Te Rautaki Hanganga
2024-2027

Infrastructure Strategy 2024-2027

Adopted 10 July 2024

HAWKES BAY REGIONAL COUNCIL
TE KAUNIHERA Ā-ROHE O TE MATAU-A-MĀUI

Contents

1. Executive summary

Hawke's Bay Regional Council manages significant infrastructure assets on behalf of the community. This includes flood and drainage schemes, publicly accessible regional parks and shared cycling and walking trails, and forestry blocks.

We set out how we intend to manage those assets in our Infrastructure Strategy. We normally outline a plan for 10 years in the document, with forecasts out to 30 years, and review every three years as part of our organisation-wide long-term plan process.

Cyclone Gabrielle has meant we had to pivot and focus on recovery and building resilience for future events.

The cyclone had a devasting impact on the Hawke's Bay region. The intense rainfall in a short period was more than our river management network was designed and built to manage. The 2024 NIWA (National Institute of Water and Atmospheric Research) data – see **hbrc.govt.nz, search: #niwamodelling** – showed the cyclone was the largest flood on record at 13 of the 20 river monitoring sites it analysed. Nearly 6km of stopbanks across our 248km stopbank network was breached and a further 28km weakened.

We had to be agile and set responses up very quickly. We formed Rapid Rebuild teams that worked around the clock to urgently repair stopbanks. They completed an extraordinary amount of work that would typically take years to design, plan, and execute. Repairs to restore the stopbanks back to pre-cyclone levels of service were completed in populated areas within four months, and 99% of repairs to the network were completed by the end of October 2023. We have spent around $50 million on infrastructure repairs since the cyclone and have forecast a further $20 million.

We were the lead agency to undertake risk assessment for the land categorisation process developed by the Government. This process identified areas that were safe for people to continue living (known as Category 1), areas that needed improved flood mitigation to be deemed safe (known as Category 2), and areas that weren't safe due to an intolerable risk to life (known as Category 3).

The focus of our 2024 Infrastructure Strategy is to deliver a nearly $250 million Flood Resilience Programme. This is part of the region's cost-share recovery package negotiated with the other councils in Hawke's Bay and the Government.

The programme is a massive undertaking - it is the biggest construction programme for our organisation - and we are committed to doing this work as quickly as we can.

Most of the programme is to work with communities to build new flood protection schemes in Category 2 areas.

Prior to Cyclone Gabrielle we had already started significant work to accelerate flood resilience in our stopbanks. Work is continuing on our Heretaunga Plains Flood Control Scheme upgrade programme which is made possible with substantial Government Covid-recovery co-funding.

Under this programme we completed the upgrade of the stopbank in Taradale in December 2022. This helped protect the Taradale community from Cyclone Gabrielle flooding.

The impact of Cyclone Gabrielle, a changing climate with more storms expected for Hawke's Bay, and difficult financial times for our communities has challenged some of the basic assumptions of the flooding and drainage schemes we operate. We also know our planning cannot remove the risk of our flood infrastructure being overwhelmed by extreme weather events.

We need to reimagine our long-term approach to managing infrastructure and this will require healthy challenging debate on levels of service, affordability, and risk with our communities.

This Infrastructure Strategy outlines some of the key concepts forming our long-term approach. This includes looking at options, such as developing alternative flowpaths or floodpaths, and nature-based solutions, such as making room for rivers.

The process for the development of this Infrastructure Strategy has been dynamic and continues to evolve as additional review and design information becomes available, and funding sources are scoped and agreed.

2. Introduction

This is our fourth Infrastructure Strategy since legislation was introduced in 2014 through the Local Government Act 2002 (LGA 2002) that required local authorities to develop an Infrastructure Strategy as part of their long-term plan.

Local authorities need to prepare and adopt a strategy that covers 10 years in detail and forecasts to at least 30 years. Strategies are formally reviewed every three years as part of councils' long-term plan process.

Cyclone Gabrielle, the significant severe weather event in February 2023, has required a change in approach to this Infrastructure Strategy to deal specifically with supporting our regional cyclone recovery programme.

In September 2023, an Order in Council under the Severe Weather Emergency Recovery Act 2023 (SWERLA) was made to replace the 10-year 2024 Long Term Plan with a three-year unaudited plan and changed some disclosure requirements for the councils most impacted by the severe weather events in the North Island in January and February 2023. This recognises that impacted councils will find it hard to forecast beyond three years with enough certainty to meet the standards required under normal long-term plan requirements. It was also to enable severe weather impacted councils to focus on cyclone recovery.

The 2024 Infrastructure Strategy has been developed within this temporary legislation to:

- provide a one-off, three-year, recovery-focused strategy prioritising Cyclone Recovery, rather than the regular 10-year strategy with forecasts to 30 years
- provide a description of the major infrastructure capital projects that we are proposing or implementing, including those to facilitate recovery
- outline the likely funding options and the impact of these options for rates and debt
- outline any significant infrastructure issues, the principal options for managing those, and the implications of those options.

We continue to work hard on Government-supported recovery programmes to complete the initial recovery work and related technical reviews, and ramp up the significant longer-term recovery programme. There is known uncertainty in this process, which reflects the complex situation Cyclone Gabrielle recovery has generated in planning and sustaining our community-wide response.

We have committed to deliver a nearly $250 million Flood Resilience Programme (see *7.2: Recovery and building resilience*). Most of the planned work is to build flood protection schemes in areas deemed unsafe to live in without improved flood mitigation (known as Category 2 areas).

The proposed programme is a massive undertaking – it is the biggest construction programme for our organisation – and we are committed to doing this work as quickly as we can.

3. Long-term vision

The impact of Cyclone Gabrielle, a changing climate with more storms expected for Hawke's Bay, and difficult financial times for our communities has challenged some of the basic assumptions of the flooding and drainage schemes we operate.

We need to reimagine our long-term approach to managing infrastructure and this will require healthy challenging debate on levels of service, affordability, and risk with our communities.

Some key concepts that will form part of our vision and approach are outlined below.

Building resilience to better manage over-design events

Our planning cannot remove the risk of our stopbanks being overtopped by extreme weather events, however an approach to develop options for alternative flow paths/floodways, detention features, and stopbanks with greater overtopping resilience could limit the impact.

This thinking forms part of the current flood scheme reviews and options under consideration for future scheme development.

Nature-based solutions

We are undertaking work to assess the feasibility of nature-based solutions in reducing flood peaks and providing additional layers of resilience for flooding events. These mitigations may include wetland

restoration/creation, soil and land management, detainment bunds, ponds, making room for rivers, and forest/understorey restoration/creation. This Ministry for the Environment funded feasibility work is due in June 2025.

Making room for rivers

This is about giving rivers more space to manage high flows. The thinking is that rivers with more room can cope better with bigger river flow events. Other benefits of this approach are that it can provide more habitat for native species, and make these areas more accessible for people to explore and play.

This concept will require a long-term approach and represents a significant change to be incorporated into future river management in our 30-year planning cycle. There will be challenging conversations to work through as options are explored with our communities.

Integrated planning

Cyclone Gabrielle has reiterated the importance of integrated planning and flood mitigation decisions. Recommendations from scheme reviews based on new flood probabilities after Cyclone Gabrielle will challenge existing scheme levels of service and identify new scheme requirements. These will require option development and investment planning to agree a sustainable way forward with our communities.

4. Strategic alignment

The Infrastructure Strategy is a key component of the Regional Council's long-term planning. It is a high-level strategic document that is aligned with and supports other key Council strategies and plans to help us achieve our strategic direction.

