

WATER SUPPLY

WATER SUPPLY

OVERVIEW

We supply potable (drinking) water to approximately 41,000 people in our District through the water infrastructure operating in the Western, Central and Eastern supply zones. Our customer base includes residential, commercial, horticultural and agricultural users.

Water treatment, storage and distribution are provided in each of the supply zones. Through the operation and maintenance of the treatment plants, pumping stations, reservoirs and the reticulation network, water is delivered to our community through 15,600 connections.

Water is sourced from nine secure bore fields across our District and one isolated surface supply in Te Puke. The change from surface supplies, which are prone to contamination, to secure groundwater supplies has enabled us to increase production capacities to meet growing demand. It has also improved the reliability of supply, particularly during adverse conditions such as drought or floods. Our water sources have significantly improved water quality with source/reticulation supplies grading of Bb or better, in accordance with New Zealand Drinking Water Standards 2005 (amended 2008).

Having completed the transition to secure groundwater sources we can place greater emphasis on water conservation. There are several drivers including environmental sustainability, statutory frameworks and policies, legislative responsibilities and compliance requirements that make water conservation necessary. Reducing water demand has many advantages as it lengthens the life of existing treatment, storage and reticulation infrastructure and means we can defer some capital expenditure. Water conservation also provides additional environmental benefits to the community by reducing the volumes of wastewater and protecting the water resource itself.

Studies by the Bay of Plenty Regional Council have highlighted the need to carefully manage future demand for water, especially in the eastern area of our District where forecast and existing demand may exceed the volume available for allocation. The allocation of water outside our reticulation system is the role of the Regional Council. Both councils see water conservation as an important part of ensuring the social, cultural, economic and environmental well-being of our communities and we will assist and educate water consumers about this.

We started rolling out District-wide water metering for all our customers in 2012/13. The Central supply area (including Omokoroa) has been completed, the Eastern and Western supply areas are underway and we aim to have all water connections metered by June 2018. District-wide metering can assist customers in managing their usage in response to conservation initiatives and costs. Meters enable us to identify high volume users and system leaks. This is important for predicting future demand and to measure losses from the network. Water metering for all customers is an important part of our water supply strategy and will allow for the installation of backflow protection devices to

all connections for the protection of customers in the event of a loss of pressure in the main trunk water supply. It will also encourage conservative use of water as all customers will be paying for the water they use. Water conservation will help ensure that sufficient water is available for all current users and provide for future generations.

Supplying drinking water for the purpose of domestic, commercial, industrial and livestock use is a high priority within our water management strategy. In drought or emergency situations we may require certain customer groups to reduce their usage to ensure adequate domestic supplies are available.

Customers with non-standard connections (larger than 20mm) pay increased charges to reflect the greater demand such connections place on the network. These customers are mainly non-residential and may choose to reduce the additional charge by downsizing their connections. We will continue to work with this customer group to find the most practicable solutions to meet their water demands.

We have amalgamated the charges across the three water supply zones, so there is now one uniform targeted rate for unmetered connections and one uniform volumetric charge across all three water supply zones. This runs in parallel with the staged approach to the introduction of a uniform district-wide wastewater charging regime in 2014/15.

There are no significant variations between the assessment of water and sanitary services and this Water Supply Strategy.

WHAT WE PROVIDE



Water reticulation operated in three supply zones:

- **WESTERN**
• Waihi Beach, Katikati
- **CENTRAL**
• Omokoroa, Te Puna
- **EASTERN**
• Te Puke, Maketu, Pukehina Beach, Paengaroa

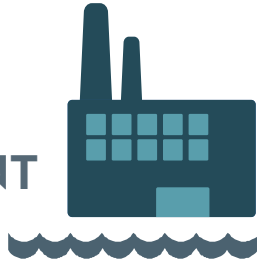


DISTRICT-WIDE WATER METERING completed 2018

26 BOOSTER PUMP STATIONS

9 BORE FIELDS

10 WATER TREATMENT PLANTS



1 SURFACE SUPPLY (Bush Dam)



24 RESERVOIRS & TANK SITES

APPROXIMATELY

674

KILOMETRES of water mains



15,600 out of **16,500**

water main fronting properties are connected to Council's water supply

WHY WE PROVIDE IT

OUR COMMUNITY OUTCOME

Water supply is provided to our Community in a sustainable manner.

