Building Communities

Water Supply

Puna Wai / Kohinga Wai

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We supply potable (drinking) water to over 16,000 properties in our District through water infrastructure operating in the Western, Central and Eastern supply zones. Our customer base includes residential, commercial, horticultural and agricultural users.

What we provide

- Water reticulation operated in three zones:
  - Western *(Waihī Beach, Katikati)*
  - Central *(Ōmokoroa, Te Puna)*
  - Eastern *(Te Puke, Maketu, Pukehina Beach, Paengaroa)*
- District-wide metering
- **26** booster pump stations
- **9** bore fields
- **10** water treatment plants
- **31** reservoirs and tank sites
- **716**km of watermains
- **1** surface supply (bush dam)

17,250 watermain fronting properties are connected to Council's water supply.

Why we provide this activity

Our community outcome

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

- 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.

Water Supply

Overview

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 more than 17,800 connections.

Water is sourced from nine secure bore fields across our District. 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 quality and 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 2018).

Having completed the transition to secure groundwater sources, Council is obliged by a number of drivers to place greater emphasis on water conservation and future growth. These include environmental sustainability, compliance requirements (including resource consent conditions), statutory frameworks and policies, and legislative responsibilities.

Key functions of this activity

Reducing water

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 wellbeing of our communities and we will assist and educate water consumers about this.

District-wide metering

District-wide metering was completed in 2018 and assists 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 activity and allows 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 water main network. It also encourages conservative use of water as all customers pay for the water they use. Water conservation helps to ensure that sufficient water is available for all current users and provides for future generations.

Drinking water

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.

Non-standard connections (larger than 20mm)

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 one uniform targeted rate for unmetered connections and one uniform volumetric charge across all three water supply zones.

The Three Waters Review, may result in significant structural changes to Council's role in the delivery of water supply, wastewater and stormwater services. Regardless of how it is delivered, the community will still need services to be provided and planned for. There is currently insufficient detail regarding the possible changes to services, and therefore it is prudent to plan on a business as usual approach to service delivery.

How we will achieve our community outcomes

Goal	Our approach
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.	• Maintain water treatment plants at a minimum of grade 'B' compliance with New Zealand Drinking Water Standards 2005 (amended 2018). Maintain piped water supplies at a minimum of grade 'b' compliance with New Zealand Drinking Standards 2005 (amended 2018). • 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, with reasonable restrictions in place. • Maintain water storage systems to ensure a minimum of 24 hours average daily demand storage in all systems. • The reticulated network is only extended when consistent with our policy on network extensions and water connections. • 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. • Water meters are used to charge according to volume for all consumers. • Appropriate funding mechanisms are used to encourage equitable and sustainable use of water. • Enable cross-boundary supply with Tauranga City subject to suitable agreements being in place.

What are we planning to do

All information from 2023 - 2031 includes an adjustment for inflation.

