

STORMWATER



STORMWATER

OVERVIEW

Stormwater systems are built to protect buildings and property from the effects of flooding and coastal erosion. These systems include watercourses, open channels, swales and structures that channel stormwater to a final discharge point. Our systems include primary and secondary overland flow paths, stormwater detention and stormwater treatment.

There are legislative requirements regarding the quality and quantity of stormwater released and we must meet these statutory obligations. Under the Resource Management Act 1991 district councils must manage land use in a way that minimises environmental effects.

We continue to manage three broad stormwater management areas:

URBAN GROWTH AREAS

These are the main urban areas within our District that are 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 that have some stormwater infrastructure but it is generally of low capital value when compared to the infrastructure in urban growth nodes 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.

The Minden area has its own potential geotechnical challenges and specific District Plan rules surrounding the management of stormwater during subdivision and development are now in place to account for this. 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.

Over the ten year period of this Plan we propose to continue our stormwater modelling of both the urban growth areas and small settlements. Waihi Beach has been extensively modelled and Te Puke is soon to be completed. As a result of the work to date we are better able to identify floodable areas and at risk properties. This has enabled us to propose a programme of work over the 10 years to address flooding issues. We are aiming to protect 97% of existing urban growth nodes and small settlement properties from having a habitable floor flooding 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 and that communities will have to expect some surface flooding.

We propose to spend \$19,938,000 over the 10 year period of which \$12,080,000 is dedicated to additional works at Waihi Beach that will initially begin with works for 2 Mile Creek Bank Protection. This is because the Creek is an important element of the wider stormwater management approach for the northern Waihi Beach catchments. The rest of the money is proposed to be spent on projects across the District including stormwater modelling, capital upgrades and renewals. Funding for structure plan areas has been deferred to 2020 as growth remains subdued.

We are offering to waive building consent and resource consent fees as an incentive to any landowners who wants to undertake raising their habitable floor levels to cope with a 1:50 year rainfall event. It is the only method to give a 100% guarantee that the house will not flood in a 1:50 year event.

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

Demand for stormwater services is managed in accordance with our Development Code and corresponding levels of service. Levels of service are currently set to meet legislative requirements and are related to both the containment of water within the system under varying flood conditions and the quantity and quality of water released into the environment. To address this, our capital works programme for 2015-25 focuses on essential upgrades and maintenance to ensure compliance with the current levels of service.

URBAN		RURAL
Urban growth areas	Small settlements	Rural settlements
Katikati	Kauri Point	Little Waihi
Omokoroa	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	

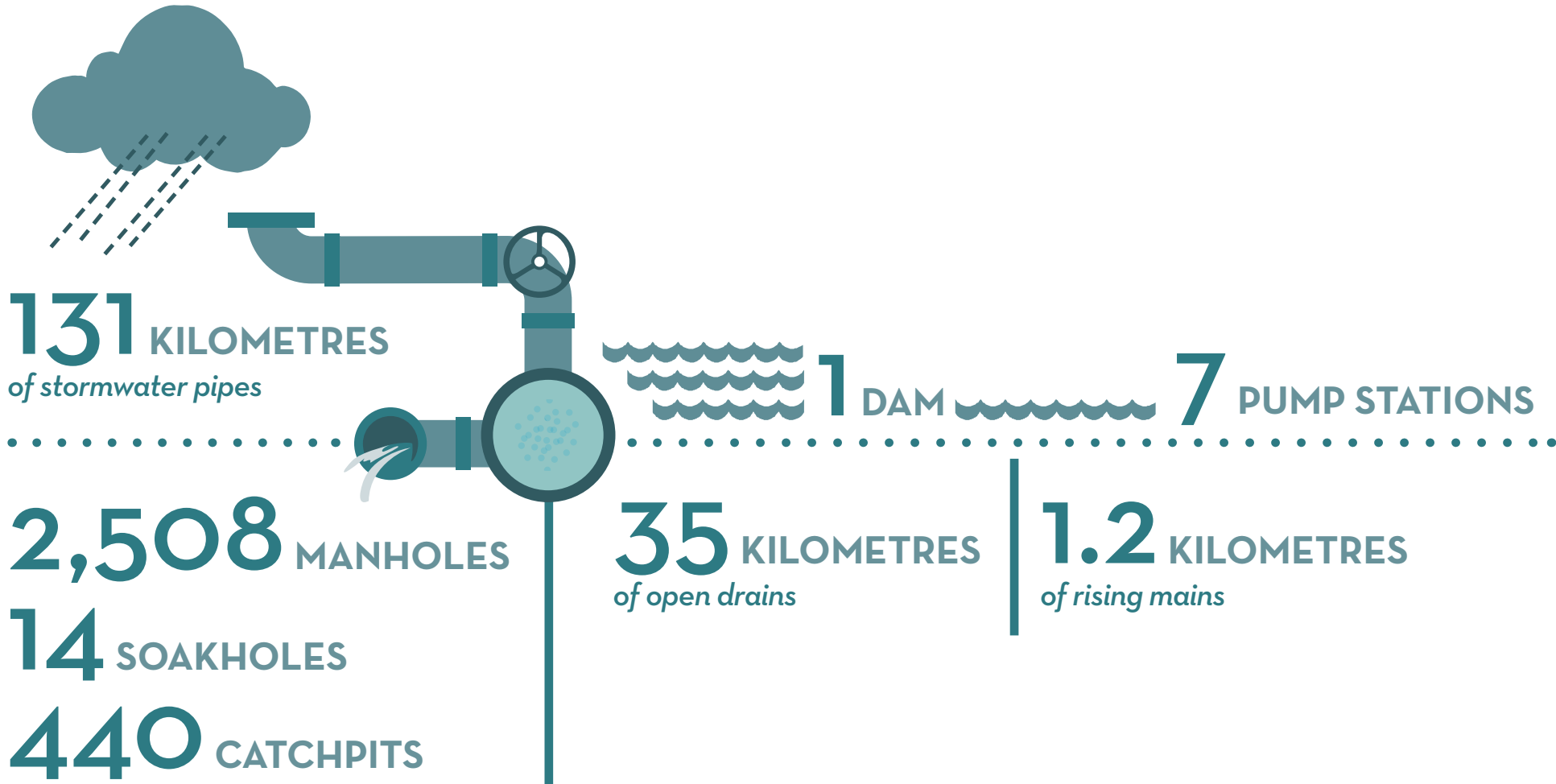
Under our Development Code and the resource consent process for subdivision developers are required to make adequate provision for the collection and disposal of stormwater runoff from hard surfaces created through the development process. This may result in vesting of new stormwater infrastructure in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

