

**Title:** Fixing the Gisborne Stormwater and Wastewater Network  
**Section:** Community Lifelines  
**Prepared by:** David Wilson (Director Lifelines)  
**Meeting Date:** 24 July 2017

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Legal     Financial     Significance = Medium

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## Report to ASSETS & INFRASTRUCTURE Committee for information

### SUMMARY

The purpose of this report is to provide Committee with a historic overview of how Gisborne District Council has delivered its stormwater and wastewater utilities programme.

Shedding light on the operational and strategic processes over a 30+ year timeframe is part of a re-focussed commitment to fixing the Gisborne stormwater and wastewater network.

Applying the knowledge gained from long-term modelling, experience, hindsight and advances in technology, we have identified beyond reasonable doubt what the fundamental infrastructure issues to be fixed are; and are now in an excellent position to go ahead and make it happen.

A report to the Future Tairawhiti Committee meeting on 28 September 2017 will recommend actions to take to address these long-standing and challenging issues with the Gisborne stormwater and wastewater network.

The decisions or matters in this report are considered to be of **Medium** significance in accordance with the Council's Significance and Engagement Policy.

A presentation will accompany this report.

### RECOMMENDATIONS

**That the Assets & Infrastructure Committee:**

1. **Notes the contents of this report.**

*Authorised by:*



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Director Lifelines

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**Keywords:** stormwater, wastewater, utilities, Strategic Priority, Tairawhiti Wai,

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## BACKGROUND

1. The current reticulated wastewater network services about 14,750 homes and businesses. Initially constructed in 1910, stimulated by a local outbreak of typhoid, it was extended to its present form in 1958 and 1965. Our wastewater treatment plant was built in 2010.
2. Prior to the extensions (1958 & 1965), there were a number of areas that experienced wastewater overflows onto their properties in times of wet weather. Understandably this caused concern amongst the community about the public health, environmental and cultural impacts of wastewater flowing onto private property and into rivers.
3. Multiple studies over many years including water modelling have given us the understanding of the geological, geographic and hydrological conditions that contribute to wastewater overflows onto properties in times of wet weather. The work to date has also identified the actions and engineering solutions that will fix it. We have not to date seen the level of discharge reduction that was expected for the level of investment and intervention/enforcement.

## DISCUSSION

4. A timeline of key events in the history of Gisborne city water utilities from 1958 until 2017 is included as Appendix 1. It describes pivotal moments where works that have delivered a significant improvement were completed, for example the wastewater treatment plant in 2010, or where a shift in the strategic focus altered the priority that works were planned and delivered by, for example during the period between 1992-2015 there was a strong focus on renewals and upgrades to the wastewater and stormwater network.
5. As would be expected, more than a decade of renewals and upgrade work focussed on the public wastewater network (1992-2015) and similarly on the stormwater network during 1994-2010, including a substantial investment (in 2010) of a new wastewater treatment plant, means our public stormwater and wastewater networks perform better now than ever before.
6. The implications of the strategic focus on renewals and upgrades of the public stormwater and wastewater network has meant that the issue of stormwater inflow on private property still exists.
7. Consequently when too much water enters the wastewater network during heavy rainfall, the network fails to manage the extra water and people continue to deal with the repercussions of being unable to use toilets and showers – because the overburdened wastewater network is unable to ‘flush’ it away.
8. The focus on public network renewals has also meant that we have to continue control-releasing wastewater into our rivers during heavy rains. In the last year this has happened four times. However, it is important to note that less water is released when scours are opened, due to less valves being needed to relieve pressure in the network.
9. Council has committed to reducing overflows to our waterways as part of the 2012 and 2015 Long Term Plans. In October 2016 we launched the DrainWise Wastewater Discharge Reduction Plan (WDRP) to deliver on this commitment.

## NEXT STEPS

10. It has become apparent that in order to deliver an effective ongoing programme of works there is a need to adapt and change scope, which almost inevitably has an effect on the time and cost of delivery.
11. Analysing this historic timeline through a project management lens gives us meaningful insight. Rather than point to where we may have “gone wrong” over the course of many decades, it gives us a strong picture of where we must now turn our attention as a matter of utmost priority: reducing inflows to private property.
12. We can summarise that the previous decades of delivery of these services has been one of “getting the job done.” Council has consistently demonstrated its commitment to fixing these challenging issues by allocating funding and resources. There may have been some short fallings due to changing demands and expenditure priorities, but it is clear that the intent to make a positive difference has and continues to be there.

## ASSESSMENT OF SIGNIFICANCE

Criteria	This Report	The Process Overall
The effects on all or a large part of the Gisborne district	Low	Low
The effects on individuals or specific communities	Low	Medium
The level or history of public interest in the matter or issue	High	High
Inconsistency with Council’s current strategy and policy	Low	Low
Impacts on Council’s delivery of its Financial Strategy and Long Term Plan.	Low	Low

13. While this report is considered to be of low significance, it is part of a process to arrive at a decision that may be of medium level in accordance with the Council’s Significance and Engagement Policy. This is because the delivery of water utility services has a history of public interest, has the potential to provide environmental and human health benefits, and also has the potential to cost a lot of money over a set period of time – until the issue is fixed.

