

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 Mākaraka and Mākōrori as possible areas 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, (subject to consultation as part of this Draft Ten Year Plan) will be 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.

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

Significant negative effects

There are no significant negative effects from this activity.

How we plan to get there

By ensuring a new treatment plant to screen and treat Gisborne city's wastewater is operational by 2011.

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.

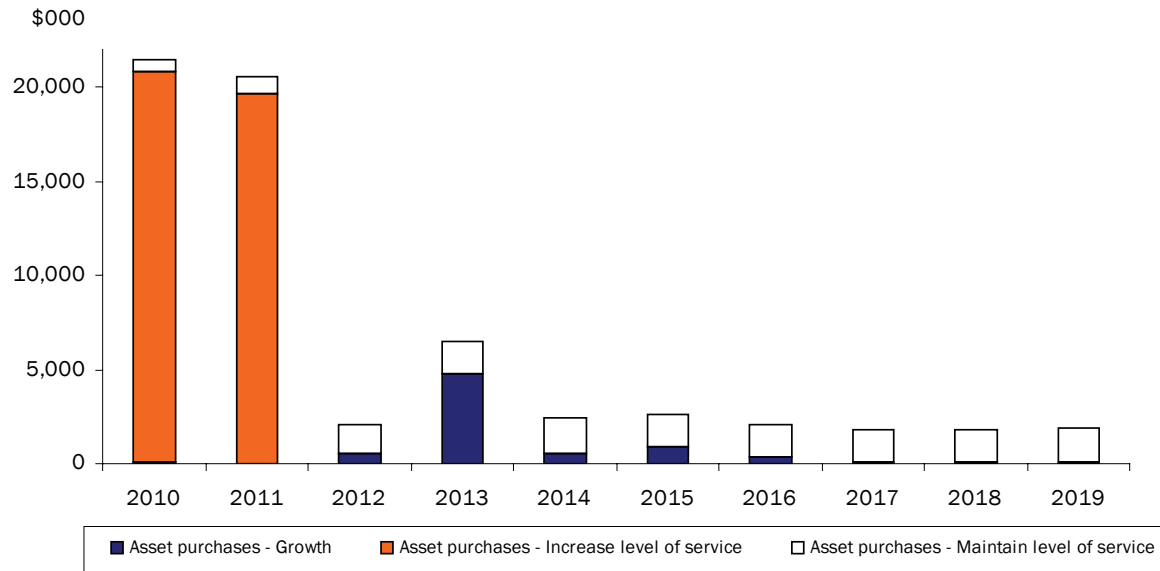
By undertaking capital works, including the following major projects.

- ▶ Renewing the Western Interceptor pipeline from Cedenco to the outfall.
- ▶ Making provision for the possibility of wastewater reticulation for the residents of Mākaraka and Mākōrori, subject to further public consultation.
- ▶ Upgrading the existing Champion 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.

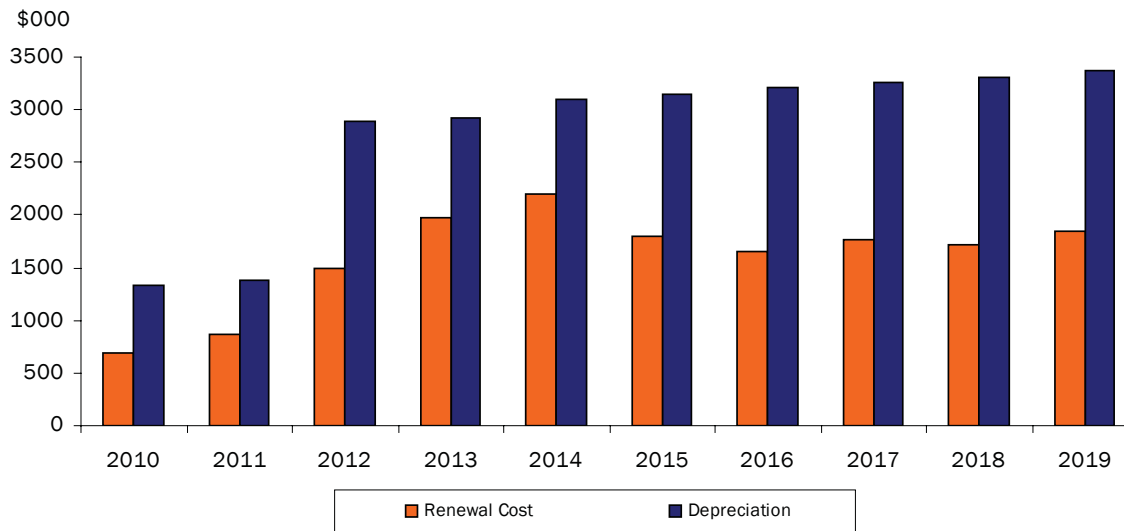
Summary of Forecasted Financial Performance for the 10 Years 2010 to 2019

