

## Urban Stormwater



### What we do

Stormwater can be described as rain that runs off hard surfaces such as roofs, paved streets, driveways and roads. Council owns and operates the public stormwater systems for Gisborne city including Makaraka and Wainui/Okitu, and township areas in the following rural communities:

- Hicks Bay, Te Araroa, Tikitiki, Ruatoria, Te Puia Springs, Tokomaru Bay and Tolaga Bay.
- Matawai, Whatatutu, Te Karaka, Patutahi and Manutuke.

Stormwater systems carry away surface water runoff from rain events, protecting properties from the impacts of flooding. The environment and public health is also provided a level of protection, such as reducing the level of pollutants discharged in natural waterways. This is achieved through:

- the primary stormwater system which consists of piped reticulation, open drains, swale drains, sumps and channels.
- the secondary stormwater system, which comes into play during significant heavy rain events. This consists of stormwater flow paths through reserves, private properties and along road corridors.
- reducing the level of pollutants discharged into natural waterways. This is via a range of measures including swale drains, green infrastructure, sumps with sediment traps, gross pollutant traps and education.

### Asset Summary Table (from June 2014 valuation)

	Units	Flood Control Schemes		Taruhuru River Scheme		Land Drainage and River Schemes	
		Qty	RC (\$)	Qty	RC (\$)	Qty (\$)	RC (\$)
Mains	m	148.7 km	\$73.4 million	9.9 km	\$5.0 million	158.6 km	\$78.4 million
In Drain Structures	No.	54	\$1.9 million	0	\$0	54	\$1.9 million
<b>Total</b>							<b>\$80.3 million</b>

### Why we do it

To protect people, dwellings, private property and public areas from flooding by removing stormwater. To discharge stormwater and collect contaminants in a manner that protects the environment and public health (excluding all land drainage beyond the city and township boundaries and river protection work).

### This activity contributes to the following Community Outcomes

- Tairāwhiti Tangata
- Tairāwhiti Taonga

### Where are we now

The geography of Gisborne City has meant that the control of stormwater runoff within the urban area has always been important. Urbanisation has led to increased surface water flows as previous ground is

removed and replaced by impervious surfaces such as roofs, driveways, concrete and paved areas.

Most of the district's stormwater reticulated assets were installed over the last 50 years, with a significant proportion installed between 1950 and 1959. These pipe systems were installed using industry-accepted standards which were relevant at the time and were also driven by the community desire to remove open drains mainly due to children's safety. The unfortunate result of these early standards was that, in many cases, pipe systems were installed with inadequate capacity when compared with the original open drain and with increased impervious areas has impacted even further on the performance of the stormwater system. There was also little consideration of the secondary flow path of stormwater during significant storm events. These early pipe systems were generally structurally sound assets, but no longer meet the required level of service.

The flooding problems caused by these early pipe systems and lack of defined secondary flow paths continued to be a concern to Council for many years. These problems

were finally brought to a head by the June 1977 and the March 1988 (Cyclone Bola) storm flooding events.

The introduction of comprehensive stormwater catchment studies in the 1990's identified flooding problems that were largely resolved by subsequent stormwater upgrades. The stormwater upgrade projects have been a major commitment of Council and were substantially completed by 2013.

In December 2010 Gisborne City completed construction of its new Wastewater Treatment Plant (WWTP). The job of excluding unwanted stormwater and groundwater entering the wastewater system has become more important now that the new WWTP is commissioned. The Wastewater Discharges Reduction Project has been developed to bring together a number of elements, including the Urban Stormwater Activity, to address this.

The day-to-day management of the urban stormwater system is carried out by Council's Water Utilities section. This includes project management of capital and operational projects, asset management planning for the activity, contract administration and management of all associated contracts, budget management, and regulatory compliance management.

The Council's operations and maintenance contractor (currently Fulton Hogan Ltd) undertakes routine operations and maintenance for the activity. This contract was competitively tendered in 2010 and was initially for 18 months with extensions based on performance for up to a further six years.

## Challenges and Opportunities

Future challenges and opportunities facing the activity:

- **Climate Change:** Our design standards are already accounting for the predicted changes to future rainfall patterns and intensities from climate change. However the implications of changes in sea level rise on coastal communities needs further

consideration. Council's approach with regard to the asset management of current and future infrastructure located within inundation areas over the life of the assets (100yrs) still needs to be clarified.

