

**Subject:** Wastewater Utility Activity Report to 2 July 2010

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## Report to OPERATIONS Committee for noting

### SUMMARY

This report updates the progress on wastewater operations to 2 July 2010.

#### Capital Activities

- The contract for the Pipeline Renewals 2009/10 is complete and in the Period of Defects Liability.
- Sites have been prioritised for the Pipeline Renewals for 2010/11.
- The large Pump Station Renewal projects have been completed for 2009/10.
- Investigations continue into possible improvements to the Wainui pump station for the Kaiti Wastewater Spillages remedial project.

#### Operational Activities

- Work to be undertaken on the Te Araroa and Waiapu septage sites
- Overflows on 30 May.
- Outfall milliscreen operations.
- Repair work undertaken on the Gisborne City network.

#### Operational Projects

- The system to rank wastewater pipeline assets in order of criticality has been used on several catchments and we are satisfied that it is producing sensible results. It will now be applied to all pipeline assets.

### RECOMMENDATIONS

#### That the Committee

1. receives the report.

Helen Churton  
Utilities Wastewater Engineer (Strategic Planning)

Peter Higgs  
Engineering and Works Manager

## 1. REPORT

### 1.1 Capital Expenditure

#### Pipeline Renewals 2009/10

The main 2009/10 Wastewater Pipeline Renewals contract is complete and in the Period of Defects Liability. To date one defect has been indentified and remedied, a pipe connection at Dominion Road.

#### Pipeline Renewals 2010/11

The locations for the 2010/11 wastewater pipeline renewals have been selected and are (in order of priority):

- Reads Quay (Gladstone to Lowe)
- Queens Road (Kauri to Childers)
- Haronga Road
- Waverley Street
- Lytton Road (flushing point on siphon near bridge)

Preliminary information gathering (survey, manhole condition assessments etc) is now being carried out for the design for each site.

#### Pump Station Renewals 2009/10 and N-Impellor Replacements

Grant Road was selected as the last of the larger pump station renewals to be completed in 2009/10. The work at this station is essentially complete, with only some minor electrical work to be tidied up. This will bring to an end the pump station renewals for 2009/10.

The 2009/10 phase of the operational project to replace Flygt 'C series' pump impellors with more power efficient types such as 'N series' has still to be completed and the remainder of the money has been requested to be carried over to the 2010/11 year. The purpose of the replacements is to improve power efficiency and stations to have their impellors replaced were proposed in a report provided to GDC. However, we have found that not all stations proposed in the report for impellor replacements can actually physically have them replaced. This can be because of the age of the pump, which can make impellor replacement either physically impossible or unfeasible because the pump is due for replacement anyway, or because of the model of the pump. One of the stations originally proposed for impellor replacement into 2009/10 fitted into one of these categories and we are now working through the list for a suitable alternative station.

#### Remedial Works for Kaiti Wastewater Spillages

As previously reported, this project will primarily focus on the area around Hirini Street/Wainui Road intersection.

Investigation into the ability to run two pumps at the Wainui Road pump station continues. We have had the rising main tested and it will be able to cope with the increase in pressure due to running of two pumps. We are now liaising with Eastland Network regarding improving the power supply to the station. We have yet to complete these negotiations, and so money has had to be carried over for this project.

## 1.2 Operational Activities

This report covers the operational activities on the wastewater networks in Gisborne City and Te Karaka Township. The annual operational budget covers all maintenance requirements for:

	Gisborne	Te Karaka
Connections	13,697	168
Length of reticulation (km)	211	6
Number of manholes	2,595	76
Number of pump stations	32	5
Treatment Method	Milliscreens	Oxidation Ponds
Discharge	Poverty Bay via marine outfall	Waipaoa River

### Septage Sites

Wet weather has slowed progress on levelling the tipping areas in front of the Te Araroa septage pits and the replacement of the outer entry gate.

The raising of a manhole and location of a drainage line from the Waiapu septage pit has also been delayed by wet weather.

### Telemetry System

The main station of the Utilities Section telemetry system is undergoing some screen changes to improve the graphics outputs. Over the period of this report the system has been operating satisfactorily.