Name of Council strategy/plan	How the Infrastructure Strategy supports or aligns with the strategy/plan
Strategic Plan 2020-2025	Supports the organisation's overarching strategic goals and focus, being: **Our vision:** We want a healthy environment, and a resilient and prosperous community. **Our focus:** We prioritise: • Water quality, safety, and climate-resilient security • Climate-smart and sustainable land use • Healthy, functioning, and climate-resilient biodiversity • Sustainable and climate-resilient services and infrastructure.
Three-Year Plan 2024-2027	Prepared and adopted as part of the long-term plan process. The assets and activities managed within the Infrastructure Strategy primarily contribute to the following community outcomes: • A resilient community • A prosperous community.
Financial Strategy	The Infrastructure Strategy and Financial Strategy are co-dependent and are prepared in alignment for the development of the Long Term Plan, noting our new plan is for a three-year period. The Infrastructure Strategy brings the infrastructure programme detail together with the related Financial Strategy for the period.
Asset Management Policy	Provides a high-level synopsis of organisational direction and asset management focus and expectation. This Policy informs the Infrastructure Strategy.
Asset Management Plans (AMPs)	Operational plans that outline the scheme level approach to achieve indicated levels of service, compliance, and provide for the whole-of-life management of the asset. This information feeds into the Infrastructure Strategy, and the Infrastructure Strategy also helps to inform the AMPs.
Infrastructure Programme Management Office (IPMO)	The IPMO sits within the Asset Management Group. The IPMO oversaw the initial response to the cyclone and is being expanded further to manage the delivery of the Flood Resilience Programme.

5. What infrastructure do we manage?

As a regional council, we are required to plan for flood protection and control works in our Infrastructure Strategy. Our Strategy is broader and includes the following assets we manage on behalf of the community:

- river flood control and land drainage schemes
- regional parks
- cycling/walking trails
- forestry.

In the term of this Infrastructure Strategy, the assets we manage will change. We are constructing new flood schemes through our Flood Resilience Programme. We may transfer Napier urban drains to Napier City Council for more consistent asset management. This is subject to a detailed business case process (underway) and councils' decisions.

We may take on managing existing and building new coastal hazard mitigation structures if the Regional Council agrees to implement the Clifton to Tangoio Coastal Hazards Strategy 2120. Consultation on the strategy and options on how to fund its implementation is being planned for 2024-25.

If Regional Council agrees to implement the coastal hazards strategy, Hastings District Council (HDC) and Napier City Council (NCC) may transfer the ownership of existing coastal assets that manage coastal hazard risks to the Regional Council.

Taking on these existing assets means we would be responsible for ongoing maintenance, monitoring, any debt, and collecting associated rates. Actioning the Strategy would include beach renourishment and building new assets. Significant capital and operational funding would be needed. New structures would also need resource consents.

5.1 River Flood Control and Land Drainage schemes

Hawke's Bay has 24 river catchments comprising seven major rivers - the Wairoa, Mohaka, Esk, Tūtaekurī, Ngaruroro, Tukituki, and Waipawa - and numerous smaller rivers and streams. Between the mountain ranges and the coast lie flat river plains (Heretaunga, Ruataniwha, and Wairoa) containing rich alluvial soils which provide the basis for the important Hawke's Bay rural and horticultural sectors.

Historically, where frequent flooding or poor drainage have been an issue for local landowners, Hawke's Bay Regional Council and its predecessor organisations have worked with landowners to establish flood control and/or drainage schemes, provided landowners have been willing to contribute to both the capital and ongoing operations and maintenance costs. This has included planting and biodiversity consideration and community feedback in scheme planning and consultation.

The primary purpose of flood control schemes is to help protect life, economic activity, and property by reducing flood risk following a major rainstorm event and/or reducing time taken to drain stormwater runoff from the land. Drainage schemes allow increased land productivity in the scheme area through a network of drains, structures, and pumps to enable water tables to be lowered to a level to support a wider range of productive economic activity. Changes in land use and community development continue to challenge scheme levels of service.

We administer 27 flood control and drainage schemes throughout the region (see Table 1). Our schemes are grouped into three scheme groupings – Heretaunga Plains Flood Control and Drainage Scheme, Upper Tukituki Scheme, and Small Schemes. The schemes include networks of stopbanks, river channels and edge protection, vegetation, drainage channels, culverts, pump stations, and hydraulic structures.

Schemes are designed to provide an agreed level of service; however, scheme and independent reviews following Cyclone Gabrielle may make recommendations on amending levels of service or operation that require changes or upgrades of assets or greater design resilience. Our asset recovery and related insurance recovery processes continue to be a major activity for our Regional Assets and Finance teams.

Table 1: HBRC scheme groupings

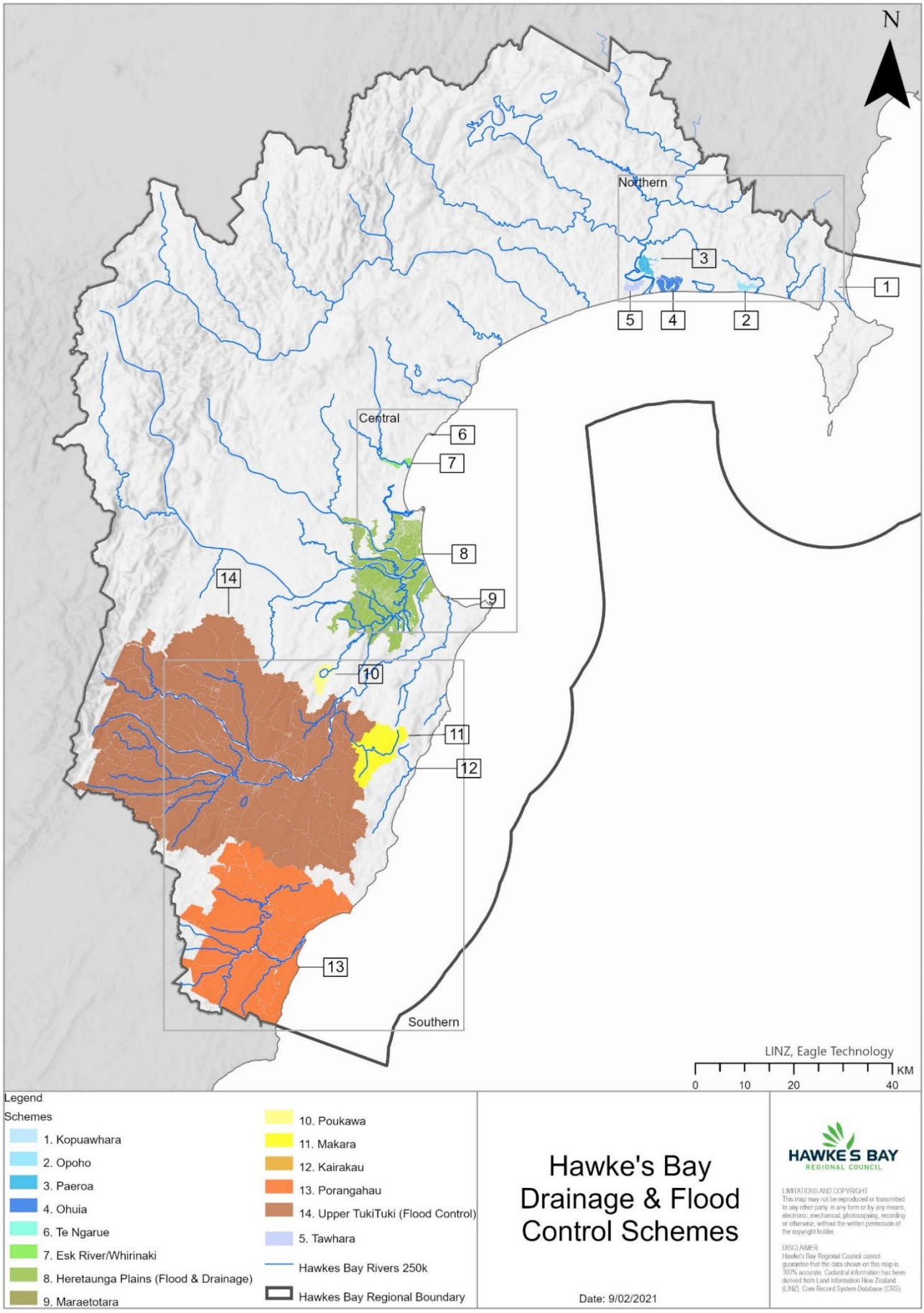
Infrastructure scheme grouping	Asset description	Quantity	Replacement value (June 2023 no Cyclone Impairment)	Critical* assets
Heretaunga Plains Flood Control and Drainage Scheme (HPFCS) Note: The HPFCS scheme has a river (flood control) and 9 drainage sub-schemes.	Stopbanks	157km	$159M	Yes
	River channels and edge protection	129km		
	Drainage channels	447km		
	Pumping stations	18		
	Structures and culverts	217		
Upper Tukituki Flood Control Scheme (UTTFCS)	Stopbanks	76km	$42M	Yes
	River channels and edge protection	206km		
	Drainage channels	12km		
	Structures and culverts	44		
Small Schemes Note: There are 12 small schemes. These are a collection of small flood control, drainage and channel management schemes.	Stopbanks	15km	$20M	Yes (Specific Asset Classes)
	River channels and edge protection	31km		
	Drainage channels	85km		
	Pumping stations	4		
	Structures and culverts	37		