OUR GOALS

- Provide potable water of an appropriate standard and quality to meet the needs of consumers within the three supply zones
- Sustainably manage our water resource, water supply infrastructure and consumer use of water across the three supply zones.

HOW WE WILL ACHIEVE OUR COMMUNITY OUTCOME

GOAL	OUR APPROACH	OUR ROLE
Provide potable water of an appropriate standard and quality to meet the needs of consumers within the three supply zones.	• Maintain water treatment plants at a minimum of grade 'B' compliance with New Zealand Drinking Water Standards 2005 (amended 2008). Maintain piped water supplies at a minimum of grade 'b' compliance with New Zealand Drinking Standards 2005 (amended 2008).	Lead
	• Maintain adequate storage and supply to meet the needs of normal domestic, commercial and industrial water use for the Western, Central and Eastern Supply zones in the event of a one-in-50 year drought.	Lead
	• Maintain water storage systems to ensure a minimum of 24 hours average daily demand storage in all systems.	Lead
	• The reticulated network is only extended when consistent with our policy on network extensions and water connections.	Lead
	• When considering applications for new connections give priority to households, livestock (including dairy farms) and commercial and industrial uses (where land is zoned for these purposes) rather than for general agricultural irrigation.	Lead
Sustainably manage our water resource, water supply infrastructure and consumer use of water across the three supply zones.	• Water meters are phased-in and used to charge according to volume for all consumers.	Lead
	• Appropriate funding mechanisms are used to encourage equitable and sustainable use of water.	Lead
	• Enable cross-boundary supply with Tauranga City subject to suitable agreements being in place.	Lead/Partner

WHAT WE ARE PLANNING TO DO

All information from 2020 – 2028 includes an adjustment for inflation.

PROJECT NUMBER	PROJECT NAME	\$'000									
		2019	2020	2021	2022	2023	2024	2025	2026	2027	2028
243619	Western Water Reticulation Renewals	630	718	901	1,180	737	237	256	609	669	653
243622	Katikati Structure Plan - Water	-	-	377	-	-	-	338	-	-	316
243623	Waihi Beach Structure Plan - Water	-	154	-	-	-	-	-	-	-	-
243624	Western Supply Zone - Bulk Flow Meters	160	36	-	-	88	-	-	-	-	-
243636	Western Supply Zone - Water Demand Management	25	56	58	27	-	28	-	30	-	31
287201	Western Supply Zone - Additional Bore at Existing Bore Field Katikati	-	-	-	644	1,099	-	-	-	-	-
287203	Additional Reservoir Capacity Project	50	-	-	-	-	857	2,079	-	-	-
310601	Asset Assessment - Western Water	10	21	10	21	11	23	12	24	12	25
318201	District Wide Water Metering Project - Western Supply Zone	50	-	-	-	-	-	-	-	-	-
337201	Western Supply Zone - Water Modelling Calibration	20	-	5	-	22	-	6	-	24	-
340801	Western Supply Zone - Reservoirs, Pumps & Controls Renewals	110	13	-	-	-	-	32	-	-	-
345201	Western Supply Zone - Additional Water Source	-	-	-	-	-	-	-	-	-	376
243210	Omokoroa Stage 2 Water Reticulation	221	-	-	-	1,795	-	983	-	-	-
243310	Central Water reticulation improvements	850	514	836	505	131	307	187	585	616	441
243320	Central Supply Zone - Construct Additional Bore	850	1,333	1,362	-	-	-	-	-	-	627
243333	Central Supply Zone - Water Demand Management	100	26	26	27	27	-	-	-	-	-
243335	Central Supply Zone - Construct Additional Reservoir	30	205	838	858	-	-	693	1,483	-	-
310701	Asset Assessment - Central Water	20	10	21	11	22	11	23	12	24	13
340601	Central Supply Zone - Water Modelling Calibration	10	113	63	-	22	-	6	-	24	-
243002	Eastern Water Reticulation improvements	1,291	1,707	1,046	1,042	1,361	766	539	3,114	614	465
287112	Eastern Supply Zone - Alternative Water supply	250	2,255	210	-	-	3,099	-	-	-	-
287113	Eastern Supply Zone Bulk Flow Meters	100	-	-	-	-	-	-	-	-	-

