



Stormwater

Purpose

Stormwater drainage in some cases protects our communities, infrastructure, and public places from flooding by discharging stormwater and collecting contaminants to minimise adverse effects from rain, runoff, and high tides. Stormwater drainage on state highways is managed by NZ Transport Agency (NZTA).

Legislation associated with this service

- Local Government Act 2002
- Resource Management Act 1991
- Civil Defence and Emergency Management Act 2002
- Land Drainage Act 1908
- New Zealand Coastal Policy Statement
- Regional Plan for Northland
- Regional Water and Soil Plan for Northland
- Regional Coastal Plan for Northland
- The Water Services Act 2021 and associated Regulations, and
- Taumata Arowai – the Water Services Regulator Act 2020

Risks and issues

Do not meet level of service (LOS) expectations due to lack of funding -

Inadequate level of funding may result in a failure to deliver the agreed LOS and have potential adverse effects on the community, which may lead to environmental and public health damage, as well as significant legal and financial consequences.

Legislative noncompliance - Failure to comply with relevant legislative obligations/breach of legislation, caused by lack of awareness

(changes in legislation not identified) lack of funding or lack of resources, resulting in unlawful action, environmental damage exposure to litigation risk, regulatory and/or government sanctions and reputational damage.

Failure to deliver on projects and programmes

- Non-delivery on projects and/or programmes due to inadequate project or programme management, lack of resources/project planning or systems/ownership; change of leadership, cost escalation or unrealistic expectations, resulting in deferring of projects, possible community dissatisfaction, reduction in service levels and damage to council image and credibility. Loss of external funding may also occur if timeframes set by the fund are not met, leaving increased costs to be borne by the ratepayer.

Inadequate contract management (network maintenance and operations) - Inadequate contract management, caused by inadequate documentation/selection or availability of contractor/management of contractor, resulting in poor contractor performance and outputs, interruption to services or reduction to service levels, health and environmental incidents, failure to meet legislative requirements, additional costs, and reputational damage.

Inadequate asset management - Inadequate asset management, caused by lack of asset management knowledge, practice and training, lack of staff knowledge and training, lack of resources, inadequate communication of issues and strategic planning, resulting in reduction in service levels, failure to meet LTP commitments, inability to cater for growth, financial consequences and reputational damage.






From Infrastructure Risk Register

What we do

We manage five community stormwater drainage schemes – Dargaville, Baylys, Te Kōpuru, Kaiwaka and Mangawhai. The level of service for the schemes is to protect habitable floors from flooding by removing and discharging stormwater. The system collects contaminants in a way that protects our environment and public health; and responds promptly and reasonably to threats

of flooding on habitable floors. We maintain the performance of the stormwater drainage systems to the expectations of the community.

Stormwater drainage systems in Whakapirau, Glinks Gully, Kelly's Bay, Pahi, Tinopai, Papanoa, Maungatūroto and Matakoho are mostly incorporated into our roads network. There are several open drain systems that exist throughout the district.

Contribution to community outcomes					
					
Catchment Management Plans to establish infrastructure and growth needs					
Stormwater capture and discharge is managed in accordance with modelling outputs and Engineering Standards					
Where practical, contaminants are collected and/or treated					

How is climate resilience being considered?

Environmental impacts are considered in the planning of all infrastructure activities. Tools used include the following:

- Hydraulic models allow for scenario planning to test design outcomes
- Integrated catchment management plans will define targets for overall infrastructure and growth needs
- NRC's environment data hub and river flood maps give current and historical trend data and information, and
- Inputs into adaptation planning.

We consider increased flooding, coastal inundation, erosion, and increased severity of storms and intensity of rainfall events, including increased intensity in short-duration rainfall events.

Through various weather events, a lot of our stormwater assets were exposed and at risk.

They also highlighted where the networks were lacking. The data, service requests and photographs have been stored to aid in future planning and input into scenario planning where network models are available.

Stormwater assets play a vital role in enabling the built environment. We will continue to improve our understanding of risk by analysing regional hydrodynamic modelling and expanding our flow modelling and analysis where possible.



What we will deliver, when

Description	2024/2025	2025/2026	2026/2027
Implement network improvements as per Baylys Beach Catchment Management Plan			
Discharge consent for Dargaville			
Small growth projects in Kaiwaka and Mangawhai			
Network improvements in Dargaville and Mangawhai			
Districtwide network renewals including reticulation, network and attenuation systems			
Mangawhai upgrade for Wood Street and surrounds			
Catchment Management Plans for Dargaville and Mangawhai			
Complete storm related remediation activities			

Performance measures	LTP Year 1 Target 2024/2025	LTP Year 2 Target 2025/2026	LTP Year 3 Target 2026/2027
Network system adequacy - For each flooding event, using a maximum of 1:50 year (50-year ARI, Annual Exceedance Probability 2%), the number of consented habitable floors affected (expressed per 1,000 properties connected to the district stormwater system).	<10	<10	<10
Response time - The median response time in an urgent flooding event (defined as an event is where a habitable floor is reasonably at risk of being affected Priority 1 (P1), measured from the time that the Council (or subcontractor) receives notification to the time that service personnel reach the site.	<2 hours for urgent events	<2 hours for urgent events	<2 hours for urgent events
Discharge compliance - Abatement notices, infringement notices, enforcement orders, convictions.	0	0	0
Customer satisfaction - The number of Customer Service Requests (CSR) received regarding single network issues (however reasonably defined) per year/1,000 properties. This includes all CSR that relate to stormwater infrastructure whether directed to the contractor or individual council staff member.	<18	<18	<18
Positive environmental outcomes - Water sensitive design, green infrastructure, low carbon design and construction, resilient network.	As defined in the Stormwater CMP or Engineering Standards	As defined in the Stormwater CMP or Engineering Standards	As defined in the Stormwater CMP or Engineering Standards

Changes in levels of service

There will be no changes to the level of service.

