

# Stormwater

## 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.

## 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 and the following rural communities:

- Hicks Bay
- Mākaraka
- Manutuke
- Matāwai
- Muriwai
- Patutahi
- Ruatōria
- Te Araroa
- Te Karaka
- Te Puia Springs
- Tikitiki
- Tokomaru Bay
- Tolaga Bay

Stormwater systems carry away surface water run-off from heavy rain events, protecting properties from the impacts of flooding. The environment and public health are also provided with 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 pipes, drains, swales, 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
- ▶ planning and building controls - for example imposing minimum floor levels or other building restrictions in flood risk areas
- ▶ reducing the level of pollutants discharged into natural waterways through a range of measures including swale drains, green infrastructure, education.

## Community Outcomes

This activity contributes to the following community outcomes:



Connected  
Tairāwhiti



Safe  
Tairāwhiti



Environmentally Sustainable  
Tairāwhiti

## Where we are now

The geography of Gisborne city has meant that the control of stormwater run-off within the urban area has always been important. Urbanisation has led to increased surface water flows as pervious ground cover such as vegetation and soil is removed and replaced by impervious surfaces such as roofs, roads and concrete.

Most of the district's stormwater reticulated assets were installed over the last 50 years with a significant proportion installed between 1950 and 1959. Although installed to the standards of the day, some of Gisborne's early stormwater pipe systems were installed with inadequate capacity and a lack of defined secondary stormwater flowpaths. These problems were highlighted by the 1977 storm and the 1988 Cyclone Bola flooding.

Gisborne city's programme of stormwater upgrade projects, which have been a major commitment of the Council since the mid 1990s, are expected to be substantially complete in 2015.

In the rural areas, a review of rural township drainage started in 2008-09 to identify and determine maintenance responsibilities for public, land, road and private drains.

Day-to-day management of the Council's stormwater systems is carried out by the Council's Engineering and Works Department with maintenance of stormwater assets provided by private contractors under long-term contracts subject to competitive tendering.

The quality of water being discharged to Gisborne's waterways is recognised as an important issue.

## Where we want to be

- ▶ Identify all residential, commercial and industrial buildings that are at risk of flooding in a 100 year flood event.
- ▶ Identify and record all overland flowpaths and flood-prone land in the Gisborne urban area on Council records.
- ▶ Have an acceptable standard of stormwater system for all existing urban areas and new subdivisions.
- ▶ Have a clearer understanding of asset information, responsibilities and designations in the rural townships and adequate stormwater asset management established as appropriate.
- ▶ Ensure that the quality of stormwater being discharged has minimal adverse environmental impacts on the receiving environment.
- ▶ Substantially reduce the risk of stormwater entering the sewer system causing overflows and treatment issues.

## How we plan to get there

- ▶ Undertake about \$9M of capital and renewal works to substantially complete the Gisborne stormwater upgrade projects by 2015.
- ▶ Prepare a more comprehensive programme of renewals. This will further minimise the need for emergency repairs that impose a greater cost and inconvenience to the community.
- ▶ Undertake capital works in areas requiring stormwater system performance/capacity improvements based on robust catchment investigations. Known areas for improvements include Mangapapa Stream, Te Hapara and Inner Kaiti/Rutene Road.

- ▶ Continue to monitor stormwater system performance to measure the effectiveness of the capital works upgrading programme.
- ▶ Ensure that new stormwater systems are designed into new subdivisions and, wherever practical, adopting low-impact urban design principles (LIUD) to reduce stormwater run-off volumes and peak flow rates to improve the quality of stormwater run-off entering the receiving environment.
- ▶ Continue to improve public education with the aim of increasing awareness of the consequences of contaminants entering the stormwater system.