PROJECT NUMBER	PROJECT NAME	\$'000									
		2019	2020	2021	2022	2023	2024	2025	2026	2027	2028
287117	Eastern Supply Zone - Water demand management	55	56	52	54	55	56	-	-	-	-
287118	Te Puke Infrastructure areas 3 + 4	161	26	-	-	-	240	-	-	-	-
310801	Asset Assessment - Eastern Water	20	10	21	11	22	11	23	12	24	13
340701	Eastern Supply Zone Water Modelling Calibration	20	-	5	-	22	-	6	-	24	-

MAJOR PROJECTS PLANNED FOR 2018 - 2028

District-wide

- District-wide metering of all water connections to be completed by June 2018
- District-wide network reticulation improvements, upgrades and renewals 2019-2028, \$15,565,610.

All information from 2020 - 2028 includes an adjustment for inflation.

HOW WE WILL TRACK PROGRESS TOWARDS OUR GOALS

OUTCOME

Water supply is provided to our Community in a sustainable manner.

The Local Government Act 2002 introduced standard performance measures for water supply to be reported by all local authorities. These mandatory measures have been integrated into Council's performance framework and are also shown in italics.

GOAL	WE'LL KNOW WE'RE MEETING OUR GOAL IF	ACTUAL						TARGET	
		2017	2019	2020	2021	2022-24	2025-28		
Provide potable water of an appropriate standard and quality to meet the needs of consumers within the three supply zones. Sustainably manage our water resource, water supply infrastructure and consumer use of water across the three supply zones.	Key Performance Measure For the three supply zones the percentage of Council's treated water supply with a Ministry of Health grading as per the New Zealand Drinking Water Standards 2005 (amended 2008).								
	• B or better for treatment	100%	100%	100%	100%	100%	100%	100%	
	• b or better for distribution	100%	100%	100%	100%	100%	100%	100%	
	Key Resident Measure Level of resident satisfaction with the quality of Council's water supply.	80%	≥80%	≥80%	≥80%	≥82%	≥82%		
	Supporting measures In a one-in-50 year drought, the ability to supply water to meet the normal daily water demand (1,100 litres per person per day).	100%	100%	100%	100%	100%	100%		
	Ability of reservoirs to provide a minimum of 24 hour daily demand.	100%	100%	100%	100%	100%	100%	100%	

HOW WE WILL TRACK PROGRESS - LEVELS OF SERVICE

GOAL	WE'LL KNOW WE'RE MEETING THE SERVICE IF	ACTUAL		TARGET								
		2017	2019	2020	2021	2022-24		2025-28				
We will provide good quality potable water to service growth within the three supply zones.	Percentage of year where reservoirs are maintained at a minimum of 50% full, in accordance with Ministry of Health requirements.	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	
We will monitor sustainable delivery and effectively manage the risks associated with the quality and quantity of the public water supply.	<i>The extent to which Council's drinking water supply complies with:</i>	100%	≥99%	≥99%	≥99%	≥99%	≥99%	≥99%	≥99%	≥99%	≥99%	
	• <i>Part 4 of the drinking-water standards (bacterial compliance criteria), and</i>											
	• <i>Part 5 of the drinking-water standards (protozoal compliance criteria)</i>											
	Distribution Zones (Yes or No)		Part 4	Part 5	Part 4	Part 5	Part 4	Part 5	Part 4	Part 5	Part 4	Part 5
	• Athenree		Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
	• Katikati		Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
• Omokoroa Minden		Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	
• Pongakawa		Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	
• Te Puke		Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	
• Te Puke Bush		Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	
<i>The percentage of real water loss from Council's networked reticulation system.</i>		21% Central	≤25%	≤25%	≤22%	≤22%	≤22%	≤22%	≤22%	≤20%	≤20%	
<i>The result is calculated using the Water NZ water loss benchmarking calculation.</i>		23% Eastern & Western										
<i>The average consumption of drinking water per day per resident within the Council's District.</i>		240 litres	≤240 litres	≤220 litres	≤220 litres	≤220 litres	≤220 litres	≤210 litres	≤210 litres	≤200 litres	≤200 litres	
We will respond to customers issues with the water supply	<i>Where Council attends a call-out in response to a fault or unplanned interruption to its networked reticulation system, the following median response times are measured:</i>											
	<i>Attendance for call-outs: from the time Council receives notification to the time service personnel reach the site:</i>											
	• Urgent call outs	30 minutes	≤1 hr	≤1 hr	≤1 hr	≤1 hr	≤1 hr	≤1 hr	≤1 hr	≤1 hr	≤1 hr	
• Non urgent call outs	4.9 hours	≤8 hrs	≤8 hrs	≤8 hrs	≤8 hrs	≤8 hrs	≤8 hrs	≤8 hrs	≤8 hrs	≤8 hrs	≤8 hrs	

