

# Wastewater

## Why we do it

**To protect public health by providing Gisborne city and Te Karaka with a reliable wastewater system. To treat and discharge wastewater in a manner that minimises adverse effects on the environment.**

## What we do

The Council provides a wastewater reticulation, treatment and disposal service for Gisborne city (including the Western Industrial area) and Te Karaka. The Council also:

- ▶ provides a number of disposal sites across the district for septic tank
- ▶ regulates trade waste discharges to the wastewater system.

## Community outcomes

This activity contributes to the following community outcomes:



Connected  
Tairāwhiti



Environmentally  
Sustainable Tairāwhiti



Healthy  
Tairāwhiti

## Where we are now

### Gisborne City

Gisborne city's wastewater reticulation was initially constructed in 1909 and drained wastewater from the urban area of the time into two septic tanks. From 1958 to 1965 the system was enlarged with the addition of pump stations to serve the present reticulated area, draining via inceptors to the newly constructed ocean outfall, commissioned in 1965.

A wastewater milliscreen facility was installed at the outfall in 1990 to remove solids of greater than 1mm from the wastewater entering Poverty Bay.

Over time there has been a steady increase in development within the city, which has seen an expansion of the wastewater infrastructure in the form of additional pipework and pump stations.

Key issues for the wastewater system.

- ▶ About 18% of the wastewater reticulation was installed pre-1920, and has exceeded or all but exceeded its design life and is therefore due for renewal.
- ▶ Inflow and infiltration of stormwater into the network causes overflows and overloading of pump stations. More information on flows is required.
- ▶ Areas forecast for growth in close proximity to the city require consideration for wastewater provision, for example the Taruheru Block and Sponge Bay and Ellmers subdivisions.
- ▶ Existing milliscreens at Stanley Road are at the end of their useful life.
- ▶ Environmental and cultural concern about the discharge of wastewater into Poverty Bay.

### Te Karaka

The Te Karaka wastewater reticulation was constructed in 1982 and consists of a piped network, five pump stations, rising mains and an oxidation pond to treat the wastewater before it discharges into the Waipaoa River.

While the overall system age is young and there is capacity for double the current population in Te Karaka, the existing pumps at Te Karaka are at the end of their useful life and require a significant amount of maintenance.

Information on Te Karaka wastewater infrastructure is inadequate for effective asset management.

### Septage Sites

The septage sites have been operating in the same manner since the service began before 1989. They require review in light of current best practice.

### Possible Wastewater Disposal Solutions in Existing Urban Areas

The Council has identified Mākōrori as a possible area for new wastewater disposal solutions. Further public consultation will be required before any decision to reticulate is made.

### Management of Wastewater Operations

The day-to-day management of the wastewater systems is carried out by the Council's Engineering and Works Department. The operation of Council's wastewater pipe network, pump stations, treatment plants and septage site is undertaken by Council's maintenance contractor. Routine maintenance is also completed under this contract.

The Council regulates trade waste discharges to the wastewater system by means of the Trade Waste Bylaw. This makes the quality of trade waste discharges the responsibility of the generator. The Council's Trade Waste Officer, liaises with trade waste clients and monitors discharges to see that consent requirements are being met.

### Trade Waste

A review of the Trade Waste Bylaw was completed and became operable on 1 July 2008. The charging mechanism has been changed to reflect increased treatment costs and the industrial waste separation.

## Where we want to be

- ▶ To have maintained the integrity of the wastewater systems through a comprehensive programme of renewals and capital projects.
- ▶ To have adequately extended wastewater reticulation to new subdivisions and other nearby communities as appropriate.

- ▶ To ensure the quality of wastewater being discharged has minimal adverse environmental impacts on the environment in accordance with resource consent requirements and, in particular, to have substantially reduced the risk of stormwater entering the sewer system causing overflows and treatment issues.
- ▶ To have implemented energy-saving measures which save money and enhance sustainability.

### How we plan to get there

By ensuring a new treatment plant to screen and treat Gisborne city's wastewater is operational by 2012.

By continuing to implement a comprehensive programme of renewals. This will minimise the need for emergency repairs that impose a greater cost and inconvenience to the community.

By undertaking capital works, including the following major projects.

- ▶ Renewing the Western Interceptor pipeline from Cedenco to the outfall.
- ▶ Making provision for the possibility of wastewater reticulation for the residents of Mākōrori, subject to further public consultation.
- ▶ Upgrading the existing Campion Road rising main and pump station to increase discharge capacity.
- ▶ Providing a new rising main from Sponge Bay subdivision to Tyndall Road.
- ▶ Upgrading the Eastern Interceptor to cater for growth.
- ▶ Undertaking optimisation works at Riverside Road and Kaiti pump stations to reduce overflows.
- ▶ Installing permanent wastewater flow loggers to focus stormwater inflow and infiltration remediation works, asset condition assessments and renewal programmes.
- ▶ Repairing laterals and rehabilitating mains on Riverside Road catchments.

