

Water Supply

Why we do it

To provide a constant, adequate, sustainable and high quality water supply to Gisborne's reticulated areas.

What we do

The Council provides reticulated water supplies for Gisborne City including parts of Manutuke and Mākaraka. Council also provides reticulated rural water supplies for Te Karaka and Whatatūtū.

For these areas, Council owns and maintains the whole water supply network which covers:

- ▶ collection of raw water
- ▶ treatment of raw water to produce suitable quality and quantities of drinking water
- ▶ distribution of treated water to the point of supply to the customer, where it consistently meets specific flow, pressure and quality standards. This includes water required for the city's emergency fire-fighting services.

Community outcomes

This activity contributes to the following community outcomes:



Where we are now

The Council maintains and/or owns the Gisborne water supply from its source supply, via water treatment infrastructure to the water reticulation network. This includes the connections from the street mains to all serviced property boundaries.

At commercial metered connections, Council owns the water meter and backflow preventer and charges for actual water used.

The water quality grading of Gisborne's reticulated water supply is currently being reviewed by the Ministry of Health in accordance with the NZ Drinking Water Standards 2005. The last water quality grading held by the Gisborne city water supply was an Aa grading.

The current water supply for Gisborne city is provided through seven distinct water sources. These are:

- ▶ Mangapoike Dam Catchment (Clapcott and Williams dams).
- ▶ Te Ārai River
- ▶ Waipaoa River
- ▶ emergency bores - Cameron Road (two bores) and Hansen Road.

Rural water supply sources include:

- ▶ Waipaoa River bore - Te Karaka supply
- ▶ Mangatu River bore - Whatatūtū supply.

Council's two treatment plants, Waingake Water Treatment Plant and Waipaoa Augmentation Water Treatment Plant are modern and designed to meet requirements of the NZ Drinking Water Standards.

Te Karaka and Whatatūtū are serviced with supplementary supplies. These services are provided to "top up" tanks during periods of insufficient rainfall. Water usage is restricted to about 1000 litres per household per day and is controlled using a ball cock system.

The Gisborne city system provides water to communities adjacent to the Waingake bulk water main, which includes the communities of Manutuke and Papatu Road. Parts of the Poverty Bay flats adjacent to the Waipaoa bulk water main are also supplied.

Where we want to be

- ▶ To retain an Aa water quality grading for the Gisborne water supply and to be in full compliance with the New Zealand Drinking Water Standards (DWSNZ) and the Fire Fighting Code of Practice.
- ▶ To improve the water quality gradings for Te Karaka and Whatatūtū (subject to Government funding under Capital Assistance Programme [CAP]).
- ▶ To properly maintained the integrity of the reticulated water supply assets (DWS 2005).
- ▶ To adequately extend the reticulated water supply to new subdivisions within Gisborne and to rural communities as appropriate.
- ▶ To ensure adequate security of supply for Gisborne's water network.

How we plan to get there

- ▶ Undertake DWSNZ compliance projects including Hospital Hill Reservoir chlorine circulation improvements, the installation of UV treatment at the water treatment plants and the Te Karaka and Whātātūtū rural water supply upgrades, which solely depend on government funding under Capital Assistance Programme (CAP).
- ▶ Undertake key strategic asset management and maintenance projects to maintain the integrity of the reticulated water supply assets. Key projects include:
 - Water Asset Componentry Condition Assessment and Renewals Programme
 - Clapcott Dam Supply main replacement
 - Te Ārai pipe bridge repairs
 - Hospital Hill reservoir sealing
 - Knob Hill reservoir sealing
 - Hospital Hill reservoir waveband.

- ▶ Undertake a capital works to bring areas identified as not meeting the Fire Fighting Code of Practice into compliance. Projects include:
 - selected upgrades of water mains
 - construction of a new ring water main between Mākaraka and the Awapuni Road water main.
- ▶ Implement a demand management strategy that will improve security of supply for the water network. The strategy will focus on water conservation programmes and public education, leak detection programmes and may signal the need for future capital expenditure projects, such as the increase of the Williams Dam storage capacity or potentially the installation of universal water metering for domestic consumers. (Note that provision for water metering and increasing dam storage capacity is not provided for in the plan.
- ▶ Continue to undertake a comprehensive programme of maintenance and renewals. This will minimise the need for emergency repairs that impose a greater cost and inconvenience to the community.

▶ **Economic**

The economic cost to the community as a result of property damage resulting from mains failures and corrosion by-products within the water supply.

Council mitigates these potential negative effects by a mix of asset management planning activities including:

- ▶ asset development work
- ▶ monitoring and testing
- ▶ demand management initiatives
- ▶ public education, including water conservation programmes.