### Significant negative effects

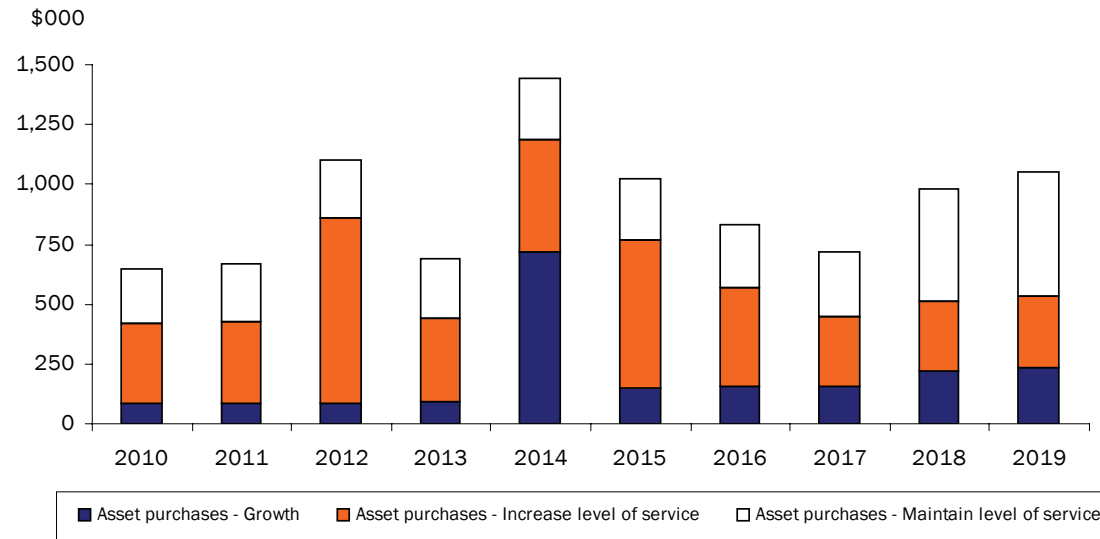
The greatest significant negative effect occurs when high levels of stormwater enter the wastewater reticulation. When this happens the wastewater system can be overloaded, requiring wastewater to be directly discharged into the river to deal with the overload. The stormwater projects are designed to assist in addressing this problem. However, the issue is also being addressed through the inflow infiltration programme.

A further negative effect is the amount of gross pollutants (bottles, plastics, rubbish, hydrocarbons and various other pollutants) discharged into the natural receiving environment from the stormwater system. The first gross pollutant measure (the Hirini Street debris grill) installed across the mouth of the Kopuawhakapata Stream is proving to be very effective.

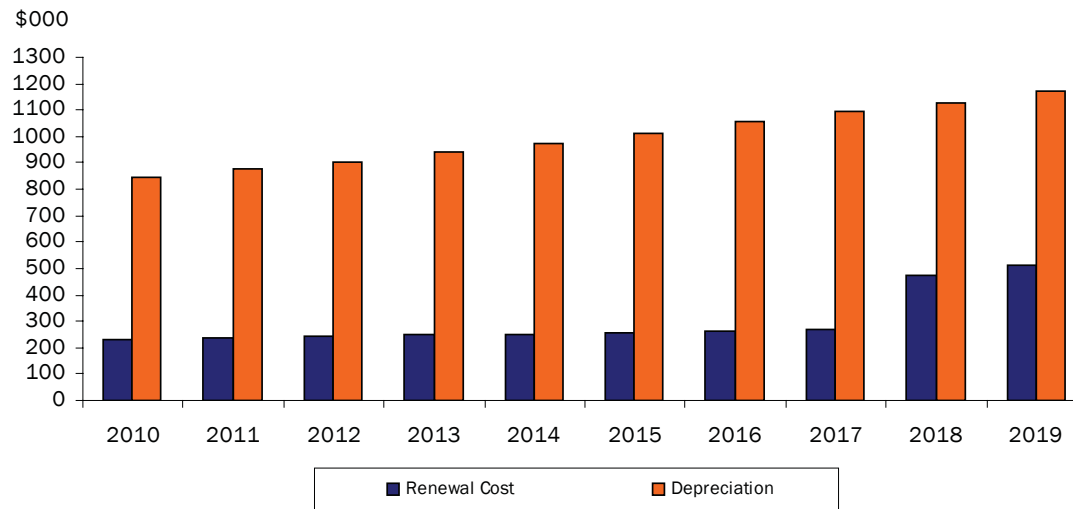
## Summary of Forecasted Financial Performance for the Years 2010 to 2019