To date only those urban growth areas and small settlements who receive direct benefits from the stormwater network have paid a stormwater rate.

Council has recognised that the provision of stormwater reticulation has a public good benefit in terms of the community and environmental benefits. As a result it is proposed that 10% of stormwater funding will be provided by the General Rate levied on all rateable properties.

WHAT WE PROVIDE



WHY WE PROVIDE IT

OUR COMMUNITY OUTCOME

Stormwater approaches are innovative, affordable and sustainable and lead to a reduction in flooding events.

(Flooding events are defined as an overflow of stormwater from a stormwater system that enters a habitable floor).

OUR GOALS

To develop a catchment based flood risk management framework that recognises and allows for the nature and behaviour of surface water systems to improve community resilience from potential flooding; by ensuring that:

- There is a localised reduction of the risk of flooding events in existing floodable areas.
- There is no increase in flooding event risk to existing development from new development or land use change.
- Urban development is avoided in flood-prone areas unless mitigation measures can be provided that do not affect the capacity / effective functioning of existing downstream stormwater systems.
- Communities are engaged and informed about various approaches to stormwater management and their views are sought and taken into account.
- Compliance and monitoring activities are carried out.
- Communities are engaged and informed about various approaches to coastal erosion management and their views are sought and taken into account.

HOW WE WILL ACHIEVE OUR COMMUNITY OUTCOME

GOAL	OUR APPROACH	OUR ROLE
<p>To develop a catchment based flood risk management framework that recognises and allows for the nature and behaviour of surface water systems to improve community resilience from potential flooding; by ensuring that:</p> <p>There is a localised reduction of the risk of flooding events in existing floodable areas.</p> <p>There is no increase in flooding event risk to existing development from new development or land use change.</p>	<ul style="list-style-type: none"> • Take a whole of catchment approach to managing development and land use change, recognise and understand the nature and behaviour of surface water systems within catchments and allow for the natural processes of those systems. • Recognise the importance of making local flood risk management decisions within a catchment context, and take into account cumulative effects. • Recognise the effects of climate change on surface water systems and potential increases in flood risk and undertake appropriate adaptation measures. 	<p>Lead/Partner</p> <p>Lead/Partner</p> <p>Lead/Partner</p>

