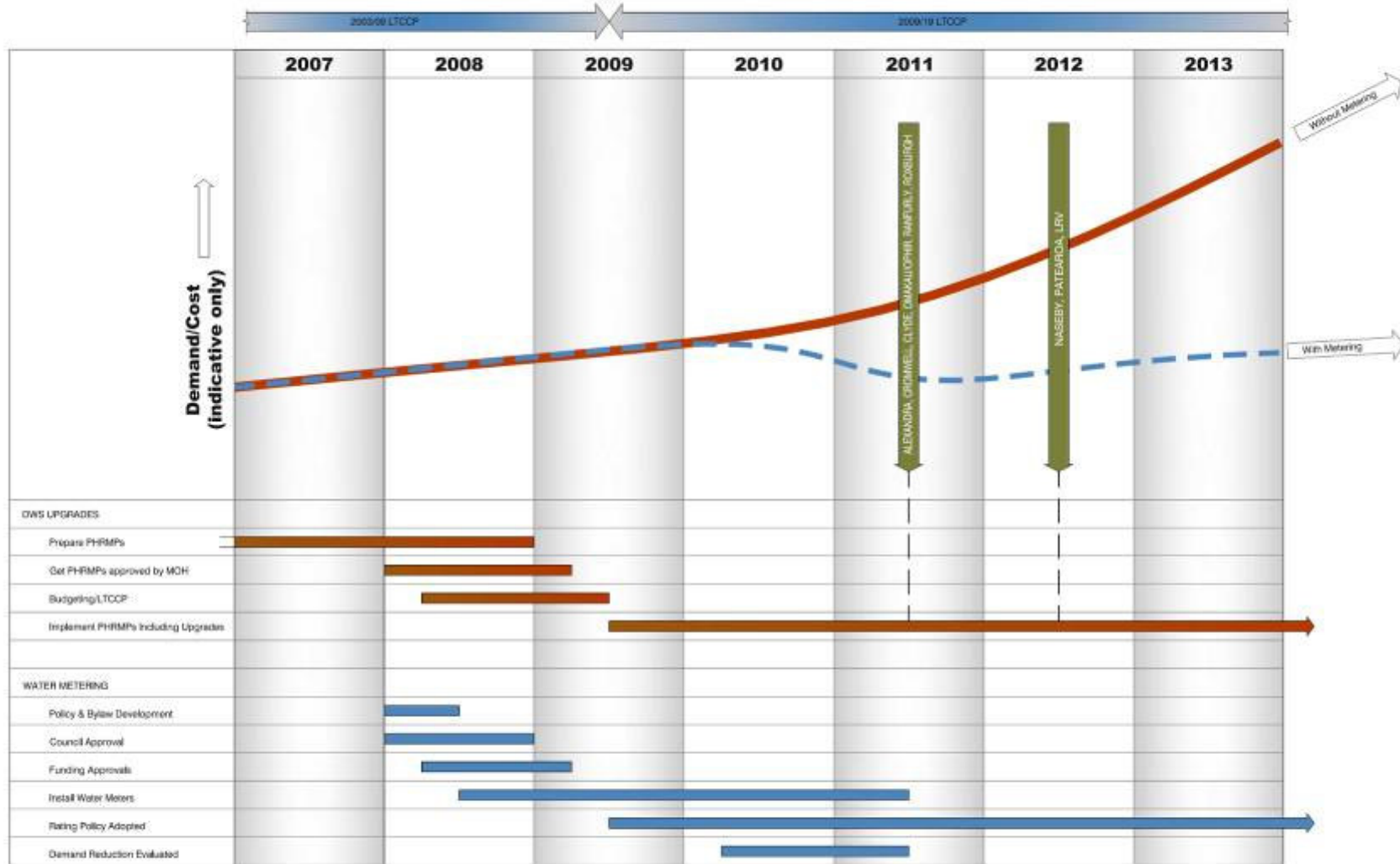


# DRINKING WATER STRATEGY



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## Contents

<b>1</b>	<b>Introduction.....</b>	<b>1</b>
<b>2</b>	<b>Water Demand .....</b>	<b>1</b>
	2.1 Demand Reduction.....	2
	2.2 Resource Consents .....	3
<b>3</b>	<b>Drinking Water Standards.....</b>	<b>4</b>
<b>4</b>	<b>TAP and CAP Scheme .....</b>	<b>4</b>
<b>5</b>	<b>Funding Options .....</b>	<b>5</b>
<b>6</b>	<b>Water Quality .....</b>	<b>5</b>
<b>7</b>	<b>Summary .....</b>	<b>5</b>

## 1 Introduction

The purpose of this report is to outline a drinking-water strategy for the Central Otago District to address the issues that exist with respect to the provision of drinking-water by Central Otago District Council (Council). This is in response to consultation undertaken as part of Central Prospects. The community said it wanted “*certainty in the availability and quality of public water supplies*”.

