

# Long Term Plan 2018-2028 Asset Management Plans

**DRAFT FOR AUDIT - 14 December 2017**



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# Rivers and Drainage Asset Management Plan 2018-2068

## Executive Summary

Bay of Plenty Regional Council  
5 Quay Street  
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NEW ZEALAND

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# Document control

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## Document information

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Kirsty Brown	Draft version for LTP Workshop 28/11/2017	17/11/2017	1.0

## Future review

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## Distribution control

Person	Role	Date of issue	Version
Kirsty Brown	Asset Management Specialist		

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# Asset Management Team

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Bay of Plenty Regional Council Rivers and Drainage Asset Management Team:

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Roger Waugh	Rivers and Drainage Asset Manager
Bruce Crabbe	Rivers and Drainage Operations Manager
Kirsty Brown	Asset Management Specialist
Mark Townsend	Engineering Manager
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This is the fourth edition of the Rivers and Drainage Schemes combined Asset Management Plan. The original plan was produced in 2008/2009 using a framework developed by GHD Limited in conjunction with staff from Bay of Plenty Regional Council.

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## 1 Scope of this Plan

This Asset Management Plan (AMP) Executive Summary describes how Bay of Plenty Regional Council manages the region's rivers and drainage assets on behalf of the community. By providing a summary of the full AMP we are seeking to make the information accessible and appropriate for its readers which includes the Leadership Team and elected members of the Council, interest groups, business partners and the community. This plan covers the services that are provided, the assets and the long-term planning and management goals that are taken into account when delivering the service.

## 2 Rivers and Drainage Schemes

Bay of Plenty Regional Council is responsible for the provision and management of five rivers and drainage schemes within its regional boundaries. These are shown below.

*Table 1 Overview of the Rivers and Drainage Schemes.*

	<b>Total catchment area (km<sup>2</sup>)</b>	<b>Total number of stakeholders</b>
Kaituna Catchment Control Scheme	1,246	33,381
Rangitāiki Drainage Scheme	290	4,398
Rangitāiki-Tarawera Rivers Scheme	3,995	7,642
Waioeka-Otara Rivers Scheme	1,175	2,869
Whakatāne-Tauranga Rivers Scheme	1,540	3,139
<b>Totals</b>	<b>8,246</b>	<b>51,429</b>

In addition to these schemes there are a number of minor rivers and drainage schemes that complete the rivers and drainage network in the Bay of Plenty. These minor schemes are not part of the Rivers and Drainage AMP as Bay of Plenty Regional Council does not own these assets, although they do manage them. Each scheme has the discretion to use Council or others to manage their scheme.

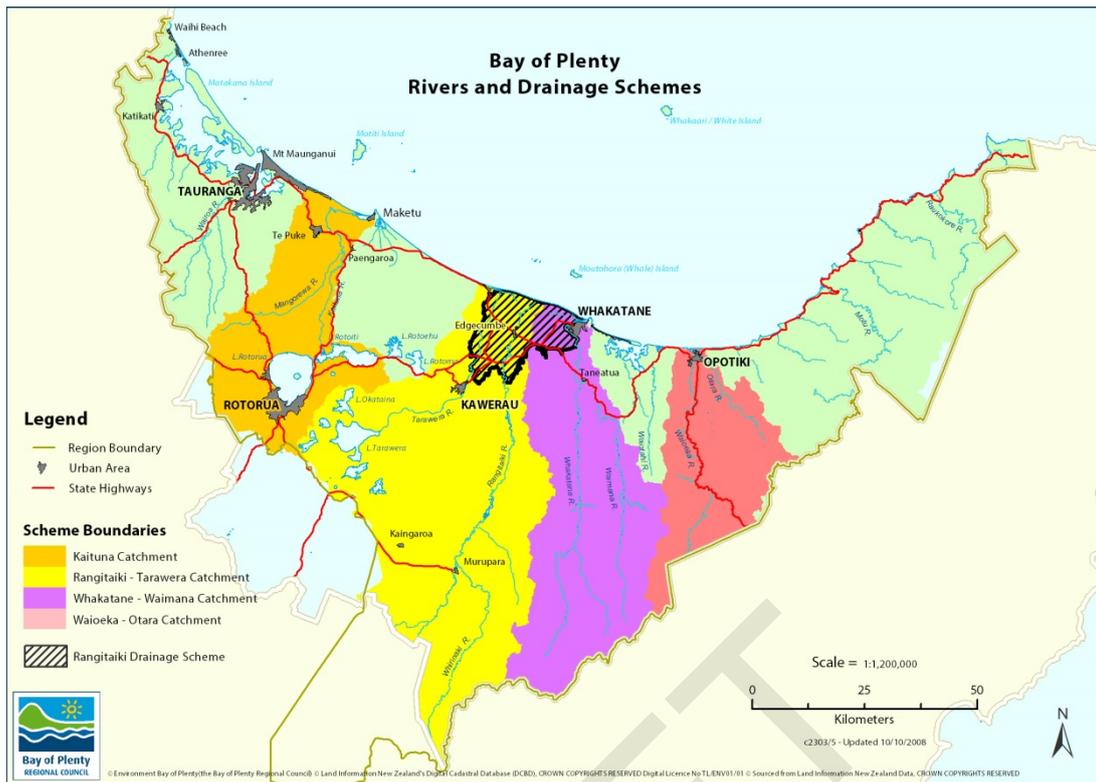


Figure 1 Map of Rivers and Drainage Schemes.

### 3 Purpose of this document

The purpose of this document is to summarise the Rivers and Drainage Asset Management Plan (AMP), which formally documents the management philosophy that is applied to the rivers and drainage infrastructure assets and services. This approach ensures that acceptable levels of service are provided in the most cost effective manner and contribute to the achievement of the community outcomes identified in the Bay of Plenty Regional Council’s Long-Term Plan (LTP).

This long-term planning approach is necessary given the large capital and operating expenditure, the long lives of the assets and the lead times in planning for upgrades of new assets when required. The sequencing and timing of works are developed through discussions with key stakeholders and the AMP is prepared in consultation with them.

The key purposes of the AMP are to:

- Convey the long-term strategy for the management of the rivers and drainage assets and services,
- Improve understanding of service level standards, options and costs to smooth peak funding demands, while improving customer satisfaction and organisational image,
- Provide a tool to assist with management assets in a cost effective and sustainable manner,
- Manage the environmental, service delivery and financial risks of asset failure,
- Identify lifecycle (long-term) costs to provide agreed Level of Service over the long-term,

- Explain how the long-term works programmes have been developed and how they will be funded, and
- Demonstrate that the service potential of the rivers and drainage assets is being maintained.

### 3.1 **Asset management objectives**

Bay of Plenty Regional Council recognises that the Rivers and Drainage AMP is the fundamental driver of flood protection and drainage. This AMP represents the fourth edition of the combined AMP for all of the rivers and drainage schemes. The first Rivers and Drainage AMPs were completed in 1996–1998 and updated in subsequent years on a five-yearly cycle for each scheme.

In order to fulfil the outcomes, vision, goals and objectives of these assets the Bay of Plenty Regional Council have adopted a systematic approach to the long-term management of its assets and services by preparing this AMP.

Bay of Plenty Regional Council is committed to best appropriate practice asset management in order to achieving the following key objectives:

- Meet the service expectations of the community ('customer values').
- Ensure capital projects and maintenance activities achieve efficient results with optimal benefits.
- Demonstrate Council's approach to managing risk and meeting growth requirements towards a sustainable future.
- Comply with all statutory requirements.

### 3.2 **Plan timeframe**

This AMP covers a 50-year timeframe. The main focus of the plan is determining the work programmes required for maintaining, rehabilitating and renewing assets over the next ten years. This AMP provides the detail underlying the Long Term Plan, and will be revised every three years.

### 3.3 **Limitations of the AMP**

This AMP has been prepared based on:

- Currently available information,
- Condition assessments completed to date,
- Existing Levels of Service, and
- Forecasts completed for 50 years.

## 4 **Strategic environment**

### 4.1 **Purpose**

As caretakers of our land, air and water, Bay of Plenty Regional Council monitors the effects of human activities on our environment. We also promote the sustainable management of our natural and physical resources for present and future generations.

## 4.2 Vision

The Bay of Plenty Regional Council’s vision is: *“Thriving together - mo te taiao, mo ngā tangata” (for the environment, for the people).*

## 4.3 Community outcomes

Bay of Plenty Regional Council’s work guides and supports the sustainable development of the Bay of Plenty. We want to make sure our region grows and develops in a way that keeps its values safe for future generations.

The Flood Protection and Control Works Activity contributes directly to three of the four Community Outcomes identified in the 2018-2028 LTP, these are set out below:

Community Outcome	Contributions to Community Outcomes	Objectives
<p><b>Safe and resilient communities</b></p> <p>Our planning and infrastructure supports resilience to natural hazards so that our communities’ safety is maintained and improved.</p>	<ul style="list-style-type: none"> <li>▶ Maintain flood protection schemes to agreed levels for major rivers and floodplains across the region.</li> </ul>	<ul style="list-style-type: none"> <li>▶ Identify potential hazards and develop ways to mitigate flood risks to protect people, property and their livelihoods.</li> <li>▶ Manage the effect of development upon the existing rivers and drainage schemes and provides a sustainable solution for future requirements.</li> <li>▶ Provide protection of public health and property by providing flood protection and mitigation.</li> <li>▶ Protecting the environment from flood damage using flood protection measures.</li> </ul>
Community Outcome	Contributions to Community Outcomes	Objectives
<p><b>A vibrant region</b></p> <p>We work with our partners and communities to achieve integrated planning and good decision-making. We support economic development, understanding the Bay of Plenty region and how best we can add value.</p>	<ul style="list-style-type: none"> <li>▶ Providing protection to the region’s floodplains to enable resources to be used efficiently and effectively so the community can benefit.</li> </ul>	<ul style="list-style-type: none"> <li>▶ Provide sustainable, safe, ongoing, and cost effective rivers and drainage schemes.</li> <li>▶ Create safe conditions for new business through the management of potential rivers and drainage hazards.</li> <li>▶ Provide robust maintenance, renewal and capital programmes.</li> <li>▶ Provide protection of critical public infrastructure and regionally significant industries by providing flood protection and mitigation.</li> </ul>

Community Outcome	Contribution to Community Outcomes	Objectives
<p><b>A healthy environment</b> We will maintain and enhance our air, land, freshwater, geothermal, coastal resources and biodiversity for all those who live, work and play within our region. We support others to do the same.</p>	<p>▶ Providing protection to the region's floodplains to enable resources to be used efficiently and effectively so the community can benefit.</p>	<p>▶ Provide sustainable, safe, ongoing, and cost effective rivers and drainage schemes. ▶ Create a catchment based collaborative approach to managing flood risk.</p>

#### 4.4 Rationale for Council's involvement

Council carries out its Rivers, Drainage and Flood Management Activity to:

- Protect important infrastructure and urban areas from flooding,
- Provide security to existing economic and social developments from flooding,
- Protect productive soils from stream and river erosion,
- Protect natural, physical and cultural heritage sites from the adverse effects of flooding and erosion,
- Provide drainage and pumping to low lying properties within scheme areas for flood protection, and
- Manage water levels in Lakes Rotorua and Rotoiti as required under resource consent no. 65980.

If Council was to stop its involvement in the management of the schemes it is unlikely there would be another public body able to provide the region wide service that spans multiple Territorial Authority boundaries.

#### 4.5 Levels of Service

Community outcomes were developed as part of the LTP 2018-2028. The Flood Protection and Control Works Activity Outcomes developed with the Levels of Service represented in the AMP are described and aligned with customer values including affordability, quality, safety, community engagement, reliability and sustainability.

A key level of service for the Flood Protection and Control Works Activity is to provide flood protection and drainage in scheme areas to mitigate the effect of flooding. The design standard (or KPIs) for this level of service is to have:

- Zero failures of flood protection systems below specified design standards, and
- Zero times when drainage schemes do not provide effective drainage to low-lying land up to the specified design standards.

The Levels of Service and design standards are reported in the full AMP.

## 5 Business overview

### 5.1 Funding

The rivers and drainage schemes are managed under the Soil Conservation and Rivers Control Act 1941. The Act allows for separately rated river schemes on a catchment-by-catchment basis.

Bay of Plenty Regional Council manages the Rangitāiki Drainage Scheme under the Rangitāiki Land Drainage Act 1956.

Targeted rates contribute 80% of river scheme costs. These are identified under each separate rating area, with the proportional funding distribution varying across each scheme.

Regional general funds contribute to 20% of the scheme rates (except Rangitāiki Drainage) to acknowledge the broader benefits (e.g. environmental) that the schemes provide. Rangitāiki Drainage Scheme is funded 100% from targeted scheme rates over the area of benefit, mainly dairying, some 29,200 ha. Rates on any property are calculated on the bases of land area and benefit classification of that property.

### 5.2 Expenditure

Expenditure on the Flood Protection and Control activity represents a significant Council investment as shown in the figure below.