GOAL	OUR APPROACH	OUR ROLE
<p>Urban development is avoided in flood-prone areas unless mitigation measures can be provided that do not affect the capacity / effective functioning of existing downstream stormwater systems.</p>	<ul style="list-style-type: none"> • Consider all practicable options to manage flood risk, including structural and non-structural opportunities. • Ensure avoidance, mitigation and response management options are sustainable and affordable. <p>Recognise flood risk management in the broader context of sustainable management by:</p> <ul style="list-style-type: none"> • Encouraging new subdivision, use and development (including infill and intensification of existing development opportunity) within areas that do not have a potential flood risk or which do not increase a potential flood risk within a catchment. • Ensuring all development avoids flood-prone and coastal protection areas or mitigates the hazard through acceptable design solutions. 	<p>Lead/Partner</p> <p>Lead</p> <p>Lead</p>
<p>Communities are engaged and informed about various approaches to stormwater management and their views are sought and taken into account.</p>	<ul style="list-style-type: none"> • Roles and responsibilities amongst individuals, communities, councils and central government are clearly stated. • Engage communities and stakeholders in: <ul style="list-style-type: none"> • Understanding surface water systems and the flood risks associated with these. • Actively managing the flood risks associated within surface water systems including long-term risks and residual risks. • Enhancing their individual responsibility in managing personal risk. 	<p>Advocate</p> <p>Advocate/ Partner</p>
<p>Compliance and monitoring activities are carried out.</p>	<ul style="list-style-type: none"> • Quantify water quality issues by monitoring the effect of stormwater discharges on receiving environments and remedy as appropriate. • Undertake contaminant loading studies, including those associated with roading stormwater systems. • Explore the use of incentives to encourage run-off containment on sites. 	<p>Lead / Partner</p> <p>Research Monitoring</p> <p>Lead / Research/ Monitoring</p>
<p>Coastal Erosion Protection</p> <p>Communities are engaged and informed about various approaches to coastal erosion management and their views are sought and taken into account.</p>	<ul style="list-style-type: none"> • Roles and responsibilities amongst individuals, communities, councils and central government are clearly stated. • Engage communities and stakeholders in: <ul style="list-style-type: none"> • Understanding costal process and the erosion risks associated with these. • Actively managing the erosion risks associated with the open coast including long-term risks and residual risks. • Enhancing their individual responsibility in managing risk to coastal properties. 	<p>Advocate</p> <p>Advocate / Parter</p>

WHAT WE ARE PLANNING TO DO

All information from 2017 - 2025 includes an adjustment for inflation.

PROJECT NUMBER	PROJECT NAME	\$'000									
		2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
226305	Waihi Beach - Open Drains	100	104	-	-	-	-	-	-	-	-
226312	Structure Plan Athenree catchment 3c	-	-	-	-	-	-	-	191	-	-
226313	Structure Plan Athenree catchment 6b	-	-	-	-	-	-	-	-	26	-
226332	Waihi Beach Pump Station Renewals	35	36	19	48	34	18	43	48	79	48
226352	Waihi Beach 2 Mile Creek East Bank	480	-	-	-	-	-	-	-	-	-
226353	Waihi Beach 2 Mile Creek West Bank	50	52	2,352	-	-	-	-	-	-	-
226354	Waihi Beach The Esplanade Pipe & Swale Drain	-	208	-	-	-	-	-	-	-	-
226355	Waihi Beach 1 Mile Creek Improved Flow Path	-	-	-	607	-	-	-	-	-	-
226356	Waihi Beach Diversion of Maranui Flood Water	-	-	-	-	-	-	-	1,398	-	-
226357	Waihi Beach Upper Catchment Attenuation/ Darley Drain	-	-	-	-	-	1,888	-	-	-	-
226358	Waihi Beach 2 Mile Creek Upper Catchment Attenuation	-	-	-	-	-	-	4,160	-	-	-
226359	Waihi Beach Broadlands Block - Upgrade Drains	-	-	-	-	114	-	-	-	-	-
226360	Waihi Beach Edinburgh Street Pipe Upgrade	-	-	-	-	-	-	-	-	396	-
226361	Waihi Beach Pio Shores Stormwater Upgrade	-	-	-	-	855	-	-	-	-	-
226362	Waihi Beach Otto Road Pipe Upgrade	-	-	-	-	-	-	-	-	-	688
226363	Waihi Beach Otto Road New Pumping System	-	-	-	-	-	-	-	-	-	688
226364	Waihi Beach Earth Dam	-	-	-	772	684	-	-	-	-	-
226413	Katikati Upgrades Highfield Drive	-	-	-	-	251	-	-	-	-	-

PROJECT NUMBER	PROJECT NAME	\$'000									
		2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
226420	Katikati upgrades Belmont Rise, Grosvenor Place	-	-	-	-	-	-	-	-	337	-
226421	Katikati upgrades Francis Drive	-	-	-	-	-	-	-	-	-	179
226515	Omokoroa Upgrades Hamurana Rd, Owen Place	-	-	-	276	68	-	-	-	-	-
226523	Omokoroa Upgrade Vivian Drive	-	-	-	-	120	-	-	-	-	-
226524	Omokoroa Stormwater Renewals	-	47	-	-	-	-	-	-	-	-
226525	Omokoroa Stormwater Upgrades, Omokoroa Road	-	-	-	386	-	-	-	-	-	-
226602	Te Puke Area 3 Structure Plan	-	-	-	-	-	2,081	-	-	-	-
226620	Stormwater Relating to Subdivision	-	-	-	-	-	-	-	826	858	-
226626	Te Puke Upgrades Bayley Place, Clydesburn Avenue, Washer Place	150	-	-	-	-	-	-	-	-	-
226633	Te Puke Upgrades Lee St, Harris Street	-	-	-	-	353	106	-	-	-	-
226635	Te Puke Upgrades Noel Bowyer Park, Fairview Place, Brown Terrace	30	-	64	-	-	-	-	-	-	-
226636	Te Puke Upgrades Princess Street, Saunders Place	-	-	-	-	325	-	-	-	-	-
226638	Te Puke Upgrades Seddon Street, Raymond, Dunlop, Bishoprick	-	-	-	-	-	-	336	-	-	-
226648	Te Puke Open Drain Safety Improvements	-	156	160	-	-	-	-	-	-	-
226651	Te Puke Upgrades Oxford Street/Boucher Avenue	-	-	-	-	-	-	-	-	984	-
226652	Te Puke Stormwater - King Street Outfall	-	-	-	-	-	-	385	-	-	-

