



## Water supply



Compared to other places the water here's fantastic. We have to take more care of it and think how lucky we are; we get mineral water quality from the tap here. There's almost no other city in the world where that happens.

In the summer people are using this wonderful water on gardens and I think we should be doing more to conserve it. When I'm washing rice, I collect the water in a bucket and use that on the plants. I have another friend who has rearranged their spouting system and they collect some of the rain water to use for watering the garden. That's a good idea too.

*Yuko Natsuhara*

Artist  
Fendalton

# Water supply



## Why does the Council provide water supply activities?

The Council provides the water supply to support the health and well being of the community, the needs of commercial users and fire-fighting requirements. Water conservation programmes are used to ensure the long-term availability and quality of the city's water supply.

## What activities are included in water supply?


### Water supply

The Council provides a continuous supply of fresh and wholesome water to properties by sourcing it from aquifers, and managing a network of wells, reservoirs, pumps and pipelines. It maintains sufficient water supply for fire-fighting purposes.

### Water conservation

The Council provides education programmes to domestic and commercial users, which aim to reduce water consumption.

## How does the Council's work contribute towards our Community Outcomes?

<i>Community Outcome</i>	<i>How the Council contributes</i>	<i>How much?</i>
 Safety	By maintaining sufficient water for fire-fighting purposes.	✓✓✓
 Community	By providing equal access to water.	✓
 Environment	By conserving water and encouraging others to do so too.	✓✓✓
 Governance	By providing the opportunity for the community to participate in decision-making through consultation on plans and projects.	✓
 Prosperity	By meeting commercial water needs.	✓✓✓
 Health	By providing drinking water to the community.	✓✓✓
 Recreation	By providing water for swimming pools and gardens.	✓✓
 Knowledge	By providing water conservation education.	✓
 City Development	By providing water for gardens and landscaping.	✓✓✓



# Water supply

## What does the Council plan to do in the future?

<i>What is the Council's objective?</i>	<i>What policies, strategies or drivers support these objectives?</i>	<i>What is the Council already doing?</i>	<i>What will we do in years 1 to 3?</i>	<i>What will we do in years 4 to 10?</i>	<i>How will we know if we achieve our objective?</i>
To provide a reliable supply of quality water to properties through a network of underground pipes.	<p><b>Strategies:</b></p> <ul style="list-style-type: none"> <li>• Water Supply Asset Management Plan</li> </ul> <p><b>Drivers:</b></p> <ul style="list-style-type: none"> <li>• Public health, commercial and fire-fighting needs</li> <li>• Amenity and recreational needs</li> <li>• Urban form and extent</li> <li>• Population growth</li> <li>• Climate and season</li> </ul>	Supplying quality water to households and businesses.	Continue to do the same.		Number of unplanned shutdowns. Time to repair leaks. Ministry of Health water supply grade. Customer satisfaction with water quality and taste. Water pressure and flow
To conserve and protect the long-term availability and quality of the city's water.			A strategy for the sustainable management of the city's water supply will be developed and presented to the Council in year 2.		Residents' satisfaction with water appearance, taste, pressure and flow.  Quality water is available for the future needs of the city.