- ▶ Continuing to monitor compliance with trade waste discharge consents.

By phasing in increases to the trade waste discharge fee (refer to the Fees and Charges Section).

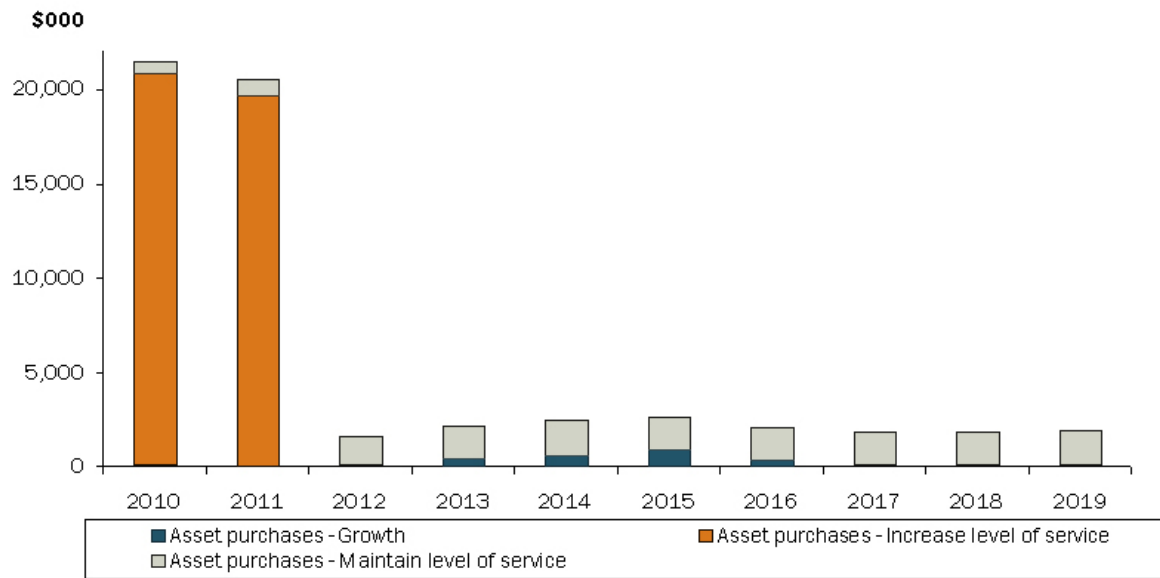
### Significant negative effects

There are no significant negative effects from this activity.

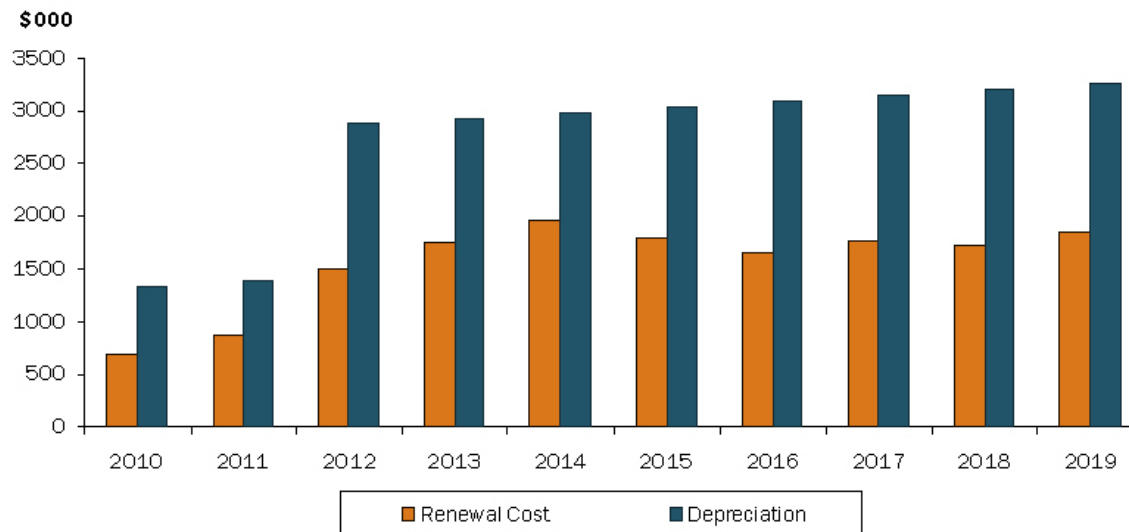
## Summary of Forecasted Financial Performance for the 10 Years 2010 to 2019