- **Reducing Wastewater Overflows and Discharges:** Ensuring that stormwater from private properties is managed appropriately and does not find its way into the wastewater system is a key factor to achieve these objectives. The Wastewater Discharges Reduction project has been developed to address this.
- **Stormwater Quality:** The draft Freshwater Plan will be publicly notified in 2015. Incorporated within this document is a push to move towards Integrated Catchment Management Plans by 2025, and also stormwater discharge water quality monitoring.
- **Demographics:** The demographics for Tairāwhiti identifies a static and ageing population. The historic trend for the rural townships has been an incremental declining population. An ageing population will likely mean fixed and less discretionary incomes hence affordability issues will become more prevalent.
- **Households:** The number of households in the Gisborne district is projected to increase by 2,400 or 14% between 2006 and 2031. This is related to a reduction in the 'number of persons per household' as a result of an ageing population, not growth. This will have implications on infill housing and changes in runoff characteristics within the city.

## What are our plans for the next ten years ?

A high level summary of significant projects and activities is listed in the table below.

What have we been doing?	What will we do in years 1-10?
<ul style="list-style-type: none"> <li>• Upgraded culverts and improved drainage systems:                             <ul style="list-style-type: none"> <li>◦ between School Road and Mangahauni Street in Tokomaru Bay</li> <li>◦ along the main highway 'crossroads' intersection near the Te Araroa Township.</li> </ul> </li> <li>• Completed pipe renewals and upsized stormwater reticulation along Whitaker Street between Domett and Fox Streets in Gisborne City.</li> <li>• Completed condition assessments of old pipes along Rutene Road and other areas within Gisborne City.</li> </ul>	<p><b>Years 1-3</b></p> <ul style="list-style-type: none"> <li>• Continue with the renewal and upgrade of old stormwater infrastructure within the city and rural townships</li> <li>• Complete investigative, design and progress upgrade work to address known stormwater capacity restrictions in Gisborne City. This is to help alleviate on property flooding which will assist the reduction of Stormwater entering into the wastewater system. It forms part of the Wastewater discharges reduction project.</li> <li>• Continue work with residents to identify and exclude unwanted stormwater from residential and commercial property entering the wastewater system.</li> <li>• Information gathering in order to assist and facilitate addressing ponding issues on private property.</li> <li>• The development of integrated computer modelling using Lidar and pipe infrastructure to understand hydraulic capacity, secondary flow paths, and ponding issues within Gisborne City.</li> </ul>

What have we been doing?	What will we do in years 1-10?
	<ul style="list-style-type: none"> <li>Complete stormwater investigative, design and upgrade work in Douglas St (Wainui).</li> <li>Complete stormwater improvements work to address known stormwater capacity constraint near the end of Lloyd George Road (Wainui).</li> </ul> <p><b>Years 4-10</b></p> <ul style="list-style-type: none"> <li>Continue with the renewal and upgrade of old stormwater infrastructure within the city and rural townships.</li> <li>Complete investigative, design and progress upgrade work to address known stormwater capacity restrictions in Gisborne city.</li> <li>Continue work with residents to identify and exclude unwanted stormwater from residential and commercial property entering the wastewater system.</li> <li>Information gathering in order to assist and facilitate addressing ponding issues on private property.</li> </ul>
<p><b>We will achieve these plans by:</b></p> <p>Effective activity management planning and reporting, developing a professional framework for staff and a communications plan for the activity.</p>	

## Levels of Service and Performance Measures

Level of Service	Performance measure	Results 2013/14	Target Years 1-3	Target Years 4-10
We provide high quality infrastructure and ensure a healthy community through the removal of stormwater and contaminants to protect dwellings, the environment and people	Customer Satisfaction - The number of complaints received by a territorial authority about the performance of its stormwater system, expressed per 1000 properties connected to the territorial authority's stormwater system.	New Mandatory Measure	<15	<12
	Discharge Compliance - Compliance with the territorial authority's resource consents for discharge from its stormwater system, measured by the number of: a) abatement notices b) infringement notices c) enforcement orders, and d) convictions, received by the territorial authority in relation to those resource consents.	New Mandatory Measure	The Draft Freshwater Plan for the Gisborne Region is likely to include a requirement that a resource consent be applied for by 2025	To be confirmed
	Percentage of residents satisfied with the district's urban stormwater services as found in Annual Resident Satisfaction Survey.	46%	50%	60%
	Response Times - The median response time to attend a flooding event, measured from the time that the territorial authority receives notification to the time that service personnel reach the site.	New Mandatory Measure	30 minute response time for emergency stormwater flooding of houses or commercial property. 1 hr for all other emergency stormwater RfS's	30 minute response time for emergency stormwater flooding of houses or commercial property. 1 hr for all other emergency stormwater RfS's
	System and Adequacy a) The number of flooding events that occur in a territorial authority district. (A flooding event means an overflow of stormwater from a stormwater system that enters a habitable floor.)	New Mandatory Measure	a) 2 or less b) <0.2	a) 1 or less b) <0.1