## COMMUNITY ENGAGEMENT

14. Council has committed in the 2015-2025 Infrastructure Strategy to “*working with the community in a combined public and private effort to reduce the inflow and infiltration of storm water into the wastewater network during wet weather events so that in the future the frequency and severity of this issue is alleviated.*” This report is part of a wider suite of actions that deliver on this commitment.

## CONSIDERATIONS

- **Financial/Budget**

15. There are no financial implications associated with this report.
16. The costs of delivering the water utilities services are budgeted for within the water utilities annual operational budget.

- **Legal**

17. There are no legal implications associated with this report.
18. Council has a legislative responsibility through the Local Government Act (2002) to: *"...play a broad role in meeting the current and future needs of their communities for good-quality local infrastructure, local public services, and performance of regulatory functions."* This report, describing the ways we have delivered our water utility services, is consistent with this intent.

## **POLICY AND PLANNING IMPLICATIONS**

19. This historic overview of how Council has delivered its stormwater and wastewater utilities programme contributes to the delivery of the GDC Strategic Priority *Tairawhiti Wai* to *"develop an integrated and sustainable strategy for water, improve the wellbeing of our waterways and coastal environments, including the protection of healthy soil."*
20. Council has committed to reducing overflows to our waterways as part of the 2012 and 2015 Long Term Plans. In October 2016 we launched the DrainWise Wastewater Discharge Reduction Plan (WDRP) to deliver on this commitment.

## **RISKS**

21. There are no major risks associated with reflecting on the historical timeline of service delivery for the GDC water utilities activity.

## **NEXT STEPS**

<b>Date</b>	<b>Action/Milestone</b>	<b>Comments</b>
28 September 2017	Report on the Actions GDC will take to address fundamental water infrastructure will be presented to Future Tairawhiti Committee on 28 September 2017	4Sight consulting have been engaged to review the DrainWise Plan to help us 're-set' the focus of Council stormwater and wastewater network activities so that our efforts are targeted to resolve the worst problems first.

## **APPENDICES**

- APPENDIX 1: Timeline of key events and strategy shifts in the history of Gisborne city water utilities
- Appendix 2: expenditure on stormwater network during 1994-2010.

## Appendix 1:

### Timeline of key events and strategy shifts in the history of Gisborne District water utilities

Date	Water utility event	Notable events with link to water utilities
1958 – 1965	<p>Extension to the 1910 wastewater system to reticulate outer urban areas to cater for a population of 45,000 + industry.</p> <p>Interceptors constructed to Midway beach</p> <p>Outfall commissioned in 1965</p>	<p>Population risen to 21,000,</p> <p>4,000 still served by night collection</p> <p>Local outbreak of typhoid</p> <p>Inner area (estb.1910) reticulation collected sewage for treatment in two septic tanks – which was discharged into the sea at low tide at points near Cook Monument and at Midway beach.</p>
1982	<p>GCC applied ECCB/RWB for consent to discharge sewers into the stormwater network in 4 locations as a way to alleviate overflows on private property and roads</p> <p>Required an aggressive infiltration programme</p>	<p>The Tribunal declined the application for 3 of the 4 discharge locations citing that sections of the sewer network were under capacity. They were of the view that overflows were not unavoidable and relying on controlled release into rivers was not an accepted practice.</p>
1983		<p>A report confirmed the Tribunal assessment and identified deficiencies relative to design and hydraulic capacity of the sewer system</p>
1988	<p>Delivered all recommendations between 1998-2005</p>	<p>Comprehensive independent report (Stevne Fitzmaurice and Partners Ltd) commissioned, and confirmed system inadequacies and recommended a programme the system into compliance and actions to reduce infiltration of stormwater into the wastewater system.</p> <p>Recommendations (Sewer System Study):</p> <ul style="list-style-type: none"> <li>a) Remove sources of direct inflow via an abatement programme (completed within 12 months)</li> <li>b) Identify direct connections between stormwater and sewer, investigate and within 6 months and all overflows eliminated (except for essential surcharge points) within 5 years</li> <li>c) Upgrade 7 majors catchments, involving flow monitoring, infiltration assessment, design &amp; construction of remedial completed with 5 years</li> </ul>