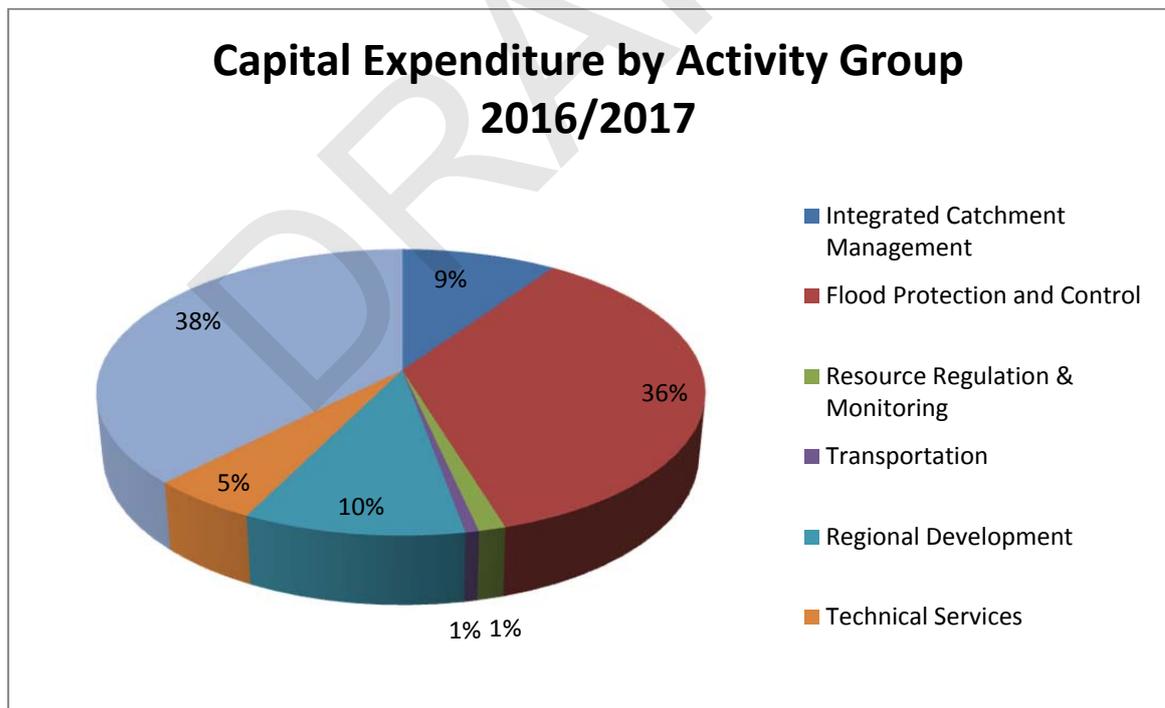


Figure 2 2016/2017 Capital expenditure budget by Council Activity Group.

## 6 Major capital works programme summary

Major new flood control infrastructure projects (defined as being \$0.5M or more of capital expenditure) that are expected to be undertaken in the 2015-2045 period are shown in the table below.

Table 2 Capital works in next 30 year period.

Major work	Cost \$000	Timing	Assumptions
<b>Kaituna Catchment Control Scheme</b>			
Ford Road Pump Station replacement.	2,200	2018/2019	Timing to suit Kaituna Diversion Project.
Kaituna River new stopbank	1,500	2019/2020	Timing to suit Kaituna Diversion Project
Utuhina Stopbanks (Stage 1).	630	2019/2020	
Utuhina Stopbanks (Stage 2).	500	2020/2021	
Te Puke Stormwater Pump Stations	2,500	2020/2021	
Climate change capital works	1,900	2024/2025	Change to achieve LOS, dependant on climate change forecasts.
Stopbanks reconstruction following geotechnical investigations and capacity review incorporating climate change.	1,700	2034/2035	Geotechnical investigations are scheduled 2031 to 2034 to identify any issues.
Stopbanks reconstruction following geotechnical investigations and capacity review incorporating climate change.	1,700	2044/2045	Geotechnical investigations are scheduled 2041 to 2044 to identify any issues.
Renewal of resource consents 65979 (Okere Gates) and 65980 (Ōhau Channel)	1,600	2046/2047	
<b>Rangitāiki – Tarawera Rivers Scheme</b>			
Rangitāiki River stopbank upgrade	1,000	2018/2019	
Rangitāiki River overlays	500	2018/2019	
Rangitāiki Floodway	4,300	2018/2019	
Rangitāiki River stopbank upgrade	1,150	2019/2020	Downstream from Edgecumbe
Rangitāiki Spillway structure	1,200	2019/2020	Variation of resource consent maybe required.
Tarawera River stopbank reconstruction	600	2021/2022	
Tarawera River Stopbank reconstruction	1,200	2022/2023	
Climate change capital works	1,400	2022/2023	Change to achieve LOS, dependant on climate change forecasts.
Climate change capital works	700	2027/2028	Change to achieve LOS, dependant on climate change forecasts.
Rangitāiki River stopbank reconstruction	1,800	2031-2034	\$600,000 per year

Major work	Cost \$000	Timing	Assumptions
Climate change capital works	1,400	2032/2033	Change to achieve LOS, dependant on climate change forecasts.
Climate change capital works	700	2037/2038	Change to achieve LOS, dependant on climate change forecasts.
Rangitāiki River stopbank reconstruction	1,800	2041-2044	\$600,000 per year
Climate change capital works	1,400	2042/2043	Change to achieve LOS, dependant on climate change forecasts.
Climate change capital works	700	2047/2048	Change to achieve LOS, dependant on climate change forecasts.
<b>Whakatāne – Tauranga Rivers Scheme</b>			
Canal stopbank top ups	570	2023/2024	
Climate change capital works	730	2023/2024	Change to achieve LOS, dependant on climate change forecasts.
Stopbanks reconstruction following geotechnical investigations.	600	2026/2027	
Climate change capital works	780	2026/2027	Change to achieve LOS, dependant on climate change forecasts.
Concrete walls	550	2030/2031	
Canal Stopbank top ups	500	2035-2036	
Pump upgrade	660	2035-2036	
Climate change capital works	730	2036-2040	Change to achieve LOS, dependant on climate change forecasts.
Stopbanks reconstruction following geotechnical investigations.	600	2038/2039	
Floodgate structures	790	2042/2043	
Canal stopbank top ups	500	2045/2046	
<b>Waioeka-Otara Rivers Scheme</b>			
Duke Street pump station upgrade	1,500	2018/2019	
Stopbanks reconstruction following geotechnical investigations	765	2022/2023	Geotechnical investigations are scheduled 2018/2019 to identify any issues.
Climate change capital works	850	2022/2023	Change to achieve LOS, dependant on climate change forecasts.
Stopbanks reconstruction following geotechnical investigations	1,015	2035/2036	
Climate change capital works	1,100	2035/2036	Change to achieve LOS, dependant on climate change forecasts.
Stopbanks reconstruction following geotechnical investigations	750	2045/2046	
Climate change capital works.	650	2045/2046	Change to achieve LOS, dependant on climate change forecasts.

## 7 Sustainability

### 7.1 Projects

In addition to on-going management of flood risks in the region, we are also looking at the long-term risks of flooding hazards, including reviewing the current levels of flood protection provided by river schemes in the region, the sustainability of the schemes, and establishing a region-wide Flood Risk Management Framework. These investigations form two significant Council projects and are summarised below.

#### 7.1.1 Regional Flood Risk Management Framework

The Regional Flood Risk Management Framework has been set up to create a catchment based collaborative approach to managing flood risk.

The motivation for development of a Regional Flood Risk Management Framework (RFRMF) came from the high costs of recent floods (2004, 2010 and 2011) and the current fragmented approach to flood risk management in the ports of the region outside of the Rivers and Drainage Scheme. The development of the RFRMF is related to an allied project, the River Scheme Sustainability (RSS) project which is more focussed on sustainability of the River and Drainage Schemes.

The Regional Flood Risk Management project was initiated in the 2012-2022 LTP. The draft Annual Plan 2013/2014 did not initially list the above as a project, but following submissions from Tauranga City Council and Western Bay of Plenty District Council it was included in the 2013/2014 Annual Plan.

#### 7.1.2 River Scheme Sustainability (RSS)

The River Scheme Sustainability project's goal is to set direction for sustainable management of the River and Drainage Schemes for the next 100 years. The goal is to reduce the long-term risk of flood hazards while encouraging environmentally and economically sustainable land-use practices and raising awareness, changing attitudes and behaviour in the communities.

The project will consider the long-term risks of flooding hazard and provide a strategy and actions to manage the Flood Protection and Control Works Programme of schemes moving forward. Flood risk strategies may include retreat, adaption or defend. Flood management options in the longer term may or may not include the structural solutions currently employed. Non-structural and other alternative solutions will be evaluated.

These are long-term projects, the outcomes of which will guide future reviews of this Asset Management Plan.

## 8 Proposed future consultation

Council will consult with the community on rivers and drainage activity proposals with River and Drainage Scheme Advisory Groups, River Forums, Iwi and other stakeholders for this AMP.

## 9 Risk management

### 9.1 Corporate Policy

Bay of Plenty Regional Council has a Risk Management Framework and Plan. The risk criteria and matrices established as the basis for risk evaluation were developed in accordance with the NZ/AS/ISO31000:2009 Risk Management Standard.

A risk register of possible risks affecting the Flood Protection and Control Works Activity has been developed in consultation with key staff and is contained in the full AMP.

### 9.2 Risk Action Plan

The Risk Register for the AMP highlights the most significant residual risks faced by the Flood Protection and Control Works Activity. The main risks are listed in order of severity (residual risk) as assigned in consultation with key Council officers.

Risks include items such as inability to afford renewals, increased severity of weather events, sea level rise, storm surge and stopbank deterioration.

Actions that are required to achieve the desired improvements are indicated along with how progress on these actions will be monitored and reported. Where applicable, action tasks will detail timeframes for achievement, and responsibility for these actions.

## 10 Lifecycle Management

The Lifecycle Management (LCM) Section of the AMP provides the broad strategies and work programmes required to achieve the goals and objectives set out earlier in this AMP.

Expenditure on infrastructure assets can be categorised into two main areas: Operational and Capital works

Operations and maintenance is required for the day-to-day operation of the network whilst maintaining the current Levels of Service. Capital works includes renewals and new (improvement) works.

Renewal includes rehabilitation and replacement of assets to restore an asset to its original level of service, i.e. capacity or the required condition. Renewals expenditure forecasts cover the cost of asset renewal through its whole lifecycle through to disposal of the asset.

New capital works (involves the creation of new assets, or works, which upgrade or improve an existing asset beyond its current capacity or performance in response to changes in usage or customer expectations.

### 10.1 Asset reliability (performance)

In the Flood Protection and Control Works Activity, a small asset failure can lead to inundation of a large area of the flood plain resulting in significant damage.

Preventative maintenance, regular inspection, monitoring and hydraulic modelling all contribute to ensuring service reliability standards are met.

Assets can also be subject to substantial damage from flows less than design level especially erosion protection assets.

Reactive maintenance is expended on repairing flood damage resulting from moderate sized floods.

## 11 Asset summary

The figures below provide a summary of the Rivers and Drainage assets owned by Bay of Plenty Regional Council, by asset type and by scheme. ODRC is Optimised Depreciated Replacement Cost as at 1 July 2017. ODRC is the optimised replacement cost of an asset less accumulated depreciation based on the already consumed or expired future economic benefits of the asset.

The figures do not take into account the impairment amount of approximately \$10 million resulting from the April 2017 flood event. Final damages will be included in the 1 July 2018 valuation.

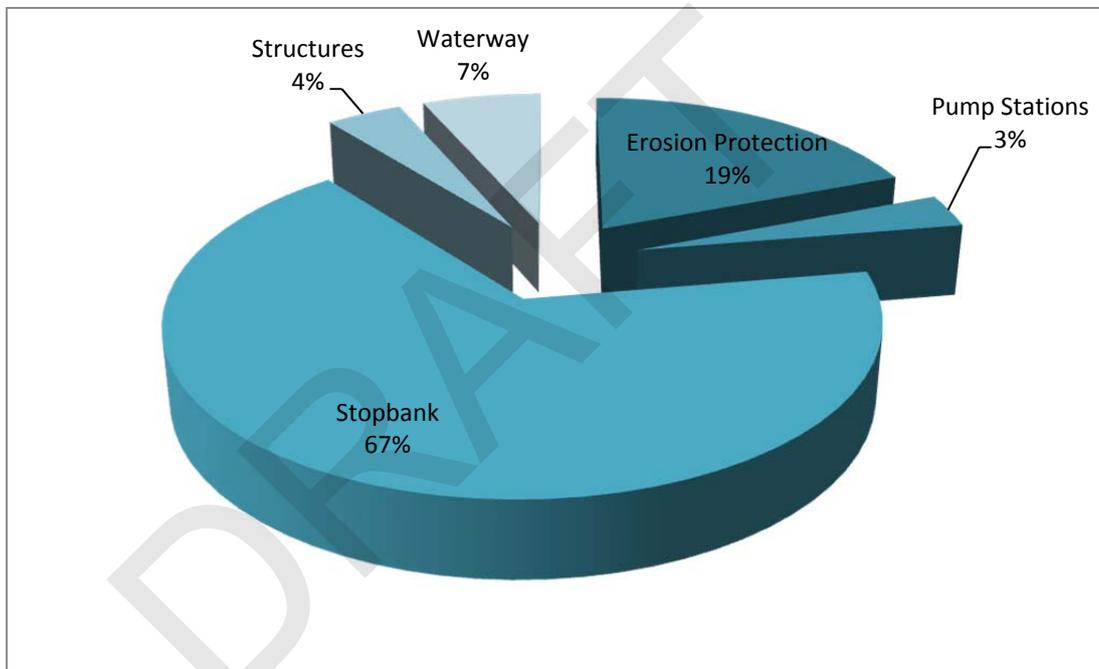


Figure 3 Asset Type as % of Value (ODRC 1 July 2017)

