

# Water Supply



## How does Water Supply contribute to the community outcomes?

Community Outcomes	How Water Supply contributes
Safe and healthy environment	<ul style="list-style-type: none"> <li>• Provide adequate public water supply systems that meet the Ministry of Health's drinking water standards.</li> <li>• Provide adequate located and pressured connections for fire fighting purposes within the urban areas of the district.</li> </ul>
Affordable services and facilities	<ul style="list-style-type: none"> <li>• Ensure that adequate public water supplies are provided and that they are efficiently maintained and affordable.</li> </ul>

## HDC Water Supply Services

The Hauraki District Council owns and operates eight water supply networks, to which there are approximately 7,050 water connections.

The supplies service the communities of Paeroa, Karangahake, Ohinemuri, Kaimanawa, Mackaytown, Waihi, Waikino, Ngatea, Kerepehi and Turua, and the rural area of the Hauraki Plains. The supplies have varying degrees of treatment and water quality as indicated below.

Approximately 2,700 people obtain their water by other means – most from their own rainwater tanks and private bores. There are currently 15 small reticulated supplies that the Hauraki District Council is aware of, that serve a variety of schools, clubs and industrial premises, other than single dwellings.

## Current Level of Service

Source & Treatment Plant Grading		Distribution System Grading
A1	Completely satisfactory. Very low level of risk. Demonstrably high quality.	
A	Completely satisfactory. Very low level of risk.	(a)
B	Satisfactory. Low level of risk.	(b)
C	Marginal. Moderate level of risk.	(c)
D	Unsatisfactory. High level of risk.	(d)
E	Completely unsatisfactory. Very high level of risk.	(e)

Community	Water Supply Grading		Length of Reticulation (km)	Number of Connections	Annual Water Production m <sup>3</sup> (02-03)	Production Per Connection m <sup>3</sup> / Year	Average Daily Demand m <sup>3</sup> / Day	Level of Treatment		Water Storage			
	Current Grade	Future Target						Type of Treatment	Quality Measured	Volume m <sup>3</sup>	Location		
Kaimanawa	u	Cb	16.9	88	212,033	2,409	500	Filtration, Chlorination	Bacteria Chlorine	Nil	-		
Karangahake	Dd	Cb	4.1	66	29,533	447	55	Chlorination, pH adjusted	Bacteria Chlorine pH	20%	Dominion Dr		
Mackaytown	De	Cb	1.7	74	29,820	403	100	Filtration, Chlorination	Bacteria Chlorine	Nil	-		
Ohinemuri	Ed	Cb	42.1	341	608,262	1,784	1,700	Filtration, Chlorination	Bacteria Chlorine	Nil	-		
Paeroa	Cb	Cb	39.3	1,774	529,515	298	2,000	pH adjusted Filtration, Chlorination	Bacteria Chlorine pH	9,000	Bennett St		
Plains			344.7	2,493	3,828,131	1,536	12,200	Clarification Filtration, pH Adjusted Chlorination	Bacteria Chlorine pH	3,490	Kerepehi Main Rd & Waitakaruru SH 25		
-West Supply Plant/Source	Db	Cb										D	C
-East Supply Plant/Source	Dc	Cc										C	C
-Kerepehi Plan/Source	Db	Cb										C	C
Waihi	Ba	Ba	57.6	2,069	524,483	253	1,950	pH adjusted Filtration, Chlorination	Bacteria Chlorine pH	6,000	Bulltown Rd		
Waikino	Dd	Bb	7.3	145	47,129	325	170	Filtration, Chlorination	Bacteria Chlorine	90	Farrelly Rd		
TOTAL			513.7	7,050	5,808,906	932 (Average)	2,334 (Average)			18,580			

The levels of service for the water supply systems can be categorised into issues relating to public health, system performance, customer demand and service delivery. The drivers for determining the appropriate levels of service are legislative requirements, public health considerations, customer expectations, effects on the environment and affordability.