PROJECT NUMBER	PROJECT NAME	\$'000									
		2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
226653	Te Puke Upgrade Cooney Place	-	36	-	-	-	-	-	-	-	-
226654	Te Puke Stormwater Upgrades Beatty Avenue	-	-	171	-	-	-	-	-	-	-
226655	Te Puke upgrades Galway Place	-	-	-	-	-	-	-	57	-	-
226656	Te Puke Stormwater network upgrades Queen Street	-	-	-	298	-	-	-	-	-	-
265413	Maketu Upper Catchment Attenuation	-	-	-	-	-	142	-	-	-	-
311302	Stormwater Asset Validation	10	10	11	11	11	12	12	13	13	14
316601	Katikati Structure Plan Utilities Stormwater	-	-	-	-	554	-	-	997	-	-
317201	Omokoroa Structure Plan Utilities Stormwater	100	208	406	-	-	-	-	1,058	-	-
319601	Stormwater Network Upgrade	150	363	246	342	370	-	-	-	-	-
331501	Waihi Beach Otawhiwhi Marae stormwater drain	400	-	-	-	-	-	-	-	-	-
331601	Te Puke Ohineangaanga Stream upper catchment screen device	-	363	-	-	-	-	-	-	-	-
340001	Growth Communities Stormwater Infrastructure rehabilitation	15	16	16	17	17	18	18	19	20	21
340101	District Wide Stormwater Modelling	120	93	107	83	-	-	-	-	-	-
340201	Asset Management Waihi Land Drainage District	20	-	-	22	-	-	24	-	-	28
301808	Upgrade Pukehina Beach Road Stage 4	-	-	-	-	-	-	-	-	-	303
301829	Upgrades Pukehina Beach Road Stage 2, Stage 3	-	-	-	-	-	-	-	-	469	-
301830	Upgrades Pukehina Beach Road Stage 5, Stage 6	-	-	-	-	-	-	-	-	-	261
301831	Upgrades Pukehina Beach Road Stage 7, Stage 8	-	-	-	-	-	-	-	-	-	48

PROJECT NUMBER	PROJECT NAME	\$'000									
		2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
332614	Small Communities Stormwater Infrastructure rehabilitation	8	-	5	-	-	-	-	-	-	-
332615	Tanners Point Upgrades Tanners Point Road	-	-	-	-	-	94	-	-	-	-
332616	Tanners Point Upgrades Tanners Point Road East	-	-	-	-	-	-	-	-	-	131
332618	Tanners Point Upgrades Tanners Point Road West	-	-	-	-	91	-	-	-	-	-
332621	Kauri Point Upgrades	-	-	-	-	142	324	-	-	-	-
332630	Pukehina Stormwater Contribution to Waihi Land Drainage Society	3	3	3	3	3	4	4	4	4	4
332636	Paengaroa Restoration (Black Road Outlet)	-	-	128	-	-	-	-	-	-	-
332401	Minden Stormwater Investigation and Remedial Work	50	-	-	110	114	-	-	-	-	-

HOW OUR PLANS HAVE CHANGED

The timing and costs of some of our projects have been updated since we adopted our 2012 - 2022 Long Term Plan (LTP).

To see how our plans have changed click [here](#) for the complete list of the projects/programmes that have been revised or alternatively visit our website www.westernbay.govt.nz.

MAJOR PROJECTS PLANNED FOR 2015 - 2025

DISTRICT WIDE

- \$2.08 million worth of stormwater modelling and asset validation is planned to assess flooding issues in urban growth areas and small communities.

WAIHI BEACH

- The first three years of the works programme has a strong focus on resolving bank erosion issues at 2 Mile Creek.
- \$1.6 million has been set aside in 2021 for upper catchment attenuation/Darley Drain works \$343,800 is to be spent on renewals of Waihi Beach pump stations.

KATIKATI

- Stormwater upgrades are planned for Highfield Drive, Belmont Rise, Grosvenor Place and Francis Drive.

OMOKOROA

- Stormwater upgrades are planned for Hamurana Road, Owen Place, Vivian Drive and Omokoroa Road.

TE PUKE

- A total of \$3.42 million is planned to be spent in Te Puke on stormwater upgrades.

SMALL SETTLEMENTS

- Upgrades are planned over the life of the plan for Pukehina, Tanners Point and Kauri Point.

All information from 2017 - 2025 includes an adjustment for inflation.