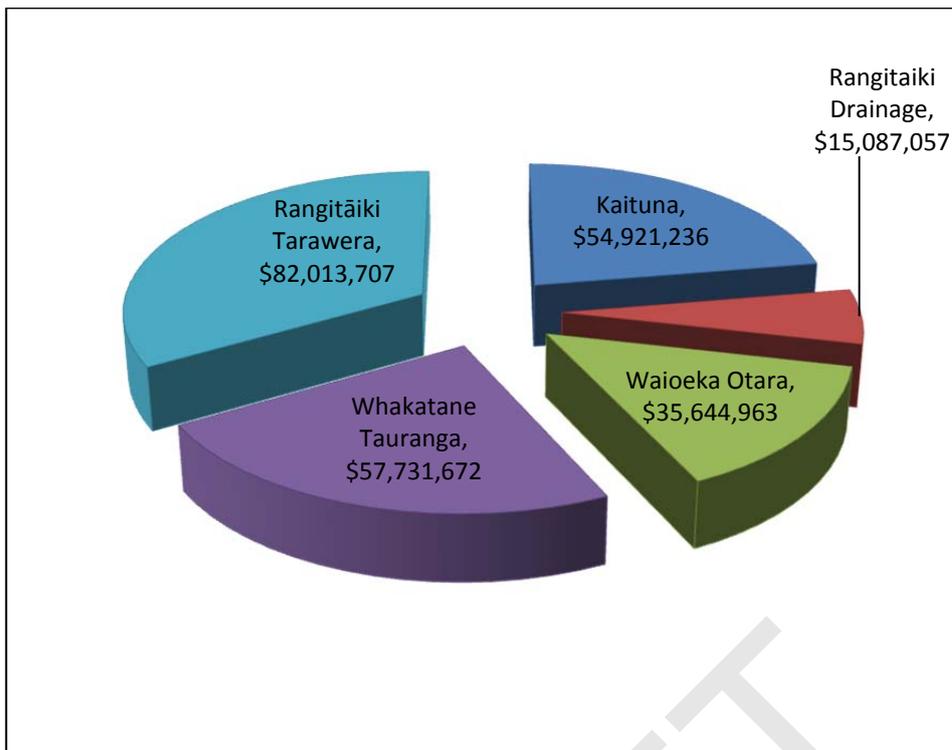


Figure 4 Asset value (ODRC 1 July 2017) by scheme.

### 11.1 Stopbanks

Stopbanks are compacted earth embankments built alongside rivers to provide protection to the bordering land from flooding. Stopbanks are the most significant asset in rivers and drainage infrastructure. The total Optimised Depreciated Replacement Cost (ODRC) of these assets is \$164 million (as at 1 July 2017). Stopbank asset condition is monitored by visual inspections, physical surveys and scheme reviews every ten years including detailed computer modelling.

Figure 5 shows the length of stopbanks across all of the schemes. There is a total of 352.2 km of stopbanks across the five schemes with Rangitāiki-Tarawera having the most at 124 km. Stopbanks have an estimated life of perpetuity for depreciation purposes. The Rangitāiki Drainage Scheme does not have stopbank assets.

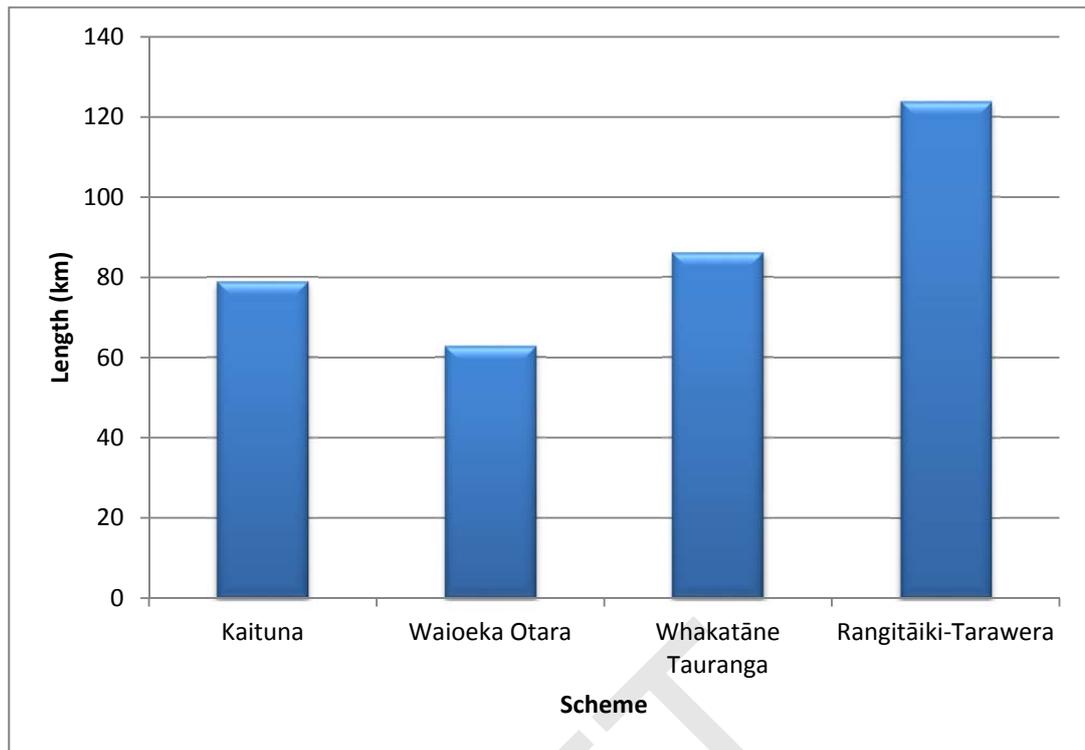


Figure 5 Length of stopbanks.

### 11.1.1 Erosion protection

Erosion protection is used to protect stopbanks and natural channel banks from erosion, maintain channel stability and reduce sediment deposition. Erosion protection assets include: rock work, buffer zone, edge planting, fencing, groyne, rubble and trenched willows. The erosion protection assets are not depreciated.

### 11.1.2 Pump stations

Pump stations in the rivers and drainage activity are used to discharge drainage and flood flows when gravity outlets have either been blocked or inhibited in some way. Pump station components generally include: pumps, pump stations (i.e. structure), pump electricals, pump electronics (e.g. computer electronics).

Pump stations are inspected fortnightly for operational capability and receive programmed maintenance throughout their life cycle.

Pump Stations including pumps and pump electronics make up 4% of the Optimised Depreciated Replacement Cost (ODRC) for all of the rivers and drainage assets, with a total value of \$8 million.

Figure 6 shows the number of pump stations per scheme.

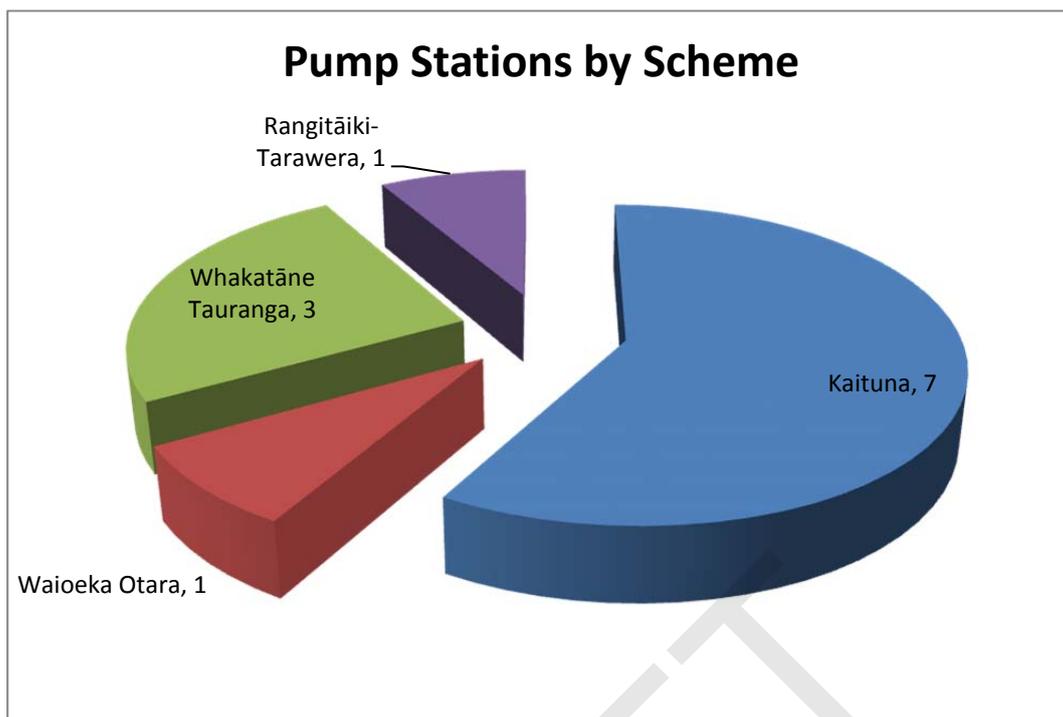


Figure 6 Number of pump stations by scheme.

### 11.1.3 Structures

Rivers and Drainage Schemes have a number of structures that assist with the overall function of the activity. The structures assets that form part of the rivers and drainage infrastructure include; culverts, concrete structures, concrete walls, drop structures, flood gates, radial gates, sluice gates, stop logs, timber walls.

Structures undergo a programme of regular maintenance with asset condition monitored by regular inspection.

### 11.1.4 Waterways (drains and canals)

The drains and canals assets are channels excavated to provide drainage (drains) or sufficient flow capacity for design floods (canals). The Rangitāiki-Tarawera and Whakatane-Tauranga Rivers Schemes do not have waterways assets. These assets do not include natural streams.

Waterways (drains and canals) contribute to 7% of the total ODRC for all of the assets.

Rangitāiki Drainage Scheme accounts for 85% of the total ODRC of waterways, with a value of \$13.6 million.

The drains and canals assets have an estimated life of perpetuity and are therefore not subjected to depreciation.

Condition of the waterways is generally monitored by visual inspections, physical surveys and scheme reviews including detailed computer modelling.

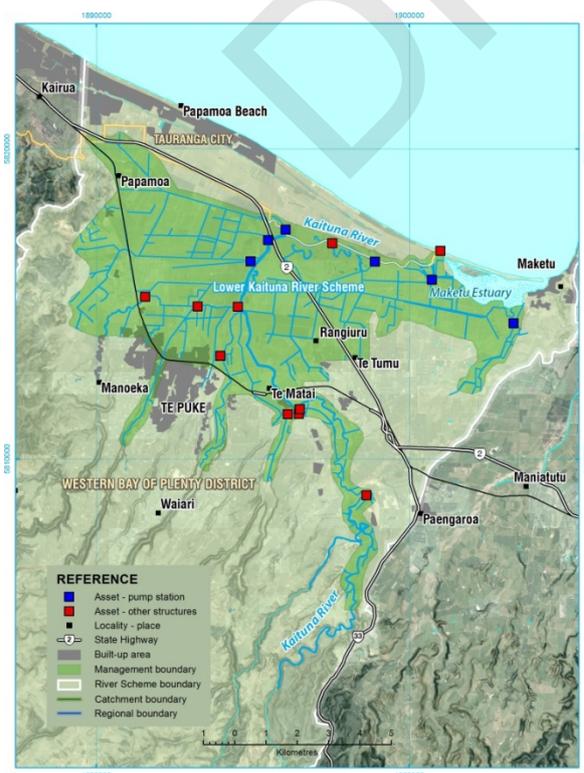
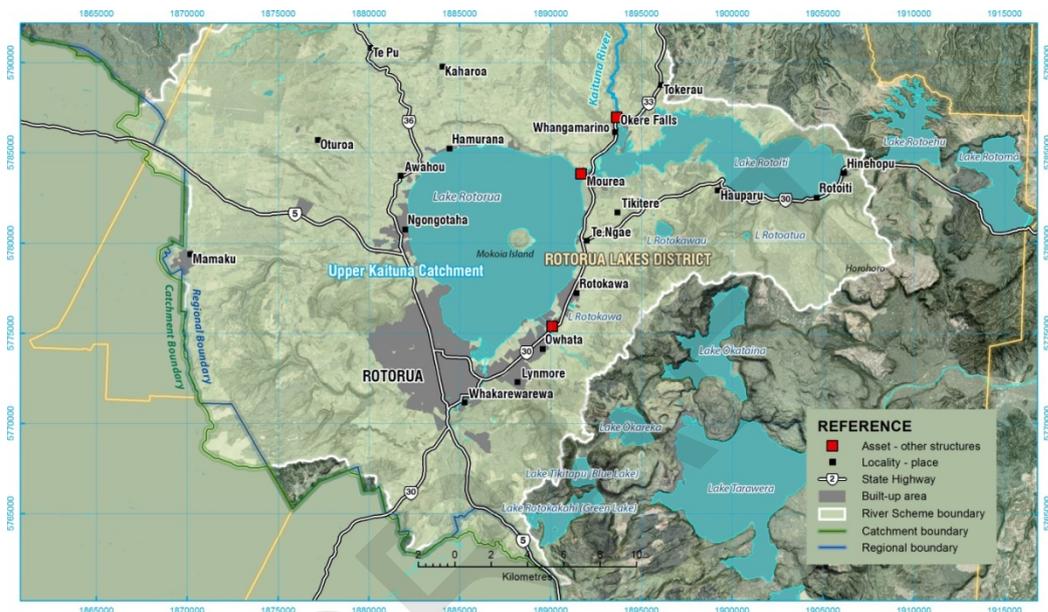
### 11.1.5 Waterways (rivers and streams)