		<p>d) Undertake an engineering study of the stormwater system on a catchment by Catchment basis concurrently with the above.</p> <p>Recommendations (Outfall Survey)</p> <p>a) Modify Outfall to improve performance by blocking the end port</p> <p>b) Institute regular diver inspection and pressure monitoring</p> <p>c) Request RWB to undertake independent bacteriological testing for City and GRC outfall</p> <p>d) Introduce trade waste bylaw</p> <p>e) Initiate public dialogue with a view to early adoption and implementation of an appropriate treatment strategy for Gisborne</p>
1989		<p>Flow monitoring undertaken to support the comprehensive report</p> <p>Amalgamation of Waiapu CC, Waikohu CC, Cook CC, Gisborne CC and East Cape CB</p> <p>Citywide questionnaire to identify wastewater and stormwater issues to develop a prioritisation process</p>
1992 - 2015	Focus on Renewals and Upgrades of wastewater network (31.7km)	
1992-1998	Stormwater network Improvements	Upgrade of streams and creeks (Kopuawhatapata, Reynolds Crk) prior to pipe and open drain upgrades
1994 - 2010	Focus on Renewals and Upgrades of Stormwater network (\$25M+ spent)	See appendix 2, 54.7km of upgraded stormwater reticulation
1991	Primary treatment (1mm screens) installed	<p>Council commences application for Wastewater Treatment plant Upgrade</p> <p>Council applies a target rate for future wastewater treatment options (reaches \$8M)</p>
2001	Wainui Pump Station Installed	To convey additional wet weather flow to treatment plant
2003	Rutene Rd Interceptor installed	To convey additional wet weather flow to Wainui Pump Station and provide additional capacity for Wainui should it be required

2005	Dedicated Inflow/Infiltration team setup	Council approved additional resourcing for a dedicated Inflow and infiltration team with priority focus on private property inspections/compliance.
2006-2008	Focus on reducing inflow and infiltration of stormwater onto the wastewater system. BECA modelled the sewer system.	Based on GDC Inflow and Infiltration Investigation Programme by Good Earth consulting 2005 which developed a process for catchment-by-catchment approach for dealing with I/I A component of this project included property owners in catchment areas know to have issues with I/I were issued with Remediation Notices instructing them to repair the faults.
2008	informs	Wastewater masterplan prepared by BECA. Review of the I/I project – recommend redirecting committed funding.
2010	Wastewater Treatment improvement – BTF (\$40M)	
2012	2012-2024 Long Term Plan	Council commits just under \$26m in the LTP towards solving wastewater discharges to properties and waterways.
2014		Workshops with councillors and OPUS to agree to framework for fixing I/I. Decided stormwater and wastewater work needed to be tied together. Expected improvements had not occurred after work had been completed on the stormwater network.
2015		BECA re-calibrated wastewater model, this included adding in some missing pump stations
2016	Focus on reducing inflow and infiltration of stormwater onto the wastewater system and limiting controlled release into rivers to target levels.	DrainWise programme launched in October 2016

Appendix 2: Table describing the expenditure on stormwater pipes for the 17 years from 1994-2010.

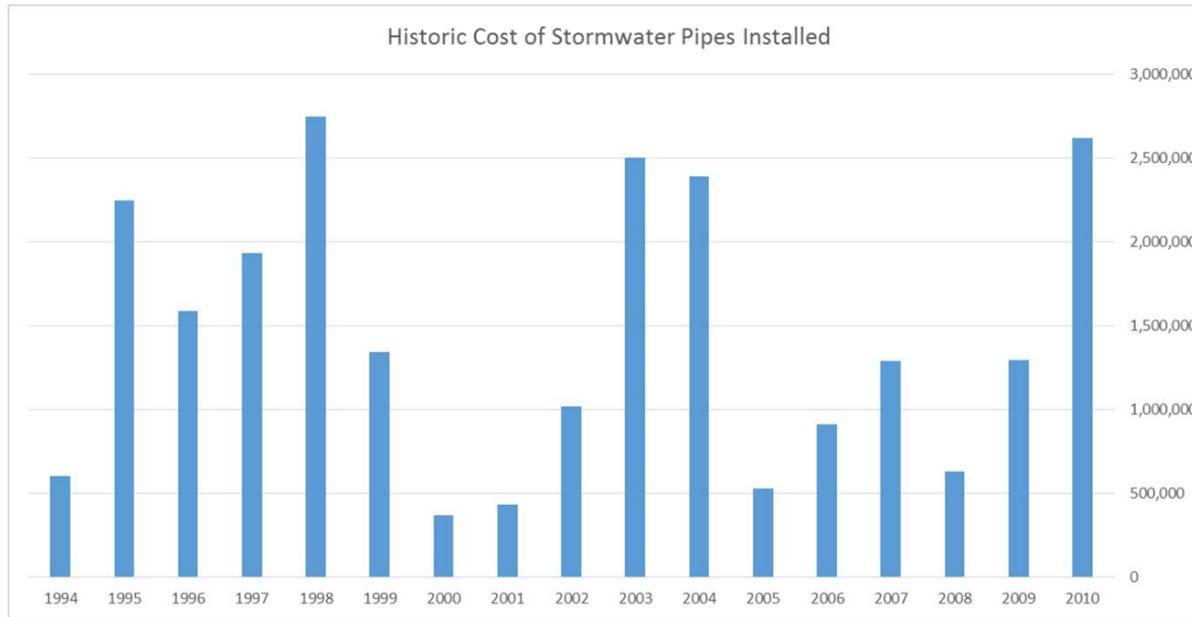


Table 1: Expenditure on stormwater pipes 1994-2010

The significant spike in 1998 occurred during a period when the strategic focus was on renewals. This involved replacing existing pipes in the Council mains network with larger ones. Similarly the spikes in 2003, 2004 and 2010 occurred during this same 'works programme.' (see Appendix 1)