# Water supply

## Measuring our achievements

Measures and targets	Current performance	06/07	07/08	08/09	09/10	10/11	11/12	12/13	13/14	14/15	15/16
Number of unplanned shutdowns (over 4 hours) with loss of water, due to reticulation, pumps or reservoirs.	1 unplanned shutdown on average per week.	Maintain ≤ 1 unplanned shutdown on average per week.									
95% of leaks reported to be in the Council's reticulation system are repaired within the following schedule: a) Major/urgent leaks contractor on site within one hour of the leak being reported; b) Medium magnitude leak repaired within one working day; c) Minor leaks and faults repaired within three working days.	95%	≤ 95% of the time									
Achievement of the highest Ministry of Health water supply grade possible without treatment of the water.	Due for regrading by Ministry of Health in 2006/07.	Maintain the highest grade possible without treatment.									
% customer satisfaction with water quality and taste.	90% satisfaction.	>90% satisfaction.									
% of properties where an ordinary water connection at the boundary can supply 25 litres per minute (based on complaints received and corrective action taken).	98%.	Maintain at ≥ 98%.									
Domestic consumption of water per capita (litres per day). To ensure the long term availability of water, domestic consumption should remain below 300 litres per person per day by 2020, on a 5 year-rolling average).	321 litres	≤ 319 litres	≤ 318 litres	≤ 316 litres	≤ 315 litres	≤ 313 litres	≤ 312 litres	≤ 310 litres	≤ 309 litres	≤ 307 litres	≤ 306 litres
Commercial consumption of water per capita (litres per day). (To ensure the long term availability of water, commercial consumption should remain below 94 litres per person per day by 2020, on a 5 year rolling average).	101 litres	101 litres	100 litres	100 litres	99 litres	99 litres	98 litres	98 litres	97 litres	97 litres	96 litres
Total water used by the city per year (million cubic metres M cu, on a 5-year rolling average).	53 M cu	53 M cu +/- 6	Maintain	Maintain	Maintain	Maintain	Maintain	Maintain	Maintain	Maintain	Maintain



# Water supply

## What negative effects or risks can occur in relation to water supply?

Negative effects	Mitigation options
Over abstraction of water from underground aquifers can result in lower river levels and the contamination of the aquifer with sea water and other less pure water in the ground.	<ul style="list-style-type: none"> <li>Management of water use and abstraction, through water conservation and monitoring of the aquifer.</li> </ul>
Water pipes can burst causing damage to land and property, and wasting water.	<ul style="list-style-type: none"> <li>Maintenance and renewal of water pipelines and a quick response to reported leaks.</li> </ul>

## The Council's key assets relating to water supply

Water reticulation system (water pipes, connections and meters) - 3,000 km

Wells and reservoirs - 240.

### Maintaining our assets

Maintenance of the assets is provided by service providers under long-term contracts.

The development of new infrastructure is competitively tendered.

Typical renewal/replacement periods for key assets include:

- Water mains - every 60 to 120 years
  - Water sub-mains - every 80 to 100 years
  - Water connections - every 80 years
  - Water meters - every 20 years
  - Pump station equipment - every 25 to 50 years
  - Reservoirs - every 100 years
  - Wells and well heads - every 60 years
- } Depending on the size and type of material

## Changes planned for assets

Reason for change	What will be done?	Year 1 cost (\$ 000)	Year 2 cost (\$ 000)	Year 3 cost (\$ 000)	Years 4 to 10 cost (\$ 000)
Renewals and replacements	Assets are maintained in accordance with the Water Supply Asset Management Plan, including replacement of pipes (10 km per year), headworks and 1 well per year, depending on the age and condition of the asset.	5,621	6,333	6,358	48,959
Increased levels of service	Service improvements are planned in the areas of energy efficiency, noise mitigation, security, lifelines, pump stations and reservoirs.	1,554	2,524	2,995	23,037
Increased demand	Assets will be added in accordance with the Water Supply Asset Management Plan including new pipes, headworks and 1 new well every 2 years.	2,118	2,172	2,573	24,304



