

**WASTEWATER**

# WASTEWATER

## OVERVIEW

Council aims to ensure that wastewater treatment and disposal systems are sustainable and continue to meet environmental and health and safety standards. We will continue to encourage households to explore and implement measures that reduce wastewater volume per person.

Increasing demand for wastewater services is driven by population growth, environmental degradation and public health issues. Waihi Beach experiences additional seasonal demand driven by holiday makers. Developers pay financial contributions (subdivision fees) which are used to repay the costs of building future capacity into our District's wastewater schemes:

### URBAN CENTRES

- Katikati
- Maketu/Little Waihi
- Omokoroa
- Te Puke
- Waihi Beach

We have four wastewater treatment plants at Katikati, Maketu/Little Waihi, Te Puke and Waihi Beach and one wastewater treatment scheme in Omokoroa. Resource consents for two of the wastewater treatment plants (Te Puke and Katikati) are currently being renewed and the capital works programme may be influenced by resource consent requirements, which have been submitted to the Regional Council. Council is planning to construct a new wastewater and treatment plant scheme for Ongare Point in 2018. A new scheme for Te Puna West was completed in 2017 and wastewater is now being pumped into the Omokoroa transfer main.

By calculating residential flows we are able to measure the capacity of our existing treatment plants. The following method is used for this purpose:

- Population based on an average of 2.7 people per house or dwelling
- Average dry weather flow of 220 litres per person per day in area water supply.

We are near to or at capacity for the Te Puke treatment plant, and have sufficient capacity for the next 10 years for the remaining treatment plants. An increase in urban development outside our existing structure plans during the life of this plan would require expansions of the treatment plants.

There are a number of households in each wastewater scheme that can be connected but have currently chosen not to. We have a programme to actively encourage these households to connect for public health reasons.

Levels of service relating to the quality and quantity of discharges from treatment plants are prescribed by legislation and resource consent conditions. All our treatment plants comply with these service levels and no changes are anticipated in the short to medium term, subject to the renewal of resource consents. There are no significant variations between the assessment of water and sanitary services and this Wastewater Strategy.

### Omokoroa

The Omokoroa Peninsula is currently serviced with a reticulated network north of the railway line that discharges to a common storage chamber/pump on Council owned land adjacent to the railway line. The pump station is designed to cater for a population of 12,000 people. The collected wastewater is discharged via a 16km pipeline to Tauranga City Council wastewater network in Bethlehem. As development takes place in Omokoroa, new reticulated infrastructure will feed into this existing pump station.

### Te Puke Waste Water Treatment Plant Upgrade

As the Te Puke Wastewater Treatment Plant is nearing capacity, Council is upgrading the facility. This is due to start within three years, and will be subject to new resource consent conditions in relation to the discharge consent, currently lodged with the Regional Council. Council will be looking into alternative discharge points over the next 3-5 years.

### Katikati Waste Water Treatment Plant Alternative Options Assessment

Katikati currently discharges its wastewater via an ocean outfall of Matakana Island. As part of its resource consent renewal Council will be looking at alternative discharge options over the 3-5 years. The aim will be to be to implement the preferred option over the 2021/2031 LTP.

### SEPTIC TANK EFFLUENT PUMP SYSTEM

The success of the pressurised scheme in Maketu/Little Waihi, using a grinder pump system to connect individual households to the treatment plant, resulted in a similar scheme being built in Te Puna West in 2017.

A new wastewater scheme is being constructed for Ongare Point. This will be a Septic Tank Effluent Pump System. It includes onsite holding tanks for the primary treatment of solids on each property, which will be owned and maintained by Council. The scheme allows for a smaller scale, more affordable treatment system and can be expanded through a series of modular upgrades to add capacity to connect the infill growth expected over the next 25 years.

## **SMALL COASTAL COMMUNITIES**

For areas of our District where a reticulated wastewater scheme is unavailable, wastewater must be managed onsite. The Bay of Plenty Regional Council is responsible for the consenting and management of onsite schemes.