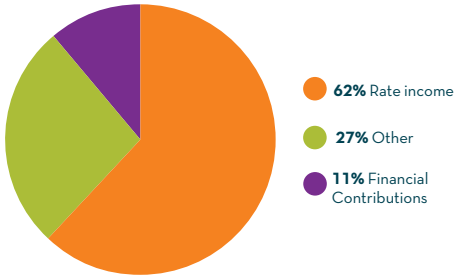
Project number	Project name	$'000									
		2022	2023	2024	2025	2026	2027	2028	2029	2030	2031
243002	Water - Eastern Reticulation Improvements	699	987	1,019	1,174	993	1,538	1,173	1,179	1,692	1,367
243028	No: 1/2 Road Reticulation Improvements	380	-	-	-	-	-	-	-	-	-
243029	Water - Eastern Treatment Plant Renewals and Improvements	429	221	32	430	376	514	36	111	38	117
243031	Eastern Supply Zone - Reservoir Imps	170	481	267	153	228	85	24	3,486	25	26
243033	Eastern Water Consents And Compliance Renewals	-	77	107	55	57	-	30	-	-	-
243034	Water - Muttons Treatment Plant - Renewal	100	517	534	-	-	-	-	-	-	-
243210	Water - Ōmokoroa Stage 2 Water Reticulation	513	-	-	-	-	-	-	-	-	-
243307	Water - Ōmokoroa Structure Plan	1,362	1,056	-	-	389	736	565	-	713	-
243310	Water - Central Reticulation Improvements	226	150	182	1,036	1,135	1,125	1,141	648	720	621
243320	Water - Central Additional Bore	1,000	310	753	-	-	-	601	2,225	-	-
243333	Central Water Demand Management	40	26	27	28	28	-	-	-	-	-
243335	Water - Central Additional Reservoir	1,100	1,136	-	-	-	234	1,442	1,483	-	-
243338	Water - Central Source And Storage Improvements	37	131	298	358	174	166	132	-	-	-
243340	Water - Central Site Security and Electrical Intruder Alarms	100	193	155	110	256	128	114	12	13	59
243341	Central Water Consents and Compliance Renewals	-	-	101	55	57	47	-	56	-	-
243619	Water - Western Reticulation Capital Improvements	293	372	668	694	891	499	833	1,193	1,233	1,082
243622	Water - Western Katikati Structure Plan	456	124	263	239	-	-	-	-	-	-
243623	Waihī Beach Structure Plan - Water	-	137	-	-	-	31	-	-	-	-
243624	Water - Western Bulk Flow Meters	75	77	53	-	91	-	-	-	-	-
243625	Water - Western Site Security and Intruder Alarms	240	291	240	118	484	1,042	42	352	25	26
243636	Western Water Demand Management	25	57	59	28	-	29	-	31	-	33
243640	Western Water Consents And Compliance Renewals	-	52	117	55	46	47	-	74	-	-
243641	Water - Waihī Beach Structure Plan B Funding	-	-	-	-	-	-	-	-	-	137
287112	Water - Eastern Alternative Supply	1,100	1,136	1,175	1,419	-	-	-	-	-	-

Project number	Project name	$'000									
		2022	2023	2024	2025	2026	2027	2028	2029	2030	2031
287113	Eastern Supply Zone Bulk Flow Meters	75	77	80	83	91	93	60	-	-	-
287117	Water - Eastern Demand Management	50	52	53	-	57	-	90	-	25	26
287118	Water - Eastern Structure Plan Implementation	19	136	182	231	-	-	-	-	76	-
287119	Water Eastern - Te Puke Structure Plan Fund B	-	146	-	-	-	-	-	-	-	-
287201	Western Supply Zone Additional Bore At Existing Bore Field Katikati	50	-	-	661	1,138	-	-	-	-	-
287203	Additional Reservoir Capacity Project	50	-	-	-	-	888	2,164	-	-	-
310601	Water - Western Asset Validation	10	21	11	22	11	23	12	25	13	26
310701	Water - Central Asset Validation	20	10	21	11	23	12	24	12	25	13
310801	Water - Eastern Asset Validation	10	21	11	22	11	23	12	12	25	13
319001	District Wide Water Metering Central Supply Zone	80	83	53	-	-	58	60	-	-	-
337201	Water - Western Reticulation Modelling	35	-	5	-	40	-	6	-	44	-
340601	Water - Central Modelling	10	62	21	-	23	-	6	-	25	-
340701	Water - Eastern Reticulation Modelling	-	21	-	6	-	23	-	-	25	-
340801	Western Water - Reservoirs, Pumps & Controls Renewals	135	234	-	121	-	128	34	136	36	143
345201	Western Supply Zone - Additional Water Source	-	-	-	-	-	-	-	-	-	390
350026	Water - Eastern Supply To Rangiuru Business Park	100	413	4,806	3,857	-	-	-	-	-	-
350027	Water - Eastern Rangiuru Business Park New Pipeline	-	-	214	-	3,186	3,504	-	-	-	-
350027	Water - Eastern Rangiuru Business Park New Pipeline	-	-	214	-	3,186	3,504	-	-	-	-