# Water supply



## Water supply

### Cost of proposed services

	CCC 2006/07 \$000's	BPDC 2006/07 \$000's	Total Plan 2006/07 \$000's	Plan 2007/08 \$000's	Plan 2008/09 \$000's	Forecast 2009/10 \$000's	Forecast 2010/11 \$000's	Forecast 2011/12 \$000's	Forecast 2012/13 \$000's	Forecast 2013/14 \$000's	Forecast 2014/15 \$000's	Forecast 2015/16 \$000's
<b>Activity operational cost -</b>												
Water conservation	228	-	228	236	243	249	258	263	268	273	278	282
Water supply	17,452	1,305	18,757	19,455	20,636	21,885	22,896	23,753	24,206	24,364	25,017	25,581
<b>Total expenditure</b>	<b>17,680</b>	<b>1,305</b>	<b>18,985</b>	<b>19,691</b>	<b>20,879</b>	<b>22,134</b>	<b>23,154</b>	<b>24,016</b>	<b>24,474</b>	<b>24,637</b>	<b>25,295</b>	<b>25,863</b>
<b>Activity operational revenue -</b>												
Water conservation	-	-	-	-	-	-	-	-	-	-	-	-
Water supply	2,452	321	2,773	2,989	3,218	3,306	3,391	3,471	3,545	3,613	3,673	3,734
Capital revenues	2,571	72	2,643	3,288	3,742	4,220	4,713	4,595	4,647	4,688	4,718	4,747
<b>Total operational revenue</b>	<b>5,023</b>	<b>393</b>	<b>5,416</b>	<b>6,277</b>	<b>6,960</b>	<b>7,526</b>	<b>8,104</b>	<b>8,066</b>	<b>8,192</b>	<b>8,301</b>	<b>8,391</b>	<b>8,481</b>
<i>Fees and charges</i>	<i>5,023</i>	<i>393</i>	<i>5,416</i>	<i>6,277</i>	<i>6,960</i>	<i>7,526</i>	<i>8,104</i>	<i>8,066</i>	<i>8,192</i>	<i>8,301</i>	<i>8,391</i>	<i>8,481</i>
<i>Grants and subsidies</i>	<i>-</i>	<i>-</i>	<i>-</i>	<i>-</i>	<i>-</i>	<i>-</i>	<i>-</i>	<i>-</i>	<i>-</i>	<i>-</i>	<i>-</i>	<i>-</i>
<b>Total operational revenue (by source)</b>	<b>5,023</b>	<b>393</b>	<b>5,416</b>	<b>6,277</b>	<b>6,960</b>	<b>7,526</b>	<b>8,104</b>	<b>8,066</b>	<b>8,192</b>	<b>8,301</b>	<b>8,391</b>	<b>8,481</b>
<b>Net operational cost</b>	<b>12,657</b>	<b>912</b>	<b>13,569</b>	<b>13,414</b>	<b>13,919</b>	<b>14,608</b>	<b>15,050</b>	<b>15,950</b>	<b>16,282</b>	<b>16,336</b>	<b>16,904</b>	<b>17,382</b>
Vested assets	1,462	-	1,462	1,515	1,567	1,617	1,664	1,709	1,750	1,789	1,824	1,859
<b>Net cost of services</b>	<b>11,195</b>	<b>912</b>	<b>12,107</b>	<b>11,899</b>	<b>12,352</b>	<b>12,991</b>	<b>13,386</b>	<b>14,241</b>	<b>14,532</b>	<b>14,547</b>	<b>15,080</b>	<b>15,523</b>
<b>Capital expenditure</b>												
Renewals and replacements	4,959	360	5,319	6,151	5,981	6,168	8,813	6,060	6,119	8,067	7,323	7,414
Improved service levels	545	151	696	872	4,055	4,337	6,466	4,100	1,310	1,790	2,374	1,588
Increased demand	1,977	45	2,022	2,475	3,007	4,306	3,534	3,155	4,062	3,714	3,825	3,692
<b>Total capital expenditure</b>	<b>7,481</b>	<b>556</b>	<b>8,037</b>	<b>9,498</b>	<b>13,043</b>	<b>14,811</b>	<b>18,813</b>	<b>13,315</b>	<b>11,491</b>	<b>13,571</b>	<b>13,522</b>	<b>12,694</b>

Rationale for activity funding (see also the Revenue and Financing Policy, page 267)

User charges (technically classified as a rate) are made for excess water supplied at the average cost of water. The level of revenue sought from these activities by the Council for the 10 years covered by the LTCCP is illustrated above.

The balance of the net operating cost is funded by a targeted rate on serviced properties based on capital value.

Development contributions are applied towards appropriate capital expenditure. The balance is funded corporately in accordance with the Revenue and Financing Policy.

Refer to page 267 for a summary of the corporate funding approach for capital expenditure.