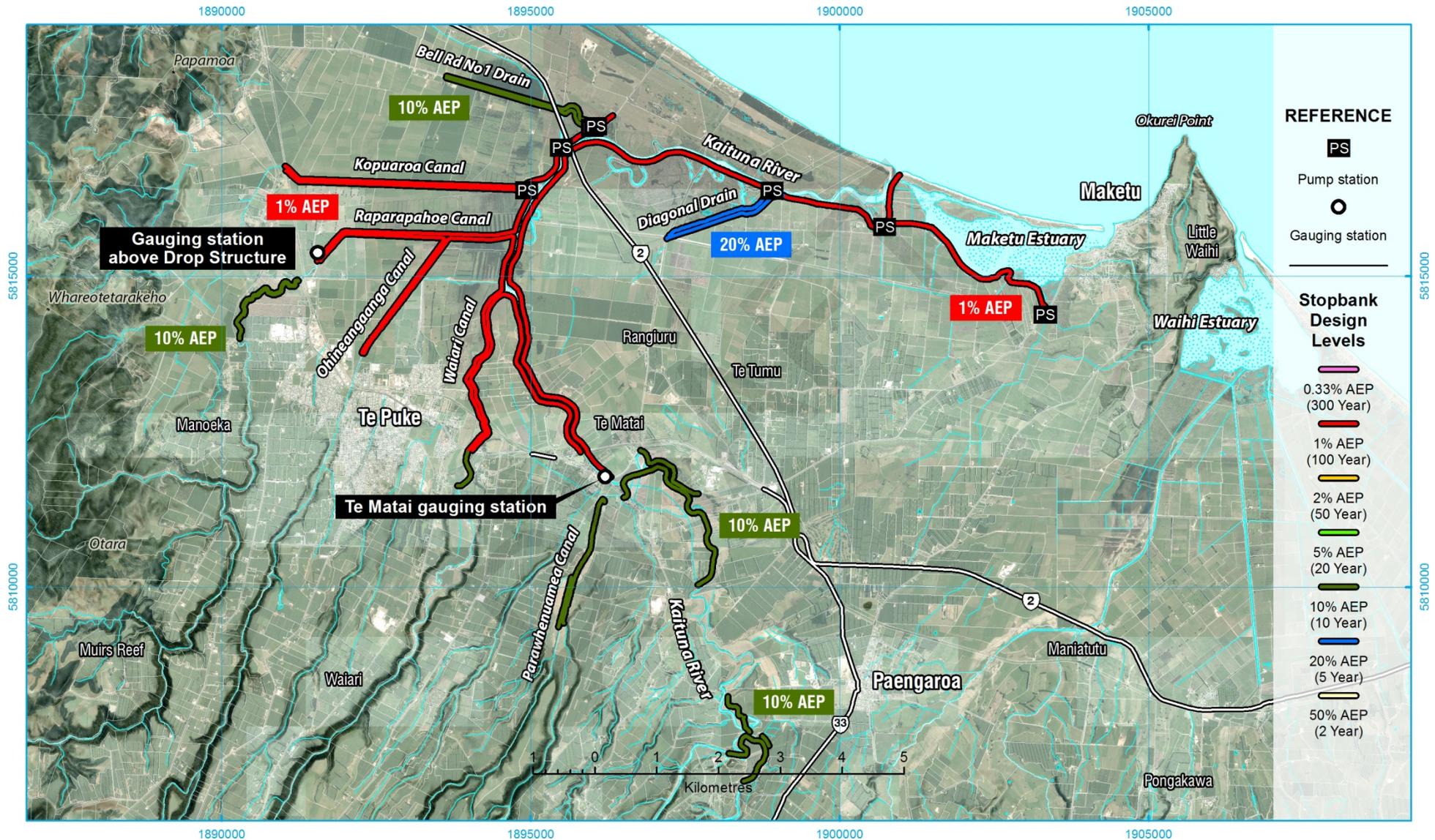
A number of rivers and streams are maintained by Bay of Plenty Regional Council. These assets do not have any economic value (i.e. are not considered as part of the valuation), however they do require maintenance and this requires ongoing maintenance and operational budgets to allow maintenance works to go ahead.

## 12 Scheme summaries

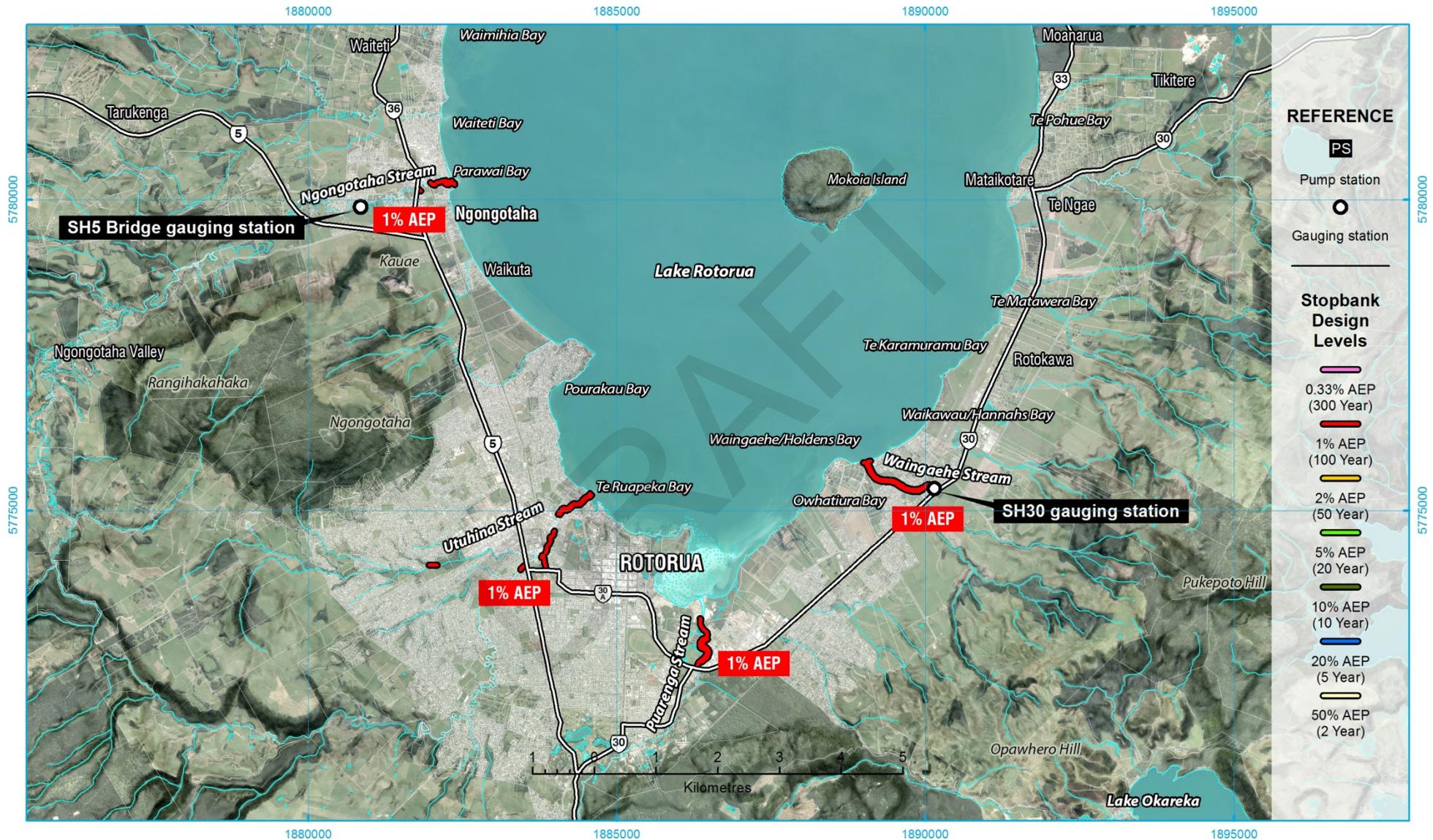
### 12.1 Kaituna Catchment Control Scheme

The Kaituna Catchment Control Scheme includes the Kaituna River, Lake Rotorua and Lake Rotoiti Catchments. The scheme consists of two discrete areas divided at Okere: Upper Kaituna and Lower Kaituna.





Asset design standards for Kaituna Rivers Scheme (Lower).



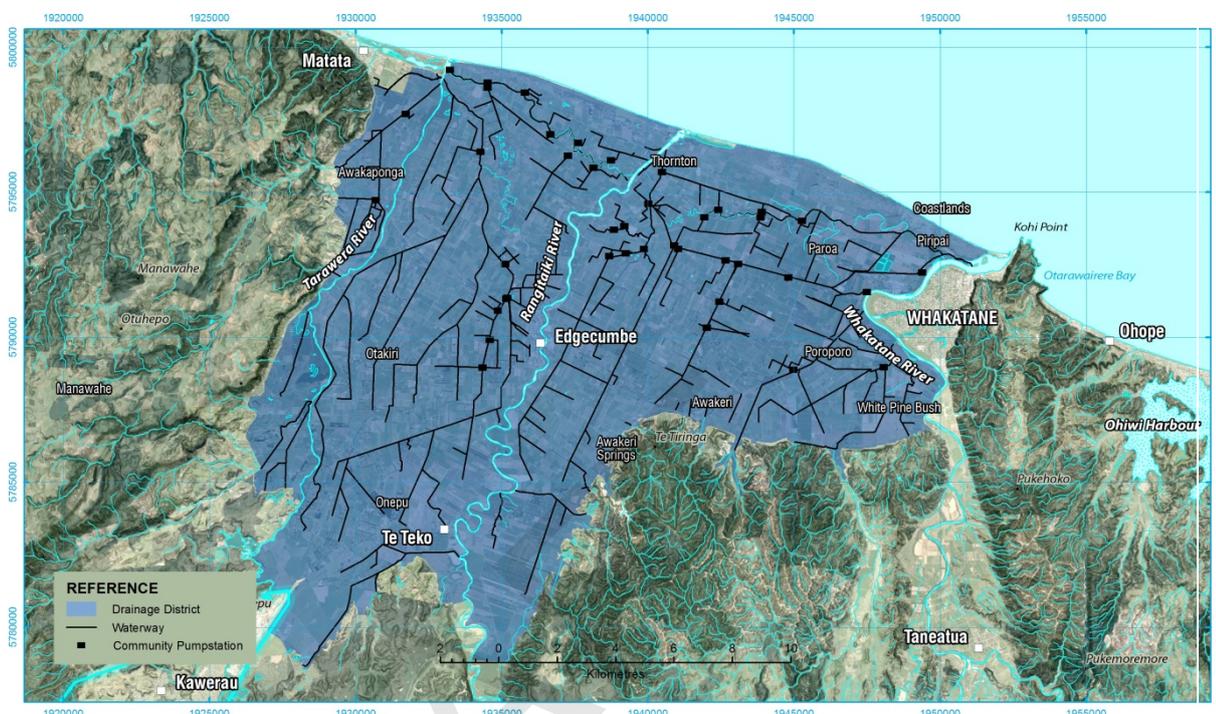
Asset design standards for Kaituna Rivers Scheme (Upper).

Table 3 Capital expenditure schedule - Kaituna Catchment Control Scheme

<b>Kaituna Catchment Control Scheme</b>			
<b>Year</b>	<b>Capital works</b>	<b>Type</b>	<b>How much</b>
<b>Year 1 (2018/2019)</b>	Pump station electronics upgrade	Improvement	\$80,000
	Kaituna River desilting	Improvement	\$150,000
	New Ford Road Pump Station	New	\$2,200,000
	Te Puke Stormwater Project (investigation)	Improvement	\$150,000
	Diagonal Drain diesel generation	Improvement	\$260,000
	Utuhina Stream stopbank (modelling)	Replacement	\$100,000
	April 2017 flood damage repairs	New	\$850,535
<b>Year 2 (2019/2020)</b>	Pump station electronic upgrades	Replacement	\$80,000
	Kaituna River desilting	Improvement	\$150,000
	Kaituna River stopbank upgrade	New	\$1,500,000
	Te Puke Stormwater Project (consent)	Improvement	\$150,000
	Utuhina Stream stopbanks (Stage 1)	Replacement	\$630,000
	Okere Radial Gates	Replacement	\$210,000
	April 2017 flood damage repairs	New	\$869,214
<b>Year 3 (2020/2021)</b>	Pump station electronic upgrades	Replacement	\$20,000
	Te Puke Stormwater Project (proposed pump stations)	New	\$2,500,000
	Utuhina Stream stopbanks (Stage 2)	Replacement	\$500,000
<b>Year 4 (2021/2022)</b>	Lower Kaituna stopbanks (modelling)	Replacement	\$100,000
	Pump station electrical upgrades	Replacement	\$95,000
<b>Year 5 (2022/2023)</b>	Lower Kaituna stopbank (modelling/optioneering)	Replacement	\$100,000
	Pumps Replacements	Replacement	\$170,000
<b>Year 6 (2023/2024)</b>	Capacity review - Lower Kaituna	Replacement	\$100,000
	Capacity review – Upper Kaituna	Replacement	\$50,000
<b>Year 7 (2024/2025)</b>	Capital climate change	Replacement	\$1,900,000
	Capacity review – Upper Kaituna	Replacement	\$100,000
<b>Year 8 (2025/2026)</b>	Other replacements	Replacement	\$42,000
	Stopbank reconstruction	Replacement	\$400,000
	Renewal of consent 20074	Replacement	\$17,500
	Climate change	Improvement	\$350,000
<b>Year 10 (2027/2028)</b>	Other replacements	Replacement	\$265,000

## 12.2 Rangitāiki Drainage Scheme

The Rangitāiki Drainage Scheme provides gravity drainage to the Rangitāiki Plains, an area of approximately 29,000 ha. The scheme has 88 km of major canals (arterial) and 240 km of drains, which divert excess water from the Rangitāiki Plains into the Tarawera, Rangitāiki and Whakatāne Rivers.