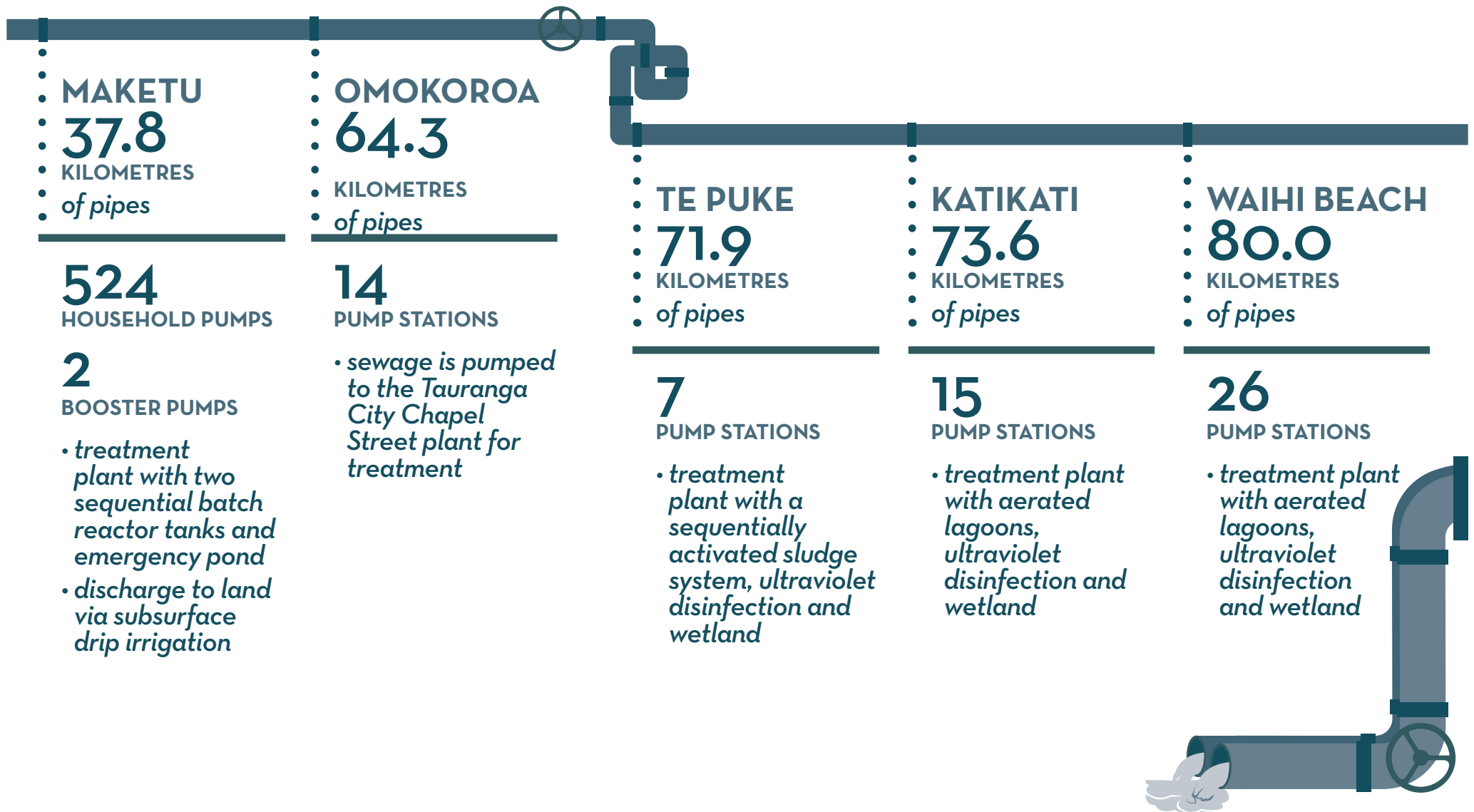
We will continue to work with the Regional Council and our small coastal communities to investigate options for sustainable onsite wastewater treatment.