HOW WE WILL TRACK PROGRESS TOWARDS OUR GOALS

OUTCOME

Stormwater approaches are innovative, affordable and sustainable and lead to a reduction in flooding events.

Recent changes to the Local Government Act 2002 has resulted in the introduction of standard performance measures for stormwater to be reported by all local authorities. These mandatory measures have been integrated into Council's performance framework and are shown in italics.

Flooding event has been defined as an overflow of stormwater from a territorial authority's stormwater system that enters a habitable floor (Non-Financial Performance Measures Rules 2013).

GOAL	WE'LL KNOW WE'RE MEETING OUR GOAL IF	ACTUAL	TARGET				
		2014	2016	2017	2018	2019 - 21	2022 - 25
<p>To develop a catchment based flood risk management framework that recognises and allows for the nature and behaviour of surface water systems to improve community resilience from potential flooding; by ensuring that:</p> <p>There is a localised reduction of risk in existing floodable areas.</p> <p>There is no increase in flood risk to existing development from new development or land use change.</p> <p>Urban development is avoided in flood-prone areas unless mitigation measures can be provided that do not affect the capacity / effective functioning of existing downstream stormwater systems.</p> <p>Communities are engaged and informed about various approaches to stormwater management and their views are sought and taken into account.</p> <p>Compliance and monitoring activities are carried out.</p>	<p>The number of times flooding occurs outside identified flood-prone urban areas during a one-in-50 year or less storm event.</p> <p>This performance measure is assessed on a per event basis i.e. flooding in more than one location in a single event will be counted as 1.</p>	3 EVENTS	≤3 EVENTS	≤3 EVENTS	≤3 EVENTS	≤3 EVENTS	≤3 EVENTS
	<p>Resident satisfaction level with stormwater systems, as monitored by the Annual Residents Survey; percentage of residents who are "very satisfied" or "satisfied".</p>	63%	≥65%	≥65%	≥65%	≥65%	≥65%

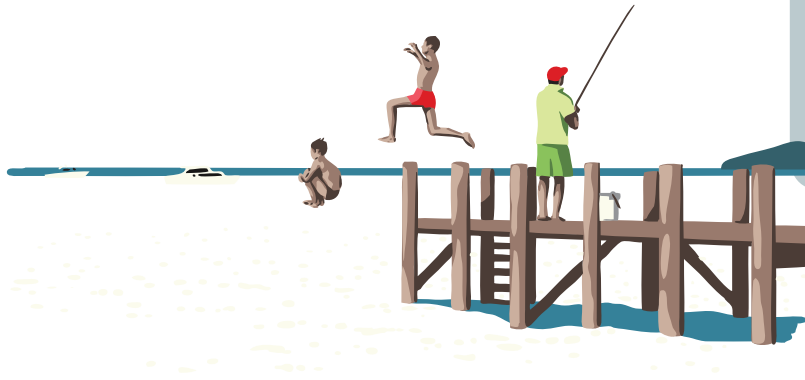
HOW WE WILL TRACK PROGRESS - LEVELS OF SERVICE

WHAT WE PROVIDE	WE'LL KNOW WE'RE MEETING THE SERVICE IF	ACTUAL	TARGET				
		2014	2016	2017	2018	2019 - 21	2022 - 25
We will provide stormwater assets to minimise risks of flooding events	Based on the number of flooding events that occur within the District. For each flooding event (district wide), the number of habitable floors affected (expressed per 1000 properties connected to Council's stormwater system).	NEW	≤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
	Waihi Beach	NEW	≤60 (6%)	≤60 (6%)	≤60 (6%)	≤50 (5%)	≤40 (4%)
	Katikati	NEW	≤10 (1%)	≤10 (1%)	≤10 (1%)	≤10 (1%)	≤10 (1%)
	Omokoroa	NEW	≤10 (1%)	≤10 (1%)	≤10 (1%)	≤10 (1%)	≤10 (1%)
	Te Puke	NEW	≤30 (3%)	≤30 (3%)	≤30 (3%)	≤30 (3%)	≤20 (2%)
	Maketu	NEW	≤30 (3%)	≤30 (3%)	≤30 (3%)	≤30 (3%)	≤30 (3%)
Compliance with Council's resource consents for discharge from our stormwater system, measured by the number of:	NEW						
• Abatement notices		0	0	0	0	0	
• Infringement notices		0	0	0	0	0	
• Enforcement orders, and		0	0	0	0	0	
• Convictions		0	0	0	0	0	
received by Council in relation to those resource consents							

WHAT WE PROVIDE	WE'LL KNOW WE'RE MEETING THE SERVICE IF	ACTUAL	TARGET				
		2014	2016	2017	2018	2019 - 21	2022 - 25
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.	NEW	≤120 minutes	≤120 minutes	≤120 minutes	≤120 minutes	≤120 minutes
	The number of complaints received by Council about the performance of its stormwater system, expressed per 1000 properties connected to the Councils stormwater system.	NEW	≤30	≤30	≤30	≤30	≤30

DID YOU KNOW..