GOAL	WE'LL KNOW WE'RE MEETING THE SERVICE IF	ACTUAL						TARGET		
		2017	2019	2020	2021	2022-24	2025-28			
We will respond to customers issues with the water supply. (Cont.)	Resolution of call-outs from the time Council receives notification to the time service personnel confirm resolution of the fault or interruption.									
	• Urgent call outs	2.7 hours	≤8 hrs	≤8 hrs	≤8 hrs	≤8 hrs	≤8 hrs	≤8 hrs	≤8 hrs	
	• Non urgent call outs	24.5 hours	≤24 hrs	≤24 hrs	≤24 hrs	≤24 hrs	≤24 hrs	≤24 hrs	≤24 hrs	
	Total number of complaints received by Council about any of the following:									
	Drinking water clarity	19.03	≤30	≤30	≤30	≤30	≤30	≤30	≤30	
	• Drinking water taste									
	• Drinking water odour									
	• Drinking water pressure or flow									
	• Continuity of supply and									
	• Council's response to any of these issues expressed per 1,000 connections to Council's networked reticulation system									

KEY ASSUMPTIONS

	ASSUMPTION	RISK
Eastern Supply Zone	No provision is made in our Asset Management Plan (AMP) for infrastructure to reticulate and supply future development at Rangiuuru as it has not been given approval to proceed.	Minor because the AMP can be updated if and when the industrial park is given approval to proceed and water is available.
Drinking water standard	The standard for drinking water as specified in Drinking Water Standards for New Zealand 2005 (revised 2008) remains unchanged for compliance with the Health (Drinking Water) Amendment Act 2007.	Quality of water supplied differs from supply standards.
Industrial water demand	Industrial demand is based on the continual growth of existing demand profiles in commercial, industrial and agricultural sectors. Trends have been identified and analysis undertaken as per the Water Asset Management Plan.	If demand assumptions are incorrect investment in water assets may not be optimal, however, much of the work can be modified according to actual growth.

	ASSUMPTION	RISK
Residential water demand	<p>Growth in water demand is based on forecast population growth and household numbers and from historical trends in individual household consumption. Trends have been identified and analysis undertaken per the Water Asset Management Plan. Expect residential water metering to reduce growth in demand.</p> <p>Risks exist where consumers are not currently connected to the water supply network but it is available for them. If there are large numbers of these new consumers in any one location connecting to the water supply upgrades to the capacity of the supply network may need to be brought forward.</p>	If demand assumptions are incorrect investment in water assets may not be optimal, however, much of the work can be modified according to actual growth.
Water asset renewals	<p>The assessed condition of the assets will not deteriorate with the provision of further field data. Asset replacement is scheduled based on accepted national standards and international best practice approaches to 'whole of life' asset management.</p> <p>Water reticulation, source headworks and storage assets will be renewed "just in time" throughout the 10 year period according to their determined life-expectancies and performance.</p>	<p>Assets that have accelerated deterioration rates are not appropriately funded.</p> <p>Delaying the renewal work by "sweating the asset" unreasonably would increase maintenance expenditure and progressively increase the risk of reduced LoS in the reticulated area.</p>
Water asset replacement	All pipe replacement is with either Polyvinyl chloride (PVC) or Polyethanol (PE) plastic pipes. This is in line with current levels of service and budgets.	Increased construction and ratepayer costs if alternative pipe materials are used, for example ductile iron.
Water losses	Management of reticulation systems and water-metering will reduce water losses from 28% to 10% over 10 years. Observation and analysis of the three supply zone networks by staff suggest this reduction is achievable. The availability of water is not expected to be affected by climate change during the ten years of this Plan. Proposals adopted for water-metering used as a demand management tool and to encourage more efficient use of the resource will help address longer term risks.	If the target is not met investment in new water sources may need to be brought forward.
Water level of service	No provision is made for changes to the adopted levels of service, funding policy or by-laws.	Changes to levels of service will have cost implications for ratepayers.
Water sources	All future water supplies are from proven groundwater sources adjacent to existing infrastructure. Current consents allow for growth for the next 50 years and are all sites close to existing water treatment plants.	Considerable increased investment in reticulation would be required if new bore sources had to be located.
Impact of water-metering	<p>Metering households will reduce demand for water and delay the need for additional water sources.</p> <p>District-wide water metering will be installed progressively throughout the district, and it expected to be completed by July 2018. Bulk -flow metering and demand management activities will be introduced over the next 10 years and will be ongoing.</p>	<p>Increased investment in water sources and the reticulation network may be required if demand does not reduce as a result of metering.</p> <p>If demand is not reduced through these initiatives Council will not be able to defer the funding for significant capital and renewals projects</p>