Our investigations have indicated that the communities at Kauri Point, Plummers Point and Tuapiro Point are compatible with the Regional Council's Operative Onsite Effluent Treatment Plan (ONSET), as individual properties are large enough to provide sufficient areas for effective land-based treatment. At Tanners Point properties are within a maintenance zone in the OSET plan. This means properties within the zone are required to undertake more frequent maintenance on their tanks and provide feedback to the Regional Council. No further Council expenditure has been allocated for these coastal communities in this Long Term Plan.

## **RURAL COMMUNITIES**

For rural areas of our District where reticulated schemes are unavailable the Bay of Plenty Regional Council is responsible for the consenting and management of onsite wastewater schemes

## WHAT WE PROVIDE



## WHY WE PROVIDE IT

### OUR COMMUNITY OUTCOME

Wastewater services are well planned and maintained to ensure a clean and healthy environment.

### OUR GOALS

- All areas in our District served by Council's reticulated wastewater disposal systems meet acceptable health, safety and environmental standards
- Assist small urban communities along the Tauranga Harbour to ensure that the wastewater disposal options available to them meet health and safety requirements.

## HOW WE WILL ACHIEVE OUR COMMUNITY OUTCOME

GOAL	OUR APPROACH	OUR ROLE
All areas in our District served by Council's reticulated wastewater disposal systems meet acceptable health, safety and environmental standards.	<ul style="list-style-type: none"> <li>• Ensure sludge disposal meets environmental and health standards by investigating new technology to reduce sludge, alternative uses and options for sludge disposal</li> <li>• Ensure that the disposal of treated effluent meets environmental and health standards and is affordable.</li> </ul>	<p>Lead</p> <p>Lead</p>
Assist small urban communities along the Tauranga Harbour to ensure that the wastewater disposal options available to them meet health and safety requirements.	<ul style="list-style-type: none"> <li>• In consultation with ratepayers advocate to the Bay of Plenty Regional Council to ensure that wastewater disposal systems, other than Council-owned systems, meet acceptable health, safety and environmental standards.</li> </ul>	Partner/Advocate

## DID YOU KNOW...

- Of the 49,000 residents that live in the Western Bay of Plenty, more than 19,000 are serviced by a Council wastewater system. This represents a total of 8,775 connections to the wastewater systems.
- In 2016/17 almost 1,900 million litres of wastewater was discharged into the public wastewater network.
- In 2017 the total value of Council's wastewater assets was \$136 million (reticulation) / \$185 million (reticulation and plant).

## 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
168603	Waihi Beach Wastewater Treatment Plant Renewals	280	267	189	79	879	349	266	59	817	150
168604	Waihi Beach Wastewater Treatment Plant Fixed Generator	-	-	-	-	-	135	-	-	-	-
168605	Waihi Beach Wastewater Treatment Plant Mechanical Seperator for Wetlands	-	-	-	-	154	-	-	-	-	-
226001	Waihi Beach Pump Station Renewals	150	133	147	150	165	169	173	380	341	351
226025	Waihi Beach Treatment Plant upgrade additional aeration capacity	-	-	-	322	-	-	-	-	-	-
310902	Waihi Beach Asset Assessment	6	6	6	6	7	7	7	12	12	13
317001	Waihi Beach Structure Plans Utilities Wastewater	-	625	-	-	-	-	-	-	-	-
319502	Waihi Beach Infiltration Investigation and Remedial Work	40	-	-	-	-	-	-	89	116	56
336301	Waihi Beach Wastewater Treatment Plant Monitoring and Review	10	-	-	-	-	-	51	-	-	-
340501	Wastewater Modelling	20	-	21	21	11	11	12	12	-	-
225723	Katikati Wastewater Pump Station Renewals	87	76	75	118	96	169	173	107	134	150
225724	Katikati Wastewater Treatment Plant Renewals	400	1,097	629	118	321	45	40	249	207	83
225727	Katikati Wastewater Treatment Plant renewals of resource consent	100	-	-	-	-	-	-	-	-	-
225743	Katikati Wastewater Infrastructure rehabilitation	50	41	52	-	11	-	12	20	21	21
311002	Katikati Asset Assessment	6	6	6	6	7	7	7	12	12	13
316701	Katikati Structure Plans Utilities Wastewater	-	-	-	-	-	-	520	-	207	-
323402	Katikati Infiltration Investigation	10	-	-	-	-	34	35	-	-	-
342101	Katikati Wastewater Network Upgrades	-	-	-	-	-	1,352	312	474	-	-
344201	Katikati Wastewater Treatment Plant - Trailer Mounted Diesel Pump	95	-	-	-	-	-	-	-	-	-