- Stormwater is managed through 'stormwater networks' which are made up of pipes and open channels linked together to drain stormwater to streams, rivers and the ocean.
- The total value of the stormwater system throughout the entire Western Bay of Plenty District (not including roading related stormwater assets) in 2014 was \$78 million.
- Stormwater systems are in place, throughout all areas of our District, ranging in size from small pipes leading to small roadside swales (in rural areas), to networks of large pipes and culverts (in urban areas).



KEY ASSUMPTIONS

ASSUMPTION	DESCRIPTION	RISK
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. Factors have been applied to account for climate change up to the year 2030 as directed by the Bay of Plenty Regional Council. These factors are based on the Ministry for the Environment Climate Change recommendations.	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	The sea level values used in relation to stormwater assets are based on the best estimate up to the year 2100, making allowances for high tide and storm surge as per the requirements of the Bay of Plenty Regional Council. The requirements are outlined in the Hydrological and Hydraulic Guidelines.	If sea levels vary 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

WELL-BEING	POSITIVE	NEGATIVE	HOW WE ARE ADDRESSING THESE EFFECTS
Social	<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.
Environmental	<ul style="list-style-type: none"> + The stormwater network can reduce the amount of sediment reaching sensitive receiving environments, such as wetlands, estuaries and harbours, after high rainfall events. + The stormwater network can help prevent other contaminants from reaching sensitive. 	<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 here. 	<ul style="list-style-type: none"> • Continue to monitor discharges to comply with the consent conditions set by the Bay of Plenty Regional Council.
Economic	<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.
Cultural	<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 well-being. 	<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.

SUMMARY FINANCIAL FORECAST

STORMWATER

All information from 2017-2025 includes an annual adjustment for inflation

FOR THE YEARS ENDED 30 JUNE	ACTUAL	BUDGET	FORECAST									
	\$'000	\$'000	\$'000									
	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
Analysis of expenditure by activity												
Stormwater	3,918	3,852	4,082	4,065	4,059	4,245	4,314	4,467	4,655	4,851	5,024	5,062
Waihi Beach coastal protection	164	183	150	150	150	153	153	152	154	153	152	153
Total operating expenditure	4,083	4,035	4,232	4,216	4,209	4,399	4,466	4,620	4,809	5,004	5,177	5,215
Analysis of expenditure by class												
Direct costs	634	618	752	750	783	821	859	901	949	999	1,051	1,110
Overhead costs	549	587	585	601	619	630	643	664	680	697	724	741
Interest	1,763	1,748	1,728	1,671	1,587	1,674	1,648	1,675	1,728	1,780	1,802	1,715
Depreciation	1,138	1,082	1,167	1,193	1,219	1,275	1,317	1,380	1,452	1,529	1,599	1,648
Total operating expenditure	4,083	4,035	4,232	4,216	4,209	4,399	4,466	4,620	4,809	5,004	5,177	5,215
Revenue												
Targeted rates	3,080	2,743	3,696	3,867	4,045	4,230	4,453	4,686	4,929	5,091	5,254	5,425
User fees	1	-	-	-	-	-	-	-	-	-	-	-
Financial contributions	191	293	733	731	751	1,082	1,122	1,157	1,204	1,236	1,303	1,358
Vested assets	418	300	300	311	321	331	342	354	367	381	396	413
Interest	-	-	-	-	-	-	-	-	-	-	-	-
Other income	2	-	160	-	-	-	-	-	-	-	-	-
Total revenue	3,692	3,336	4,890	4,910	5,117	5,643	5,917	6,197	6,500	6,708	6,953	7,196
Net cost of service - surplus/(deficit)	(391)	(699)	657	694	908	1,244	1,451	1,577	1,692	1,703	1,776	1,981
Capital expenditure	859	1,160	1,708	1,682	3,675	2,962	4,093	4,671	4,967	4,594	3,169	2,394
Vested assets	418	300	300	311	321	331	342	354	367	381	396	413
Total other funding required	(1,667)	2,159	(1,351)	(1,299)	(3,087)	(2,048)	(2,985)	(3,448)	(3,642)	(3,272)	(1,789)	(826)
Other funding provided by												
General rate	197	54	1,134	1,509	1,576	1,319	1,391	1,471	1,560	1,643	1,732	1,831
Debt increase/(decrease)	(334)	(41)	103	20	2,354	997	2,002	3,122	3,217	3,304	(36)	282
Reserves and future surpluses	1,804	2,146	114	(230)	(842)	(267)	(409)	(1,146)	(1,134)	(1,675)	94	(1,288)
Total other funding	1,667	2,159	1,351	1,299	3,087	2,048	2,985	3,448	3,642	3,272	1,789	826