Where the money comes from

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

Funding sources for 2021-22



How we will track progress

What we do	How we track progress	Result 2020	Target 2022		Target 2023		Target 2024		Target 2025-27		Target 2028-31	
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 (revised 2018).											
	• B or better for treatment	100%	100%		100%		100%		100%		100%	
	• b or better for distribution	100%	100%		100%		100%		100%		100%	
	Key Resident Measure Level of resident satisfaction with the quality of Council's water supply.	76%	≥80%		≥80%		≥85%		≥85%		≥85%	
We will provide good quality potable water to service growth within the three supply zones.	Ability of reservoirs to provide a minimum of 24-hour daily demand.	100%	100%		100%		100%		100%		100%	
	Percentage of year where reservoirs are maintained at a minimum of 50% full for 80% of the time, in accordance with Ministry of Health requirements.	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.	The extent to which Council's drinking water supply complies with: **Part 4** of the drinking-water standards (bacterial compliance criteria), and **Part 5** of the drinking-water standards (protozoal compliance criteria).	0	≥99%		≥99%		≥99%		≥99%		≥99%	
	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**	**Part 4**	**Part 5**
	• Athenree	N	N	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
	• Katikati	N	N	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
	• Ōmokoroa Minden	N	N	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
	• Pongakawa	N	N	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
	• Te Puke	N	N	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y

What we do	How we track progress	Result 2020	Target 2022	2023	2024	2025-27	2028-31
We will monitor sustainable delivery and effectively manage the risks associated with the quality and quantity of the public water supply.	The percentage of real water loss from Council's networked reticulation system. To be monitored through the water metering system.	19.7%	≤25%	≤25%	≤22%	≤20%	≤20%
	The average consumption of drinking water per day per resident within Council's district.	170 litres	≤220 litres	≤200 litres	≤200 litres	≤190 litres	≤180 litres
We will respond to customers issues with the water supply.	Where Council attends a callout in response to a fault or unplanned interruption to its networked reticulation system, the following median response times are measured: Attendance for callouts: from the time Council receives notification to the time service personnel reach the site:						
	• Urgent callouts	0.76 hours	≤60 minutes	≤60 minutes	≤60 minutes	≤60 minutes	≤60 minutes
	• Non urgent callouts	3.8 hours	≤24 hours	≤24 hours	≤24 hours	≤24 hours	≤24 hours
	Resolution of callouts from the time Council receives notification to the time service personnel confirm resolution of the fault or interruption.						
	• Urgent callouts	6.18 hours	≤5 hours	≤5 hours	≤5 hours	≤5 hours	≤5 hours
	• Non urgent callouts	26.5 hours	≤28 hours	≤28 hours	≤28 hours	≤28 hours	≤28 hours
	Total number of complaints received by Council about any of the following:						
	Drinking water clarity: • 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.	6.79	≤30	≤30	≤30	≤30	≤30

Key assumptions

Assumption	Description	Risks
Eastern Supply Zone	No provision is made in our Asset Management Plan (AMP) for infrastructure to reticulate and supply future development at Rangiuru 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 2018) 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.
Residential water demand	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. 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.	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	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. 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.	Assets that have accelerated deterioration rates are not appropriately funded. Delaying the renewal work by 'sweating the asset' unreasonably would increase maintenance expenditure and progressively increase the risk of reduced levels of service in the reticulated area.
Water asset replacement	All pipe replacement is with either Polyvinyl chloride (PVC) or Polyethylene (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 have reduced water losses from 28% to 10% between 2018 and 2028. 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 10 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.

Assumption	Description	Risks
Water level of service	No provision is made for changes to the adopted levels of service, funding policy or bylaws.	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	Metering households has reduced demand for water and may delay the need for additional water sources. Bulk-flow metering and demand management activities will continue over the next 10 years.	Increased investment in water sources and the reticulation network may be required if demand does not reduce as a result of metering. If demand is not reduced through these initiatives Council will not be able to defer the funding for significant capital and renewals projects

Significant effects of providing this activity

Wellbeing	Positive	Negative	How are we addressing these effects
 **Social**	• 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.	• 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.	• These effects are monitored and controlled by the Bay of Plenty Regional Council through resource consents required to extract and use water.
 **Cultural**	• Good quality water is available to residents which improves health and wellbeing.	• Water abstraction from streams and rivers can have an adverse effect on the mauri of the water body.	• Continuing to better identify the cultural significance of water catchments through resource consent conditions.
 **Environmental**	• Treated water returned to the environment.	• Water extraction from rivers and streams has the potential for negative impacts on ecological values as habitats for native species of plants and animals.	• 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**	• Provides a reliable water supply for commercial and industrial users. • Provides a reliable water supply for agriculture and horticulture.	• 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.	• 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.

Stream water testing