PROJECT NUMBER	PROJECT NAME	\$'000									
		2019	2020	2021	2022	2023	2024	2025	2026	2027	2028
229815	Omokoroa Wastewater Pump Station Renewals	66	68	178	236	264	282	254	261	256	85
317301	Omokoroa Structure Plans Utilities Wastewater	-	3,307	-	537	-	-	1,544	-	-	627
323502	Omokoroa Infiltration Investigation	-	-	-	43	33	-	-	-	-	-
331701	Te Puna West wastewater system	53	-	-	-	-	-	-	-	-	-
336601	Omokoroa Manhole Repair	200	-	210	-	-	-	-	-	-	-
338601	Omokoroa Asset Assessment	6	6	6	6	7	7	7	12	12	13
343901	Omokoroa Infiltration Rehabilitation	20	51	105	21	22	-	-	-	-	-
220102	Te Puke Wastewater Treatment Plant Fixed Generator	120	-	-	-	-	-	-	-	-	-
220103	Te Puke Wastewater Treatment Plant Sludge Thickner	-	-	-	-	550	-	-	-	-	-
220104	Te Puke Wastewater Treatment Plant Micro Screen	350	-	-	-	-	-	-	-	-	-
220105	Te Puke Wastewater Treatment Plant Inlet Grit Trap	-	513	-	-	-	-	-	-	-	-
220106	Te Puke Wastewater Treatment Plant Effluent Monitoring Equipment	-	-	-	-	121	-	-	-	-	-
220107	Te Puke Wastewater Treatment Plant Screen	-	-	-	-	-	-	578	-	-	-
225615	Te Puke Wastewater Pump Station Renewals	72	128	87	94	36	79	103	108	45	119
225619	Te Puke Wastewater Treatment Plant Renewals	81	66	272	73	63	-	102	56	22	76
225620	Te Puke Wastewater Treatment Plant Renewals of Resource Consent	235	56	-	-	-	-	-	-	-	-
225632	Te Puke Wastewater Treatment Plant Upgrade	280	-	-	1,610	-	-	-	-	-	1,378
225633	Te Puke Wastewater Pipe Renewals	55	-	-	-	-	-	-	-	-	-
295702	Te Puke Structure Plan Area 3 Phase 2	-	318	-	-	-	-	-	-	-	-
295703	Te Puke Structure Plan Area 3	-	334	-	-	-	-	177	-	-	-
311102	Te Puke Asset Assessment	6	6	6	6	7	7	7	12	12	13
323602	Te Puke Infiltration Investigation	-	41	31	-	-	-	-	-	37	38
344001	Te Puke Wastewater Treatment Plant Rock Filter	-	-	-	-	110	-	-	-	-	-

PROJECT NUMBER	PROJECT NAME	\$'000									
		2019	2020	2021	2022	2023	2024	2025	2026	2027	2028
344101	Te Puke Wastewater Treatment Plant - Wetlands Decommissioning	-	-	-	-	110	-	-	-	-	-
335001	Maketu Wastewater Treatment Plant Improvements	140	62	-	-	-	-	-	-	-	
344301	Maketu Wastewater Pump Station Renewals	-	-	-	-	-	-	-	130	280	326
331801	Ongare Point Wastewater System	873	-	-	-	-	-	-	-	-	

## HOW OUR PLANS HAVE CHANGED

The timing and costs of some of our projects have been updated since we adopted our 2015 - 2025 Long Term Plan (LTP).