**Critical asset in terms of scheme operation, not the NEMA (National Emergency Management Agency) definition of eligibility for essential infrastructure repair or rebuild.*

Changes to our scheme funding were adopted in the 2024 Revenue and Financing Policy review. This means the Flood Protection and Drainage Scheme rates will be set based on the following:

- All flood schemes (Heretaunga Plains Flood Control Scheme, Upper Tukituki Flood Control Scheme, Upper Makara Streams Catchment Scheme, and Maraetotara Flood Maintenance Scheme) are rated at 30% general rate and 70% targeted rate based on capital value.
- All drainage schemes (except for Raupare Enhancement and Opoho which remain based on area and fixed charge respectively) are rated at 10% general rate and 90% targeted rate.
- River and stream maintenance is now funded through the general rate.

Figure 1: HBRC schemes map



5.2 Regional parks

Our regional parks are often located around waterways and have multi-purpose functions. We undertake work, including riparian planting, to assist with flood control, soil conservation, and water quality enhancement. A key focus is also on protecting and enhancing biodiversity so we can have healthy, functioning ecosystems. We also have regional parks to protect and enhance cultural and historic values and provide recreational opportunities.

We own and manage four regional parks - Pākōwhai, Pekapeka, Tūtira, and Waitangi. We co-own and co-manage Hawea Historical Park near Whakatu with the Hawea Historical Park Whenua Topu Trust. We also own Whittle Reserve (84 hectares) in Puketitiri. Waipātiki Holiday Park is a Regional Council land asset which is managed independently.

Following Cyclone Gabrielle, the focus is on recovery. As a result, we have cut operational costs. We have reduced our annual maintenance budget of $1 million for our regional parks by 20% each year for the next three years. We also deferred contributing towards development costs for collaborative projects to develop regional parks at Ahuriri and Wairoa for the next three years.

We are focused on developing the $70 million flood mitigation scheme for Wairoa and we will continue to pay towards project management costs for the Ahuriri Regional Park project. A joint committee of the Regional Council, Napier City Council, and Mana Ahuriri Trust is leading the project.

Table 2: Regional park assets

Infrastructure asset	Asset description	Land area (hectares)	Replacement value (at June 2023)	Critical asset
Regional parks	Pākōwhai	19ha	$5.3M	No
	Pekapeka	98ha		
	Tūtira	464ha		
	Waitangi	300ha		
	Hawea Historical Park	9.15ha		

5.3 Cycling/walking trails

We manage approximately 105km of shared cycling/walking trails which have been constructed along stopbanks and berm areas the Regional Council owns or administers. Some of these form part of the Hawke's Bay Trails, which is one of the 23 Ngā Haerenga Great Rides of New Zealand. We are the lead agency for the Hawke's Bay Trails Great Ride managing the whole network (177km) on behalf of all asset owners.

We also maintain some shared cycling/walking trails for recreation use in Central Hawke's Bay – the Tukituki Trail. We have a 2021 Memorandum of Understanding (MOU) covering participation with Central Hawke's Bay District Council, Rotary River Pathway Trust, and Ruahine Adult Riders Club in the management of the Tukituki Trails in Central Hawke's Bay. This is independent from other cycleways we are involved with in the Heretaunga Plains. The MOU will see non-critical trail assets added to our asset register and will require ongoing maintenance in future years and a funding stream to cover the activity.

Cyclone Gabrielle had a major impact on the cycleway network due to stopbank damage and roading/trail slips or destroyed bridges.

Following consultation on our Three-Year Plan 2024-2027 Council decided to defer all new capital works on cycleways aside from $50,000 per year for safety improvements, and existing projects that are externally funded.

We are also actively engaged with recreational interest groups who are keen to use Regional Council land and river areas that we own.

Table 3: Cycleway assets

Infrastructure asset	Asset description	Length (kilometres)	Replacement value (at June 2023)	Critical asset
Cycleways	Trails form part of the HB Trails (200km)	105km	$3.1M	No

5.4 Forestry

The Regional Council owns and manages forests at Māhia, Tūtira Regional Park and nearby Waihapua, Waipawa, and Waipukurau. We also manage the Tangoio Soil Conservation Reserve, which is a Crown-owned forest area within the rohe of Maungaharuru-Tangitū hapū. The mix of forests includes over 50 forest tree species, including pinus radiata, cedars, cypresses, redwoods, eucalypts, mixed natives, and mānuka for honey.

Table 4: Forestry assets

Infrastructure asset	Asset description	Land area (hectares)	Fair value (at 30 June 2023)	Critical asset
Forestry on HBRC-owned land	Tūtira Regional Park	368.5ha (87.6ha planted)	$6.17M	No
	Waihapua	319ha (51.2ha planted)		No
	Waipukurau	119ha (78.3ha planted)		No
	Waipawa	78ha (51.2ha planted)		No
	Waipawa River (Walker Road)	19ha (18ha planted)		No
	Tūtira Mānuka Honey	95.5ha		No
	Māhia	54.8ha (36ha planted)		No
Forestry on HBRC-managed land	Tangoio Soil Conservation Reserve	550ha (309ha planted)	$5.23M (tree crop)	No

6. Main achievements since our last Infrastructure Strategy

The 2021 Infrastructure Strategy increased capital expenditure across 10 years, particularly in the first three years – a total of about $153 million. This was to cover infrastructure renewal and replacement, and major Government co-funded Covid recovery projects to upgrade river service levels in the Heretaunga Plains Flood Control Scheme and provide greater emphasis on gravel management in our rivers.

Status	Resilient River Communities programme
	We secured $19.2 million in co-funding in 2019 through Kānoa (the Government's Regional Economic Development & Investment Unit) to accelerate our flood resilience work. This programme includes four projects.
Completed 	***Taradale and Ngatarawa stopbanks upgrade (part of the Heretaunga Plains Flood Control Scheme Upgrade programme)*** Completed the stopbank upgrade in Taradale in December 2022 from a 1% to a 0.2% likelihood of flooding in any given year (or 1-in-500-year level of protection). This project helped protect the Taradale community from Cyclone Gabrielle flooding. Completed the stopbank upgrade in Ngatarawa in November 2023. This was also upgraded to a 1% to a 0.2% likelihood of flooding in any given year (or 1-in-500-year pre-cyclone level of protection).
Completed 	***Upper Tukituki Flood Control Scheme SH50/Waipawa erosion*** Undertook erosion control work on the Waipawa River, upstream of SH50, completed in August 2021. This included putting in akmons (large precast concrete blocks linked with steel cables) upstream of the bridge to deflect the flow of water back into the river.
Completed 	***River Parade Scour Protection, Wairoa*** Installed steel sheetpile wall to protect Wairoa River Bridge and Wairoa District Council roading from further erosion, completed in June 2022.
Ongoing 	***Heretaunga Plains Flood Control Scheme upgrade programme*** This includes geotechnical investigations and design work for Brookfields Lower, Raupare, Chesterhope, Pākōwhai Park and East Clive, undertaking erosion control work at Farndon Road.
Completed 	***Upper Tukituki Gravel Extraction Flood Control Scheme*** Three tranches of gravel extraction from the Upper Tukituki Scheme were completed removing 800,000m^3 of gravel at the Makaretu, Tukipo, and Waipawa rivers. We are continuing to extract gravel funded by savings achieved in the first three tranches.