The drivers listed above can be categorised as quality and quantity. The quality issues are clear in most instances and relate to water supply standards set by the Department of Health for each supply. The quantity issues relate to a balance between customer expectation and affordability. Customer

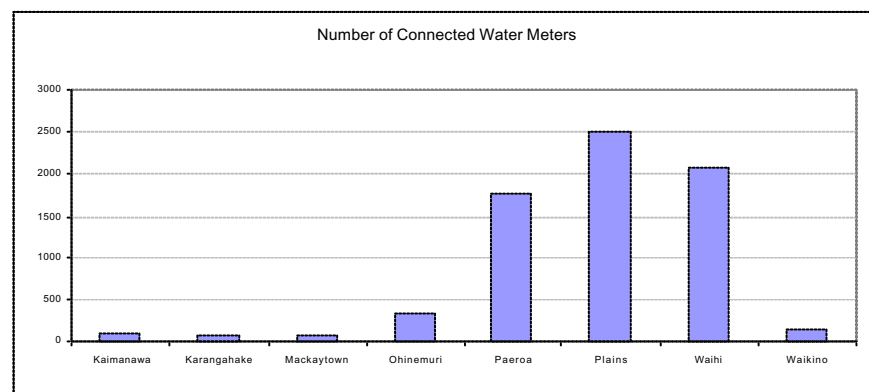
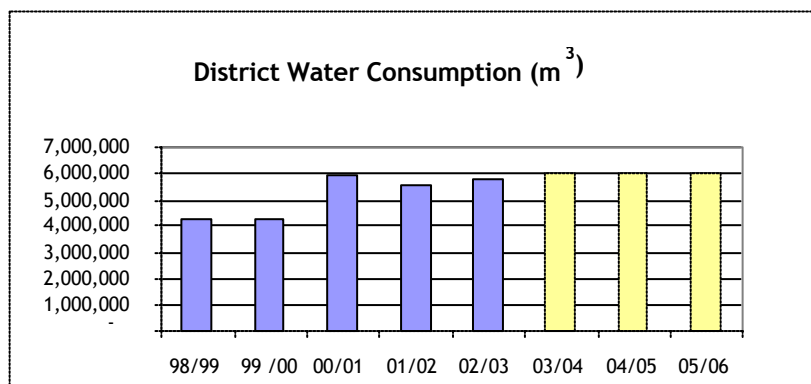
satisfaction with water supplies is measured on a regular basis through surveys and the HCP/Annual Plan process.

The Waihi, Waikino, Paeroa, Karangahake and Mackaytown supplies are on-demand supplies where it is expected that water will be continually supplied at a reasonable pressure. The Plains supply provides the 24 hour water requirement over 24 hours but not necessarily on-demand and all consumers are required to have 24-hour on-site storage. The level of service for Ohinemuri and Kaimanawa has not been determined. Council is not intending to provide on demand storage to Ohinemuri and Kaimanawa.

These supplies are predominantly rural supplies and have historically been developed to support agricultural production.

Within the urban areas there is a need to provide fire fighting capability for the protection of public safety. There are some isolated areas in Waihi, Paeroa and the other urban areas where the targets of the NZ Fire Service Code of Practice are not met. The Hauraki District Council has programmed these areas into the Capital Works Programme for water mains replacement to allow for these issues to be resolved.

To ensure the quality and safety of the drinking water is maintained, all the water supplies are monitored regularly for the detection of bacteria, chlorine levels and pH by Council staff and independent contractors. The four main water treatment plants, Paeroa, Waihi, Kerepehi and Waitakaruru are monitored continuously via radio telemetry.