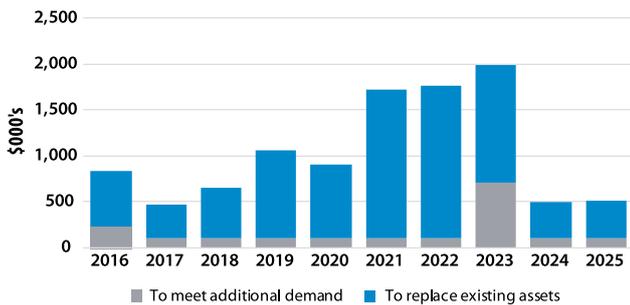
b) For each flooding event, the number of habitable floors affected. (Expressed per 1000 properties connected to the territorial authority's stormwater system.)

## Forecast Activity Cost Statement

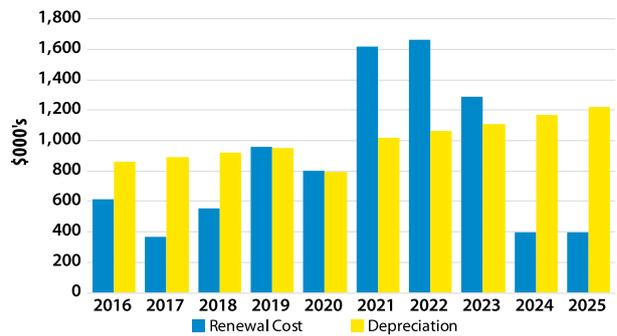
OPERATING REVENUE AND EXPENDITURE (\$000)	Budget 2015/16	Budget 2016/17	Budget 2017/18	Budget 2018/19	Budget 2019/20	Budget 2020/21	Budget 2021/22	Budget 2022/23	Budget 2023/24	Budget 2024/25
Operating Non Exchange Revenue	0	0	0	0	0	0	0	0	0	0
Operating Exchange Revenue	0	0	0	0	0	0	0	0	0	0
Operating Expenditure	2,696	2,763	2,787	2,685	2,770	2,786	2,924	3,086	3,217	3,363
<b>Net Cost of Service</b>	<b>2,696</b>	<b>2,763</b>	<b>2,787</b>	<b>2,685</b>	<b>2,770</b>	<b>2,786</b>	<b>2,924</b>	<b>3,086</b>	<b>3,217</b>	<b>3,363</b>

CAPITAL EXPENDITURE (\$000)	2015/16	2016/17	2017/18	2018/19	2019/20	2020/21	2021/22	2022/23	2023/24	2024/25
- to meet additional demand	228	100	101	101	102	103	108	705	107	108
- to replace existing assets	614	369	553	961	804	1,618	1,664	1,290	395	400
<b>Capital Projects</b>	<b>842</b>	<b>469</b>	<b>654</b>	<b>1,063</b>	<b>906</b>	<b>1,721</b>	<b>1,772</b>	<b>1,996</b>	<b>502</b>	<b>508</b>

## Total Capital Projects



## Depreciation v renewal capital assets



## Capital Expenditure 2015-2025

Description	LOS	Total Cost	2015/16 \$000s	2016/17 \$000s	2017/18 \$000s	2018/19 \$000s	2019/20 \$000s	2020/21 \$000s	2021/22 \$000s	2022/23 \$000s	2023/24 \$000s	2024/25 \$000s
Stormwater Flooding Improvements	GROWTH MAINTAIN	<b>4,286</b>	100	100	137	443	525	1,336	1,345	100	100	100
Reticulation Upgrades and Renewals	GROWTH MAINTAIN	<b>3,259</b>	315	317	319	322	324	326	329	332	336	339
Rural Township Upgrades	GROWTH MAINTAIN	<b>2,011</b>	50	52	198	298	57	59	98	1,064	66	69
Stream Upgrades	GROWTH MAINTAIN	<b>877</b>	377	0	0	0	0	0	0	500	0	0
<b>Totals</b>		<b>10,433</b>	<b>842</b>	<b>469</b>	<b>654</b>	<b>1,063</b>	<b>906</b>	<b>1,721</b>	<b>1,772</b>	<b>1,996</b>	<b>502</b>	<b>508</b>