Status	Regional Water Security programme
	We received $30.6 million in co-funding from the Government's Provincial Growth Fund in 2020 to investigate water supply options aiming to ensure Hawke's Bay has long-term, climate-resilient, and secure supplies of freshwater for all. The programme supports the Kotahi Plan and involves four initiatives.
Completed 	***Regional Water Assessment*** Completed Hawke's Bay's first Regional Water Assessment. It was publicly released in June 2023. This report, the first of its kind in New Zealand, provides a regional stocktake of the region's freshwater system and provides valuable baseline data and analysis for how we manage water and make our region more resilient, both when we have too much of it, with flooding, and not enough, in droughts.
Ongoing 	***3D Aquifer Mapping project*** Processing of our 3D aquifer mapping aerial survey was completed and in July 2022 was made available to the public. This type of mapping was significant in that it gives us a view of our aquifers we've never had before and will help us improve the management of groundwater resources in the region. Ground water drilling was completed in 2022. Numerical groundwater modelling results are due in quarter 1 of 2024-25.
Ongoing 	***Managed Aquifer Recharge (MAR) pilot in Central Hawke's Bay*** Resource consent was granted in August 2023 and the detailed design phase started in 2023-24. The pilot aims to determine whether MAR is a viable water storage option and can contribute to water security in the area. The plan is to use excess flows from the Waipawa River in the wetter months to replenish the Ruataniwha aquifer and provide additional water supply in the drier seasons.
Ongoing 	***Community-scale water storage feasibility investigation for Heretaunga*** Work continues on potential sites and regional governance, ownership, and operating models.

Status	Regional parks
Ongoing 	Work to develop Ahuriri Regional Park got underway. A joint committee of the Regional Council, Napier City Council, and Mana Ahuriri is leading the project. We are continuing to contribute to project management costs but have deferred contributing towards development costs of the park until 2027-28, as consulted on in our Three-Year Plan 2024-2027.

Status	Hawke's Bay Trails
Ongoing 	In November 2022, Hawke's Bay Trails, a local collaboration led by Regional Council's Asset Management staff, celebrated its 10th anniversary since it opened as one of the Great Rides of the Ngā Haerenga New Zealand Cycle Trails. It was the busiest of all the Great Rides in the country for the year ending June 2021, with 426,760 journeys including walkers.

7. Cyclone Gabrielle

7.1 Impact on our infrastructure and our response

NIWA's (National Institute of Water and Atmospheric Research) analysis released in February 2024 underlined the extraordinary magnitude of Cyclone Gabrielle. Its data showed the cyclone was the largest flood event on record at 13 of the 20 river monitoring sites it analysed. A feature of the event was the very high rainfall intensity and short duration (less than 24 hours) of the rainfall, which was more than our river management network was designed and built to manage.

The cyclone had catastrophic impacts across the region's communities, and flood control and drainage networks from Wairoa through the Heretaunga Plains and across Central Hawke's Bay. Record river levels caused significant stopbank breaches and flooding of several drainage schemes adjacent to the Upper Tukituki, Ngaruroro, and Tūtaekurī rivers, and significant out of channel flows on the Esk and Wairoa rivers. This was on top of the region just having experienced its wettest six-month period on record.

Figure 2: Eskdale SH5/SH2 Intersection; Esk River in flood, Cyclone Gabrielle

Pre-Cyclone Gabrielle, NIWA's modelling puts the probability of a flood this size occurring in a given year, known as an Annual Recurrence Interval (ARI), as more than a one in 1,000-year event at some river sites.

When Cyclone Gabrielle hit all our flood stopbanks except two (Taradale and Whirinaki) were designed and built to a one in a 100-year standard, or a 1% likelihood of flooding in any given year. An upgrade of the Taradale stopbank completed in 2022 as part of our wider Heretaunga Plains Flood Control Scheme upgrade programme strengthened it to a one in 500-year level of protection (or a 0.2% likelihood of flooding in any given year). This substantially helped protect the Taradale community from Cyclone Gabrielle flooding and showed the value of our work and investment along with the Government (see *Figure 3*).

Figure 3: Taradale IRG upgraded stopbank, 14 February 2023

During Cyclone Gabrielle, a region-wide State of Emergency was declared, followed by a national State of Emergency for four weeks. Widespread infrastructure asset inspections and assessments were required by experienced engineers to determine the priority and immediate safety of the community. These were often completed in very challenging conditions during and in the weeks after the event. River management staff from other regional councils supported us through this phase for several weeks. We formed Rapid Repair teams that involved our staff, local contractors, and consultants working around the clock to repair stopbanks. It was a substantial achievement to restore essential river protection and drainage function for the 2023 winter period. Priority was given to stopbanks, drainage and pumpstations over less critical infrastructure assets in the rapid response phase. We have spent around $50 million on infrastructure repairs since the cyclone and have forecast a further $20 million.

Figure 4: Redcliffe Bridge at Taradale, Tūtaekurī River

Site & Site number	Flow estimate	ARI	
	(m^3/s)	Pre Gabrielle	Post Gabrielle
Tūtaekurī River at Puketapu 23032	4,800	980	400
Mangaone River at Rissington 23019	1393 1,610	>1,000 >1,000	400 550
Ngaruroro River at Fernhill 23102	5398 6,000	710 >1,000	400 480
Ngaruroro River at Whanawhana 23103	1,012	120	70
Waipawa River at RDS 23235	1,810	>1,000	120
Tukituki River at Tapairu Rd 23207	1,805	160	70
Tukituki River at Red Bridge 23201	4,320	80	60
Esk River at Waipunga Bridge 22802	2,175	220	180
Esk River at Berry Rd 22809	350	550	120
Wairoa River at Marumaru 21401	4,100	250	120
Waiau River at Ardkeen 21493	1,656	50	40
Waiau River at Otoi 21409	838	30	30
Hangaroa River at Doneraille Park 21437	2,070	420	220
Ruakituri River at Tauwharetoi 21432	998	50	40
Taurekaitai Stream at Wallingford 24325	659	60	50
Mangaorapa Stream at Mangaorapa Rd 24304	690	>1,000	110
Pōrangahau River at Saleyards 24301	1,590	>1,000	80
Tukipo River at SH50 (Punawai) 23220	561	170	90
Kopuawhara Stream at Railway Bridge 20101	176	4	4
Awanui Stream at Flume 1123148	38	50	30

Figure 5: Pre and post-Gabrielle Flood Average Return Interval (ARI), NIWA (February 2024)

Figure 5 shows the Cyclone Gabrielle site statistics for stations in the Regional Council catchments, and the estimated Annual Recurrence Interval (ARI) with and without the cyclone records included.

The shaded sites are locations where the uncertainty in the ARIs is especially high due to the size of the event and the shorter record lengths.

The extreme nature of the Gabrielle event has significantly revised the flood return interval for many stations we maintain. This has significance for design level of service planning. The full report can be found at **hbrc.govt.nz search: #niwamodelling**

The table below gives a summary of the impact on our flood control and drainage networks and our response.

