



Building Communities
Stormwater
Waiāwhā



Stormwater Waiāwhā

Council's stormwater network is designed to manage the risk of flooding and coastal erosion to buildings and property, in a way that avoids negative impacts on the environment. The stormwater network includes watercourses, open channels, swales, pipes and structures that channel stormwater to a final discharge point. It includes primary and secondary overland flow paths, stormwater detention and stormwater treatment.

What we provide

- **146.1km** stormwater pipes
- **2,952** manholes
- **15** soakholes
- **1** dam
- **7** pump stations
- **688** utility catchpits
- **48** stormwater ponds
- **33.6km** of open drains
- **1.2km** of rising mains.

Why we provide this activity

Our community outcome

A stormwater management system that manages flood risk contributes to improving water quality and contributes to enhancing ecological and cultural values.



Stormwater

Overview

Stormwater management will continue to be a high priority over the next 10 years. With climate change and urban growth, there is a focus on designing networks in urban areas that are resilient to changing weather patterns, while also contributing to improving water quality and enhancing ecological and cultural values. This requires an integrated approach that focuses on the receiving environment and sustainable management of water resources alongside the need to manage the risk of flooding. Documents such as Ngā Wai Manga – Urban Water Principles, produced by the Urban Water Working Group, provide guidance for implementing an integrated approach.

Legislative requirements regarding the quality and quantity of stormwater released must be met by Council. Under the Resource Management Act 1991 district councils must manage land use in a way that minimises environmental effects.

The Three Waters Review may result in significant structural changes to Council’s role in the delivery of water supply, wastewater and stormwater services. Regardless of how it is delivered, the community will still need services to be provided and planned for. There is currently insufficient detail regarding the possible changes to services and therefore it is prudent to plan on a business as usual approach to service delivery.



The District has three stormwater management areas:

Urban growth areas

These are the main urban areas within our District planned for future urban development and expansion. They will have significant stormwater infrastructure and the greatest potential to affect receiving environments.

Small settlements

These are small urban settlements with some stormwater infrastructure generally of low capital value when compared to the infrastructure in urban growth areas.

Rural settlements

These areas include land zoned rural as well as rural villages that have fewer than 50 residential dwellings. These areas are provided for by the stormwater infrastructure that is supplied as part of the roading system.

Urban		Rural
Urban growth areas	Small settlements	Rural settlements
Katikati	Kauri Point	Little Waihi
Ōmokoroa	Maketu	Plummers Point
Te Puke	Minden	Pongakawa
Waihi Beach (including Island View/Pios Beach, Athenree)	Ongare Point	Rogers Road
	Paengaroa	Te Kahika
	Pukehina Beach	Tuapiro
	Tanners Point	All other rural areas
	Te Puna	

Over the next 10 years we will continue to obtain and implement comprehensive stormwater consents for sub-catchments, based on an integrated catchment management planning approach. We will carry out monitoring and modelling work to ensure compliance with consent conditions.

We will use structure planning processes to design integrated stormwater management networks in urban growth areas.

Extensive modelling has been completed and used to obtain comprehensive stormwater consents. This has resulted in:

Specific District Plan rules for the Minden area.

Overland flow paths are identified in the Minden Lifestyle Zone Structure Plan and new stormwater works may be proposed as a result of development in the future.

Waihi Beach and Te Puke

Identification of floodable areas and at-risk properties in Te Puke and Waihi Beach. A programme of work is in place to address flooding issues. We aim to protect 97% of existing urban growth areas and small settlement properties from having a habitable floor flooding incident in a 1:10 year rainfall event. It is important to understand that we are not aiming to stop flooding of non-habitable floor space such as garages, sheds or gardens. Communities can expect some surface flooding.

District Plan rules in Waihi Beach and Te Puke also future-proof flood mitigation by requiring all new dwellings to have habitable floor levels that protect properties against flooding in a 1:50 year rainfall event.

We will continue to invest in our stormwater network to meet agreed levels of service and the conditions of our comprehensive stormwater consents.

Under our Development Code and the resource consent process for subdivision, developers are required to make adequate provision for the collection and disposal of stormwater run-off from hard surfaces created through the development process. This may result in vesting of new stormwater infrastructure in Council, where appropriate.