COUNCIL'S ADDITIONAL ASSET REQUIREMENTS

STORMWATER

All information from 2017-2025 includes an annual adjustment for inflation

CAPITAL EXPENDITURE	\$'000									
	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
To meet additional demand (capacity for future residents - growth)	100	208	406	-	554	2,223	-	3,072	885	-
To improve the level of service	640	716	396	105	-	-	24	-	469	640
To replace existing assets (renewals)	968	758	2,873	2,857	3,539	2,448	4,943	1,522	1,816	1,754
Total capital expenditure	1,708	1,682	3,675	2,962	4,093	4,671	4,967	4,594	3,169	2,394

WHAT WE'RE DOING TO IMPROVE THE LEVELS OF SERVICE

This is not a complete list of the projects/programmes we have planned for this group of activities. The full list is available on our website www.westernbay.govt.nz

- **319601- DISTRICT STORMWATER NETWORK UPGRADE**

To ensure compliance with resource consents

- **331501- WAIHI BEACH-OTAWHIWHI MARAE STORMWATER DRAIN**

The area is unsuitable for ground soakage

WHERE THE MONEY COMES FROM

STORMWATER

COMMUNITY OUTCOME

Stormwater approaches are innovative, affordable and sustainable and lead to a reduction in flooding events.

(Flooding events are defined as an overflow of stormwater from a stormwater system that enters a habitable floor).

GOAL

To develop a catchment based flood risk management framework that recognises and allows for the nature and behaviour of surface water systems to improve community resilience from potential flooding; by ensuring that:

- There is a localised reduction of the risk of flooding events in existing floodable areas.
- There is no increase in flooding event risk to existing development from new development or land use change.
- Urban development is avoided in flood-prone areas unless mitigation measures can be provided that do not affect the capacity / effective functioning of existing downstream stormwater systems.
- Communities are engaged and informed about various approaches to stormwater management and their views are sought and taken into account.
- Compliance and monitoring activities are carried out.
- Communities are engaged and informed about various approaches to coastal erosion management and their views are sought and taken into account.

DISCUSSION / RATIONALE

Stormwater - General

Education aimed at raising community awareness of stormwater issues and good practice benefits the District as a whole.

Some communities will be required to implement higher standards of stormwater treatment as a result of having sensitive receiving environments, for example wetlands, estuaries and harbours. While these communities could be seen as the cause of the adverse environmental effects, protection of these environments also benefits the whole District.

Individual property owners within a community cannot exclude themselves from benefiting from the existence of a stormwater system and we could not exclude them from receiving these benefits if they refused to pay for the service.

Different communities may benefit from different levels of service for stormwater. This could be as a result of topographical conditions, for example steep slopes, unstable land or density of settlement, i.e. urban versus rural densities of development.

Individuals benefit from the delivery of this service through the reduction in risk of damage due to flooding and/or erosion on their properties. Properties that benefit from stormwater assets can be identified.

Individuals also benefit from this service as it reduces the risk of flooding to commercial and business centres.

Developers benefit from the existence of excess capacity in the stormwater system. In some cases stormwater assets and levels of service have to be increased to enable development to proceed.

FUNDING APPROACH

Capital expenditure

Financed initially by loans and serviced from:

- Financial contributions, if expenditure is to accommodate growth and/or to pay for the consumption of excess capacity in the stormwater supply system. Includes the related loan servicing (holding) costs
- For capital expenditure to service existing ratepayers. 90% Uniform Annual Charges over the defined area of benefit which has a reticulated stormwater system. 10% from general rates.

Areas of benefit

- Urban Growth nodes - Katikati, Omokoroa, Te Puke, Waihi Beach (including Pios Beach, Athenree)
- Small settlements - Kauri Point, Maketu/Little Waihi, Paengaroa, Pukehina, Tanners Point and Te Puna
- Minden

Operational, maintenance and renewals expenditure including financing costs that relate to existing ratepayers

90% Uniform Annual Charges over the defined area of benefit which has a reticulated stormwater system. 10% from General Rates.

STORMWATER

DISCUSSION / RATIONALE

Stormwater - General (cont).

Not all ratepayers are connected to a stormwater system, primarily our District's towns and small settlements are connected but not our rural residents.

Some actions increase expenditure on this service:

- Modifications to overland flow paths through minor earthworks, construction of retaining walls or fences.
- Growth of trees or shrubs in overland flow paths.
- Additional paving, hard surfaces or buildings may increase the volume of stormwater run-off and reduce its quality/effectiveness.
- Inappropriate disposal of hazardous substances and contaminants into the stormwater system increases the requirements for stormwater prior to discharge.

Expected useful lives of stormwater assets:

- Reticulated stormwater >60 years.
- Open drains 30 to 50 years.

Some drains and reticulation systems have surplus capacity which can be utilized by later developments.

If this activity were funded using a rate in the dollar a disproportionate burden of the funding would fall on high value properties, especially those in rural areas where there is limited stormwater infrastructure benefit received.

Waihi Beach coastal protection project

This policy applies to the project that comprises:

- Dune enhancement - 412m dune enhancement (shoreline at northern end of Shaw Road)
- Rock revetment - 1047m rock revetment (along shoreline at Shaw Road, Ayr Street and the Loop) and 1.2m wide timber access ways
- Three Mile Creek works - 146m dune enhancement (shoreline off Glen Isla Place) and creek training at Three Mile Creek using training groynes
- Maintenance and monitoring during the life of the works.

