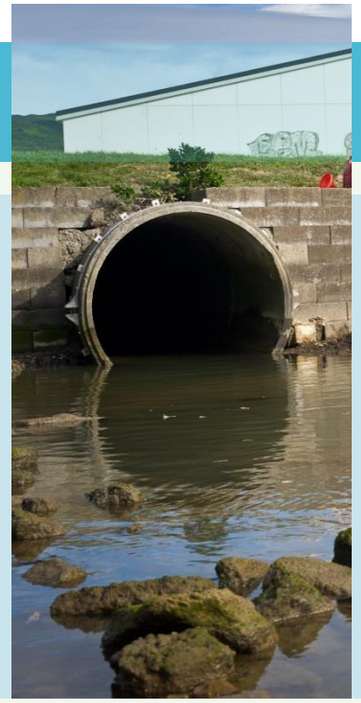
Activity Summary: STORMWATER



Activity Description

What we do

Stormwater is rainwater that flows across the ground and does not get absorbed into the soil. It flows into stormwater pipes and streams, and from there into our harbour. We provide a network of pipes and open channels to efficiently and safely control and remove stormwater in our city, as well as a 24 hour response system.
We do this to protect people and property from the effects of flooding as well as maintain clean and safe streams, harbours and coastlines.

Why we do it

Our stormwater network helps minimise the impacts on Te Awarua-o-Porirua Harbour and catchment areas. Protecting our harbour is a priority for us, and we work hard to ensure that our stormwater is managed and disposed of in a safe and sustainable way. We also want to make sure we protect our community – both people and property – from uncontrolled stormwater run offs. This can cause flooding and could pose a risk to public safety. To mitigate these risks, we make sure that we regularly monitor and plan for possible impacts and hazards. We also take time to regularly review our networks capability and identify any areas that may need renewal work or an upgrade. We are constantly working towards building our resilience across all our three water systems.

Supported Strategic Priorities

The Stormwater activity is a fundamental service for our community. It supports all of the strategic priorities but especially:

- A great village and city experience
- A healthy and protected harbour and catchment

Levels of Service

Desired Levels of service

- The stormwater system is adequate
- We respond to faults within reasonable timeframes
- We are compliant with resource consents for discharge
- Coastal water is safe and freshwater quality is protected
- Decrease interruptions to service
- Customers are satisfied with the stormwater system

Performance measures

- The number of flooding events that affect habitable floors
- Median response times to attend a flooding event
- Breaches of resource consents for discharges
- Monitored beach availability for recreation; E.coli level at monitored freshwater sites
- Number of pipeline blockages
- Resident satisfaction with stormwater service, complaints about stormwater system performance

Demand

Growth and Development

- Population growth
- Housing density / type
- Transient population
- Development type zoning / re-zoning
- Impervious surfaces
- Hydraulic neutrality

Climate Change

- Rainfall intensity and volume
- Rainfall frequency
- Rainfall distribution
- Sea level rise

Demand issues

Growth in impervious areas and rainfall are considered to be the key factors affecting volumetric demand on the stormwater service. Projected volume increases of up to 3.2% and 13.4% respectively are anticipated to 2038. The total increase in stormwater flows therefore could be up to 16.6%. This doesn't rule out local variations in the development of impervious areas, or the possible wider effect of successful demand management through hydraulically neutral design principles.

Asset Information

Asset description

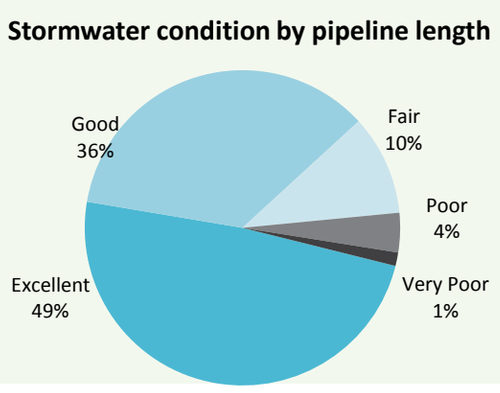
275 km of piped network

Asset Value

- Replacement cost $153 million
- Depreciated replacement cost $96 million
- Annual depreciation $1.5 million

Asset Condition and Performance

- Good condition overall
- Lack of capacity to convey storm flows, especially in the CBD but also in many areas around the city
- Silt and contaminants washed by rain into stormwater system and thereby into receiving waters (streams and harbour)



Activity Summary: STORMWATER

Risk

What are the risks	*What are we doing about them*
Capacity limitations mean that properties can be adversely affected by flooding in heavy rain events	Stormwater network upgrades including for the CBD, Network modelling and the protection of overland flow paths
Additional flows from new developments may overload systems further	Network modelling and the protection of overland flow paths, Development controls such as hydraulic neutrality
Climate change increasing stormwater flows, an affecting network performance, particularly in coastal, low-lying areas	Climate change factored into planning and design of new works

Lifecycle Management Plan

Operating and Maintenance highlights

New initiatives or aspirational change	Year 1	Year 2	Year 3	> Year 3	
Future Service Studies (incl. Stormwater Flooding and Quality)	$40K	$90K	$90K	$120K	2022-2024
Alliance partnership for network maintenance and operations	Subject to contract negotiations				
Stormwater monitoring and investigations	$50K	$50K	$50K	$150K	2022-2024

Significant capital projects

Issue	Response and Project	Cost ($millions) and timing	
Minimising the impact of flooding on people's lives	CBD flooding improvements	$28.9	2018–2037
Minimising the impact of flooding on people's lives	Network upgrades	$13.2	2018–2037
Developing a better understanding of networks to address service issues	Network modelling	$0.6	2018-2021

Forecast Expenditure Summary

These tables and graphs summarise the total operating and capital expenditure. They are for each year of the LTP (years 1 – 20) and then as 5 yearly averages for year 21-30 of the Infrastructure Strategy. Forecasts are in $000's, and the base costs are uninflated.

Years	18/19	19/20	20/21	21/22	22/23	23/24	24/25	25/26	26/27	27/28	28/29
	$000	$000	$000	$000	$000	$000	$000	$000	$000	$000	$000
Operating	2,944	3,250	3,511	3,577	3,646	3,675	3,744	3,773	3,881	4,007	4,224
Growth	0	0	0	0	0	0	0	0	0	0	0
Levels of service	1,266	5,255	2,993	1,428	249	218	278	733	555	1,444	2,608
Renewals	0	0	0	0	0	0	0	0	0	0	0

Years	29/30	30/31	31/32	32/33	33/34	34/35	35/36	36/37	37/38	38-42	43-48
	$000	$000	$000	$000	$000	$000	$000	$000	$000	$000	$000
Operating	4,367	4,641	4,850	5,120	5,329	5,531	5,857	6,305	6,482	6,482	6,482
Growth	0	0	0	0	0	0	0	0	0	0	0
Levels of service	2,577	3,862	3,108	3,202	3,108	2,189	4,358	4,564	2,608	1,233	1,233
Renewals	0	0	0	0	0	0	0	0	0	200	200