	2010 \$000	2011 \$000	2012 \$000	2013 \$000	2014 \$000	2015 \$000	2016 \$000	2017 \$000	2018 \$000	2019 \$000
<b>STORMWATER</b>										
<b>OPERATIONS</b>										
<b>Operating Revenue</b>										
Activity revenue	0	0	0	0	0	0	0	0	0	0
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>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
<b>Operating Expenditure</b>										
Depreciation	847	877	906	939	973	1,013	1,055	1,092	1,130	1,170
Interest	541	517	508	497	475	456	429	394	359	324
Operating costs	1,311	1,384	1,369	1,467	1,475	1,512	1,571	1,665	1,673	1,784
<b>Total Operating Expenditure</b>	<b>2,699</b>	<b>2,778</b>	<b>2,783</b>	<b>2,903</b>	<b>2,923</b>	<b>2,981</b>	<b>3,055</b>	<b>3,151</b>	<b>3,162</b>	<b>3,278</b>
<b>Net Internal Charges/Recoveries</b>	<b>129</b>	<b>146</b>	<b>170</b>	<b>217</b>	<b>236</b>	<b>246</b>	<b>289</b>	<b>333</b>	<b>435</b>	<b>498</b>
<b>Net Cost of Service</b>	<b>2,828</b>	<b>2,924</b>	<b>2,953</b>	<b>3,120</b>	<b>3,159</b>	<b>3,227</b>	<b>3,344</b>	<b>3,484</b>	<b>3,597</b>	<b>3,776</b>
<b>Funded by:</b>										
Rates income	-2,828	-2,924	-2,953	-3,120	-3,159	-3,227	-3,344	-3,484	-3,597	-3,776
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
<b>Total Operations Funding</b>	<b>-2,828</b>	<b>-2,924</b>	<b>-2,953</b>	<b>-3,120</b>	<b>-3,159</b>	<b>-3,227</b>	<b>-3,344</b>	<b>-3,484</b>	<b>-3,597</b>	<b>-3,776</b>
<b>CAPITAL</b>										
<b>Capital outgoings</b>										
Asset purchases - Growth	84	86	88	90	721	152	156	159	218	233
Asset purchases - Increase level of service	338	343	773	350	468	615	411	287	294	301
Asset purchases - Maintain level of service	228	236	242	247	252	258	264	270	472	514
<b>Total Asset Purchases</b>	<b>650</b>	<b>665</b>	<b>1,103</b>	<b>687</b>	<b>1,441</b>	<b>1,025</b>	<b>831</b>	<b>716</b>	<b>984</b>	<b>1,048</b>
Loan repayments	531	541	551	582	592	608	625	631	638	645
<b>Total Capital Outgoings</b>	<b>1,181</b>	<b>1,206</b>	<b>1,654</b>	<b>1,269</b>	<b>2,033</b>	<b>1,633</b>	<b>1,456</b>	<b>1,347</b>	<b>1,622</b>	<b>1,693</b>
<b>Funded by:</b>										
Rates income	0	0	0	0	0	0	0	0	0	0
Development contribution income	-134	-134	-90	-90	-90	-90	-90	-75	-75	-75
Transfers to/from development contribution reserve	57	55	9	7	-615	-45	-49	-67	-125	-138
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	-200	-200	-627	-200	-323	-339	-129	-132	-135	-138
Transfer from depreciation reserve	-904	-926	-947	-986	-1,005	-1,159	-1,189	-1,072	-1,287	-1,341
Transfer to/from other reserves	0	-1	1	0	0	0	1	-1	0	-1
<b>Total Capital Funding</b>	<b>-1,181</b>	<b>-1,206</b>	<b>-1,654</b>	<b>-1,269</b>	<b>-2,033</b>	<b>-1,633</b>	<b>-1,456</b>	<b>-1,347</b>	<b>-1,622</b>	<b>-1,693</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>STORMWATER</b>														
Stormwater Pipelines/Renewals	MAINT/GROW	2,502,987	174,656	180,394	184,613	189,000	193,050	197,269	201,825	206,550	462,030	513,600	21.52%	78.48%
Stormwater Renewals for Rural Townships	INC	1,158,800	103,500	106,900	109,400	112,000	114,400	116,900	119,600	122,400	125,300	128,400		100%
Stormwater In Drain Structures	INC	650,075	34,930	36,079	36,923	37,800	38,610	167,459	171,327	41,310	42,289	43,348		100%
Stormwater - Upper Reynolds Drain from Gladstone Rd to Elgin	INC	212,758						212,758						100%
Stormwater Localised Urban Upgrades	MAINT/GROW	1,303,650	116,436	120,263	123,075	126,000	128,700	131,513	134,550	137,700	140,963	144,450	15.7%	84.30%
Stormwater Te Hapara Capital Improvements	INC	1,000,000			600,000	200,000	200,000							100%
Upsizing of infrastructure to Cater for Additional Growth	GROW	231,760	20,700	21,380	21,880	22,400	22,880	23,380	23,920	24,480	25,060	25,680	100%	
Stormwater Mangapapa Stream	INC/GROW	1,090,500					171,600	175,350	179,400	183,600	187,950	192,600	28.11%	71.89%
Rutene Road Stormwater Improvements	INC	426,660	200,000	200,000	26,660									100%
Taruheru/Waru/Haisman (Stormwater Catchment)	GROW	572,000					572,000						100%	
<b>Totals:</b>		<b>9,149,190</b>	<b>650,222</b>	<b>665,016</b>	<b>1,102,551</b>	<b>687,200</b>	<b>1,441,240</b>	<b>1,024,629</b>	<b>830,622</b>	<b>716,040</b>	<b>983,592</b>	<b>1,048,078</b>		
<b>Grand Total:</b>		<b>9,149,190</b>	<b>650,222</b>	<b>665,016</b>	<b>1,102,551</b>	<b>687,200</b>	<b>1,441,240</b>	<b>1,024,629</b>	<b>830,622</b>	<b>716,040</b>	<b>983,592</b>	<b>1,048,078</b>		