Significant negative effects

The potential significant negative effects of the water supply activity are:

▶ **Environmental**

The effects on the environment of discharges of chlorinated water from maintenance activities or pipeline failures.

▶ **Social**

Health and safety risks associated with the construction, maintenance or operation of the water supply infrastructure. Property damage resulting from mains failure. Damage to some household hot water valves caused by corrosion by-products within galvanised iron rider mains and service connections.

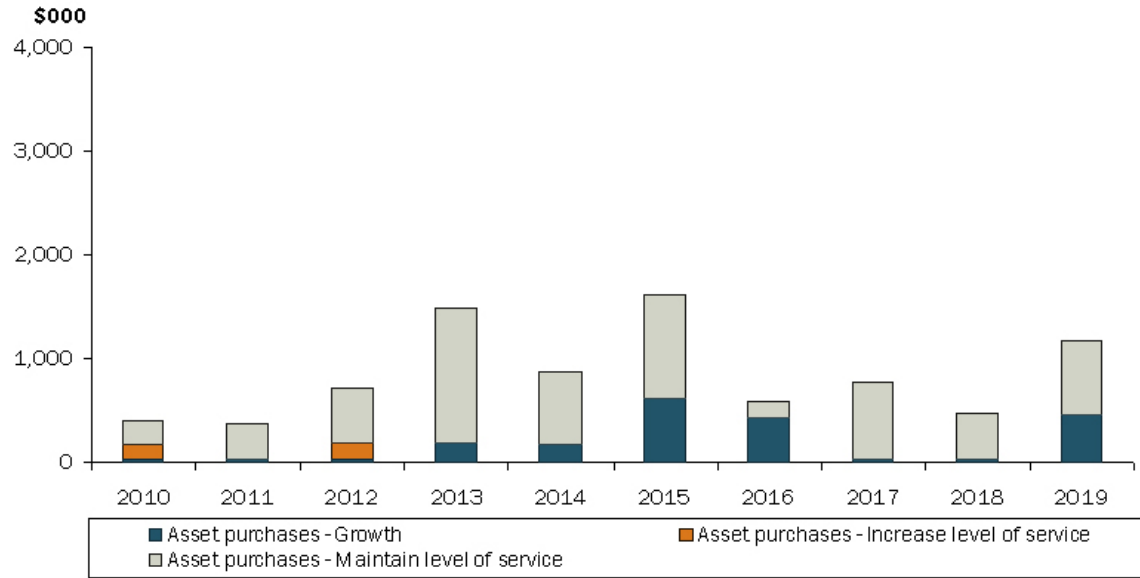
▶ **Cultural**

No potential significant negative cultural effects have been identified for the water supply activity.

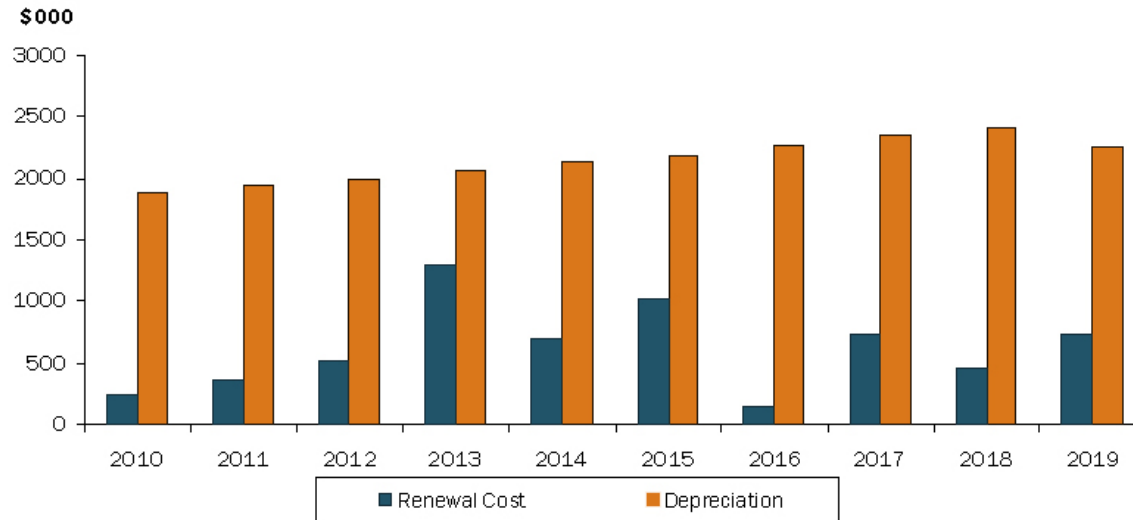
Summary of Forecasted Financial Performance for the 10 Years 2010 to 2019