### Overflows

On 30 May Gisborne experienced heavy rain causing wastewater overflows to occur in Stout Street, the Esplanade and Hirini Street. The most concerning overflow was at the Hirini Street intersection where one of the three wastewater manholes in the intersection, which had been bolted down previously, opened allowing an overflow. In reviewing this problem it was found that the two 12 mm stainless steel bolts holding the manhole down had sheared. This was attributed to the position of the manhole being in the path of turning loaded logging trucks putting excessive turning forces on the manhole lid. The lid has now been modified with four high tensile bolts holding it down. It will be monitored to see if this modification is successful.

### Outfall

No. 3 screen was removed at the beginning of May for a clean and minor servicing. The inside of the screen was heavily contaminated reducing its efficiency in allowing flows through.

The middle screen of No. 2 screen was removed at the end of May for a clean and minor servicing. This screen was not as heavily contaminated as the No. 3 screen. These two screens have been successfully carrying all the flows since they were cleaned.

The No. 1 screen which is the other outer screen is due to come out for a clean which will then carry us through to December.

Prior to this none of the screens have been taken out and serviced since July 2009. All of the screens have performed well during the current processing flows, which is generally a time of high demand on them. They are being kept running at minimal cost until decommissioning.

For the period 1 July 2009 to 13 June 2010, 188 tonnes of material from the network was removed by the screens and dewatered. The residual waste was taken to All Brites for disposal at a cost of \$32,100.

#### Gisborne City Pump Stations

Issues arising from the six monthly pump station checks have been attended to. One of the pumps from the Steele Road pump station that was not performing required reconditioning which was the most expensive fix resulting from the checks. This was about \$6,000. This station is classed as a high flow station and needs to operate efficiently.

For the period of this report the pump stations have generally performed satisfactorily. Blockages are still being experienced but the overall amount is reducing. An example of this is the Oak Street pump station which suffered from regular blocking. Since the pumps were upsized a few months back there have been no further blockages.

#### Gisborne City Network Pipelines

One sewer main repair was carried out in Williams Street. The Inflow team located a break in the pipe that was letting in a steady flow of groundwater.

Lateral repairs have been completed at Gladstone Road due to pavement collapse, Ballance Street due to a misaligned pipe and Russell Street due to root intrusion.

Operational jetting of pipelines has been ongoing over the period of this report. This includes monthly and three monthly programmes and one-off jetting of lines to clear blockages that are reported.

#### Requests for Service

There were 26 requests for service received from 1 May to 30 June 2010. Of these, 17 were regarding blockages and overflows (from gully traps). The next highest was three for camera bookings and two for covers/collapses. There are currently no unresolved requests relating to wastewater.

No requests for service were received from Te Karaka.

### **1.3 Operational Projects**

#### Condition Assessments

The condition assessment project to prioritise and plan our specific pipeline and pump station renewals for the next 10 years continues to progress. The scoring system to identify critical pipeline assets has been tested now on several catchments and we are confident that it is ranking pipe lengths in a sensible manner.

To recap previous reports the scoring system is risk based. Risk is the product of consequence and probability. In this case:

$$\text{Asset Criticality} = \text{Consequence of failure} \times \text{Probability of failure}$$

Where failure is defined as 'failure to provide the Levels of Service for the wastewater activity'.

For both consequence and probability, we are considering a number of factors.

The consequence factors are:

- Negative impact on public confidence
- Cost to Council
- Environmental damage
- Negative impact on public health

The probability factors are:

- Remaining life
- Condition rating
- Blockage/repair/break defect history
- Vulnerability

Each manhole to manhole length is given a score for each consequence factor. The scores for each factor are combined using a weighting system to give an overall consequence score. The same process is followed to give an overall probability score for each pipe. The overall consequence and overall probability scores are then multiplied to give a risk score for each pipe.

A spreadsheet has been developed, together with a system that takes data from the Hansen asset database and converts it into scores for each factor and calculates the risk scores from these. This means that the system can be easily replicated from catchment to catchment, and it will be progressively applied to all pipelines across Gisborne.

## **2. FINANCIAL**

The operational maintenance budget is 7.3% under-spent to the end of May 2010 at \$1,913,551. This is an accrued amount and may need adjustment when the real costs are inputted. We believe we are still on target to meet our 5% efficiency gain by the end of the year.