2002. At that time, the medium trend appeared to be the most suitable fit, based on population growth over the previous few years. However, changes over the past two years now suggest the high growth line is a better fit at present.

Statistics New Zealand's published population for the urban areas of the four Wellington cities, as at 30 June 2004, is 367,600. At current per capita water usage rates, there is sufficient raw water consented for a population of 377,000.

With a continued high population growth, this population will be reached in 2007. With more modest growth, 377,000 could be reached in about 2010.

Either way, unless water usage per capita is reduced, planning for the development of a new source is imminent.

The graph below indicates population changes and trends.

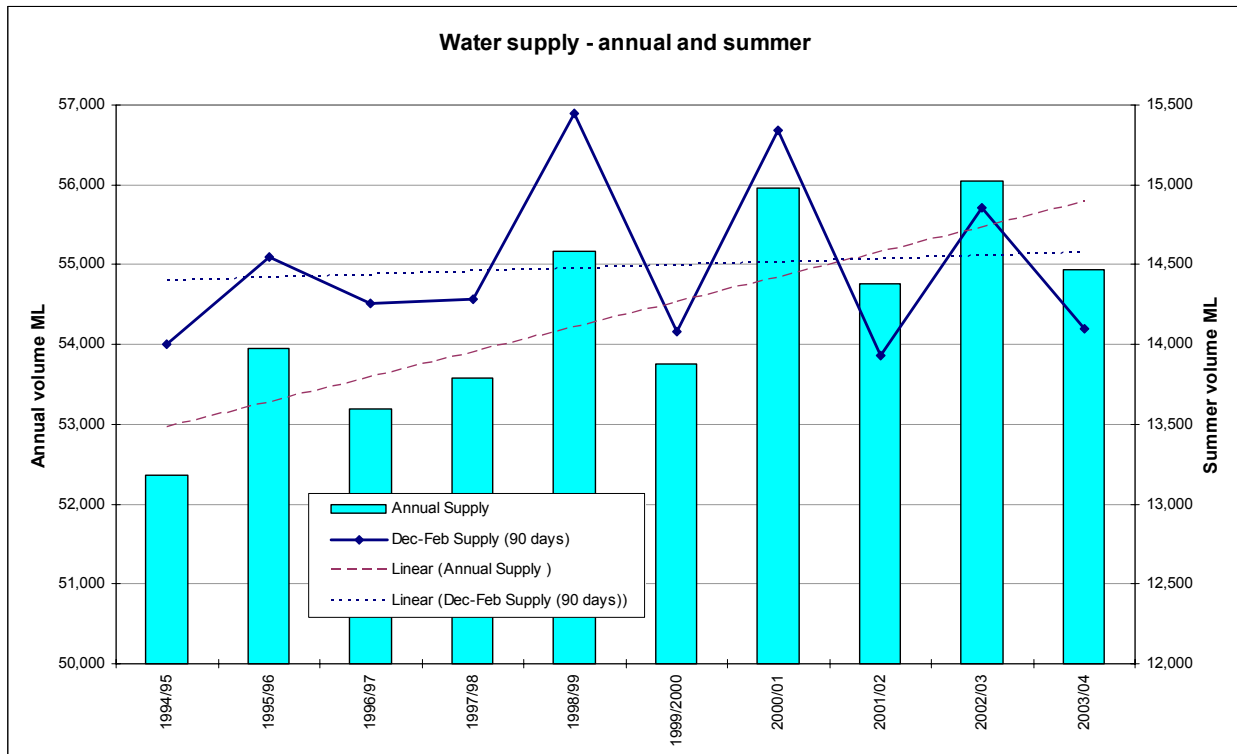


Graph 1

**Water consumption**

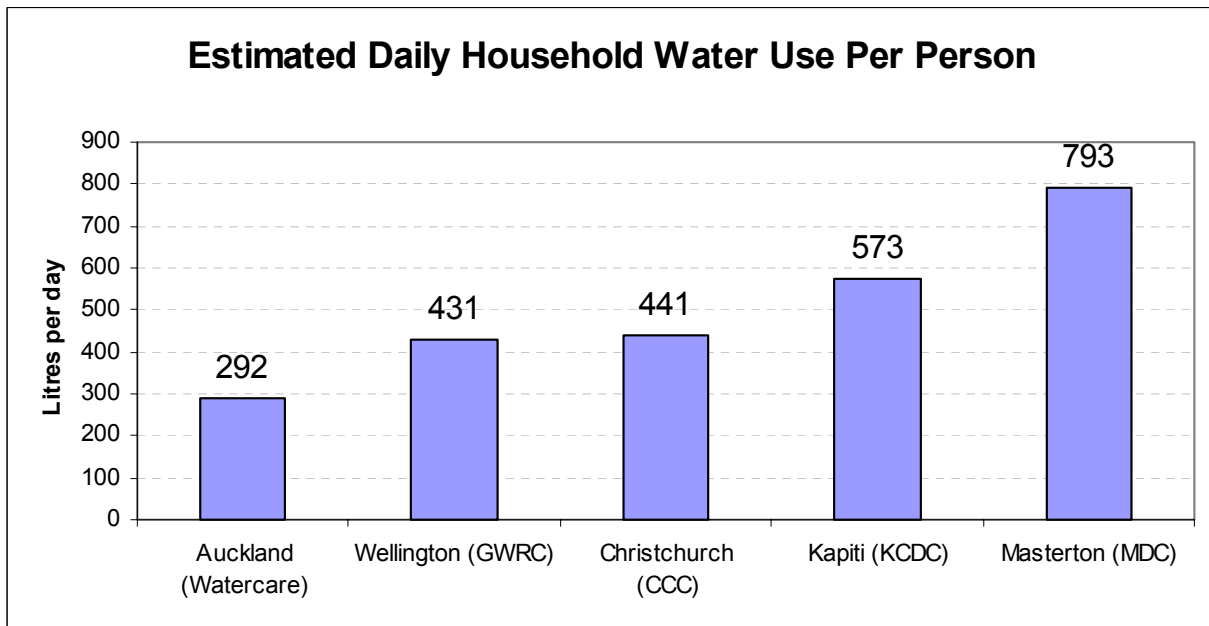
Annual demand has been trending upwards over the last few years, masked to some extent by the considerable variation between years in water use over the summer period.

The graph below indicates the trends.



Graph 2

On a per person basis, there is a variation throughout New Zealand as to how much water is used annually. Some examples are shown in the graph below.