	2010 \$'000	2011 \$'000	2012 \$'000	2013 \$'000	2014 \$'000	2015 \$'000	2016 \$'000	2017 \$'000	2018 \$'000	2019 \$'000
WATER SUPPLY										
OPERATIONS										
Operating Revenue										
Activity revenue	-1,515	-1,560	-1,604	-1,647	-1,701	-1,751	-1,812	-1,868	-1,928	-1,992
Grants and subsidies	0	0	0	0	0	0	0	0	0	0
Other revenue	0	0	0	0	0	0	0	0	0	0
Total Operating Revenue	-1,515	-1,560	-1,604	-1,647	-1,701	-1,751	-1,812	-1,868	-1,928	-1,992
Operating Expenditure										
Depreciation	1,887	1,947	2,002	2,059	2,129	2,192	2,275	2,349	2,412	2,260
Interest	82	84	89	98	97	96	95	88	79	69
Operating costs	2,697	3,094	3,028	3,048	3,132	3,038	3,217	3,326	3,320	3,583
Total Operating Expenditure	4,666	5,125	5,119	5,205	5,358	5,326	5,587	5,763	5,811	5,912
Net Internal Charges/(Recoveries)	135	147	170	217	236	247	289	333	435	498
Net Cost of Service	3,286	3,712	3,685	3,775	3,893	3,822	4,064	4,228	4,318	4,418
Funded by:										
Rates income	-3,286	-3,712	-3,685	-3,775	-3,893	-3,822	-4,064	-4,228	-4,318	-4,418
Transfers to/(from) reserves	0	0	0	0	0	0	0	0	0	0
Depreciation not funded	0	0	0	0	0	0	0	0	0	0
(Increase)/decrease in deficits carried forward	0	0	0	0	0	0	0	0	0	0
TOTAL OPERATIONS FUNDING	-3,286	-3,712	-3,685	-3,775	-3,893	-3,822	-4,064	-4,228	-4,318	-4,418
CAPITAL										
Capital Outgoings										
Asset purchases - Growth	26	27	37	203	180	616	429	31	31	460
Asset purchases - Increase level of service	150	0	155	0	0	0	0	0	0	0
Asset purchases - Maintain level of service	241	356	529	1,288	696	1,013	156	734	451	725
Total asset purchases	417	383	721	1,492	875	1,630	584	765	482	1,186
Loan repayments	78	86	89	101	111	112	120	122	127	226
Total Capital Outgoings	495	469	810	1,593	986	1,742	704	887	609	1,412
Funded by:										
Rates income	0	0	0	0	0	0	0	0	0	0
Development contribution income	-143	-143	-143	-89	-89	-89	-89	-89	-84	-84
Transfers to/(from) development contribution reserve	98	116	114	-39	-42	-454	-335	59	53	-372
Capital grants and donations	0	-254	-260	0	0	0	0	0	0	0
Other capital revenue	0	0	0	0	0	0	0	0	0	0
Loan funding	-169	-49	-255	-195	-12	-160	-49	0	0	-52
Transfer from depreciation reserve	-281	-140	-267	-1,270	-843	-1,040	-231	-856	-577	-904
Transfer to/(from) other reserves	0	1	1	0	0	1	0	-1	-1	0
TOTAL CAPITAL FUNDING	-495	-469	-810	-1,593	-986	-1,742	-704	-887	-609	-1,412

Total Capital Projects



Depreciation v Renewal Capital Projects



Capital Expenditure Programme

Description	LOS	Total Cost	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	Grant Funding	Dev Cont Funding	Loan & Reserve Funding
WATER SUPPLY															
Distribution : Pipe renewals (Asbestos Main Replacement)	MAINT	1,999,116	21,632		42,775	83,128	94,560	30,113	51,605	673,200	388,430	613,673			100%
Waingake Water Catchment : Renew Power Poles	MAINT	129,375	129,375												100%
Waingake Treatment Plant - Baffles in Clear Water Reservoir	INC	82,800	82,800												100%
Waingake Water Treatment Plant : Ultra Violet Treatment Installation	INC	67,275	67,275												100%
Waipaoa Water Treatment Plant : Ultra Violet Treatment Installation	INC	155,005			155,005										100%
Distribution : Hospital Hill Chlorine water supply improvements	MAINT	128,150			27,350	100,800									100%
Water Supply Distribution : Firefighting Upgrade	MAINT/GROW	460,768				460,768									100%
Bulk Water Distribution : Western Industrial Ring Main	MAINT/GROW	1,255,719						1,255,719						33.23%	66.77%
Water Distribution : Telemetry system for Gaddums Hill and Hauroa Road Reservoirs	MAINT	35,683		35,683											100%
Waingake Water Treatment Plant : Filter to Waste Facility	MAINT	147,832						147,832							100%
Waingake Water Treatment Plant : Backwash Discharge Treatment Issues	MAINT	22,400				22,400									100%
Waingake Water Treatment Plant : Seismic Restraints for Chemical Bulk Storage Tanks	MAINT	58,655			58,655										100%
Waipaoa Water Treatment Plant : Seismic Restraints for Chemical Bulk Storage Tanks	MAINT	60,049				60,049									100%
Distribution : Water Meter Renewals	MAINT	495,450	51,750	53,450	27,350	28,000	28,600	58,450	59,800	61,200	62,650	64,200			100%
Development Contributions : Taruheru Block Water	MAINT/GROW	1,236,822				103,740	105,963	108,279	443,118			475,722		89%	11%
Development Contributions : Construct Knob Hill Booster Station & Reservoir Supply main	MAINT/GROW	1,331,960			109,400	604,800	617,760							1.38%	98.62%