As the need for stormwater management increases with the intensification of development and increasing frequency and intensity of rainfall events caused by climate change, so changes to the design of stormwater infrastructure are required in accordance with our level of service for stormwater.

Urban growth areas and small settlements that receive direct benefits from the stormwater network pay a targeted rate for stormwater management. Stormwater management also has a public good benefit in terms of public health and environmental benefits. As a result, 10% of stormwater funding is provided by the general rates levied on all rateable properties.



How we will achieve our community outcomes

Goal	Our approach
<p>Use an integrated catchment-based management approach that:</p> <ul style="list-style-type: none"> • Reduces flood risk by upgrading infrastructure, identifying secondary flow paths and minimising runoff. • Uses low-impact design to improve water quality, including maintaining natural flows as much as possible and reducing contaminants through systems that mimic natural processes. • Minimises loss of habitat in receiving environments. • Provides recreational opportunities and amenity values where possible. • Recognises cultural values associated with local waterways. 	<ul style="list-style-type: none"> • We will continue work to obtain and implement comprehensive stormwater consents that are based on catchment management plans. • We will progressively upgrade the public stormwater network in accordance with our asset management plan and the requirements of our comprehensive stormwater consents. • We will use structure planning processes to develop integrated stormwater networks in urban growth areas.
<p>Engage with communities and Tangata Whenua to build understanding about various approaches to stormwater management, including coastal erosion protection and ensure their views are sought and taken into account.</p>	<ul style="list-style-type: none"> • We will engage with communities and Tangata Whenua through the process of obtaining comprehensive stormwater consents and in structure planning processes. • We will carry out specific engagement in areas where upgrades to the existing network or options for coastal erosion protection are proposed.
<p>Undertake compliance and monitoring activities through a balanced approach, to ensure best practice use of the stormwater network.</p>	<ul style="list-style-type: none"> • We will implement a monitoring and compliance programme in accordance with requirements of our comprehensive stormwater consents.

What are we planning to do

All information from 2023 - 2031 includes an adjustment for inflation.

Project number	Project name	\$'000									
		2022	2023	2024	2025	2026	2027	2028	2029	2030	2031
226332	Waihi Beach Pump Station Renewals	-	-	59	61	111	77	58	48	57	65
226353	Waihi Beach 2 Mile Creek West Bank	200	2,892	2,136	-	-	-	-	-	-	-
226355	Waihi Beach 1 Mile Creek Improved Flow Path	-	-	-	-	-	117	601	-	-	-
226356	Waihi Beach Diversion of Maranui Flood Water	-	-	-	55	114	-	-	-	-	-
226357	Waihi Beach Upper Catchment Attenuation/ Darley Drain	-	-	-	-	-	-	-	124	508	-
226358	Waihi Beach 2 Mile Creek Upper Catchment Attenuation	-	103	854	1,653	228	-	-	-	-	-
226360	Waihi Beach Edinburgh Street Pipe Upgrade	-	-	406	-	-	-	-	-	-	-
226361	Stormwater - Waihi Beach Pio Shores	150	475	-	551	-	934	-	840	863	-
226362	Waihi Beach Pipe Upgrade	-	-	-	-	-	736	-	-	-	-
226363	Waihi Beach Otto Road New Pumping System	-	-	-	-	717	-	-	-	-	-
226364	Waihi Beach Earth Dam	-	-	-	-	-	1,016	902	-	-	-
226365	Stormwater - Waihi Beach Improvements Various	-	-	43	77	80	82	174	87	330	754
226413	Katikati Upgrades Highfield Drive	-	283	-	-	-	-	-	-	-	-
226420	Katikati Upgrades Belmont Rise, Grosvenor Place	-	-	-	353	-	-	-	-	-	-
226421	Katikati Upgrades Francis Drive	-	-	-	176	-	-	-	-	-	-
226515	Ōmokoroa Upgrades Hamurana Road, Owen Place	-	-	-	-	-	374	90	-	-	-
226523	Stormwater - Ōmokoroa Vivian Drive Upgrade	-	-	598	-	-	-	-	-	-	-
226524	Ōmokoroa Stormwater Renewals	-	-	-	50	341	-	-	-	-	-
226525	Ōmokoroa Stormwater Upgrades	-	-	48	331	-	-	-	-	-	-
226602	Stormwater - Te Puke Area 3 Structure Plan	1,377	-	-	66	689	-	-	148	1,558	-
226620	Te Puke Offsite Mitigation Due to Growth (Pumps/Ponds)	-	-	694	716	-	-	-	-	-	-
226636	Te Puke Upgrades Princess Street, Saunders Place	35	341	-	-	-	-	-	-	-	-
226638	Te Puke Upgrades Seddon Street, Raymond, Dunlop, Bishoprick	-	36	374	-	-	-	-	-	-	-