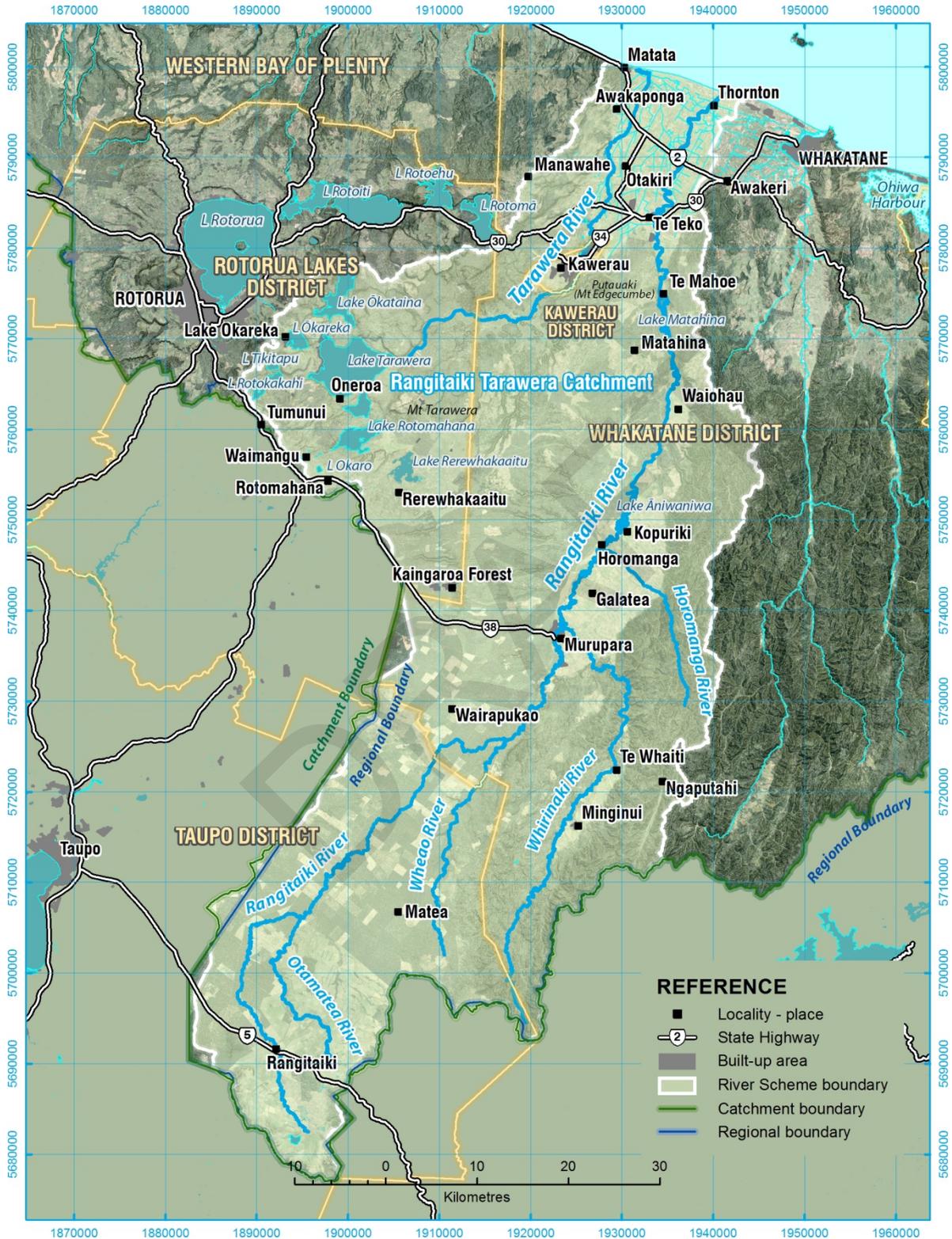
The following table outlines the capital expenditure for the Rangitāiki Drainage Scheme.

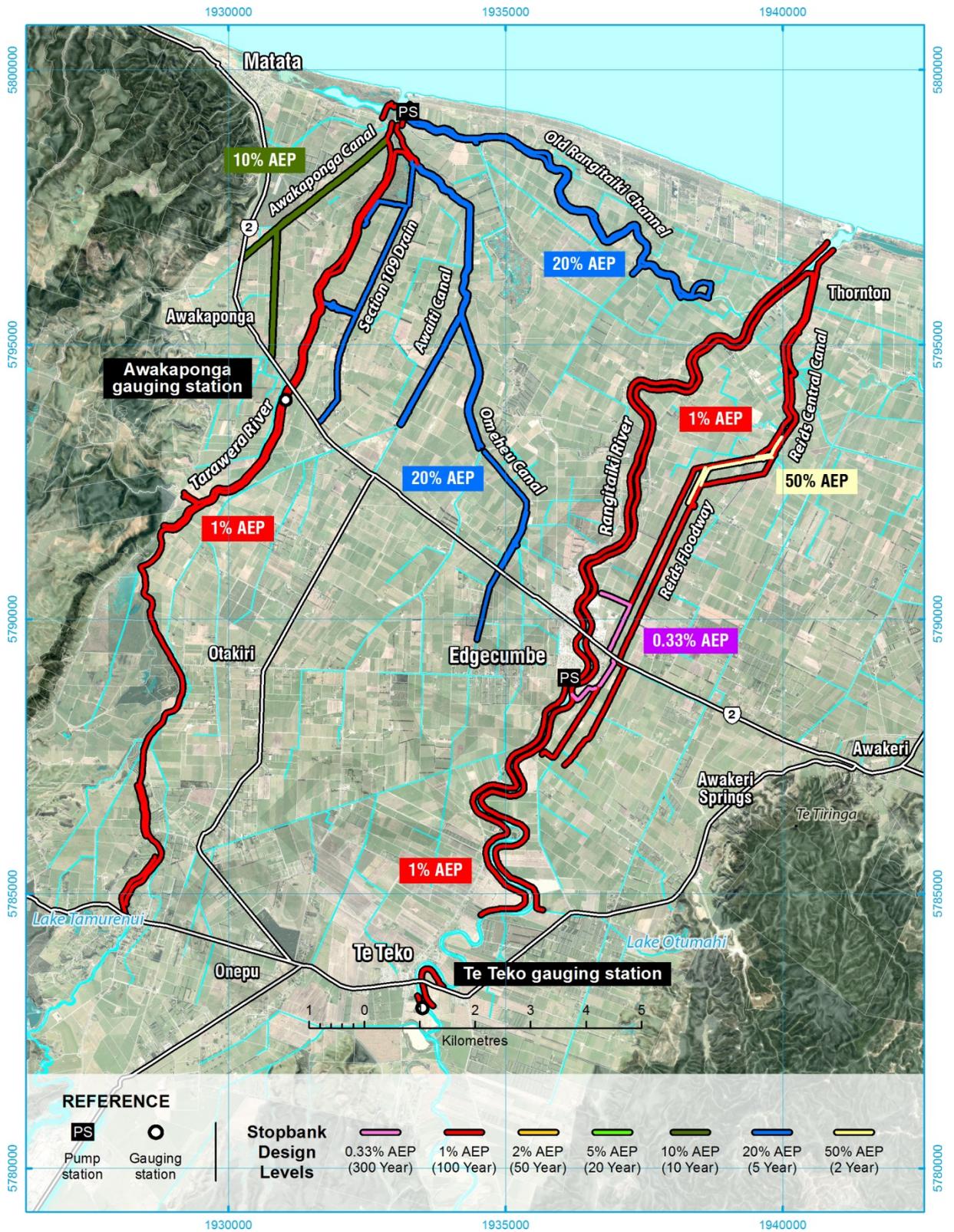
*Table 4 Capital expenditure schedule – Rangitāiki Drainage Scheme*

Year	Capital works	Type	How much
Year 1 (2018/2019)	Multiple floodgate replacement	Replacement	\$255,000
	April 2017 flood damage repairs	New	\$240,489
Year 2 (2019/2020)	Multiple floodgate replacement	Replacement	\$110,000
	April 2017 flood damage repairs	New	\$245,771
Year 3 (2020/2021)	Multiple floodgate replacement	Replacement	\$180,000
Year 4 (2021/2022)	Multiple floodgate replacement	Replacement	\$210,000
Year 5 (2022/2023)	Multiple floodgate replacement	Replacement	\$190,000
Year 6 (2023/2024)	Multiple floodgate replacement	Replacement	\$105,000
Year 7 (2024/2025)	Multiple floodgate replacement	Replacement	\$105,000
Year 8 (2025/2026)	Multiple floodgate replacement	Replacement	\$204,000
Year 9 (2026/2027)	Multiple floodgate replacement	Replacement	\$204,000
Year 10 (2027/2028)	Multiple floodgate replacement	Replacement	\$204,000

### 12.3 Rangitāiki-Tarawera Rivers Scheme

Rangitāiki-Tarawera Rivers Scheme provides flood protection and channel edge stability to land within the Rangitāiki and Tarawera Catchments. It has the largest catchment area of all the schemes.





Asset design standards for Rangitāiki-Tarawera Rivers Scheme.

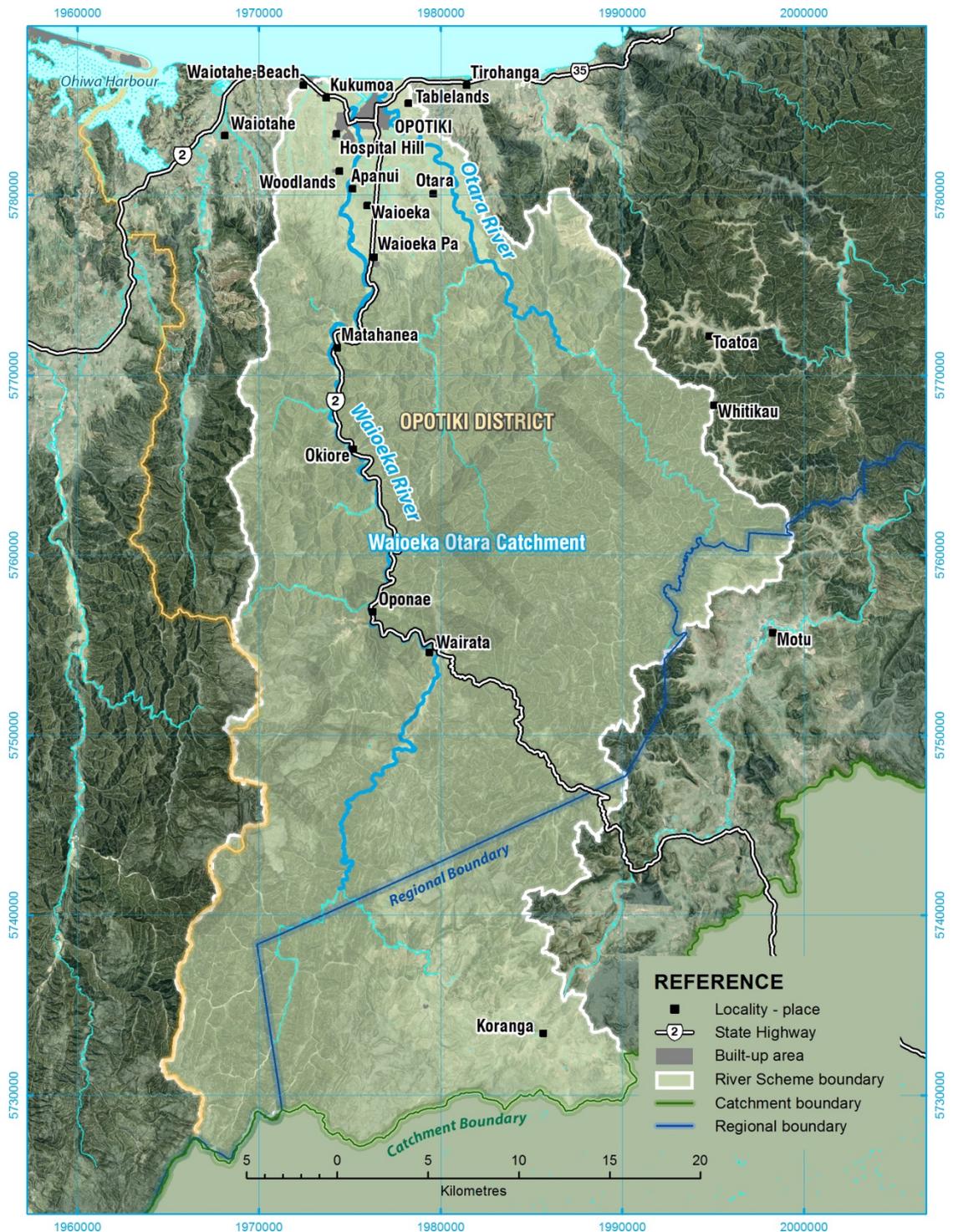
Table 5 Capital expenditure schedule – Rangitāiki-Tarawera Rivers Scheme.