To see how our plans have changed click [here](#) for the complete list of the projects/programmes that have been revised or alternatively visit our website [www.westernbay.govt.nz](http://www.westernbay.govt.nz).

### Wastewater connections

30 JUNE 2017					
SYSTEM	NUMBER OF CONNECTIONS	PROPERTIES PAYING AVAILABILITY, BUT NOT CONNECTED (INCLUDES VACANT SECTIONS)	TOTAL PROPERTIES ELIGIBLE TO CONNECT	TOTAL CAPACITY (POPULATION EQUIVALENTS)	
Katikati wastewater	1938	256	2194	6000	
Maketu/Little Waihi wastewater stage 1	438	125	563	3000	
Omokoroa wastewater	1131	181	1312	12000	
Te Puke wastewater	2668	70	2738	9000	
Waihi Beach wastewater	2599	230	2829	21000	
<b>TOTAL</b>	<b>8774</b>	<b>862</b>	<b>9636</b>	<b>51000</b>	

Figures in the table above are for the year ended 30 June 2017.



## HOW WE WILL TRACK PROGRESS TOWARDS OUR GOALS

### OUTCOME

Wastewater services are well planned and maintained to ensure a clean and healthy environment.

The Local Government Act 2002 introduced standard performance measures for wastewater 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
<p><b>All areas in our District served by Council's reticulated wastewater disposal systems meet acceptable health, safety and environmental standards.</b></p> <p><b>Assist small urban communities along the Tauranga Harbour to ensure that the wastewater disposal options available to them meet health and safety requirements.</b></p>	<p><b>Key Performance Measure</b> Percentage compliance with Resource Consents for each wastewater scheme.</p> <ul style="list-style-type: none"> <li>• Katikati</li> <li>• Maketu/Little Waihi</li> <li>• Te Puke</li> <li>• Waihi Beach</li> <li>• Ongare Point.</li> </ul>	90.6%	≥90%	≥90%	≥90%	≥93%	≥95%
		100%	≥94%	≥96%	≥96%	≥98%	≥99%
		92.5%	≥90%	≥90%	≥90%	≥93%	≥95%
		97.9%	≥97%	≥97%	≥97%	≥97%	≥98%
		New	≥95%	≥95%	≥95%	≥95%	≥95%
	<p><b>Key Resident Measure</b> Level of resident satisfaction with Council's reticulated wastewater disposal system.</p>	96%	≥90%	≥90%	≥90%	≥95%	≥95%

## HOW WE WILL TRACK PROGRESS - LEVELS OF SERVICE

WHAT WE PROVIDE	WE'LL KNOW WE'RE MEETING THE SERVICE IF	ACTUAL						TARGET	
		2017	2019	2020	2021	2022-24	2025-28		
<b>Maintain wastewater systems and have capacity to meet demand.</b>	The number of dry weather sewerage overflows from Council's sewerage system, expressed per 1000 sewerage connections to that sewerage system.  NOTE: only applies when 1mm of rain has fallen in a 24 hour period.	1.83	≤2	≤2	≤2	≤2	≤2	≤2	
	Compliance with resource consents for discharge from the sewerage system measured by the number of; <ul style="list-style-type: none"> <li>• Abatement notices</li> <li>• Infringement notices</li> <li>• Enforcement orders</li> <li>• Convictions.</li> </ul> received by Council in relation to those resource consents.	0	0	0	0	0	0	0	
<b>Provide wastewater services that meet customer needs.</b>	Where Council attends to sewerage overflows resulting from a blockage or other fault in the Councils sewerage system, the following median response times measured:								
	• Attendance time: from the time that Council receives notification to the time that service personnel reach the site	26 mins	≤1.5 hrs	≤1.5 hrs	≤1.5 hrs	≤1.5 hrs	≤1.5 hrs	≤1.5 hrs	
	• Resolution time: from the time that Council receives notification to the time that service personnel confirm resolution of the blockage or other fault.	2 hours 47 mins	≤8 hrs	≤8 hrs	≤8 hrs	≤8 hrs	≤8 hrs	≤8 hrs	
The total number of complaints received by Council about any of the following: <ul style="list-style-type: none"> <li>• Sewerage odour</li> <li>• Sewerage system faults</li> <li>• Sewerage system blockages</li> <li>• Council's response to issues with sewerage system.</li> </ul> Expressed per 1000 connections to the Councils sewerage system.	29.27	≤40	≤40	≤40	≤40	≤40	≤40		