	2010 \$000	2011 \$000	2012 \$000	2013 \$000	2014 \$000	2015 \$000	2016 \$000	2017 \$000	2018 \$000	2019 \$000
<b>SEWERAGE and WASTEWATER</b>										
<b>OPERATIONS</b>										
<b>Operating Revenue</b>										
Activity revenue	-274	-412	-423	-435	-449	-462	-478	-493	-509	-526
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
<b>Total Operating Revenue</b>	<b>-274</b>	<b>-412</b>	<b>-423</b>	<b>-435</b>	<b>-449</b>	<b>-462</b>	<b>-478</b>	<b>-493</b>	<b>-509</b>	<b>-526</b>
<b>Operating Expenditure</b>										
Depreciation	1,340	1,381	2,886	2,926	2,987	3,032	3,097	3,150	3,204	3,261
Interest	670	1,472	1,807	1,721	1,643	1,554	1,449	1,343	1,236	1,127
Operating costs	2,435	2,682	3,287	3,085	3,217	3,364	3,444	3,634	3,647	3,703
<b>Total Operating Expenditure</b>	<b>4,445</b>	<b>5,535</b>	<b>7,980</b>	<b>7,732</b>	<b>7,847</b>	<b>7,950</b>	<b>7,990</b>	<b>8,127</b>	<b>8,087</b>	<b>8,091</b>
<b>Net Internal Charges/(Recoveries)</b>	<b>183</b>	<b>201</b>	<b>236</b>	<b>320</b>	<b>350</b>	<b>366</b>	<b>438</b>	<b>513</b>	<b>690</b>	<b>797</b>
<b>Net Cost of Service</b>	<b>4,354</b>	<b>5,324</b>	<b>7,793</b>	<b>7,617</b>	<b>7,748</b>	<b>7,854</b>	<b>7,950</b>	<b>8,147</b>	<b>8,268</b>	<b>8,362</b>
<b>Funded by:</b>										
Rates income	-4,228	-5,324	-7,856	-7,680	-7,748	-7,854	-7,950	-8,147	-8,268	-8,362
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	-126	0	63	63	0	0	0	0	0	0
<b>TOTAL OPERATIONS FUNDING</b>	<b>-4,354</b>	<b>-5,324</b>	<b>-7,793</b>	<b>-7,617</b>	<b>-7,748</b>	<b>-7,854</b>	<b>-7,950</b>	<b>-8,147</b>	<b>-8,268</b>	<b>-8,362</b>
<b>CAPITAL</b>										
<b>Capital Outgoings</b>										
Asset purchases - Growth	111	37	101	411	512	867	394	60	62	64
Asset purchases - Increase level of service	20,709	19,622	0	0	0	0	0	0	0	0
Asset purchases - Maintain level of service	683	874	1,487	1,756	1,960	1,791	1,648	1,764	1,716	1,841
Total asset purchases	21,503	20,534	1,588	2,168	2,472	2,658	2,042	1,824	1,778	1,906
Loan repayments	253	795	1,308	1,331	1,535	1,557	1,570	1,581	1,586	1,586
<b>Total Capital Outgoings</b>	<b>21,756</b>	<b>21,329</b>	<b>2,896</b>	<b>3,499</b>	<b>4,007</b>	<b>4,215</b>	<b>3,612</b>	<b>3,405</b>	<b>3,364</b>	<b>3,492</b>
<b>Funded by:</b>										
Rates income	-934	-934	0	0	0	0	0	0	0	0
Development contribution income	-523	-523	-396	-396	-396	-396	-396	-341	-341	-341
Transfers to/(from) development contribution reserve	-412	-301	271	-115	-90	-467	3	282	280	278
Capital grants and donations	0	0	0	0	0	0	0	0	0	0
Other capital revenue	0	0	0	0	0	0	0	0	0	0
Loan funding	-12,291	-11,650	-25	-179	-446	-94	-36	-101	0	-68
Transfer from depreciation reserve	-3,827	-4,399	-2,746	-2,809	-3,075	-3,258	-3,183	-3,245	-3,303	-3,361
Transfer to/(from) other reserves	-3,769	-3,522	0	0	0	0	0	0	0	0
<b>TOTAL CAPITAL FUNDING</b>	<b>-21,756</b>	<b>-21,329</b>	<b>-2,896</b>	<b>-3,499</b>	<b>-4,007</b>	<b>-4,215</b>	<b>-3,612</b>	<b>-3,405</b>	<b>-3,364</b>	<b>-3,492</b>