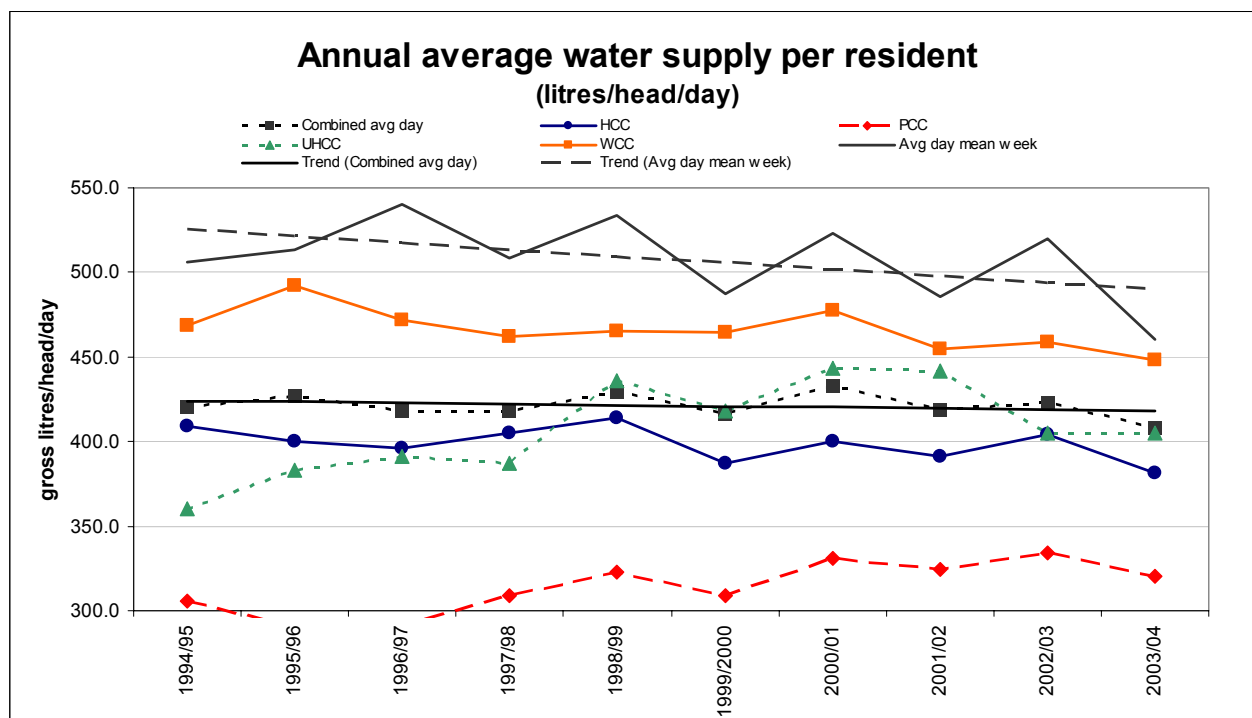


Graph 3

In Auckland water is metered, in Wellington charging is generally through the rating system. Christchurch has installed domestic meters but prefers to continue to charge through its rates.

Gross consumption per capita includes water consumed by all users and is easier to measure than domestic consumption in situations where domestic water meters are not installed.

The graph below indicates the gross consumption per capita in each city and the cities combined.



Graph 4

The overall trend in gross litres/head/day is downwards, but the rate does not offset the rate the population is rising at. Hence, the rising annual demand as shown in graph 2.

#### 4. A new source

Work has started on identifying the construction order for new sources. Comments at this stage are therefore preliminary. It appears the next likely source is development of a river intake at Te Marua costing about \$4 - \$5M. The amount of water that can be obtained is not likely to be significant. A second source will have to be developed a few years later. Assuming the second development is for a source together with a water treatment plant, then a rough order of cost is \$20-30M for a plant that can produce 20 millions litres a day. The cost of a new source or sources can also be compared with adopting universal metering for residential properties.

#### 5. The response

Doing nothing about reducing per capita consumption will result in a requirement for a new water source within a few years, followed by another a few years later. Expenditure of about \$25-35M. Borrowing this sum will cost about \$2-2.5M a year in interest charges, equivalent to a 10% increase in wholesale water charges.

It's the easy option but it does nothing for sustainability. The water has to be pumped to reach the end user requiring electricity and then about 80 percent of it becomes waste water requiring treatment. More water is extracted from rivers.

A similar issue has arisen in Auckland where the population growth rate is higher than in Wellington. In Auckland, the TLAs and Watercare Services have decided to tackle the problem by preparing a water management plan. The contents page of the Auckland Plan is attached to indicate what a completed plan may contain.

It is suggested Wellington heads down a similar route. Provisions in the Local Government Act 2002 require TLAs to consult with their communities about water supply. This consultation is to include demand reduction strategies.

A water management plan would involve all local authorities and provide a unified approach to managing existing and future water needs in a sustainable way. However, each TLA could set its own targets and be responsible for achieving them.

## **6. Next steps**

Each TLA can consider the proposition that a water management plan is prepared. Auckland's document "From the Sky to the Sea" provides excellent background information on what a Wellington plan could look like.

One of the ways of preparing a plan, if all TLAs agree, is to form a steering group to guide its preparation.

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