There are similar issues across all supplies, and it would be beneficial to the community as a whole for a consistent approach to be taken to resolve them. The issues include:

- The implications for affordability of upgrades based on current water demand
- Compliance with Drinking Water Standards (DWS)
- Compliance with regulations and regional water policies
- Options for reducing water demand
- Water quality
- Funding options
- Managing improvements through the long-term Council-community plans (LTCCP) and Annual Plan processes.

## 2 Water Demand

It is well documented and known that Central Otago towns have a peak per-capita water consumption that is about the highest in New Zealand. There are a number of factors that contribute to this:

- High summer temperatures and high evapotranspiration
- Free-draining soils
- High visitor numbers during holiday seasons
- An expectation that town water supply is available for domestic and municipal irrigation
- A perception that water is freely available where there are significant rivers adjacent to towns.

The result of this high water demand is that any future upgrades to water supply infrastructure will be more expensive as pipe, pump and reservoir sizes must provide greater capacity to meet peak-day demands. In addition, much of the water that is treated to a higher standard will not be used as potable water. On-going operation and treatment costs will also be unrealistically high during the peak demand period.

In considering the future provision of reticulated potable water supplies, sustainability issues must be considered. This concerns not only the demand on the water resource, but also the on-going energy use for operation and maintenance of the supply infrastructure.

## **2.1 Demand Reduction**

Reduction of the peak per-capita water demand is the most obvious means of reducing the volume and flow of water required and the costs associated with operation and maintenance.

Council has previously attempted, through its initial demand management strategy, to reduce peak demand in the main towns using a mix of education and water restrictions. This has not shown any marked improvement (as is commonly the case), with peak water use strongly linked to climatic conditions of warm weather and low rainfall.

The proven way to significantly reduce demand in urban networks is through realistic volumetric charging for water use. There are two pre-requisites that must be in place for this to occur:

- Meters must be installed on supply connections to all properties; and
- Council must have set up a rating policy so that revenue can be legally collected based on meter readings.

Council must also make arrangements and provision for the reading and maintenance of meters. There are a number of domestic water meters already installed around the District (particularly in Bannockburn), and new service connections installed in recent years have had manifolds installed that facilitate the easy and inexpensive retrofitting of meters. Integrated meters are now installed on all new and replacement tobies.

There are a number of options for volumetric charging such as:

- Providing a base allowance, and charging for water used over and above this
- Using stepped tariffs to penalise high users
- Splitting the water rates between uniform and volumetric charges

Experience in other areas where metering has been introduced suggests that regular reviews of the charging regime are required to maintain water consumption reductions (as people realise the costs are not as high as they expected).

An important aspect of introducing metering is that Council needs to be seen to have its 'own house in order' before expecting the public to accept metering. This means that the following should be addressed as a matter of urgency:

- Irrigation of parks, reserves and greenways needs to be revised, to include separation from the potable supply and where this is not practicable improving scheduling to maximise efficiency.

- Other highly visible 'water wasting' activities such as scouring and hydrant testing should be managed so that the volumes used are minimised, and the water discharged discreetly where possible.
- Metering of Council facilities.
- Ongoing active leakage management (monitoring, detection and repair).
- Pressure management.

The best option for controlling demand in rural or lifestyle areas is to use restrictors. The use of restrictors has a number of advantages:

- The daily water use is spread out over 24 hours which minimises impact on the network.
- Demand is physically controlled, consumers simply cannot use more water than their restrictor allows even if there is a leak or hose left on. Large lifestyle sections (>2,000m<sup>2</sup>) which could otherwise have significant irrigation demands even with metering are controlled.

A policy regarding the use of restrictors would be beneficial. This should stipulate that all residential properties outside the urban supply area, or over a certain area threshold, should be supplied via a restrictor of maximum nominal size (say) 2,000 L/day. Provision could be included for properties to apply for additional water at an additional cost.

## **2.2 Resource Consents**

The allocation of water for consumptive use is coming under increasing scrutiny from the general public, central government and regulatory bodies. The phrase 'water is like gold here now' is becoming more common.

Gaining resource consent for community water supplies in future will require a greater level of evidence to show that the volumes of water requested are reasonable, will not adversely affect others, and will be efficiently used. The Otago Regional Council (ORC) now expects more detailed justification of water demand to support applications for resource consent. This includes justification for the per capita consumptive use and any population projections. If water is also used for irrigation, the application must include the basis for irrigation design and scheduling.