The policy does not apply to:

- Coastal erosion works in other locations, intended for the purpose of protecting Council esplanade reserves, strategic harbour walkways or public access ways. Such structures are included in the District Reserves Activity
- Additional works at Two Mile Creek, e.g. Creek Training.

FUNDING APPROACH

Areas of benefit

- Growth Communities - Katikati, Omokoroa, Te Puke, Waihi Beach (including Pios Beach, Athenree)
- Small settlements - Kauri Point, Maketu/Little Waihi, Paengaroa, Pukehina, Tanners Point and Te Puna
- Minden

General Rates may be used to service interest payments and growth related debt in terms of low growth.

Waihi Beach coastal protection project

Loans will be used to finance capital expenditure, excluding renewals, over a 25 year period.

These loans will be serviced from the following revenue sources:

General rate reserves

To finance up to 5% of the capital cost of the project.

Balance of Waihi Beach Drainage Reserve and Waihi Beach Erosion Reserve

Lump sums transferred to finance the capital cost of the project. (\$272,000).

Rates collected for coastal protection works (2003/04) - Lump sum transferred to finance the capital cost of the project. (\$245,474).

Uniform Annual General Charge (UAGC)

To fund the revenue required for capital and all operating, maintenance and finance costs of the Three Mile Creek training groynes.

STORMWATER

DISCUSSION / RATIONALE

Waihi Beach coastal protection project (cont)

If coastal erosion went uncontrolled and damage to property occurred, the image of Waihi Beach could be adversely affected.

If protection works were not constructed other costs may be imposed on the community such as litigation in the event of property loss or the need for other solutions to the erosion problem.

Walkways along the top of the rock revetment will provide public access.

Two Council reserves (Elizabeth Street Reserve and Brewer Park) will be protected through these works. These reserves comprise two out of 85 properties in the primary hazard area. The works reduce the risk of erosion to esplanade reserves but the works themselves will reduce the amenity value of the esplanade reserves.

In areas where beach scraping and dune care is undertaken there is expected to be some improved beach amenity value and environmental enhancement.

Two Mile Creek and Three Mile Creek provide waterways into which stormwater discharges flow from both rural and urban catchments. The eroding effects of additional stormwater from increased urban development are not considered significant in terms of intensity, when compared to the overall quantity of stormwater from existing urban and rural catchments. Three Mile Creek receives treated discharges from the Waihi Beach wastewater treatment plant.

The Waihi Beach community therefore benefits from the existence of Two Mile Creek and Three Mile Creek but there is no direct stormwater or wastewater benefit from the erosion mitigation works.

Individual properties that receive benefits from the reduced risk of property damage resulting from coastal erosion can be identified and can be charged for the service.

The life of the protection works is 25 years. The works are designed to protect buildings and property that have a long life.

FUNDING APPROACH

Uniform Annual Charge for the Waihi Beach Ward

To fund 25% of the remaining revenue requirement for capital and all operating, maintenance and financing cost of the rock revetment works. To fund 30% of the remaining revenue requirement for capital and all operating, maintenance and financing cost of the coastal protection works for the dune enhancement work (northern end and off Glen Isla Place).

Area of benefit targeted rates

Uniform Annual Charge for 83 beachfront properties directly benefiting from the works

or

- *Lump-sum contributions* equivalent to loan and interest portion of revenue requirement over 25 years; and*
- *Area of benefit targeted rates to meet the revenue required for maintenance and operations for those properties that elect to take up the lump-sum payment option.*

To fund 75% of the remaining revenue requirement for capital and all operating, maintenance and financing costs of the rock revetment (53 properties).

To fund 70% of the remaining revenue requirement for capital and all operating, maintenance and financing costs of the coastal protection works for the dune enhancement, northern end (23 properties) and off Glen Isla Place (7 properties).

** a lump-sum payment option is offered each year to the properties benefiting from the rock revetment.*

STORMWATER

DISCUSSION / RATIONALE

Two Mile Creek

A public benefit has been identified as there is no practicable alternative to using Two Mile Creek to convey the stormwater that collects in this area to the ocean.

FUNDING APPROACH

Council conveys stormwater collected above Two Mile Creek to the ocean through Two Mile Creek. The increase in dwellings and changes to rainfall patterns have led to the banks of the creek eroding. It has been identified that there is a private benefit from the proposed capital works as the mitigation of erosion protects those properties from further loss of land or damage.

Capital Works

Above Dillon Street bridge

- Capital works to be funded 90% from growth UAC and 10% from general rates.
Any land required to achieve the preferred solution will be vested by the respective land owners.

Below Dillon Street bridge

- 25% to be funded by the properties who receive a direct benefit as a result of the works.
- The balance will be funded 90% from growth UAC and 10% from general rates.

Funding sources - Stormwater 2015/16