| | 2010 \$000 | 2011 \$000 | 2012 \$000 | 2013 \$000 | 2014 \$000 | 2015 \$000 | 2016 \$000 | 2017 \$000 | 2018 \$000 | 2019 \$000 |
|--|----------------|----------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|
| SEWERAGE and WASTEWATER | | | | | | | | | | |
| OPERATIONS | | | | | | | | | | |
| Operating revenue | | | | | | | | | | |
| Activity revenue | -400 | -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 |
| Total Operating Revenue | -400 | -412 | -423 | -435 | -449 | -462 | -478 | -493 | -509 | -526 |
| Operating Expenditure | | | | | | | | | | |
| Depreciation | 1,340 | 1,381 | 2,886 | 2,926 | 3,098 | 3,142 | 3,207 | 3,261 | 3,314 | 3,371 |
| Interest | 619 | 1,321 | 1,623 | 1,689 | 1,747 | 1,663 | 1,570 | 1,471 | 1,364 | 1,255 |
| Operating costs | 2,435 | 2,676 | 3,246 | 3,069 | 3,222 | 3,364 | 3,450 | 3,622 | 3,659 | 3,730 |
| Total Operating Expenditure | 4,394 | 5,378 | 7,755 | 7,684 | 8,067 | 8,169 | 8,227 | 8,354 | 8,337 | 8,356 |
| Net Internal Charges/Recoveries | 185 | 208 | 245 | 329 | 359 | 375 | 448 | 523 | 699 | 808 |
| Net Cost of Service | 4,179 | 5,174 | 7,577 | 7,578 | 7,977 | 8,082 | 8,197 | 8,384 | 8,527 | 8,638 |
| Funded by: | | | | | | | | | | |
| Rates income | -4,179 | -5,174 | -7,577 | -7,578 | -7,977 | -8,082 | -8,197 | -8,384 | -8,527 | -8,638 |
| 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 | -4,179 | -5,174 | -7,577 | -7,578 | -7,977 | -8,082 | -8,197 | -8,384 | -8,527 | -8,638 |
| CAPITAL | | | | | | | | | | |
| Capital outgoings | | | | | | | | | | |
| Asset purchases - Growth | 111 | 37 | 570 | 4,750 | 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 | 875 | 1,487 | 1,756 | 1,960 | 1,791 | 1,648 | 1,764 | 1,716 | 1,842 |
| Total Asset Purchases | 21,503 | 20,534 | 2,057 | 6,506 | 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 |
| Total Capital Outgoings | 21,756 | 21,329 | 3,365 | 7,837 | 4,007 | 4,215 | 3,612 | 3,405 | 3,364 | 3,492 |
| Funded by: | | | | | | | | | | |
| Rates income | -2,198 | -2,509 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Development contribution income | -560 | -560 | -424 | -424 | -424 | -424 | -424 | -365 | -365 | -365 |
| Transfers to/from development contribution reserve | -375 | -264 | 252 | -520 | -62 | -277 | 212 | 307 | 305 | 303 |
| Capital grants & 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 | -10,833 | -10,268 | -447 | -4,084 | -446 | -255 | -216 | -101 | 0 | -68 |
| Transfer from depreciation reserve | -3,827 | -4,399 | -2,746 | -2,809 | -3,075 | -3,259 | -3,183 | -3,245 | -3,304 | -3,361 |
| Transfer to/from other reserves | -3,963 | -3,329 | 0 | 0 | 0 | 0 | -1 | -1 | 0 | -1 |
| Total Capital Funding | -21,756 | -21,329 | -3,365 | -7,837 | -4,007 | -4,215 | -3,612 | -3,405 | -3,364 | -3,492 |

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 |
|--|------------|-------------------|-------------------|-------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------------|
| SEWERAGE and WASTEWATER | | | | | | | | | | | | | | |
| 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% |
| Mākaraka Wastewater | GROW | 4,808,020 | | | 469,273 | 4,338,747 | | | | | | | 10% | 90% |
| 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 | | | | 46.29% | 53.71% |
| 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% |
| Totals: | | 63,280,347 | 21,503,070 | 20,533,857 | 2,057,328 | 6,506,427 | 2,471,920 | 2,658,000 | 2,041,830 | 1,824,255 | 1,778,090 | 1,905,570 | | |

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 ³ /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 | |
| LOS (1) - Reliability 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. | | |
| LOS (2) - Quality 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. |