Table 5: Summary of the impact on our flood control and drainage networks and our response

Cyclone impact on our infrastructure	Our response
• Approximately 5.6km of breaches in the 248km of stopbank networks across the region. • A further 28km of stopbanks weakened. • Three key pump stations were flooded – Pākōwhai, Mission, and Brookfields. • Provisioning of flood pumps and fuel for generators was a significant task for weeks as power was restored to the network. Electrical controls and pumps were compromised, and significant remediation and some full replacement required. • Significant volumes of silt and floating debris caused problems and blocked pumps, culverts, river berms, and drainage systems. • Widespread major damage to river channels, berms, and edge protection across the region. • Site access was compromised by the loss of major road bridges in the Heretaunga Plains Rivers and their tributaries. • Our telemetry network lost communication with over 100 rain and river level monitoring sites on Monday 13 February 2023. Some sites were destroyed and other impacted by the severity of river flows, communication, and power supply disruption. • Nearly 30% of the Hawke's Bay trail network was damaged and unable to be used due to stopbank damage and roading/trail slips or destroyed bridges.	• An assessment, investigation, and prioritisation process was developed to inspect and assess damage, and then prioritise for repair based on existing stopbank inspection criteria. • A Rapid Response programme was set up to repair breached stopbanks and drainage scheme damage. • Rapid Rebuild teams worked around the clock to urgently repair stopbanks. They completed an extraordinary amount of work that would typically take years to design, plan, and execute. Repairs to restore the stopbanks back to pre-cyclone levels of service were completed in populated areas within four months, and 99% of repairs to the network were completed in October 2023. The practical construction access and logistics were significant. • Pump station and drainage system repairs required work in very challenging silt ridden conditions for some months. Some drains and inlet areas had to be cleared multiple times as silt continued to be washed into drainage systems. • A review of the telemetry system performance in the cyclone was commissioned. Restoration of these sites and building in redundancy for communications is progressing. • A Silt Taskforce was established and managed based on central government funding in conjunction with other local authorities. Waste and debris management has been a significant compliance and logistical issue in the last 12 months. • Basic community and staff wellbeing was a significant initial priority as our staff were impacted directly and indirectly by cyclone related situations in the months following the event. This continues over 12 months after the event. • A complex infrastructure insurance claim process involving commercial providers and NEMA will take significant time to close out.

7.2 Recovery and building resilience

Following Cyclone Gabrielle, we were the lead agency to undertake risk assessment for the land categorisation framework and process developed by the Government. The framework, the Future of Severely Affected Land (FOSAL), was used to identify areas that were safe for people to continue living (known as Category 1), areas that needed improved flood mitigation to be deemed safe (known as Category 2), and areas that weren't safe due to an intolerable risk to life (known as Category 3).

Regional Council committed to a $247.65 million Flood Resilience Programme with most of the programme building flood protection schemes in Category 2 areas. The programme is part of the region's cost-share recovery package negotiated with the other councils in Hawke's Bay and the Government. We have agreed to fund $44.15 million of the work.

The focus of this Infrastructure Strategy is to deliver this programme (see *8: Key work planned* for more details). This will be a massive undertaking. We are committed to do the work as quickly as we can. We need to keep the community engaged and aware of the wide range of decisions that need to be made. This is a challenging task for us and our communities and needs to be progressed at pace to meet stakeholder expectations.

We are building capacity in our staff and are expanding our Infrastructure Programme Management Office to coordinate the work, supported by industry experts, and assisted by the Regional Recovery Agency. We also worked with the Government to speed up the usually lengthy resource consent process. This means we will be able to start work sooner.

New flood resilience schemes are planned for these locations:

- Wairoa
- Whirinaki
- parts of Heretaunga (Pākōwhai, Waiohiki, and Ohiti Road/Omāhu)
- Pōrangahau.

The programme also includes additional work to already repaired stopbanks, upgrading pumpstations and replacing and upgrading telemetry that were flooded, and accelerating scheme reviews.

7.3 Reviews

A range of reviews were initiated after Cyclone Gabrielle which are outlined below. The process for the development of this Infrastructure Strategy has been dynamic and continues to evolve as additional review and design information becomes available and funding sources are scoped and agreed.

Reviews	Who is undertaking review	Status of review
Government Inquiry into the Response to the North Island Severe Weather Events	Panel: Sir Jerry Mateparae GNZM QSO KstJ (Chair), John Ombler CNZM QSO, Rangimarie Hunia Ngati Whatua, and Julie Greene	Released by the Minister for Emergency Management and Recovery April 2024
Independent Review of Hawke's Bay Civil Defence Emergency Management	Mike Bush, Gary Knowles, Paul Viaanderen, and Ngahiwi Tomoana	Released March 2024
HB Independent Flood Review	Dr Phil Mitchell, Bernadette Arapere, and Kyle Christensen	Due July 2024
Heretaunga Plains Flood Control Scheme	Tonkin & Taylor	Draft review report due July 2024 and will form the basis for further community engagement
Upper Tukituki Flood Control Scheme (Review includes gravel)	Tonkin & Taylor	Draft review report due July 2024 and will form the basis for further community engagement
NIWA	NIWA Storm Review	Released February 2024
Review of HBRC Telemetry System	Graeme Horrell	Released May 2023

8. Key work planned

The 10-year capital and renewal forecast

The funding and investment forecast in Figure 6 is a snapshot of known activities. These are described in further detail in the supporting table on the following page.

This forecast shows additional recovery and level of service investment is expected following the Flood Resilience Programme completion in Year 2027-28. As post-cyclone reviews are complete and funding and priority of recommendations are planned, agreed, and prioritised with stakeholders the investment from 2028-29 to 2033-34 is expected to be greater than the current documented forecast.

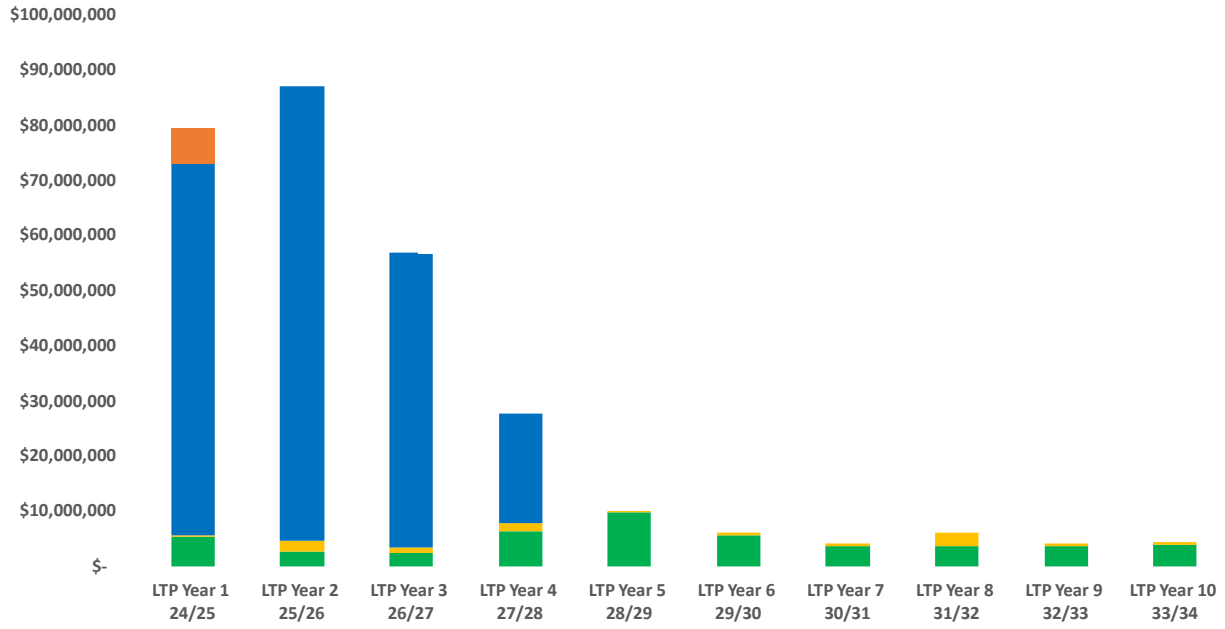


Figure 6: 10-Year Capital & Renewal Forecast

Legend:

- IRG – Capital – New (Infrastructure Reference Group programmes run through Crown Infrastructure Partners)
- NIWE/FRP – Capital - New (North Island Weather Event/Flood Resilience Programme related to Cyclone Gabrielle recovery)
- BAU – Capital - Renewals (Business as usual)
- BAU - Capital - New (Business as usual)

Capital projects and other initiatives

The scope and funding of forecast work in this Three-Year Plan 2024-27 continues to develop. This is a dynamic process and it is likely to evolve reflecting the complicated environment we are working through with stakeholders.