Description	LOS	Total Cost	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	Grant Funding	Dev Cont Funding	Loan & Reserve Funding
WATER SUPPLY															
Development Contributions : Local Urban Upgrade	GROW	289,700	25,875	26,725	27,350	28,000	28,600	29,225	29,900	30,600	31,325	32,100		100%	
Rural Townships : Te Karaka Water Supply Upgrade	MAINT	267,250		267,250									95%		5%
Rural Townships : Whatatūtū Water Supply Upgrade	MAINT	273,500			273,500								95%		5%
Distribution : Additional metres and valves for effective demand management	MAINT	37,881	37,881											50%	50%
Totals:		8,535,390	416,588	383,108	721,385	1,491,685	875,483	1,629,618	584,423	765,000	482,405	1,185,695			

Asset management

Factor	Gisborne City	Te Karaka	Whatatūtū	Total
Population served	32,000 approximately 41,922	550 543	280	33,000 approximately 42,745
Length of Reticulation (kms)	240.58	4.1	2.7	247.38
Pump Stations (number)	8	1	1	10
Fire Hydrants (number)	1508	0	0	1508
Replacement Value (\$000)	143,007	275	151	143,433
Depreciated Replacement Value (\$000)	89,080	116	33	89,229
Number of Connections	12,972	162	42	13,176
How Water Sourced	Dams, Rivers	Bores	Bores	
Annual Total Volume of Water Produced (m ³)	2.79M	36,500	8,395 11,960	
Average Daily Volume of Water Produced (m ³) (2006/07)	15,540	142	4,333	
Annual total Volume of Water Sold (m ³) 2006/07)	1.95M	0	0	
Water Supply Grading	U	U	U	
Average Consumption per Connection (m ³ /year)	300	221	204	

This activity has a comprehensive asset / activity management plan which is the key tool for ensuring that capital funding and existing assets are used as efficiently and effectively as possible.

WATER SUPPLY

Levels of Service Statement	Performance Measure		Current Performance	Targets				Mechanism to Achieve Target
	Customer	Technical		Yr 1 2009-10	Yr 2 2010-11	Yr 3 2011-12	Yr 4-10 2012-18	
LOS (1) - Health and Safety Provide water that is clean and safe to drink, bathe and wash in.	Number of complaints per annum regarding water quality.		21 (2008)	21	Decreasing Trend	Decreasing Trend	Decreasing Trend	Effective protozoa treatment.
		Compliance with NZ Drinking Water Standards.	Achieved (2008)	Achieved	Achieved	Achieved	Achieved	Effective protozoa treatment.
		Number of public advisory notices issued to boil water.	Zero (2008)	Zero	Zero	Zero	Zero	Effective protozoa treatment at water plants.
LOS (2) - Quality Water is available at an appropriate pressure, free from taste and odours and produced in an environmentally, sustainable and affordable manner.	Number of Requests for Service regarding water leaks; and		101 (annual average 2005-2008)	100	100	100	100 - 80	Effective and efficient maintenance contract and renewals programme.
	The percentage of requests resolved within target timeframes.		80% (2005-2008)	80%	82%	84%	86% - 90%	Improving customer satisfaction.
	Number of events regarding no water / or low pressure.		50 (2008)	50	50	50	50 - 45	Effective and efficient maintenance contract and renewals programme.
	Percentage of residents who are very / fairly satisfied with the water supply system.		75% (June 2008)	75%	N/M	82%	Year 4 - N/M Year 5 - 10 86%	Demand management strategies. Better customer focus through maintenance contract and operations within Utilities.
		Water provided continuously and without restriction in compliance with the maintenance contract for up to a 50-year drought in the Gisborne region.	Achieved (2008)	Achieved	Achieved	Achieved	Achieved	Demand management and source water review and strategy.