## 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	Dev Cont Funding	Loan & Reserve Funding
<b>SEWERAGE and WASTEWATER</b>														
Wastewater Treatment Plant	INC	40,331,000	20,709,000	19,622,000									4%	96%
Wastewater - Pump Station and Telemetry Renewals	MAINT	2,620,640	228,360	235,180	241,780	248,380	256,520	264,000	273,240	281,820	290,840	300,520		100%
Wastewater - Te Karaka Pump Renewals	MAINT	65,182		19,242	10,990	11,290	11,660	12,000						100%
Wastewater - Pipeline Renewals Specific	MAINT	363,300	363,300											100%
Wastewater - Pipeline Renewals (new programme)	MAINT/GROW	11,320,000		534,500	1,208,900	1,241,900	1,282,600	1,320,000	1,366,200	1,409,100	1,454,200	1,502,600	1.90%	98.10%
Wastewater - Upgrade Rising Main and Pump Station for Taruheru Block - Campion	MAINT/GROW	505,350			98,910	406,440							75.03%	24.97%
Localised Urban Upgrades	GROW	297,800	25,950	26,725	27,475	28,225	29,150	30,000	31,050	32,025	33,050	34,150	100%	
Installation of Permanent Flow Loggers	MAINT	248,800				56,450		60,000		64,050		68,300		100%
Eastern Interceptor	MAINT/GROW	598,300					58,300	540,000					75.80%	24.20%
Wainui Road Pipeline New	GROW	635,340						300,000	335,340				100%	
Taruheru Block pump station (Moss or Cameron)	MAINT/GROW	149,490					17,490	132,000					74.12%	25.88%
Taruheru Block pump station (Moss or Cameron)	MAINT/GROW	141,125				141,125							97.86%	2.14%
Disraeli Street Interceptor	MAINT	73,260							36,000	37,260				100%
Remedial works in Oak Street / Stout Street Area	MAINT	96,210		96,210										100%
Reduction of wastewater overflows in the Riverside Road Area	MAINT/GROW	850,070				33,870	816,200						45.95%	54.05%
Reductions of wastewater overflows in the Kaiti Area	MAINT/GROW	176,460	176,460										44.56%	55.44%
<b>Totals:</b>		<b>58,472,327</b>	<b>21,503,070</b>	<b>20,533,857</b>	<b>1,588,055</b>	<b>2,167,680</b>	<b>2,471,920</b>	<b>2,658,000</b>	<b>2,041,830</b>	<b>1,824,255</b>	<b>1,778,090</b>	<b>1,905,570</b>		

## Asset management

Factor	Gisborne City	Te Karaka	Total
Population served by the Wastewater Activity*	29,400	522	29,922
Number of connections	13,637	168	13,805
Length of reticulation (km)	206,670	6	206,676
Number of manholes	2,553	76	2,629
Number of pumping stations plus outfall	31	5	36
Value (DRC) \$000	37,598	1,187	38,785
Discharge volumes (average per day) m <sup>3</sup> /day	13,118	2,612	15,730
Treatment method	Milliscreens	Oxidation Ponds	
Discharge	Poverty Bay via marine outfall	Waipaoa River	

\* Commercial and residential properties are charged per pan for wastewater services. Each pan charge has been taken as a connection.

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.

## WASTEWATER

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	
<b>LOS (1) - Reliability</b> Provides a modern and convenient to use wastewater reticulation system which protects public health.	Number of Requests for Service regarding odours; and		32 (annual average 2005-2008)	32	30	30	30 - 20	New Wastewater Treatment.
	The percentage of requests resolved within target timeframes.		90%	90%	90%	90%	90% - 95%	Improving customer satisfaction.
	Number of Requests for Service regarding blockages; and		111 (annual average 2005-2008)	110	105	100	95 - 80	
	The percentage of requests resolved within target timeframes.		90%	90%	90%	90%	90% - 95%	Improving customer satisfaction.
	Percentage of customers who rate RFS response as excellent/good.		91% (2008)	91%	91%	91%	91%	
Percentage of residents who are very/fairly satisfied with the Gisborne district's sewerage system.		58% (June 2008)	58%	Not Measured	58%	65%	New WWTP Stages 1 - 2. Inflow Infiltration Project.	
<b>LOS (2) - Quality</b> To protect the physical environment through the treatment and discharge of effluent.	Compliance with outfall waste consent conditions.		Suspended solids 85% (2008)	90%	95%	100%	100%	New Wastewater Treatment Plant - 2011.
			Total oil and grease 26% (2008)	60%	80%	100%	100%	Tradewaste Bylaw.
	The annual number of events where sewerage is discharged from Council's reticulation into rivers or streams (based on a 1 in 10 year event).		5 (2008)	5	4	3	1	Sewage network maintenance, repairs and renewal. Reduction of inflow into network.