SIGNIFICANT EFFECTS OF PROVIDING THIS ACTIVITY

WELL-BEING	POSITIVE	NEGATIVE	HOW WE ARE ADDRESSING THESE EFFECTS
Social	<ul style="list-style-type: none"> ✓ Provides for a safe and convenient drinking water supply for residential properties' everyday needs. ✓ Provides water for a range of recreation and leisure activities, e.g. swimming pools. ✓ Provides the operational basis for the sewerage network. 	<ul style="list-style-type: none"> ✗ Increasing the amount of water taken for public supply from groundwater bores means less groundwater is available for landowners wanting to develop private bores for irrigation. 	<ul style="list-style-type: none"> • These effects are monitored and controlled by the Bay of Plenty Regional Council through resource consents required to extract and use water.
Environmental	<ul style="list-style-type: none"> ✓ Treated water returned to the environment. 	<ul style="list-style-type: none"> ✗ Water extraction from rivers and streams has the potential for negative impacts on ecological values as habitats for native species of plants and animals. 	<ul style="list-style-type: none"> • We are continuing to monitor and reduce water losses from the public supply system to reduce the amount of water we need to take.
Economic	<ul style="list-style-type: none"> ✓ Provides a reliable water supply for commercial and industrial users. ✓ Provides a reliable water supply for agriculture and horticulture. 	<ul style="list-style-type: none"> ✗ Some people may find it difficult to pay for the water they use and will have to reduce their use. ✗ Businesses using large volumes of water may decide against locating in our District due to water costs. 	<ul style="list-style-type: none"> • We are continuing to install water meters for all customers in our District. • We are making consumers aware of their water use by charging for water by volume used.
Cultural	<ul style="list-style-type: none"> ✓ Good quality water is available to residents which improves health and well-being. 	<ul style="list-style-type: none"> ✗ Water abstraction from streams and rivers can have an adverse effect on the mauri of the water body. 	<ul style="list-style-type: none"> • Continuing to better identify the cultural significance of water catchments through resource consent conditions.

COUNCIL'S ADDITIONAL ASSET REQUIREMENTS

DISTRICT-WIDE WATER SUPPLY

All information from 2020-2028 includes an annual adjustment for inflation.

CAPITAL EXPENDITURE	\$'000									
	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028
To meet additional demand (capacity for future residents - growth)	1,562	3,971	2,787	1,502	2,894	4,196	4,094	1,483	-	1,319
To improve the level of service	360	149	73	-	154	-	17	-	73	-
To replace existing assets (renewals)	2,881	2,951	2,784	2,727	2,229	1,309	1,015	4,308	1,899	1,559
Total capital expenditure	4,803	7,071	5,644	4,229	5,277	5,505	5,126	5,790	1,973	2,877

WHERE THE MONEY COMES FROM

Please refer to Chapter 5 'Policies, Summaries & Statements' for the Revenue and Financing Policy for water supply.

FUNDING SOURCES FOR WATER SUPPLY 2018/19