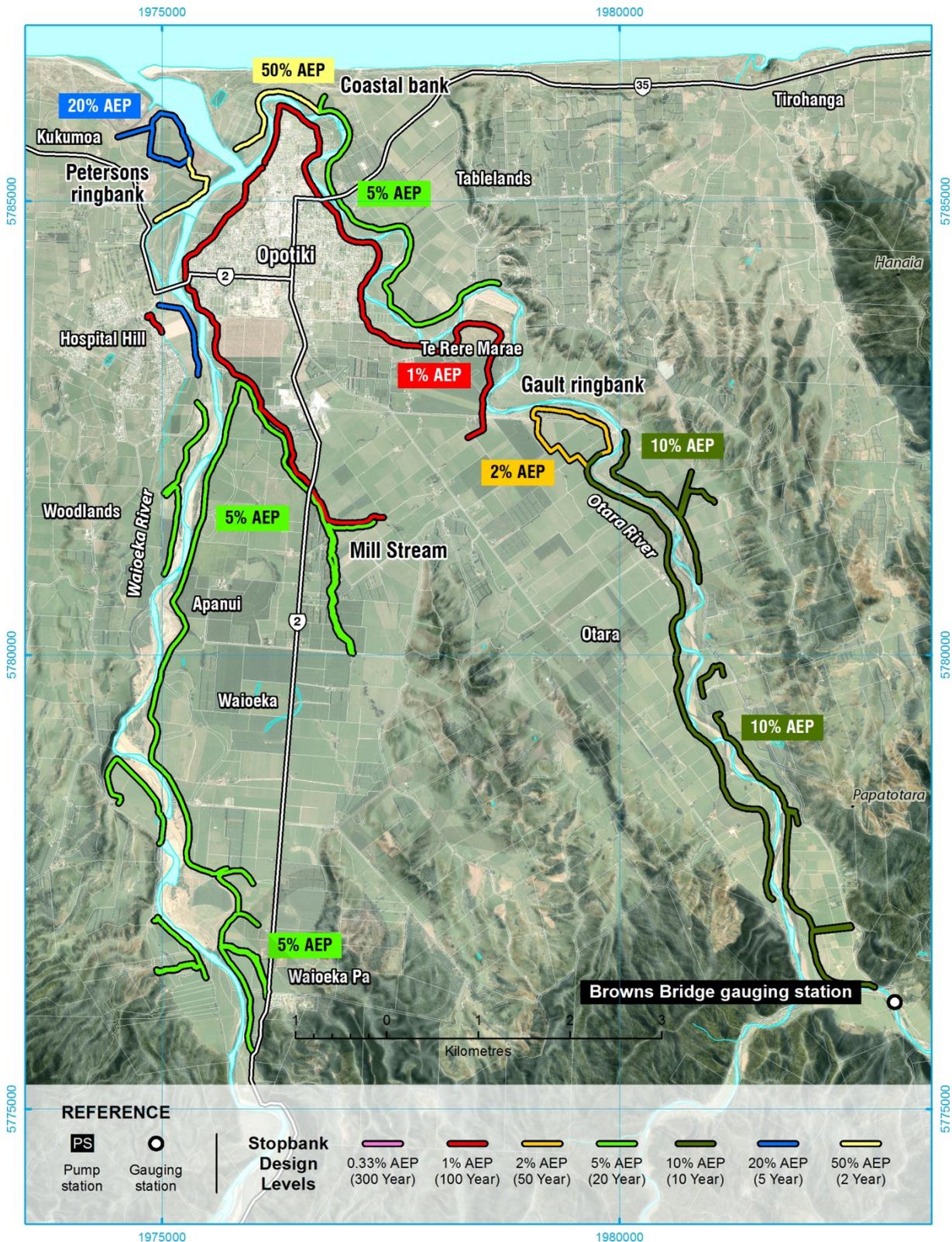
<b>Rangitāiki-Tarawera Rivers Scheme</b>			
<b>Year</b>	<b>Capital works</b>	<b>Type</b>	<b>How much</b>
<b>Year 1 (2018/2019)</b>	Rangitaiki River (modelling)	Replacement	<b>\$150,000</b>
	Rangitaiki River (stopbank upgrade)	Replacement	<b>\$1,000,000</b>
	Rangitaiki Floodway	Replacement	<b>\$4,300,000</b>
	Rangitaiki River (overlays)	Improvement	<b>\$500,000</b>
	April 2017 flood damage repairs	New	<b>\$7,270,526</b>
<b>Year 2 (2019/2020)</b>	Rangitaiki River (stopbank upgrade downstream Edgecumbe)	Replacement	<b>\$1,150,000</b>
	Rangitaiki River (overlays)	Improvement	<b>\$400,000</b>
	Rangitaiki Spillway Structure	Improvement	<b>\$1,200,000</b>
	April 2017 flood damage repairs	New	<b>\$7,430,193</b>
<b>Year 4 (2021/2022)</b>	Tarawera River (capacity review)	Replacement	<b>\$600,000</b>
<b>Year 5 (2022/2023)</b>	Tarawera River (stopbank upgrade)	Replacement	<b>\$1,200,000</b>
<b>Year 6 (2023/2024)</b>	Pump station electronic upgrade	Replacement	<b>\$30,000</b>
<b>Year 10 (2027/2028)</b>	Rangitaiki River (modelling)	Improvement	<b>\$150,000</b>

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## 12.4 Waioeka-Otara Rivers Scheme

The Waioeka-Otara Rivers Scheme provides flood protection, channel edge stability and some drainage and pumping to Opotiki and the surrounding land on the floodplain.





Asset design standards for Waioeka-Otara Rivers Scheme.

The following table outlines the annual capital expenditure for the Waioeka-Otara Rivers Scheme.

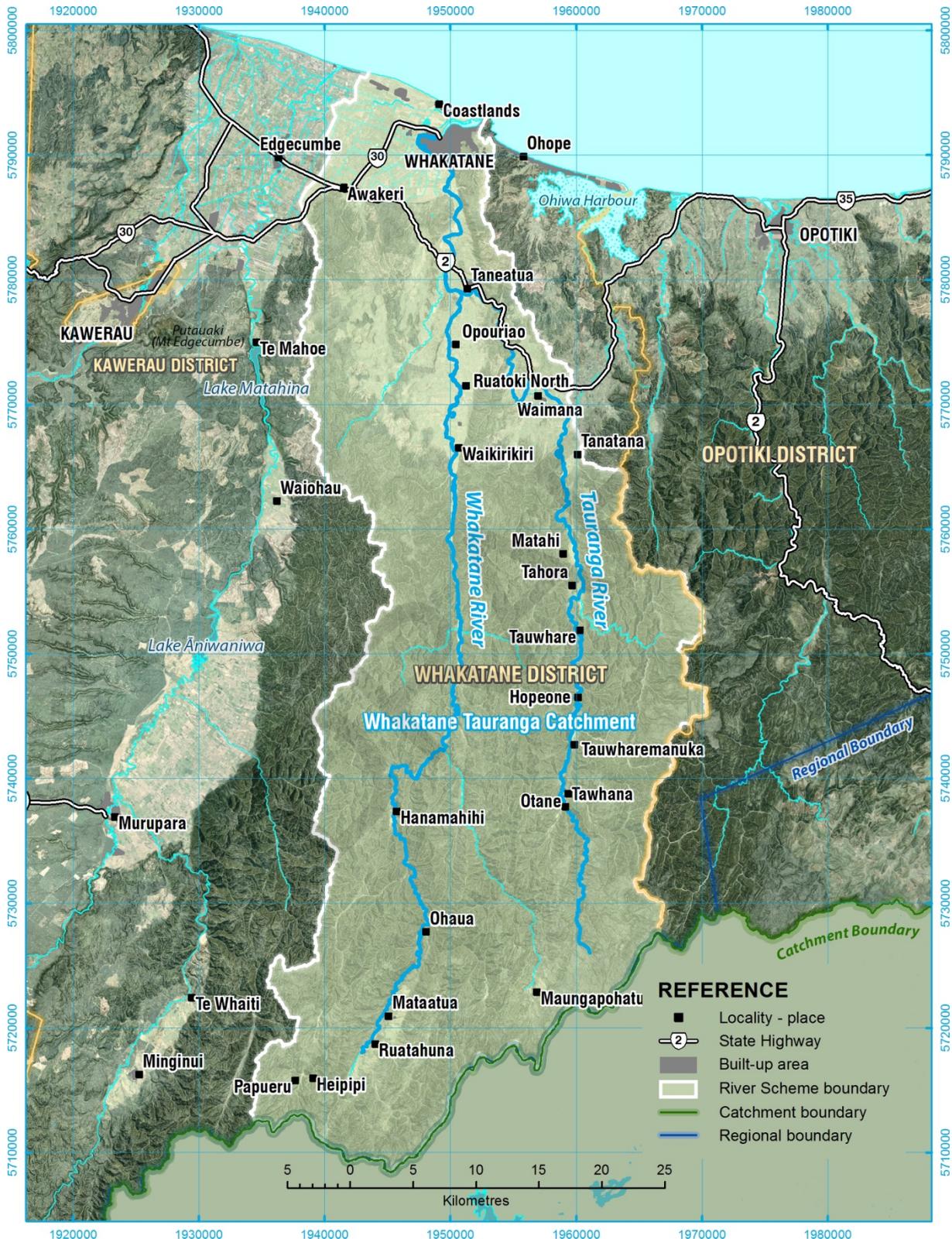
*Table 6 Capital expenditure schedule – Waioeka-Otara Rivers Scheme.*

<b>Waioeka-Otara Rivers Scheme</b>			
<b>Year</b>	<b>Capital works</b>	<b>Type</b>	<b>How much</b>
<b>Year 1 (2018/2019)</b>	Duke Street Pump Station (upgrade modelling)	Improvement	<b>\$100,000</b>
	Capacity review (modelling)	Improvement	<b>\$100,000</b>
	April 2017 flood damage repairs	New	<b>\$2,533,400</b>
<b>Year 2 (2019/2020)</b>	Duke Street Pump Station upgrade	Improvement	<b>\$1,500,000</b>
	Consent renewal (61321 and 61322)	Replacement	<b>\$90,000</b>
	Capacity review (modelling)	Improvement	<b>\$100,000</b>
	April 2017 flood damage repairs	New	<b>\$2,589,035</b>
<b>Year 3 (2020/2021)</b>	Capacity review (modelling)	Improvement	<b>\$100,000</b>
<b>Year 4 (2021/2022)</b>	Capacity review (engineering design)	Improvement	<b>\$100,000</b>
<b>Year 5 (2022/2023)</b>	Stopbank reconstruction	Improvement	<b>\$765,000</b>
	Duke Street Pump Station	Replacement	<b>\$145,000</b>
	Capital climate change	Replacement	<b>\$850,000</b>
<b>Year 7 (2024/2025)</b>	Capacity review	Improvement	<b>\$100,000</b>

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## 12.5 Whakatāne-Tauranga Rivers Scheme

The Whakatane-Tauranga Rivers Scheme provides flood protection, channel edge stability and drainage to the Whakatane River and Tauranga River Catchments.



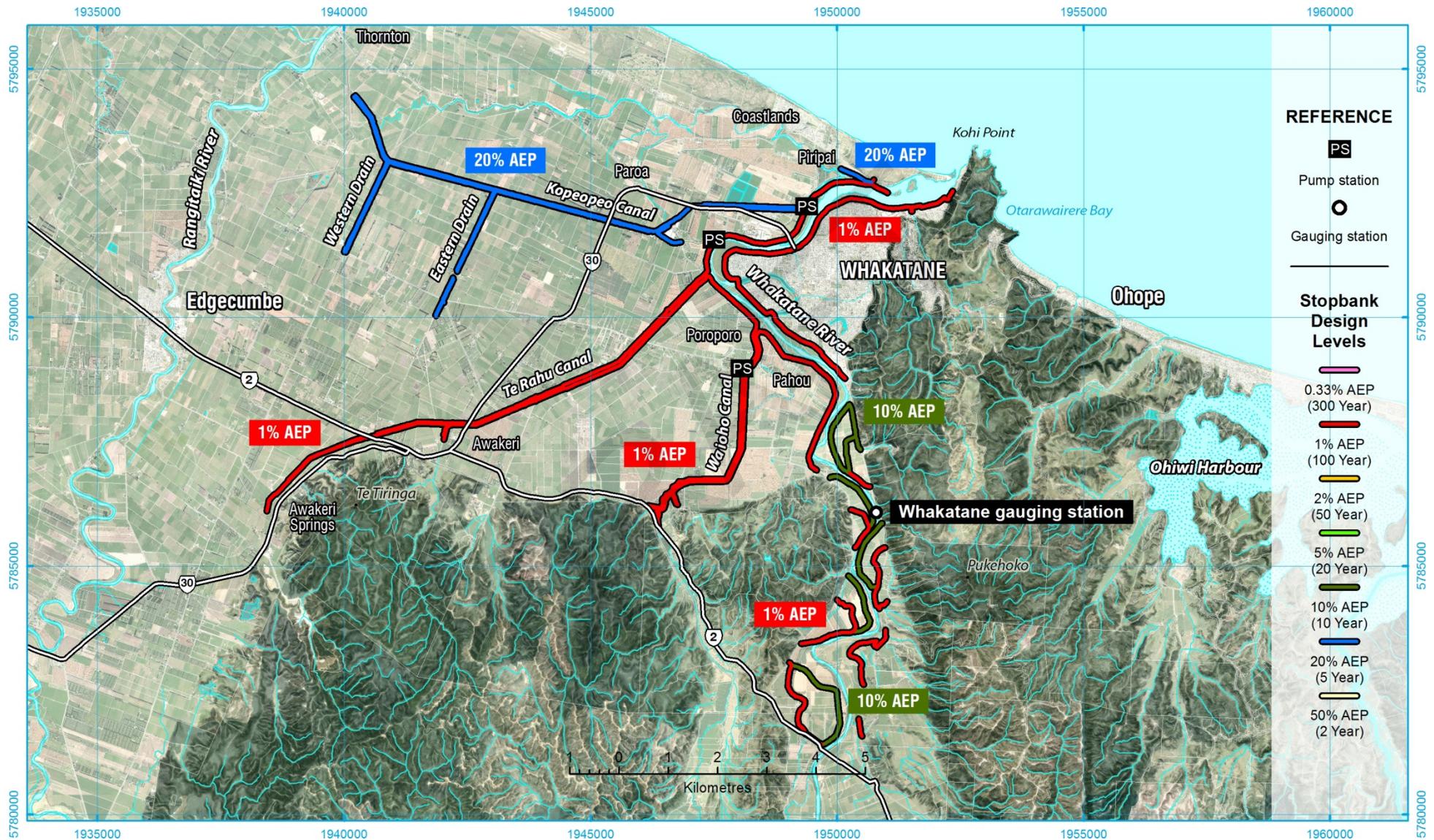


Figure 7 Asset design standards for Whakatane-Tauranga Rivers Scheme.