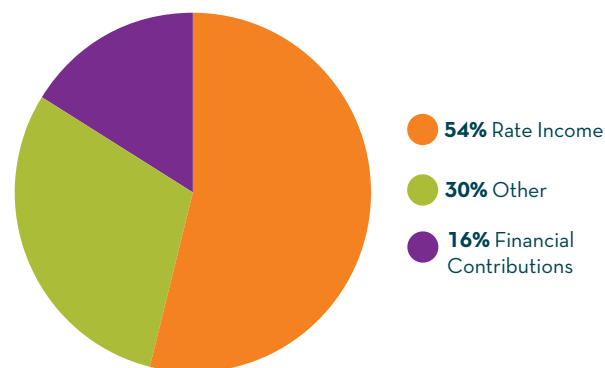
Project number	Project name	\$'000									
		2022	2023	2024	2025	2026	2027	2028	2029	2030	2031
226642	Te Puke Upgrades Williams Drive	-	-	-	-	-	269	-	-	-	-
226651	Te Puke Upgrades Oxford Street/ Boucher Avenue	-	-	88	904	-	-	-	-	-	-
226652	Te Puke Stormwater - King Street Outfall	-	-	-	-	455	-	-	-	-	-
226655	Te Puke Upgrades Galway Place	-	62	-	-	-	-	-	-	-	-
226657	Stormwater - Te Puke Upgrades Tynan Street	-	-	-	-	-	-	-	-	-	358
226658	Stormwater - Te Puke Upgrades Jellicoe Street/ Dunlop Road	-	-	-	-	-	-	-	-	508	-
265413	Maketu Upper Catchment Attenuation	-	-	-	-	11	140	-	-	-	-
301808	Upgrade Pukehina Beach Road Stage 4	-	-	-	50	262	-	-	-	-	-
301829	Upgrades Pukehina Beach Road Stage 2, Stage 3	-	46	427	-	-	-	-	-	-	-
301830	Upgrades Pukehina Beach Road Stage 5, Stage 6	-	-	-	-	-	274	-	-	-	-
301831	Upgrades Pukehina Beach Road Stage 7, Stage 8	-	-	-	-	-	257	-	-	-	-
301832	Upgrades Pukehina Beach Road Stage 9	-	-	-	-	-	-	-	-	-	501
311302	Stormwater - Asset Validation	50	52	53	55	57	58	60	62	63	65
316601	Katikati Structure Plan Utilities Stormwater	-	-	-	226	2,841	-	-	49	510	-
317201	Ōmokoroa Structure Plan - Stormwater Industrial	1,875	3,740	1,068	1,543	341	249	169	-	3,207	3,764
319601	Stormwater - Comprehensive Stormwater Consents	150	258	267	276	285	280	240	309	317	325
331501	Waihi Beach Otawhiwhi Marae Stormwater Drain	-	-	475	-	-	-	-	-	-	-
331601	Stormwater - Te Puke Ohineangaanga Stream	-	-	395	-	-	-	-	-	-	-
332401	Minden Stormwater Investigation	-	52	-	-	-	-	-	-	-	-
332614	Small Communities Stormwater Infrastructure Rehabilitation	-	-	-	-	-	7	-	-	-	-
332616	Tanners Point Upgrades Tanners Point Road East Stage 2	-	-	-	132	-	-	-	-	-	-
332617	Tanners Point Upgrades Tanners Point Road North	-	-	-	-	137	105	228	-	-	-
332621	Kauri Point Upgrades	-	155	363	-	-	-	-	-	-	-
332627	Stormwater - Kauri Point Upgrades Stanley Street	-	-	-	-	-	-	-	124	-	-
332630	Stormwater - Small Communities Annual Contribution To Waihi Drainage Society	5	5	5	6	6	6	6	6	6	7