Capital projects & other initiatives	Description	Timeline	Likely funding options	Implications of options for rates and debt
NIWE Flood Resilience Programme				
Land Categorisation 2 flood mitigation interventions	New flood resilience schemes are planned for these locations: • Wairoa • Whirinaki • parts of Heretaunga (Pākōwhai, Waiohiki, and Ohiti Road/Omāhu) • Pōrangahau	Years 1-4 2024-28	Recovery funding - total cost is $164.1M Funding split: Govt $139.2M / HBRC $24.9M	HBRC's contribution of $24.9M for the initial capital build will be loan funded and recovered through rates. Where affordability is an issue particularly for schemes with a small footprint, general rate funding is being applied.
Drainage and pumpstation repairs/upgrades	Upgrade of Mission (Awatoto), Brookfields, and Pākōwhai pumpstations. In conjunction with scheme reviews to confirm Level of Service and resilience requirements.	Years 1-4 2024-28	Recovery funding-cost allocation is $30M Funding split: Govt $22.5M / HBRC $7.5M	HBRC contribution of $7.5M will be loan funded and recovered through the general rate.
Stopbank Rapid Repair additional work	Provisions for additional work to meet new flood Levels of Service from technical review. The LoS specification for the stopbanks from the review may change the design requirements.	Years 1-3 2024-27	Recovery funding total cost is $30M Funding split: Govt $22.5M / HBRC $7.5M	HBRC contribution of $7.5M will be loan funded and recovered through the general rate.
Scheme reviews – to configure and build resilience	Undertake scheme LoS reviews: Scheme reviews and post-cyclone independent reviews may generate additional recommendations. *Programme:* • Heretaunga Flood Control Scheme – draft review report due July 2024 • Upper Tukituki Flood Control Scheme – draft review report due July 2024 • Nuhaka / Northern Minor • Makara • Karamū/Raupare/Twyford • Esk • Haumoana/Te Awanga/Maraetotara • Clive/Muddy Creek • Paeroa • Puninga • Te Ngarue • Poukawa • Kopuawhara	Years 1-2 2024-26	Recovery funding cost allocation $3M Funding split: Govt $2.25M / HBRC $0.75M	HBRC contribution of $0.75M will be loan funded and recovered through the general rate.

Capital projects & other initiatives	Description	Timeline	Likely funding options	Implications of options for rates and debt
Telemetry – network repairs and upgrade	Replace and upgrade of telemetry based on reviews.	Years 1-2 2024-26	$5M Funding split: Govt $3.75M / HBRC $1.25M	HBRC contribution of $1.25M will be loan funded and recovered through the general rate. Managed and delivered under Integrated Catchment Management (ICM).
Flood Protection & Control Works				
Resilient River Communities programme (IRG) This is co-funded by Kānoa (Govt's Regional Economic Development & Investment Unit)	Increase Level of Service from current 1% likelihood of flooding in any given year (or a 1 in 100-year protection) with some spill protection. Continuing initiatives through to detailed design until we have confirmation of the variation with Kānoa (projects will reflect Cyclone Gabrielle Level of Service revisions).	Year 1 2024-25	Work to date has been co-funded with Kānoa giving 64% and HBRC 36%.	Reviews may recommend additional LoS requirements and related additional cost impacts. If Kānoa funding or recovery funding packages are not available, the burden would fall on schemes. Currently IRG is loan funded and payment falls to the schemes.
Pump station fish passage	Installation of fish passages, when practical, across stream barriers at pump stations. New pump stations (Mission (Awatoto), Brookfields and Pākōwhai) will have fish passage availability factored in.	No funded programme	No dedicated budget. Incorporated in new pump station works where possible.	Would require rating support if implemented.
TANK Plan Change – capital works	Plan Change 9 (known as TANK) focuses on water quality, quantity, flows and allocation in the Tūtaekurī, Ahuriri, Ngaruroro, and Karamū (TANK) catchments and the Heretaunga aquifer system. The Plan Change is currently under appeal, however, holds legal weight and must be given affect to now. It requires consideration be given to riparian land management, riparian planting, land drainage and flood control, regional biosecurity and biodiversity, stormwater control, sedimentation, and water use and efficiency. Consideration will need to be given to how this will be achieved within scheme areas.	Ongoing	Likely to require substantial and ongoing funding.	Any works would require rating support.
Clive River – land for dredging	Dredging Te Awa o Mokotūāraro (Clive River) and discharge of silt to land necessary for consent.	Deferred	Will require increased funding to discharge to land (vs coastal).	Targeted rate, building up a reserve.

Capital projects & other initiatives	Description	Timeline	Likely funding options	Implications of options for rates and debt
River and Lagoon Opening	Installation of water level (telemetry) and some image capture devices (CCTV) for better monitoring of river and lagoon openings. Enhanced Levels of Service for two river openings (Esk and Mahanga).	Years 1-3 2024-27	Increase due to LoS, costs, rising sea level and public expectations. Esk and Mahanga river openings to be managed within existing resources.	General rate funded.
Gravel Management - processing and new access to rivers	Have built new access to the location where gravel needs to be managed for flood protection with Kānoa support. Global consents commenced 2022. New monitoring and compliance conditions required including consultation with tāngata whenua and the wider community.	Ongoing activity	Increased monitoring and compliance costs.	Potential adjustment to the gravel levies for ongoing consent costs. New access is internally loan funded and recovered through fees and charges.
Upper Tukituki-Gravel extraction	Further tranches of gravel extraction. Tranche three extraction was completed removing 800,000m^3 of gravel at the Makaretu, Tukipo, and Waipawa rivers.	Year 1 2024-25	This work is co-funded with the Govt 64% and HBRC 36%.	HBRC portion is loan funded and recovered through the scheme rate.
Opoho – new pump station	Options subject to scheme reviews.	Year 1 2024-25	Scheme reviews underway. If any new capital is needed post-review options include internal loan funding or rating.	Post-review discussion on the scheme's ongoing management and operation. Any renewal capital is funded through the depreciation reserve.
Ohuia – Whakakī new pump station	Options subject to scheme reviews.	Year 1 2024-25		
Transfer of Napier/Meeanee Drainage Assets to Napier City Council (NCC) as part of S17a Review	Initial Morrison Low review completed prior to the cyclone following Cyclone Fili event Dec 2020. HBRC business case under development. NCC has done some due diligence on potential transfer assets.	Pending business case report and mutual council agreement	Asset transfer would have a reduction in HBRC drainage asset book value.	Reduced rating revenue matched by reduced expenditure, subject to decision by councils.
Karamū Enhancement Scheme	Enhancement of the Karamū Stream priority has been reduced due to priority given to other scheme areas. No new capital spending.		Any additional capital would be either reserve or rate funded.	
Karamū Weed Harvesting Equipment	Equipment to be purchased to improve the weed boating programme.	Years 1-3 2024-27	Capital $300K over 3 years.	Rate funded.

Capital projects & other initiatives	Description	Timeline	Likely funding options	Implications of options for rates and debt
Public Use of Rivers	Use of land within the flood protection scheme for recreational activity and for planting or productive activity.	Ongoing review activity	No capital in the 2024-26 period.	General rate funded if required.
Public Use of Rivers review (Upper Tukituki and Heretaunga Plains)	Review the Public Use of Rivers activity to form a strategy. Components of the review are underway with ongoing information/tasks required to form the strategy.	Ongoing	No capital in the 2024-26 period.	Rate funded if required.
Regional Water Security Programme				
Managed Aquifer Recharge (MAR)	Pilot in Central Hawke's Bay to determine whether MAR is a viable water storage option in the area.	Years 1-4 2024-28	Co-funded with Kānoa.	Internally loan funded. Repayments are funded by the long-term investment reserve.
Heretaunga Water Storage	Community-scale water storage feasibility investigation for Heretaunga.	Work continues on potential sites and regional governance, ownership, and operating models.		
Open Spaces				
Hawea Historical Park - Stage 3 **Waitangi Regional Park - Stage 3**	Deferring all planned capital works for regional parks for the next three years.			No funding allocated for three years.
Wairoa Regional Park development	Feasibly study in collaboration with Wairoa District Council and stakeholders. Deferring contributing towards development costs until 2027-28.	Deferred		
Ahuriri Regional Park	Joint venture between Hawke's Bay Regional Council, Napier City Council, and Mana Ahuriri Trust. HBRC currently contributes to project management. Deferring contributing towards development costs until 2027-28.	Years 1-3 2024-27	Funding allocation for project management only.	Internally loan funded repaid through the general rate.
Repairs to cycleways	Cycleways total cost of repair is estimated at $2.2M, with an expected delivery December 2024.	Year 1 2024-25	MBIE $0.75M	No rate impacts.