The following table outlines the annual capital expenditure for the Whakatāne-Tauranga Rivers Scheme.

Table 7 Capital expenditure schedule – Whakatāne-Tauranga Rivers Scheme

<b>Whakatāne-Tauranga Rivers Scheme</b>			
<b>Year</b>	<b>Capital works</b>	<b>Type</b>	<b>How much</b>
<b>Year 1 (2018/2019)</b>	Whakatane River (modelling)	Replacement	<b>\$100,000</b>
	Whakatane River Stopbanks (Stage 1)	Improvement	<b>\$350,000</b>
	Quay Street Stormwater	Improvement	<b>\$270,000</b>
	April 2017 flood damage repairs	New	<b>\$5,894,107</b>
<b>Year 2 (2019/2020)</b>	Whakatane River Stopbanks (Stage 2)	Improvement	<b>\$320,000</b>
	April 2017 flood damage repairs	New	<b>\$6,023,546</b>
<b>Year 3 (2020/2021)</b>	Culvert renewals	Replacement	<b>\$150,000</b>
<b>Year 4 (2021/2022)</b>	Culvert renewals	Replacement	<b>\$28,000</b>
<b>Year 5 (2022/2023)</b>	Capacity review (canals)	Improvement	<b>\$50,000</b>
<b>Year 6 (2023/2024)</b>	Canal stopbanks	Replacement	<b>\$570,000</b>
	Capital climate change	Improvement	<b>\$730,000</b>
<b>Year 7 (2024/2025)</b>	Pump electronics	Replacement	<b>\$35,000</b>
<b>Year 8 (2025/2026)</b>	Capacity review (rivers)	Improvement	<b>\$100,000</b>
<b>Year 9 (2026/2027)</b>	Whakatāne River stopbanks	Replacement	<b>\$600,000</b>
	Capital climate change	Improvement	<b>\$780,000</b>

### 13 AMP review and monitoring

This plan is a living document, which is relevant and integral to daily activity. To ensure the plan remains useful and relevant the following on-going process of AMP monitoring and review activity will be undertaken:

- Formal adoption of the AMP by the Council.
- Work on AMP Improvement Plan annually.
- Review and formally adopt Levels of Service to comply with community outcomes.
- Revise AMP three yearly prior to Long Term Plan (LTP) to incorporate and document changes to works programmes, outcome of service level reviews and new knowledge resulting from the AMP's Improvement Plan.
- Quality assurance audits of asset management information to ensure the integrity and cost effectiveness of data collected.
- Peer review and external audits will be undertaken to assess the effectiveness with which this plan meets corporate objectives. Periodic internal audits will be undertaken to assess the adequacy of asset management processes, systems and data and external audits will be undertaken to measure asset management performance against 'best practice'.

## 14 Improvement Plan

The purpose of the Improvement Plan is to identify and develop improvements to the AMP processes to ensure it is fit for purpose and effective. This includes:

- The cycle of AMP monitoring, review, revision and audit to improve the effectiveness of AMP outputs and compliance with audit criteria, legislative requirements and best appropriate practice.
- The definition of service standards reflecting community outcomes through public consultation. The AMP is used to identify service level options and costs, and the delivery of services is a key objective of asset management planning.
- Identify and prioritise ways to cost-effectively improve the quality of the AMP, and therefore decision making and service delivery.
- Identify indicative time-scales, priorities, human and financial resources required to achieve asset management planning objectives.

The development of this AMP is based on existing Levels of Service, the best available current information and the knowledge of Bay of Plenty Regional Council staff. It is intended that the development of this Plan is part of an ongoing process and that the document will be reviewed and updated regularly. This review process involves using improved knowledge of customer expectations (community consultation) and information from asset management systems and databases. This will enable Bay of Plenty Regional Council to optimise decision-making, review outputs, develop strategies, improve risk management and extend the planning horizon.

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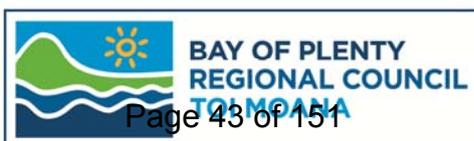


# ROTORUA TE ARAWA LAKES PROGRAMME

## Asset Management Plan 2018-2028 Executive Summary

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### Proud Partners



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## Document control

### Document information

<b>Document name:</b>	Asset Management Plan – Rotorua Te Arawa Lakes Programme
<b>Contact person:</b>	Niroy Sumeran, Lakes Operations Officer
<b>Status:</b>	Draft Summary

### Document review

<b>Review timeframe:</b>	2017/2018 In line with the requirements of Council's Long Term Plan.
<b>Reviewers:</b>	Audit NZ, Organisational Asset Management Steering Group, Programme Leads

### Document history

Author	Description of change	Date	Version
Kirsty Brown	Audit NZ changes (A1901191)	30 March 2015	1.0
Kirsty Brown	Internal review by OAMSG	31 July 2015	1.1
Kirsty Brown	Adoption by Regional Direction & Delivery Committee	17 November 2015	1.2
Abby Harding	Edited as per Niroy Sumeran and Andy Bruere's changes	17 November 2017	1.3
Mary Burford	Edited as per LTP 2018-2028	17 November 2017	1.4

# Asset Management Team

## Rotorua Te Arawa Lakes Programme

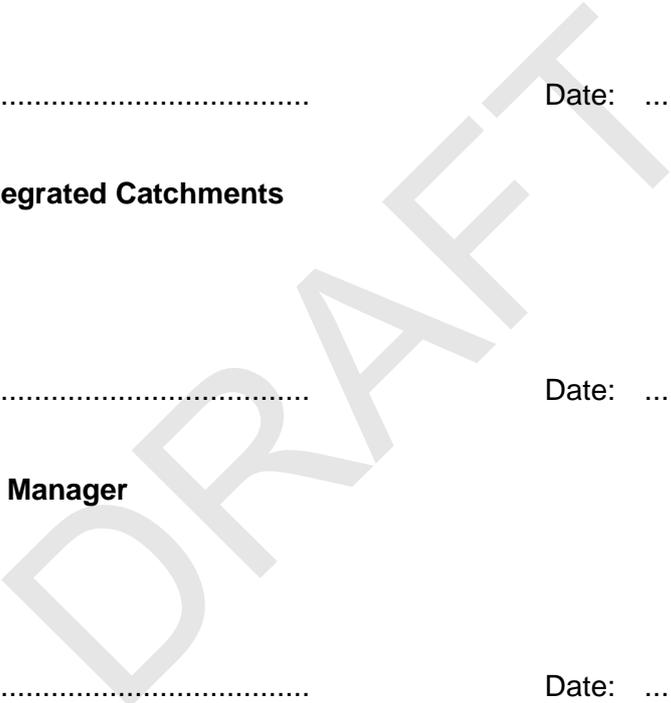
- Chris Ingle                      General Manager, Integrated Catchments
- Helen Creagh                  Rotorua Catchments Manager
- Andy Bruere                    Lakes Operations Manager
- Niroy Sumeran                 Lakes Operations Officer

**Approved for issue:**

Signed: ..... Date: .....  
Chris Ingle  
**General Manager, Integrated Catchments**

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**Lakes Operations Manager**



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## 1 Summary of the lakes activity

The twelve lakes that are considered as part of this Asset Management Plan (AMP) are outlined in Table 1 and the assets they contain and location as shown in the map on the following page. Deed funded lakes are those out of the 12 lakes that have been identified as the most in need of action and have Crown funding (as formalised under a Memorandum of Understanding dated 18 April 2007) towards improving their water quality, subject to Bay of Plenty Regional Council (BoPRC) and Rotorua Lakes Council (RLC) matching the Crown's contribution.

Table 1: Lakes covered under the Rotorua Te Arawa Lakes Programme

Deed Funded Lakes	Non-Deed Funded Lakes
Rotorua	Tikitapu
Rotoehu	Ōkātina
Rotoiti	Rotokakahi
Ōkāreka	Tarawera
	Okaro
	Rotomā
	Rerewhakaaitu
	Rotomahana

Table 2: BoPRC Assets for the Rotorua Te Arawa Lakes Programme

Asset	Replacement Value
<b>P-Locking plants:</b> Rotoehu, Rotorua	\$1,092,800
<b>Zeolite plant:</b> Rotorua	\$469,400
<b>De-stratification plant:</b> Rotoehu	\$456,600
<b>Koaro fish pass:</b> Rotorua	\$26,000
<b>Monitoring buoys:</b> Rotorua, Rotoiti, Rotoehu and Tarawera	\$204,500
<b>Wetlands:</b> Okaro and Rotoehu (floating)	\$1,119,200
<b>Groundwater monitoring bores:</b> Rerewhakaaitu, Tarawera, Rotokakahi, Tikitapu and Okareka	\$1,353,218
<b>Aquatic weed harvester trailer:</b> Rotorua	\$63,335
<b>Outlet structure:</b> Okareka	\$263,443
<b>Diversion wall:</b> Rotoiti.	\$11,368,500
<b>Pioneer pump canopy unit:</b> Okareka	\$86,141
<b>Total asset replacement value</b>	<b>\$16,503,137</b>



## 2 Purpose of this document

The purpose of this document is to summarise the Rotorua Lakes AMP, which formally documents the management philosophy that is applied to its infrastructure assets and services. This approach ensures that acceptable levels of service are provided in the most cost effective manner and contribute to the achievement of the community outcomes identified in BoPRC's Long-Term Plan 2018-2028 (LTP2018-2028).

The key purposes of the AMP are to: *\*Source: Section 3 of the Programme Management Plan 2008-2022.*

- 💧 Convey the long-term strategy for the management of Rotorua Te Arawa Lakes Programme assets and services that Council manages
- 💧 Improve understanding of service level standards, options and costs to smooth peak funding demands, while improving customer satisfaction and organisational image
- 💧 Provide a tool to assist with management assets in a cost effective and sustainable manner
- 💧 Manage the environmental, service delivery and financial risks of asset failure
- 💧 Demonstrate that the service potential of the Lakes assets is being maintained

### 2.1 Asset management objectives

BoPRC recognises that the Rotorua Lakes AMP is the fundamental driver of managing the 12 lakes on behalf of the community.

In order to fulfil the outcomes, vision, goals and objectives of these assets BoPRC have adopted a systematic approach to the long-term management of its assets and services by preparing this AMP.

BoPRC is committed to "best appropriate practice" asset management in order to achieve the following key objectives:

- 💧 Meet the service expectations of the community ('customer values')
- 💧 Ensure capital projects and maintenance activities achieve efficient results with optimal benefits
- 💧 Demonstrate Council's approach to managing risk.
- 💧 Comply with all statutory requirements

### 2.2 Plan timeframes

This AMP covers a 10-year timeframe. The main focus of the plan is to determine the work programmes required to maintain, improve and renew assets over the next ten years. The AMP provides the detail underpinning the LTP 2018-2028 and will be revised every three years.

### 3 Strategic environment

#### 3.1 Purpose

As caretakers of the region's land, air and water, BoPRC monitors the effects of human activities on the environment. It also promotes the sustainable management of natural and physical resources for present and future generations.

#### 3.2 Rotorua Te Arawa Lakes Programme vision

The lakes of the Rotorua district and their catchments are preserved and protected for the use and enjoyment of present and future generations, while recognising and providing for the traditional relationship of Te Arawa with their ancestral lakes.

Matakite:

E tiakina ana, e manaakitia ana hoki nga rota o te rohe o Te Arawa hei painga mo tatau me nga whakatipuranga e ara mai nei, a, me te aro ana ki te hononga tuku iho o Te Arawa ki o ratau rota.

#### 3.3 Community outcomes

Bay of Plenty Regional Council's work guides and supports the sustainable development of the Bay of Plenty. Council wants to make sure the region grows and develops in a way that keeps its values safe for future generations.