Project number	Project name	\$'000									
		2022	2023	2024	2025	2026	2027	2028	2029	2030	2031
332635	Paengaroa Upgrades Halls Rd Stage 1 & 2	-	-	-	-	-	-	-	581	863	-
332636	Paengaroa Restoration (Black Road Outlet)	-	-	-	165	-	-	-	-	-	-
340001	Stormwater - Small Communities Infrastructure Remediation	17	18	18	19	13	13	13	14	14	14
340101	Stormwater - District Wide Modelling	100	103	107	77	80	82	84	87	89	91
340201	Asset Management - Waihi Land Drainage District	25	-	-	28	-	-	30	-	-	-
344601	Waihi Beach Stormwater - Athenree Improvements	-	-	-	-	-	397	-	-	-	-
344801	Ōmokoroa Upgrades Myrtle Drive, Gerald Place	-	362	-	-	-	-	-	-	-	-
344901	Ōmokoroa Stormwater- Harbour View Road Upgrade	-	-	-	33	615	-	-	-	-	-
345001	Ōmokoroa Stormwater - Upgrade for Ōmokoroa Road, Tory Way, Tralee Street	-	31	374	-	-	-	-	-	-	-
345101	Ōmokoroa Stormwater - Upgrade Precious Reserve Pond	-	-	-	127	-	-	-	-	-	-
352801	Stormwater - Ongare Point Improvements	-	-	-	-	-	-	-	-	89	351
352901	Stormwater - Catchment Management Plans Review And Update	-	-	-	83	85	-	-	-	-	98
353001	Stormwater - Ōmokoroa Comprehensive Consent Renewal	50	155	107	-	-	-	-	-	-	-

Where the money comes from

Please refer to 'Policies, Summaries & Statements' for the Revenue and Financing Policy for stormwater

Funding sources for 2021-22



How we will track progress





What we do	How we track progress	Result 2020	Target				
			2022	2023	2024	2025-27	2028-31
We use an integrated catchment based management approach to provide a stormwater network that minimises risks of flooding events.	Key Performance Measure The number of times per annum flooding occurs outside identified flood-prone urban areas during a one-in-50 year or less storm event.	○	≤3	≤3	≤3	≤3	≤3
	Key Resident Measure Level of resident satisfaction with the stormwater network.	62%	≥65%	≥65%	≥65%	≥65%	≥65%
	The number of flooding events that occur within the Western Bay of Plenty District. For each flooding event (district-wide), the number of habitable floors affected (expressed per 1000 properties connected to Council's stormwater system).	○	≤30 (3%) per event	≤30 (3%) per event	≤30 (3%) per event	≤30 (3%) per event	≤30 (3%) per event
	For a one-in-ten year flooding event, the number of habitable floors affected. (Expressed per 1000 properties connected to Council's stormwater system).	Per event	Per event	Per event	Per event	Per event	Per event
	<ul style="list-style-type: none"> • Waihi Beach • Katikati • Ōmokoroa • Te Duke • Maketu 	○	○	○	○	○	○
We use an integrated catchment based management approach to provide a stormwater network that avoids impacts on water quality.	Compliance with Council's resource consents for discharge from our stormwater system, measured by the number of:						
	• Abatement notices	○	○	○	○	○	○
	• Infringement notices	○	○	○	○	○	○
	• Enforcement orders and	○	○	○	○	○	○
	• Convictions	○	○	○	○	○	○
Received by Council in relation to those resource consents.							

What we do	How we track progress	Result 2020	Target				
			2022	2023	2024	2025-27	2028-31
We will carry out compliance and monitoring activities in a balance way to ensure best practice.	Percentage complete of Council's annual audit programme.	New	80%	80%	80%	80%	80%
	Number of awareness / education initiatives on best practice delivered.	New	≥3	≥3	≥3	≥3	≥3
We will be responsive to customer's stormwater issues.	The median response to attend a flooding event, measured from the time that Council receives the notification to the time that service personnel reach the site.	0 minutes	≤120 minutes	≤120 minutes	≤120 minutes	≤120 minutes	≤120 minutes
	<ul style="list-style-type: none"> Urgent 		≤60 mins	≤60 mins	≤60 mins	≤60 mins	≤60 mins
	<ul style="list-style-type: none"> Non urgent 	≤24 hours	≤24 hours	≤24 hours	≤24 hours	≤24 hours	
	The number of complaints received by Council about the performance of its stormwater system, expressed per 1000 properties connected to the Councils stormwater system.	0.17	≤30	≤30	≤30	≤30	≤30