## KEY ASSUMPTIONS

ASSUMPTION	DESCRIPTION	RISK
Domestic wastewater flows	<p>Average dry weather flow (ADWF) or average domestic daily wastewater flow of 220 litres per person per day.</p> <p>Number of people per dwelling = 2.7.</p> <p>For accommodation facilities, for example campgrounds and motels, different factors are applied. For holiday areas, for example Waihi Beach and Maketu/Little Waihi, the wastewater schemes have been designed for peak holiday resident populations forecast to 2021.</p>	<p>Higher than predicted wastewater flows resulting in under-capacity systems and/or advanced expenditure for upgrades of reticulation and treatment assets.</p> <p>Lower than predicted wastewater flows would mean the assets would be under-utilised.</p>
Industrial and commercial wastewater flows	<ul style="list-style-type: none"> <li>• Light flow 0.4 litres per second per hectare</li> <li>• Medium flow 0.7 litres per second per hectare</li> <li>• Heavy flow 1.3 litres per second per hectare.</li> </ul> <p>Flow assumptions are generally greater than currently experienced by Western Bay of Plenty District industries. Flow data may be distorted by high water-use industries.</p>	<p>Higher than predicted wastewater flows would result in under-capacity systems and/or advanced expenditure for upgrades of reticulation and treatment assets. Lower than predicted flows would result in under-utilised assets.</p>
Wastewater assets economic life	<p>Economic life of assets:</p> <ul style="list-style-type: none"> <li>• Polyvinyl chloride (PVC), polyethanol (PE) plastic components 80 years</li> <li>• Pumps 15 years</li> <li>• Electrical 15 years</li> <li>• Concrete structures. 60 years</li> </ul> <p>Concrete structures are given a lower life in wastewater environments based on experience and condition rating.</p>	<p>Asset renewals are required earlier than programmed, requiring funding earlier than budgeted. Alternatively asset renewals can be deferred due to longer than expected life resulting in savings.</p>
Wastewater asset valuations	<p>Asset valuations have been calculated from unit rates using data from the Rawlinsons Publication and comparing it with previous actual data. A 20% allowance is made for design and consenting. Unit rates have adequate allowance for construction variations.</p>	<p>If the unit rates used budget allocations for renewals would be incorrect.</p> <p>This may require greater funding.</p>
Wastewater emergency storage at pump stations	<p>Capacity for nine hours emergency storage at pump stations.</p>	<p>If storage capacity is insufficient, overflows would occur, with consequential environmental damage. Prosecution may follow.</p>
Legislation	<p>There will be no significant changes to legislation affecting the wastewater activity (Health Act 1956 and Local Government Act 2002).</p>	<p>If new standards for wastewater that required upgrades to existing infrastructure were imposed, this would impact on the amount of rates paid by those served by Council schemes.</p>