Significant negative effects

Identified significant negative effect/issue	Mitigation
<p>Level of service (LOS) versus feasibility The construction and maintenance costs of infrastructure upgrades to meet LOS is beyond the means of the community.</p>	<p>In conjunction with community consultation, use Catchment Management Plans and technical assessment to determine the most practicable way forward, without negatively impacting on public health and the environment or creating risk to persons or property.</p> <p>Maintenance schedules are maintained with latest condition assessment and priority information.</p>
<p>Contamination of urban watercourses Urban stormwater runoff has the potential to adversely impact the receiving environment stakeholders and users.</p>	<p>The engineering standard provides minimum standards for stormwater infrastructure. Updates include best practice for water sensitive design and treatment. Continue to improve understanding of coastal/estuarine outfalls and the effects on the environment and incorporate best practice into catchment management plans.</p>
<p>Contamination of rural watercourses Rural stormwater runoff is likely to have a different contaminant profile than that from the urban areas. Depending on land use rural runoff potentially has more elevated levels of nitrogen and phosphates than urban stormwater, due to fertiliser usage and animal husbandry.</p>	<p>The engineering standard provides general guidance for the management of rural stormwater runoff. The section primarily relates to quantity control of runoff, although there is a recommendation that appropriate water quality treatment options be considered in conjunction with attenuation. The Engineering Standards updates reflect best practice in water sensitive design and treatment.</p>
<p>Network resilience Increased frequency and intensity of rainfall events along with sea level rise will challenge the resilience and capacity of the network.</p>	<p>Increased focus on water sensitive design and green infrastructure will play a big part in these solutions. Focus on flood protection devices in low-lying areas of Dargaville and Mangawhai is critical.</p>
<p>Flooding direct impact Urban catchments create a greater amount of impermeable coverage (such as roads, roofs, and paved areas) than would be seen in the natural environment. Runoff is generated quicker from paved areas resulting in changes to overland flow paths and localised flooding, which in turn can damage property and increase the risk to life.</p>	<p>The Engineering Standards allow for protection of the receiving environment from potential erosion and flooding. The attenuation of runoff allows for flooding to be controlled locally, within the specific device.</p> <p>Online tools, maps and models are being developed to enable better planning around problem areas such as overland flow paths</p>
<p>Stormwater infiltration Studies of the stormwater network in Dargaville and Mangawhai have found stormwater leaking into the wastewater system.</p>	<p>Ageing infrastructure, particularly in Dargaville, is due to long-term underinvestment. Continue to use outcomes of condition investigations to identify priority renewals and replacements.</p>
<p>Future growth The spatial plans have identified the likely growth areas in Kaipara. Fast growth without good infrastructure planning can in some cases cause a deficit in funding and LOS provision.</p>	<p>Stormwater requirements for all developments will be identified through the consenting process with required funding to be determined also at this time.</p>

Public safety

Public safety is at the forefront of network operations some assets however have an inherent risk.

All risks to the public are elevated with urgency to the maintenance contractor and continual improvement is applied to the built environment.

Generally Council policy is to not pipe open drains (and not allow private piping of open drains) unless there is strong evidence of a positive safety gain.

Asset data

Asset management system data and use requires improvement.

Asset data management is a process of continual improvement and there are multiple improvement projects underway and planned. The asset data prepared under the auspices of three-water reform will be used to update the data in AssetFinda. This can then be used to support maintenance schedules, renewals and replacement programmes.



Prospective Funding Impact Statement

Stormwater	Annual Plan	Budget	Budget	Budget
For the year ended: 30 June	2023/2024 \$'000	2024/2025 \$'000	2025/2026 \$'000	2026/2027 \$'000
Sources of operating funding				
General rates, uniform annual general charges, rate penalties	488	431	504	604
Targeted rates	2,241	1,988	2,141	2,285
Subsidies and grants for operating purposes	0	0	0	0
Fees and charges	0	0	0	0
Internal charges and overheads recovered	0	0	0	0
Interest and dividends from investments	0	0	0	0
Local authorities fuel tax, fines, infringement fees and other receipts	0	0	0	0
Total operating funding	2,729	2,419	2,645	2,889
Application of operating funding				
Payments to staff and suppliers	819	784	858	858
Finance costs	252	185	228	286
Internal charges and overheads charged	565	360	377	363
Other operating funding applications	0	0	0	0
Total applications of operating funding	1,637	1,330	1,464	1,507
Surplus (deficit) of operating funding	1,092	1,089	1,181	1,382
Sources of capital funding				
Subsidies and grants for capital expenditure	0	401	0	0
Development and financial contributions	144	144	144	144
Increase (decrease) in debt	692	996	1,953	341
Gross proceeds from sale of assets	0	0	0	0
Lump sum contributions	0	0	0	0
Other dedicated capital funding	0	0	0	0
Total sources of capital funding	836	1,541	2,097	485
Applications of capital funding				
Capital expenditure	0	0	0	0
Capital expenditure - to meet additional demand	34	300	1,500	1,500
Capital expenditure - to improve the level of service	1,195	1,681	2,550	1,050
Capital expenditure - to replace existing assets	1,062	100	0	0
Increase (decrease) in reserves	-362	549	-771	-682
Increase (decrease) of investments	0	0	0	0
Total applications of capital funding	1,929	2,630	3,279	1,868
Surplus (deficit) of capital funding	-1,092	-1,089	-1,182	-1,383
Funding Balance	0	0	0	0