Key assumptions

Assumption	Description	Risks
Land coverage imperviousness	Estimates of land coverage imperviousness are made based on the recommendations in the New Zealand Building Code Handbook.	<p>Significant differences between forecast population and household growth and actual out-turns would result in Council failing to provide appropriate and cost-effective levels of service to communities.</p> <p>Over-estimating the speed of growth could increase Councils debt if infrastructure development was undertaken in anticipation of growth that did not eventuate.</p>
Rainfall intensity values	Rainfall intensity values are generated from actual rainfall data. Climate change factors are accounted for in accordance with best practice.	If the rainfall intensity values increase significantly then a greater percentage of the stormwater infrastructure will be under-sized. As a result the levels of service may not be achieved and potentially the investment in stormwater infrastructure may need to increase.
Sea level changes	Sea level rise values are factored into stormwater modelling, in accordance with best practice.	If sea level rise varies from those estimated, changes in system and funding requirements may occur as a result.
Stormwater asset cost estimates	Asset valuations have been calculated using data obtained from the Rawlinsons Publication. This publication contains average rates from contractors throughout New Zealand.	If asset valuations vary from those calculated changes in funding requirements will occur as a result.
Stormwater asset economic life	The estimates of economic life of stormwater assets are based on recommendations in the International Infrastructure Management Manual.	If the estimated economic life of assets is inaccurate estimates of renewal expenditure will be inaccurate and funding requirements may change as a result.

Significant effects of providing this activity

Wellbeing	Positive	Negative	How are we addressing these effects
 <p>Social</p>	<ul style="list-style-type: none"> The stormwater network reduces the risk of damage from flooding to individual properties. The stormwater network provides a safe living environment for the whole community. 	<ul style="list-style-type: none"> Disruption during the implementation of works. Individuals can affect the stormwater network and neighbouring properties by altering natural flowpaths. Flooding can affect public health and safety. Stormwater can cause public health issues through the bacterial contamination of beaches. 	<ul style="list-style-type: none"> Continue to advise landowners of potentially flood-prone areas. Monitor new developments to ensure natural flowpaths are maintained.
 <p>Cultural</p>	<ul style="list-style-type: none"> The stormwater network can help in protecting sites of cultural and historical significance from erosion and flooding. Acknowledges the significance of the receiving waters and the need to improve the mauri of water bodies, which improves health and wellbeing. 	<ul style="list-style-type: none"> Contamination of the receiving environment is unacceptable to Tangata Whenua. 	<ul style="list-style-type: none"> Continuing to better identify sites of cultural significance. Continue to monitor discharges to comply with the consent conditions set by the Bay of Plenty Regional Council.
 <p>Environmental</p>	<ul style="list-style-type: none"> The stormwater network reduces the potential for damage and erosion to property, essential utilities and transport infrastructure. The stormwater network can help prevent other contaminants from reaching sensitive environments. 	<ul style="list-style-type: none"> Stream degradation through erosion by inadequately controlled discharges. Barriers for fish, contamination from sediment and pollutants. Beach erosion from stormwater outlets. Transfer of contaminants such as silt, nutrients, toxic substances. 	<ul style="list-style-type: none"> Continue to monitor discharges to comply with the consent conditions set by the Bay of Plenty Regional Council.
 <p>Economic</p>	<ul style="list-style-type: none"> The stormwater network reduces the potential for damage and erosion to property, essential utilities and transport infrastructure. Efficiencies are available through integrating stormwater activities with others such as land use, transportation and industrial development. 	<ul style="list-style-type: none"> The cost of maintaining the stormwater network to ensure it is free from blockages before high rainfall events. Existing stormwater issues include costs associated with damage related to flooding, stream erosion and personal safety. 	<ul style="list-style-type: none"> Continue to promote value for money by integrating stormwater upgrades with other projects.



Waihi Beach stormwater pond