

4.7 The Future & risk mitigation

4.7.1 Reticulated

System Upgrades

Water conservation and leak detection

Leakage, or water generally unaccounted for can be related to a failure of pipe work in the distribution system, domestic plumbing failures, losses through system fittings and water surreptitiously obtained. Also leakage can be related to pressure, the greater the pressure, the greater the potential for leakage. The current estimate of leakage from the Wellington system is more than 21%. Council consider the accepted leakage from a system is between 10-15% of the total water supplied. Further investigation on this issue is programmed for the 05/06 financial year and has been highlighted in the current Water AMP.

Pipelines

A cause of concern is the number of incidents of bursting failure of asbestos cement (AC) mains. AC pipe was first laid in the city system in the late 1930s and comprises 30% of the reticulation system. While the imported, poorer quality pipe is involved with most of the pipe failures, . The water pipe renewals programme is currently working on reducing the length of 100mm AC pipe. When AC mains break, they are repaired with plastic pipes from collar to collar.



There is a need to upgrade, by replacement or relining, all unlined and therefore unprotected steel & iron water mains. These mains were laid from the start of the city's waterworks in 1872 until about 1935, at which time concrete-lined pipes became available

After fixing leaks and bursts a 10-minute flush through of that section of pipe is carried out. Council's Environmental Health Officer (EHO) considers this insufficient and would like to see chlorine dousing and flushing on repaired pipes. The Medical Officer of Health recommends checking Council

Tory Street 450mm water main burst

procedures to determine if chlorine dosing and flushing can be included as per the EHO's recommendation. This will be further investigated.

It is Council policy that reservoirs must have 24 hours of available storage for emergency purposes. Twelve of the current council reservoirs do not provide the required storage under normal conditions of 600 litres/person/day (emergency supplies required are 300 litres per person per day), especially in the older suburbs. The latest census information has been analysed for the 75 reservoirs and the required capacity for each of these has been assessed. This, age, condition and the need to earthquake proof, form the basis for a forward programme for reservoir upgrading.

Asset Planning

AMP's are continuously improving by carrying out various investigations and consultation to explore level of service options. AMP's also detail the likely future demands for service and how demands can be met or managed.

Water meters

A water meter facilitates payment for the actual water used - a reward for being careful with water. Using water efficiently in the home and garden could lead to a significant reduction in water bills. This will depend on the number of people in a house, whether the household is a high, average or low user and how much is currently being paid on an unmeasured basis through a targeted rate on the capital value of the property.

Being able to accurately determine the rate of water consumption would greatly assist with reducing water losses from the system and better target leakage. Council currently has a voluntary residential metering policy in place where residents may volunteer for a meter of which they cover the cost of the meter and the installation costs and Council then maintain.



All commercial premises are required to have a water meter and pay on a consumption basis per cubic meter.

Water Conservation

Current demands show that from 2007, there is a statistical chance that there could be a water shortage in 1 in 50 year drought conditions. The present Council policy includes applying watering restrictions and water conservation measures are publicised regionally by the GWRC. Requesting the public to adopt further conservation measures would have to be politically supported.

The lower reservoir at Te Marua empty during maintenance

A Regional Wellington Water Management Plan is to be prepared by the GWRC. The Plan would provide a unified, integrated approach from the regions local authorities to improve the region's water use efficiency. Essentially the plan would target more sustainable use of the water resource and encompass a conservation awareness programme. Rainwater harvesting, greywater recycling and the requirement for dual flush toilets will be investigated along with other water conservation techniques.

4.7.2 Non-reticulated

Education regarding safe drinking water.

Current information regarding safe rainwater collection and storage may not be reaching the communities. It is believed that none of the publications currently available demonstrate a systematic approach to the design, installation, operation and maintenance of these systems. Council is looking to address this with New Zealand Water and Wastes Association (NZWWA), GWRC and MoH.

Council will investigate introducing a code of practice of private rainwater systems for use as a building compliance guidance document under the potable water requirements of the Building Act.

To help maintain and update the information database Regional Public Health recommend that annual site inspections to determine the status of the non-reticulated supplies be undertaken on an ongoing basis.

The Makara Ohariu Community Board suggested registering on the MoH's Programme of Assistance to drinking-water suppliers. Council and the Makara Ohariu Community Board will investigate this option together. This may require co-operation between community members to act as a small supplier rather than individual property suppliers.

National environmental standard

Mfe is working with the MoH to develop and implement a national environmental standard (NES) for human drinking-water sources under the RMA 1991. The NES will require monitoring and reporting of source water in order to inform the community of the quality of their drinking water sources. The qualitative standard is designed to help regional councils and water suppliers manage drinking-water sources better and to take into account water supplies when issuing consents or setting permitted use rules in regional plans which will ultimately lead to better quality drinking water.

The qualitative grading of supplies to communities smaller than 500 people is not considered to be economic, although this threshold may drop over time to include more ‘at-risk’ communities. The proposed standard could be applied to smaller drinking-water supplies, in the same way that existing voluntary guidelines are applied.

Council will work along side MoH to avoid subjecting the public to two tiers level of regulation.

4.8 Future growth

4.8.1 Reticulated

Demand Management

The majority of water use in Wellington is for residential purposes with an estimated usage of 450 litres of water per person, each day. Currently Council purchases around 29,866 mega litres (ML) of water each year from GWRC, at a cost of approximately \$12,000,000.



At present, the region has sufficient water resources to be able to meet the current demand from Council (on average 53% of the GWRC’s water supply is used by Wellington City) and the other three cities, although GWRC was under strain in 2003 during drought conditions. Recent GWRC research has stated that if the recent rate of population growth continues, as from 2007, they would be unable to supply sufficient potable water during 1 in 50-year drought conditions.

GWRC has decided to focus on reducing the demand for water, rather than building new facilities, as the response to any increase in bulk demand, as a new raw water supply infrastructure will cost millions of dollars.

Construction of Aramoana Reservoir