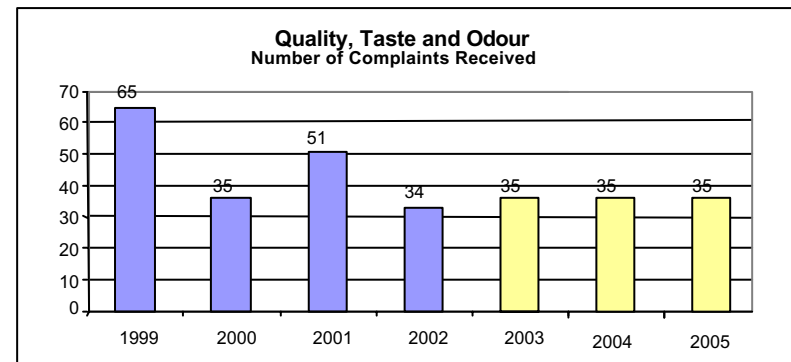
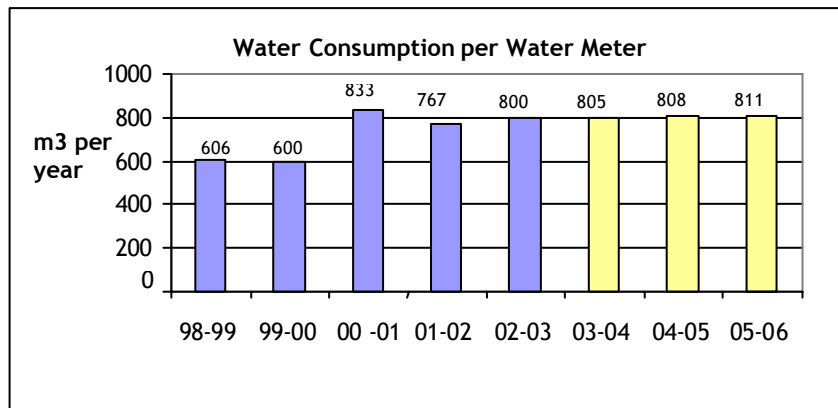
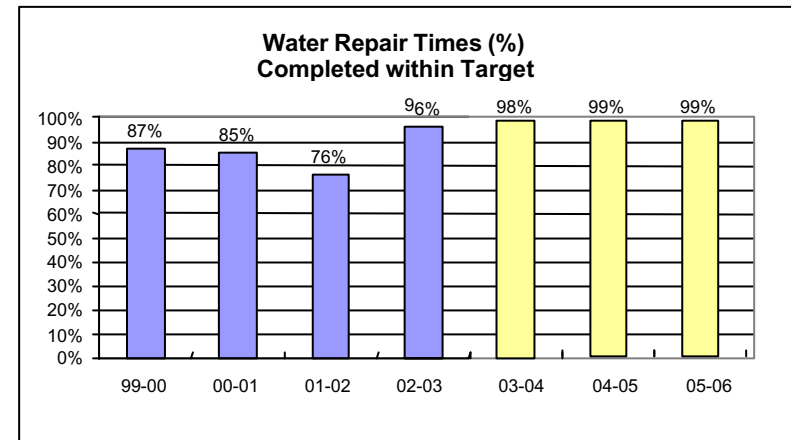
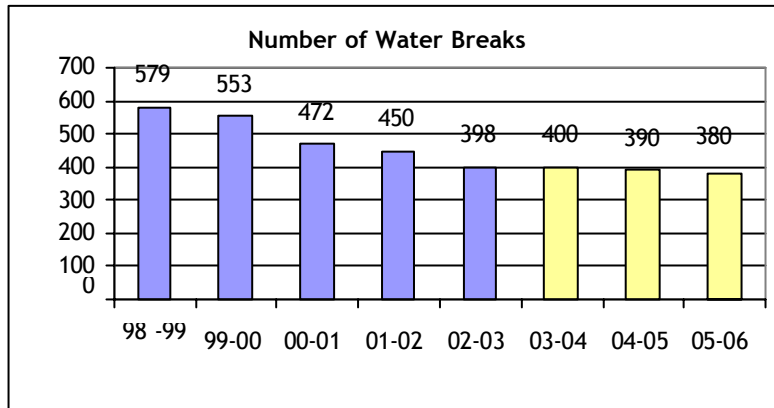


### What will success look like?

Measure	Target						
Compliance with the Public Health Grading system set by the Ministry of Health for drinking water supply.	Routine tests taken at the Water Treatment Plants are to meet the following parameters: <table border="1"> <tr> <td>E.coli</td> <td>Not detected for 99% of tests</td> </tr> <tr> <td>Regular Chlorine</td> <td>Test 0.3-5.0 mg/l for 95% of tests</td> </tr> <tr> <td>Regular pH</td> <td>Tests {7.0-8.5} for 90% of tests</td> </tr> </table>	E.coli	Not detected for 99% of tests	Regular Chlorine	Test 0.3-5.0 mg/l for 95% of tests	Regular pH	Tests {7.0-8.5} for 90% of tests
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Regular pH	Tests {7.0-8.5} for 90% of tests						
Compliance with the standards specified in the New Zealand Fire Service Fire Fighting Water Supplies Code of Practice.	To develop a programme to establish compliance of fire hydrants with fire service standards.						
Complaints responded to in agreed timeframes	<table border="1"> <tr> <td rowspan="2">Domestic Supply</td> <td>Verbal complaints</td> <td>Reply within 2 hours if there is a loss of supply.</td> </tr> <tr> <td>Written complaints</td> <td>Initial reply by end of next working day.</td> </tr> </table>	Domestic Supply	Verbal complaints	Reply within 2 hours if there is a loss of supply.	Written complaints	Initial reply by end of next working day.	
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	Written complaints	Initial reply by end of next working day.					
Customer satisfaction of water supply services within the District is measured through the triennial survey.	95% of customers surveyed are satisfied with their water supply services.						
Maintain water mains to agreed level of service.	Have no more than 400 breaks in water mains and services, district-wide per annum.						
Maintain water quality of drinking water supplies	Receive no more than 35 complaints per annum relating to water quality, taste or odour						
Assessment of water and sanitary services undertaken as required by the Local Government Act 2002.	Assessment completed by 30 <sup>th</sup> June 2005						