As an example the Waitaki Catchment Water Allocation Regional Plan includes a policy that includes a guideline of 300 litres per person per day for Town and community water supplies. This flow is unlikely to include an allowance for summer domestic irrigation.

Central government (MfE and MAF) has implemented the Sustainable Water Programme of Action for freshwater management. This programme is being implemented in stages and includes the development of a national policy statement on freshwater management and various national environmental standards under the Resource Management Act. Both

types of documents will have the effect of law and will require the ORC and CODC to include their provisions in the regional policy statement, regional plans and the district plan.

### **3 Drinking Water Standards**

The *Health (Drinking-Water) Amendment Act 2007* was enacted in October 2007. This Act amends the *Health Act 1956* and requires drinking water suppliers to comply with the following 'main duties':

- apply to be included on the register of community drinking-water supplies
- take all practicable steps to comply with the (previously voluntary) drinking water Standards;
- introduce and implement public health risk management plans for the water supply (if serving more than 500 people);

The Act commences on 1 July 2008, and has a staged implementation programme for compliance with 'main duties':

- New or Large supplies (>10,000 people): 1 July 2009
- Medium supplies (5,001-10,000 people): 1 July 2010
- Minor supplies (501-5,000 people): 1 July 2011
- Small supplies (101-500 people): 1 July 2012
- Neighbourhood supplies (25-100 people): 1 July 2013

The meaning of 'all practicable steps' is also defined in the Act. One prescribed way to achieve this is to have an approved Public Health Risk Management Plan (PHRMP), AND to comply with its provisions (particularly relating to improvements).

The Act permits affordability to be used as a reason to delay implementing improvements, but this needs to be supported by statements of financial position that show that an improvement is not currently affordable. The drinking water assistance programme (DWAP) will provide technical advice and, in some cases, funding to increase the ability to meet the standards and reduce the costs for communities. The allocation of funding is subject to the vagaries of central government, and is linked to the deprivation index of the communities in question. Essentially, this means that larger community supplies are unlikely to receive any central government funding.

In summary, there is now a legal requirement for Council to meet the DWS. The initial step is to continue the implementation of PHRMPs for each supply.

### **4 TAP and CAP Scheme**

The Ministry of Health have programmes called the Technical Assistance Programme (TAP) and the Capital Assistance Programme (CAP). These schemes are funded by

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central government and are intended to assist drinking-water suppliers to reduce the health risks of their water supplies.

The TAP provides subsidised technical assistance and advice from water supply professionals. Participants in this scheme may apply for capital assistance (i.e. a subsidy) under the CAP (note that the CAP subsidy is not available unless you are in the TAP). There is no guarantee that a subsidy will be forthcoming, and the applications are assessed against various criteria, including deprivation index and health risks. This tends to favour smaller supplies in lower socio-economic areas.

## **5 Funding Options**

Council will need to ascertain how much future upgrades will cost, and then develop means for funding these upgrades. These will in turn need to be introduced through Council's Annual Planning and LTCCP processes to provide a legal basis for funding.

Council has a development contribution policy that enables the collection of revenue from developers to contribute toward the cost of headworks. This policy is regularly reviewed to ensure that it is consistent with any planned upgrades.

Any change in the way water supplies are funded will need to have the rating basis adjusted through the Revenue and Funding Policy. The current provisions for volumetric water charging will need to be amended and clarified.

## **6 Water Quality**

It is important to note that the purpose of the Health Amendment Act and DWS is to protect public health by improving the safety of drinking water provided to communities. This does not always translate into what consumers perceive as acceptable water quality. For example, a water supply might have a very high grading from a health standpoint; yet the taste, odour or hardness might attract dissatisfaction from consumers. This is particularly true of chlorinated water supplies from variable quality sources where odours commonly occur.

The cost of addressing aesthetic issues with a water supply can be higher than the cost of treating the water to make it safe to drink. Residents will need to be consulted on the options for addressing aesthetic water quality issues.

## **7 Summary**

A strategy for managing the water supplies throughout the District requires the co-ordination of a number of factors to ensure that Council meets its legal obligations with respect to meeting health and financial management requirements.

A detailed strategy is outlined in the accompanying wall chart, but applies the following principles:

- Demand reduction is a high priority so that demands can be confirmed prior to embarking on upgrades
- PHRMPs will need to be completed and approved for each scheme to ensure that Council meets the DWS.
- Any change to rating methods will need to be decided in advance so that the Annual Plan process can be followed and rates legally collected.
- Any significant item (i.e. water supply upgrades) will need to follow the LTCCP or special consultative procedure.