Capital projects & other initiatives	Description	Timeline	Likely funding options	Implications of options for rates and debt
Regional Cycling Development	Existing projects with external funding are to be continued along with safety improvements on the cycleways of $50,000 annually. Renewals - pathways, trails counters, signage, boardwalks, signage planned from Year 4 onwards. All new capital is on hold, including the Ngaruroro Explorer feasibility study which is pending the outcome of the Category 2 work. Future projects could include: • Ngaruroro Explorer Extension* • Vineyard Experience* • Heartland Ride (concept) *Subject to co-funding	Years 1-3 2024-27 Years 4-10 2027-34		Safety improvements internally loan funded repaid through the general rate. Included in Renewal Programme. Any renewals are funded by the depreciation reserve. Subject to 50:50 co-funding with MBIE.

9. Significant assumptions

The assumptions in this Infrastructure Strategy and in our Financial Strategy are evolving with the Flood Resilience Programme. The assumptions will develop as more information is available and decisions are made over the next three years.

Significant assumptions	Risk and impact
1. There is uncertainty about sources of funding to implement recommendations that will come from infrastructure planning currently.	The ability to adopt to modified flood control schemes to better cater for design events is significantly affected. The impact of this risk is that the timeframe over which scheme modifications are made are significantly lengthened.
2. Cyclone Gabrielle and the consequent legislative changes have meant this Infrastructure Strategy is recovery focused to respond to the post-cyclone period and its unique challenges.	Reduced audit and scope for this planning cycle as outlined in the SWERLA (Severe Weather Emergency Recovery Act 2023). This enables focus on core recovery processes for a specific period.
3. Current priorities for organisational recovery and resource planning will see changes to previous programme priorities.	Insufficient budget available to continue to deliver a continued level of service. Mitigation is being provided by the Infrastructure Programme Management Office (IPMO) to manage planned programmes. The programme changes reflect agreed priorities and funding agreements. Levels of Service (LoS) may be impacted while response activities are completed.
4. The outcome of Cyclone Gabrielle-related reviews may generate additional requirements for drainage and river control, which are not currently resourced. This may include new flood control programmes and resources.	The scope of review recommendations may require funding agreements and stakeholder consultation if new LoS is required. Funding of these programmes may be limited and require external resourcing to proceed. Ongoing whole-of-operational costs of additional scheme capacity may be beyond the economic capacity of the rating base.

Significant assumptions	Risk and impact
5. Investment in our new schemes as a result of land categorisation is affordable for our community.	The long-term impact of additional land categorisation mitigation costs may be uneconomic or beyond the capacity of the rating revenue of schemes.
7. There will not be changes to land drainage and river control related legislation.	Should legislation change occur it will reduce our ability to undertake the work that we currently do and the way do it. We maintain our current role and vigilance on related legislative processes as they impact our activities and scheme operation.
8. The current multi-value approach to the management of waterways in the major schemes will continue to be accepted by the community. Co-governance or co-management arrangements under new Treaty of Waitangi settlement legislation will inform and enhance the multi-value approach.	Maintaining a pragmatic balance between critical scheme function and identified community and biodiversity values in the management of infrastructure assets.
9. The responsibility for coastal protection from Napier City Council and Hastings District Council coastline will transfer to Regional Council at some point in the future.	Planning related to the Regional Council taking on coastal assets from Napier City Council and Hastings District Council is not currently included in resource planning. This will result in any transfer of responsibility being delayed and a possible increase in coastal erosion.
10. Transfer of stormwater drainage assets within the Napier City boundary will occur within this planning cycle.	There is a risk this may not happen within this planning cycle which will impact on asset management planning and financial aspects of operating these assets. This is dependent on mutual agreement between the Regional Council and Napier City Council, and a formal transition and Memorandum of Understanding to cover operational and ownership transfer. Rating transfer changes will be required.
11. Climate change adaptation is a critical consideration in our future infrastructure asset management.	Our region is susceptible to the future impacts of climate change and this needs to be incorporated into future planning and review processes. Existing Levels of Service and asset capacity may need to be revised, and long-term climate change adaptation which will have funding requirements.

10. Significant issues

This section summarises the significant infrastructure issues facing the Regional Council over the next three years and beyond, and outlines the principal options for managing the issues, and the implications of those options.

The identified significant issues are:

1. Rebuilding critical flood infrastructure after Cyclone Gabrielle
2. Increasing insurance premiums and difficulties in getting affordable insurance policy cover
3. Adapting to climate change and increasing risk of natural disasters
4. Delivering within financial constraints and affordability of increasing Levels of Service
5. Responding to a changing regulatory environment
6. Land use change and growth.

Issue 1: Rebuilding critical flood infrastructure after Cyclone Gabrielle	
Known uncertainty in recovery planning – We know there are decisions yet to be made that may have implications for our current and future scheme Levels of Service (LoS), and our funding environment in our new normal business as usual (BAU). We expect that the outcomes of the post-cyclone reviews will increase funding and resource requirements for Asset Management. Reviews will be investigating options in scheme planning to develop greater resilience to accommodate overtopping in flood management and drainage scheme capacity. **Financial and resourcing constraints** – The impact of Cyclone Gabrielle on our infrastructure has caused significant unplanned costs. We are working through the claims process with our insurers and NEMA (National Emergency Management Agency). This will be a long and labour-intensive process which we expect to continue into 2025. In the interim we must progress with plans of action based on our current known assumptions to provide a safe and manageable environment for our communities. Until these claims processes are completed there will be known uncertainty around how much money we will have available to manage our way forward. This has implications for our staff resources required to manage the claim process and the subsequent remediation, and on scheme LoS in the period while this activity is transacted. Our new BAU following the reviews may require additional Asset Management staff resources in the period of the Strategy to manage remediation activities. There will continue to be strong market competition for project management and engineering staff with significant recovery works being undertaken on the East Coast concurrent with this Strategy. This is an industry risk in years following a major cyclone. Additionally, consultant and contracting resources will experience similar competitive demand which will have an impact on our ability to develop remediation options and deliver rebuild activity. **Financial affordability for ratepayers** – All Regional Council activities are significantly funded by rating income. Increasing LoS demand, regulatory compliance, and costs of basic service contribute to increasing demand on rating to stakeholders. We are having challenging conversations with stakeholders about the viability of schemes where funding challenges for scheme activities create additional income to maintain LoS. **Community expectations** – Since Cyclone Gabrielle risk appetite may have changed. When rebuilding the previous Levels of Service may not be sufficient to meet new expectations particularly with a changing climate.	
Principal management options	**Implications of the options**
We have to work on the best estimate of the information available from consulting with central government, our technical advisors, insurers, and stakeholders. Maintain the Rapid Recovery Project delivery model and the Regional Response Plan. (This allows us to adapt to the changing environment for our new BAU.)	We may have to make decisions based on current information with some uncertainty included to progress effectively and maintain a safe community environment. Some risk of re-work as outcomes are confirmed in the future. We anticipate costs to increase across the spectrum of our activities. We expect maintaining staff and contractor resources will continue to be challenging and generate higher activity costs. We will need to communicate and manage community expectations on level of service options being considered. Current delivery of information to the community via LAWA (Land, Air, Water Aotearoa) and our web resources needs to be improved and made more resilient for provision of event data, level of service, and new land classification information. Ideally this would be consistent with other territorial authority environment planning information.