## Asset management

Key assets as at 31 May 2008:

- 133km Stormwater pipes
- 9.5km Significant open drains
- 12.8km Main streams and creeks
- 54 In-drain structures

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.

## STORMWATER

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) - Sustainability</b> The removal of stormwater and contaminants to protect dwellings, people, private property and public areas from flooding.	Number of Requests for Service regarding blockages.		73 (annual average 2005-2008)	70	70	70	70 - 60	Stormwater improvements. New code of practice of urban design for stormwater.
	and the percentage of requests resolved within target timeframes.		83%	83%	85%	85%	86% - 90%	Improving customer satisfaction.
	Number of Requests for Service regarding emergency repairs; and		50 (annual average 2005-2008)	50	45	40	40	Improving customer satisfaction.
	The percentage of requests resolved within target timeframes.		95%	95%	95%	95%	95%	
	Percentage of customers who rate RFS responses as excellent / good.		88% (2008)	88%	90%	90%	92%	Stormwater improvements. New code of practice of urban design for stormwater.
	Percentage of residents who are very / fairly satisfied with the district's urban stormwater services.		61% (June 2008)	61%	Not Measured	61%	70%	Stormwater improvements. New code of practice of urban design for stormwater.
	Number of residential buildings* flooded during the year. * Refers to habitable parts of residential buildings only		New Measure	Set Base	Decreasing Trend	Decreasing Trend	Decreasing Trend	
A 24/7 callout service is available for reporting stormwater problems.	100% (2008)	100%	100%	100%	100%			
<b>LOS (2) - Health and Safety</b> To discharge stormwater and collect contaminants in an effective manner to protect the environment and public health		A current sanitary assessment has been completed for each community system.	Achieved (2008)	Achieved	Achieved	Achieved	Achieved	Undertake sanitary assessments every 5 years (ie, prior to the LGA 2002 requirements of 'from time to time'.