## Future Demand

The following tables illustrate the extent to which the council predicts the current levels of demand for water supplies is likely to change over the next three years. The figures in these tables are, however, the average for the Hauraki District as a whole.



## Council's Proposed Strategies

- Council has sufficient access to source water for current demand, but it is not necessarily accessible to the areas requiring it. Storage of treated water will be needed to ensure that demands can be met.
- Extensions to water supplies will be considered where there is proven demand, and they are economically viable.
- The long term strategy for smaller supplies is to provide the water for their requirements from water treatment plants that can produce a higher quality treated water. Ohinemuri, Karangahake and Mackaytown will be serviced by the Paeroa plant. Waikino Township will be supplied from the Waihi supply.
- Kaimanawa water supply is in the process of being graded, but the result is expected to be similar to that of Waikino. It is therefore the Council's plan to supply Kaimanawa from either the Paeroa or Kerepehi supply.
- Plains water supply is programmed for an improved treatment process with the inclusion of upgraded treatment and raw water storage.
- Improvements to water supply services to meet the improved standards will be undertaken. A renewal strategy has been developed. This strategy will involve the short term renewal of some resource consents and a commitment to the completion of the capital upgrading programme proposed.

## Planned Capital Work

The most significant new capital works that are anticipated to be provided during the next ten years follows.



## Major Capital Expenditure

Priority	Project	Year to be completed	Cost \$
Plains	Raw Water Off-stream storage at the Hikutaia Cut.	2007/08	1,600,000
	Treated Water Storage at Kerepehi.	2005-2007	1,000,000
	Treated Water Storage at Waitakaruru.	2007-2009	650,000
	Raw water Storage at Waitakaruru.	2007/08	2,150,000
	Kerepehi Treatment Plant Upgrade to meet NZ Drinking Water Standards.	2004-2006	700,000
	Waitakaruru Treatment Plant Upgrade to meet NZ Drinking Water Standards.	2008/09	700,000
Waihi	Raw water Storage.	2005-2007	1,500,000
	Treatment Plant Upgrade to meet NZ Drinking Water Standards.	2006/07	650,000
Paeroa	Treatment Plant Upgrade to provide for the extended reticulation and the new drinking water standards.	2006-2008	1,200,000
	Raw water main replacement to replace the Asbestos Cement pipe that currently exists.	2006-2008	750,000
Kaimanawa	New Water Reservoir.	2009/10	400,000
	Reticulation to connect to Paeroa/Kerepehi.		400,000
Karangahake/ Mackaytown	New Water Storage.	2007/08	92,000
	Reticulation to connect to Paeroa/Kerepehi.	2009/10	300,000
Waikino	Reticulation to connect to Waihi.	2006/07	360,000
Ohinemuri	Decommissioning the Dams.	2004-2014	205,000

### Signalling possible change in Levels of service

New legislation under the Health Act and the Drinking Water Amendment Bill may require a number of changes to the standards of the supply of water for public consumption.

### Renewal of resource consents

Council currently holds resource consents for all its water supplies that allow for the taking of source water. The following resource consents will be required to be renewed in the next three years and are currently in progress:

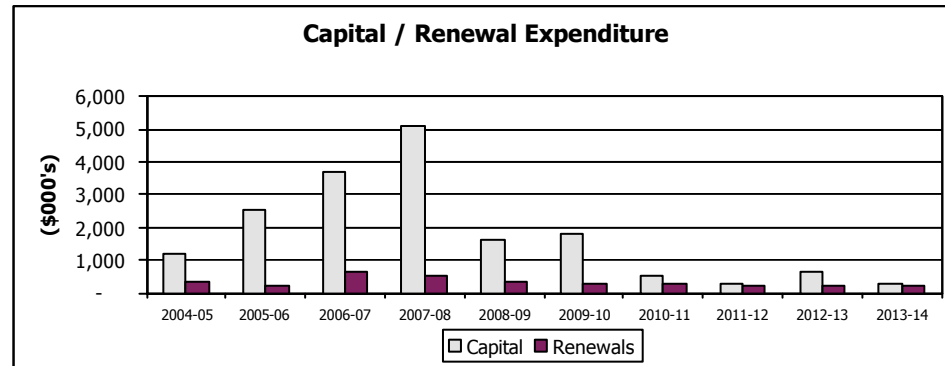
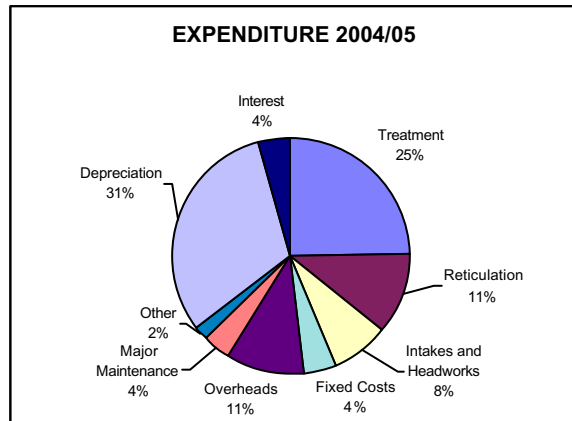
- Waikino, Mangakara Stream Take 590032, (01/10/2001)
- Waihi, Waitete Stream Take 590034, (01/10/2001)
- Ohinemuri, Tarariki Stream Take 590035, (01/10/2001)
- Kerepehi, Waihou River Take 940271, (01/05/2005)

### Where do funds come from?

Activity	General Rates District	Targeted Rates	User Charges & Fees
Water Supply		100%	

### What is the cost of operating the Water Supply activity?

Forecast 2003-04 \$000's		Forecast 2004-05 \$000's	Projected 2005-06 \$000's	Projected 2006-07 \$000's	Projected 2007-08 \$000's	Projected 2008-09 \$000's	Projected 2009-10 \$000's	Projected 2010-11 \$000's	Projected 2011-12 \$000's	Projected 2012-13 \$000's	Projected 2013-14 \$000's
<b>EXPENDITURE</b>											
680	Treatment	708	699	672	702	714	742	759	759	760	759
314	Reticulation	325	322	319	316	313	309	307	304	302	299
218	Intakes and Headworks	221	248	245	285	285	288	288	289	290	290
79	Fixed Costs	128	128	128	128	128	128	128	128	128	128
288	Overheads	311	314	308	308	314	308	308	314	308	308
148	Major Maintenance	109	99	50	39	39	50	59	63	50	69
56	Other	57	57	57	58	58	58	58	58	58	58
888	Depreciation	888	876	898	934	992	996	1,011	1,011	1,011	1,010
224	Interest	125	112	187	371	661	713	776	758	717	698
<b>2,895</b>	<b>Total Expenditure</b>	<b>2,872</b>	<b>2,855</b>	<b>2,864</b>	<b>3,141</b>	<b>3,504</b>	<b>3,592</b>	<b>3,694</b>	<b>3,684</b>	<b>3,624</b>	<b>3,619</b>
<b>LESS REVENUE</b>											
(3,683)	Water Meter Targeted Rate	(3,685)	(3,685)	(3,685)	(3,725)	(3,725)	(3,741)	(3,738)	(3,738)	(3,738)	(3,738)
<b>(788)</b>	<b>NET COST OF SERVICE</b>	<b>(813)</b>	<b>(830)</b>	<b>(821)</b>	<b>(584)</b>	<b>(221)</b>	<b>(149)</b>	<b>(44)</b>	<b>(54)</b>	<b>(114)</b>	<b>(119)</b>



<b>Capital</b>	<b>1,175</b>	<b>2,540</b>	<b>3,698</b>	<b>5,104</b>	<b>1,645</b>	<b>1,795</b>	<b>510</b>	<b>273</b>	<b>645</b>	<b>295</b>
<b>Renewals</b>	<b>329</b>	<b>242</b>	<b>657</b>	<b>551</b>	<b>322</b>	<b>254</b>	<b>286</b>	<b>211</b>	<b>206</b>	<b>208</b>