## SIGNIFICANT EFFECTS OF PROVIDING THIS ACTIVITY

WELL-BEING	POSITIVE	NEGATIVE	HOW WE ARE ADDRESSING THESE EFFECTS
Social	<ul style="list-style-type: none"> <li>✓ Wastewater treatment schemes provide a safe disposal method for urban areas where smaller section sizes are unsuitable for onsite treatment.</li> <li>✓ Wastewater treatment schemes decrease the risk of infection in the urban environment as there is no requirement for septic tanks.</li> </ul>	<ul style="list-style-type: none"> <li>✗ The costs of providing, operating and maintaining the schemes is high due to energy requirements.</li> <li>✗ Unless properly maintained there can be problems with foul odour.</li> <li>✗ Creates an ongoing need for the disposal of sewage sludge.</li> </ul>	<ul style="list-style-type: none"> <li>• We will continue to encourage households to reduce the amount of wastewater they produce, for example through reuse of grey water for garden irrigation.</li> <li>• We will continue to investigate alternatives for the sustainable disposal of sewage sludge.</li> </ul>
Environmental	<ul style="list-style-type: none"> <li>✓ Having wastewater treatment plants reduces the amount of untreated effluent entering the environment.</li> </ul>	<ul style="list-style-type: none"> <li>✗ Ecosystems in the receiving environments may be adversely affected by spills or overflows of untreated sewage; smell and noises from the wastewater treatment plants and pumping stations may create nuisance or impact public health and the operation and maintenance of our assets.</li> <li>✗ The operation and maintenance of our assets include the production of greenhouse gases through energy use, wastewater treatment processes and biosolids.</li> </ul>	<ul style="list-style-type: none"> <li>• We continue to monitor treated effluent to ensure it meets the conditions of resource consents.</li> <li>• Wetlands are used for effluent treatment to promote their retention and development as they are a rare ecosystem in the region.</li> <li>• Environmental damage during the construction of new works is mitigated through resource consent conditions.</li> </ul>
Economic	<ul style="list-style-type: none"> <li>✓ Allows for better use of the available developable land.</li> <li>✓ Provides infrastructure to enable business development in the community.</li> <li>✓ A wastewater system that is working well and meeting its levels of service, will increase property values and ensure our towns are good places for people to 'live, work, learn and play'.</li> </ul>	<ul style="list-style-type: none"> <li>✗ Restricted capacity can result in constraints on development potential and business capacity.</li> <li>✗ The cost of the investment in infrastructure.</li> <li>✗ Significant costs and time to implement system upgrades and overflow reduction improvement.</li> </ul>	<ul style="list-style-type: none"> <li>• We will continue to monitor our wastewater systems to ensure they are working well and meeting levels of service.</li> </ul>
Cultural	<ul style="list-style-type: none"> <li>✓ Respects cultural sensitivity around receiving environments.</li> <li>✓ Receiving environments are improved.</li> </ul>	<ul style="list-style-type: none"> <li>✗ Receiving waters may be adversely affected if wastewater is not properly treated and, where overflows occur, could adversely affect health through consumption of contaminated shellfish and other kaimoana.</li> </ul>	<ul style="list-style-type: none"> <li>• Council has opted for a land-based disposal approach with the Maketu/Little Waihi wastewater scheme.</li> </ul>

## COUNCIL'S ADDITIONAL ASSET REQUIREMENTS

### DISTRICT-WIDE WASTEWATER

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)	280	4,584	-	2,468	-	1,352	3,130	474	207	2,005
To improve the level of service	1,321	625	126	43	1,077	147	12	12	-	-
To replace existing assets (renewals)	2,126	1,931	1,839	869	1,834	1,093	1,123	1,370	2,123	1,362
<b>Total capital expenditure</b>	<b>3,727</b>	<b>7,140</b>	<b>1,965</b>	<b>3,380</b>	<b>2,911</b>	<b>2,592</b>	<b>4,264</b>	<b>1,856</b>	<b>2,331</b>	<b>3,367</b>

## WHERE THE MONEY COMES FROM

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

## FUNDING SOURCES FOR WASTE WATER 2018/19