Issue 2: Increasing insurance premiums and difficulties in getting affordable insurance policy cover	
The current market conditions for re-insurance and the impact on affordability of commercial market options in the current market of changing worldwide weather and reducing natural disaster risk appetite is of concern. Previous coverage options may be diminished or uneconomic going forward. Major asset risk is still major earthquake events for our East Coast location but the impact of climate change and changing weather intensity is increasingly significant in our continuing insurance cover approach. The insurance model for major event cover currently has 40% covered by commercial insurance and the 60% balance covered by NEMA (National Emergency Management Agency). NEMA cover requires insurance to be in place to trigger the cover. The feedback on the recovery of the 60% via the NEMA process is that it requires substantial work to transact and is necessarily strongly audited.	
Principal management options	**Implications of the options**
We are working with other councils in a similar risk position to resolve this situation. Potential for share service/self-insurance options are under consideration at present by council which is part of Manawatu-Wanganui Local Authority Shared Services (shared service company MWLASS). MWLASS representatives are in continued direct contact with the Lloyds insurance market to outline our position and risk profiles.	All councils are facing rising costs and the management approach to insurance risk management varies across the MWLASS members. There is some risk of options to risk share being unacceptable to fiscally stretched organisations, which may limit the effectiveness of the group approach and the affordability of available options.

Issue 3: Adapting to climate change and increasing risk of natural disasters	
Climate change is a significant issue in planning and managing our flood and drainage infrastructure. The key projected climate change issues that may impact our infrastructure assets and pose risk to communities are: • increased severity of storms • increased frequency of droughts • sea level rise. Major natural disaster risk to assets is earthquakes. Additional risks may be identified in reviews yet to be finalised. (See *Part 1 – Overview. Responding to climate change* for more information about climate change projections for Hawke's Bay.)	
Principal management options	**Implications of the options**
National Institute and Atmospheric Research's (NIWA) review of weather event statistics to reconfirm appropriate Levels of Service for use in schemes. We have been developing our infrastructure response to climate change through planned work programmes and levels of service and scheme reviews.	Updated climate modelling is likely to result in planning and resilience assumption changes for infrastructure assets. Planning changes, level of service recommendations, consultation, and additional capital costs are likely.

Issue 4: Delivering within financial constraints and affordability of increasing Levels of Service	
Cyclone Gabrielle has had a significant impact on the Regional Council's budget. The Regional Council consulted on several proposals as part of its budget prioritisation and made the following decisions impacting the Asset Management group of activities.	
Principal management options	**Implications of the options**
Reduced annual maintenance for regional parks for three years.	The 20% reduction will reduce the annual maintenance budget from $1 million to about $800,000. This will result in reduced Levels of Service.
Not undertaking any new development in the Open Spaces activity, including the Ngaruroro Explorer trail, which is on hold pending the outcome of the Category 2 work. Deferred contributing towards development costs for Wairoa and Ahuriri regional parks. (Open Spaces includes regional parks, HBRC trails, and forestry.)	No additional capacity or development available in the period. Community satisfaction maybe less positive as Open Spaces are often well-used for recreation and exercise.
Pausing the Karamū Enhancement Project.	Delay in the current programme. This does not involve critical assets and is a long-term project which can be paused without any significant short-term impact. Existing planting will be maintained, and the plans can be reactivated when resource priority allows.

Issue 5: Responding to a changing regulatory environment	
There have been significant changes in regulatory legislation, and we anticipate there will be further changes, which may impact how we manage our infrastructure. **RMA (Resource Management Act) and Essential Freshwater reforms** Freshwater management is a core priority for Regional Council. We have until the end of 2027 to deliver an improved freshwater policy for our rivers, lakes, aquifers, streams, and wetlands. The new Government has a pipeline of on-going reform in both the freshwater and broader resource management space. While we don't know the full scope of those changes, we are working to ensure we are as ready as we can be for them. This includes continuing to participate in sector lobbying to ensure those reforms are implementable. **Local Water Done Well (previously known as Three Waters) –** While regional councils are not the core focus of these reforms, we are responsible for regulating stormwater, freshwater supply, and wastewater discharge – and that is unlikely to change. We do, however, have some stormwater operations which may need to be considered as part of the implementation of Local Water Done Well. **New dam safety regulations** – These came into effect in May 2024 with dam owners having a further 1-2 years to undertake the necessary work to classify their dam and put in place a dam safety assurance programme. **Forestry in the Emission Trading Scheme (ETS)** - Annual charge for post-1989 forest land registered in the ETS came into effect on 19 October 2023.	
Principal management options	**Implications of the options**
Maintain awareness of legislative requirements and potential operational impacts. Changes may be needed to regulation and compliance operational activity planning.	**Essential Freshwater reforms:** This area of legislative change has raised a lot of questions on the operation of our existing river and drainage assets. The retrospective application of the legislation is very challenging on legacy drainage and river systems as the original design and assumptions are decades older than the new regulations. All new activities going forward are impacted by the need to consider the requirements. The potential for additional science and monitoring, and specific technical provisions for fish passage and the consenting of all current pumpstations could cause significant cost and staff resource implication.

	Local Water Done Well (previously known as Three Waters): Under the recommendation of the 2021 Morrison Low report, we are working with Napier City Council (NCC) to transfer the drainage assets within the Napier City area to NCC for more consistent management in the NCC area. Urban stormwater assets in Napier could transfer to a yet-to-be established council-controlled organisation as part of Local Water Done Well so due diligence is being completed to enable an efficient asset transfer ahead of this. This asset transfer will impact on our asset value, will mean one less drainage area to manage, and we would need to work through whether we relinquish or share the tidal gate consent. The transfer of assets to the new entity may require consultation. We also need to clarify how the work the Works Group does for Hastings District Council (HDC) and NCC teams translates to the new entity. There is little indication for any other rural stormwater assets being significantly involved in the Local Water Done Well reforms, based on current information. We will continue to maintain watch as the changes develop to determine if there will be any further implications for our asset holding. **New dam compliance** will mean we have a new inspection standard for dams to adhere to. We do not have the professional resource to undertake this work so this will require additional costs to cover this activity. In addition, there is a lack of qualified inspectors in New Zealand. Staff have anticipated this change and understand the compliance requirement.

Issue 6: Land use change and growth	
The Government's land categorisation framework for the Future of Severely Affected Land (FOSAL) following Cyclone Gabrielle will result in land use change over the life of this Three-Year Plan. Some land use will also change to accommodate flood mitigation solutions in Category 2 land. We assume that the Hastings and Napier Future Development Strategy will guide development across existing urban areas and nearby areas across the two districts over the next 30 years. Changes to national regulation and policy will have an impact on land use in the region that affect both our policy and planning, and our Infrastructure Strategy. As the outcomes of the official reviews of Cyclone Gabrielle are received and worked through, there are likely to be further demands and recommendations. Until this is forthcoming, this means uncertainty for our communities and our work programme.	
Principal management options	**Implications of the options**
Work with councils to coordinate spatial planning and clearly articulate the issues and risks for flood prone land. This work has been obligatory with the post-Cyclone Gabrielle land classification review. Develop improved sources of information from the land categorisation process and flood modelling. Maintain reliable and up to date flood modelling (river and drainage systems).	The cyclone provided a graphic illustration of the risks of flood hazards in our communities. These have required central government engagement with TLAs to work through a rapid land categorisation process; the resulting decisions will continue to be worked through with landowners in Category 2 and 3 zoned areas. The speed of the assessments was driven by the need to resolve insurance and investment decisions for landowners to move forward, and the scale of the co-funding buyout/remediation provisioning required for central government and councils. Regional Council staff involvement in this process has been substantial and they will continue as expert advisors until all matters arising from the Land Classification process are resolved. Zoning of land will have long-term implications for land use and scheme requirements. It is likely that the post-cyclone reviews may require specific remediations and service level changes with economic impacts for these areas.