The Rotorua Te Arawa Lakes Programme contributes directly to four of the five Community Outcomes identified in BoPRC's LTP 2018-2028, these are set out below:

Table 3: How the programme supports community outcomes

Community outcomes	How the activity contributes to community outcomes	Key performance indicators
<p><b>Water Quality and Quantity</b> Our water and land management practices maintain and improve the quality and quantity of the region's water resources.</p> <p><b>Environmental Protection</b> We maintain and enhance regional biodiversity and our air, land, freshwater, geothermal and coastal resources for the benefit of our communities. We support others to do the same.</p> <p><b>Resilience and Safety</b> Our planning and infrastructure provides resilience to natural hazards and flooding so that our communities' safety is improved and maintained.</p> <p><b>Regional Collaboration and Leadership</b> We have established the region's priorities and strategic</p>	<ul style="list-style-type: none"> <li>💧 Setting water quality improvement actions to achieve each lake's Trophic Level Index (TLI) target.</li> <li>💧 Works with iwi, landowners and the community to provide updates on Rotorua lakes water quality and progress.</li> </ul>	<ul style="list-style-type: none"> <li>💧 Percentage reduction in exports of nitrogen from the Lake Rotorua catchment in accordance with the integrated Framework and engineering solutions target.</li> <li>💧 Meeting the TLI for each lake, which are set in the Regional Water and Land Plan.</li> <li>💧 Achieving nutrient reductions targets set in the Regional Policy Statement for Lake Rotorua and other individual lake action plans.</li> <li>💧 Continue to implement the Rotorua Te Arawa Lakes Programme, including implementing Lake Water Quality Action Plans; investigation lake restoration options; and</li> </ul>

<p>direction with our partners and communities. We have collaborated to achieve integrated planning across the region.</p>		<p>monitoring interventions.</p> <ul style="list-style-type: none"> <li>💧 Harvest lake weed.</li> <li>💧 Take proactive measures to minimise algae blooms.</li> <li>💧 Commission and operate the Tikitere Nitrogen Reduction Plant</li> <li>💧 Continue operation of P-locking plants.</li> </ul>
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### 3.1 Rationale for Council’s involvement

Bay of Plenty Regional Council works with a number of parties to deliver the Lakes Programme and manage the overall goals and objectives of the activity. The Rotorua Te Arawa Lakes Strategy Group is the overarching management group for the 12 lakes in the Rotorua Te Arawa Lakes Programme. The parties involved and their responsibilities are summarised in Table 4.

Table 4: Roles and responsibilities for the partner organisations

Agency	Role within Lakes programme
Te Arawa Lakes Trust	<ul style="list-style-type: none"> <li>💧 Representatives of 52 iwi hapū of Te Arawa as outlined in Schedule 2 of the Te Arawa Lakes Settlement Act 2006</li> <li>💧 Land owner of the Te Arawa Lake beds</li> <li>💧 Lead and monitor cultural component of the lakes strategy</li> <li>💧 Involved and engaged in lakes programme strategy deliverables</li> </ul>
Rotorua Lakes Council	<ul style="list-style-type: none"> <li>💧 Administer the relevant sections of the Resource Management Act 1991</li> <li>💧 Provide and maintain urban sewerage and stormwater discharge infrastructure</li> <li>💧 Plan for and manage land uses within lake catchments through the District Plan</li> <li>💧 Fund agreed portion of the Deed funded projects, in association with Bay of Plenty Regional Council</li> </ul>
Bay of Plenty Regional Council	<ul style="list-style-type: none"> <li>💧 Implement the strategy for the lakes</li> <li>💧 Administer the relevant sections of the Resource Management Act 1991</li> <li>💧 Monitor and report water quality issues</li> <li>💧 Implement the Recreation and Aquatic Pest Management Strategy</li> <li>💧 Plan for and manage land uses within lake catchments through the Regional Policy Statement</li> <li>💧 Fund agreed portion of Deed funded projects, in association with Rotorua Lakes Council</li> </ul>

### 3.2 Programme’s objectives

The key objective for the Rotorua Te Arawa Lakes Programme is:

*“To meet community expectations for water quality in each lake”.*

Each of the 12 Rotorua lakes has a water quality target based on a TLI that is identified in the Regional Natural Resources Plan. These current measureable objectives set for the programme are calculated using four key indicators – total nitrogen, total phosphorous,

water clarity, and chlorophyll-A which are combined into one TLI number. The higher the TLI is, the lower the lake water quality. The current TLI targets are as follows:

*Table 5: Trophic Level Index Targets for the 12 lakes*

Lake	TLI target	Nutrient reduction target (N)	Nutrient reduction target (P)
Rotoehu	3.9	8,880 kg	708 kg
Rotomā	2.3	1,320 kg	250 kg
Tikitapu	2.7	701-822 kg	21-31 kg
Ōkāreka	3.0	2,500 kg	80 kg
Ōkaro	5.0	910 kg	20 kg
Rotorua	4.2	250 tonnes	10 tonnes
Rotoiti	3.5	130 tonnes	19 tonnes
Ōkātina	2.6	860 kg	380 kg
Tarawera	2.6	TBC	TBC
Rerewhakaaitu	3.6	TBC	TBC
Rotokakahi	3.1	TBC	TBC
Rotomahana	-	TBC	TBC

- 💧 Rotokakahi is an iwi owned lake managed by the Lake Rotokakahi Control Board.
- 💧 Lake Rotomahana TLI does not exceed the three-yearly rolling average 0.2 unit trigger.

The aim for the above reductions is to meet community expectations for water quality in each lake.

Although objectives are set in a regulatory document, partners within this programme acknowledge and agree that community expectations mean more than meeting a scientific measure of water quality (TLI). Measures of community satisfaction can also include restoration of taonga species, mahinga kai, restoring the mauri of water or simply improving water clarity. \*

*\*Source: Section 4 of the Programme Management Plan 2008-2022*

### 3.3 Levels of service

Levels of Service (LoS) is an asset management term that covers the service element of delivering a community activity in conjunction with the measurable targets that can be used to determine how effectively the activity has been delivered.

Asset Management (AM) planning enables the relationship between LoS and the cost of the service (the price/quality relationship) to be determined. This relationship is then evaluated in consultation with the community to determine the LoS they are prepared to pay for.

One of the basic cornerstones of sound asset management is:

*“To provide the LoS that the current and future community want and are prepared to pay for”.*

## 4 Funding and expenditure

The original Deed of Funding was signed in August 2009, with the latest iteration being signed off in October 2013. For the four priority lakes the total funding covered under the Deed from 2008 to 2022:

💧 Ministry for Environment	\$72.1 million
💧 BOPRC	\$39.7 million
💧 RLC (Sewage Schemes)	\$32.4 million
<b>TOTAL</b>	<b>\$144.2 million</b>

For Non-Deed Funding:

💧 BOPRC	\$76.9 million (Non Deed funding)
💧 RLC	\$12.8 million (Non Deed funding)

The Long Term Plan forms a key reference document for the Programme. It contains Deed and Non-Deed Funding. The LTP is updated every three years and in between under the Annual Plan a programme is prepared (based on the input from the Project Action Plans) which defines the budget and activities for that year.

All asset funding and expenditure for the Rotorua Te Arawa Lakes Programme can be viewed in the Programme Financial Management Plan.

The table below contain the financial estimates which incorporates the projected income and funding sources (uninflated) to fund operational, renewal and capital expenditure for the next ten years. Deed project income ends 2022. This is based on the best available information at the time of preparation.

*Table 6: Programme Financial Estimates 2018-2028.*

Programme Statement (\$000's)		Type	2018/2019 \$000	2019/2020 \$000	2020/2021 \$000	2021/2022 \$000	2022/2023 \$000	2023/2024 \$000	2024/2025 \$000	2025/2026 \$000	2026/2027 \$000	2027/2028 \$000
<b>Operating revenue</b>												
	Targeted rates		3,054	2,608	2,940	2,896	3,125	3,112	3,118	2,833	2,733	2,658
	Subsidies – Operational		5,377	5,040	4,865	6,540	0	0	0	0	0	0
	<b>Total operating revenue</b>		<b>8,431</b>	<b>7,648</b>	<b>7,805</b>	<b>9,436</b>	<b>3,125</b>	<b>3,112</b>	<b>3,118</b>	<b>2,833</b>	<b>2,733</b>	<b>2,658</b>
<b>Operating expenditure</b>												
	General expenditure		16,719	15,963	16,302	19,563	6,944	6,916	6,928	6,360	6,159	6,009
	<b>Total operating expenditure</b>		<b>16,719</b>	<b>15,963</b>	<b>16,302</b>	<b>19,563</b>	<b>6,944</b>	<b>6,916</b>	<b>6,928</b>	<b>6,360</b>	<b>6,159</b>	<b>6,009</b>
<b>Funding required</b>												
	General rates		1,071	1,071	1,223	1,259	1,420	1,466	1,556	1,503	1,551	1,604
	Other funding		7,217	7,245	7,273	8,868	2,399	2,339	2,255	2,023	1,875	1,747
	<b>Total funding required</b>		<b>8,288</b>	<b>8,315</b>	<b>8,496</b>	<b>10,127</b>	<b>3,818</b>	<b>3,805</b>	<b>3,811</b>	<b>3,526</b>	<b>3,426</b>	<b>3,351</b>
<b>Capital revenue</b>												
	Subsidies		2,400	1,200	0	0	0	0	0	0	0	0
	<b>Total capital revenue</b>		<b>2,400</b>	<b>1,200</b>	<b>0</b>							
<b>Capital expenditure</b>												
	General expenditure		5,440	2,400	0	0	0	0	0	0	0	0
	<b>Total capital expenditure</b>		<b>5,440</b>	<b>2,400</b>	<b>0</b>							
<b>Capital funding</b>												
	Other funding		3,040	1,200	0	0	0	0	0	0	0	0
	<b>Total funding required</b>		<b>3,040</b>	<b>1,200</b>	<b>0</b>							

## 5 Major capital works programme

Table 7: Capital works (uninflated)

Project	Costs	Commissioning years
Tikitere Nitrogen Reduction Plant	\$7,200,000	2018/2019
Buoy Orareka	\$35,000	2017/2018
Buoy Rotoiti	\$35,000	2017/2018
Nutrient Assessment Database	\$250,000	2017/2018
Lake Ōkāreka Pipeline	\$320,000	2018/2019
<b>Total</b>	<b>\$7,840,000</b>	

## 6 Risk management

Proactive risk management is key for the BoPRC. By predicting adverse impacts that may affect a particular project, plans can be developed to treat a risk before the risk impacts, escalates, or is realised.

Risk assessment and management are vital business processes used to:

- Identify potential threats to the programme, system or asset
- To assess vulnerabilities of the programme, system or asset
- To evaluate the impacts on programme's assets or systems
- To evaluate the probability of these threats occurring
- To take action that minimises or eliminates the risk from the programme

Assessing risks at asset level is the focus of this AMP section and the Programme and Project Risk Management Plan.

- The identification of the programme risks focuses on the following three key areas as identified in the following diagram:



## 7 Lifecycle management

The following Lifecycle Management (LCM) section provides a high level and detailed summary of the lakes assets. It also provides a summary of the key strategies and works programmes that are underway to manage the assets that form the activity, to ensure that Levels of Service are met as are the overall goals and objectives of this plan and the lakes strategy.

The LCM section includes the following:

- 💧 Explanation of Lifecycle Management
- 💧 Asset valuation and data summaries
- 💧 Asset overviews by “plant” type or “asset group”
- 💧 Key issues and actions for each asset group
- 💧 Lifecycle Management strategies and programmes

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## 8 Asset summary

Council manages 12 lakes through the Rotorua Te Arawa Lakes Programme activity as noted in the Introduction. The programme focuses on water quality protection and restoration. It is a joint programme between Bay of Plenty Regional Council, Rotorua Lakes Council and Te Arawa Lake Trust. Council manages \$16,503,137 (replacement value) of assets to implement the goals of the Rotorua Lakes Strategy. The assets and their locations (on 5 lakes) are summarised on this page.

Table 8 – Replacement value

Lakes Summary	\$16,503,137	Lake Okaro	\$279,200
P-Locking plants: Rotoehu, Rotorua	\$1,092,800	Wetland 1 & 2	\$279,200
Tikitere Zeolite Pilot plant: Rotorua	\$469,400		
De-stratification plant: Rotoehu	\$456,600	<b>Lake Rotoiti</b>	<b>\$11,407,700</b>
Koaro Fish pass	\$26,000	Monitoring buoy A & B	\$39,200
Monitoring buoys: Rotorua, Rotoiti, Rotoehu and Tarawera	\$204,500	Ōhau Channel diversion wall	\$11,368,500
Wetlands: Okaro and Rotoehu (floating)	\$1,119,200		
Groundwater monitoring bores: Rerewhakaaitu, Tarawera, Rotokakahi, Tikitapu and Okareka	\$1,353,218	<b>Lake Rotoehu</b>	<b>\$1,756,400</b>
Aquatic weed harvester trailer: Rotorua	\$63,335	Waitangi Soda Springs P-locking plant	\$382,600
Outlet Structure: Okareka	\$263,443	De-stratification plant	\$456,600
Diversion wall: Rotoiti.	\$11,368,500	Monitoring buoys (2)	\$77,200
Pioneer Pump Canopy unit: Okareka	\$86,141	Wetland	\$840,000
<b>Lake Rotorua</b>	<b>\$1,598,582</b>	<b>Lake Okareka</b>	<b>\$349,584</b>
Puarenga P-Locking plant	\$315,200	Outlet structure	\$263,443
Utuhina P-Locking plant	\$395,000	Pioneer Pump Canopy unit	\$86,141
Tikitere Zeolite Pilot plant	\$469,400		
Monitoring buoy	\$39,700	<b>Multiple Lakes</b>	<b>\$1,111,671</b>
Koaro Fish pass	\$26,000	Monitoring buoy	\$48,400
Groundwater bores (4)	\$353,282	Groundwater bores (12)	\$999,936

## 8.1 Phosphorus locking (P-locking) plants

There are currently three Phosphorous locking (P-locking) plants in the Rotorua District that are managed by BoPRC. These are:

- 💧 Utuhina Stream - Lake Rotorua
- 💧 Puarenga Stream - Lake Rotorua
- 💧 Waitangi Soda Springs - Lake Rotoehu

P-locking plants are used to reduce available phosphorous from a water body by using a “locking” chemical such as alum. P-locking plants target point sources that are high in phosphorus with the aim of reducing the concentration of phosphorous entering water bodies, i.e. Lake Rotorua or Lake Rotoehu. Various studies have shown that these lakes have degrading water quality due to excess phosphorous. Currently, both Rotorua P-locking plants are going through a re-consent process to continue dosing alum.

Table : P-locking plant asset summary

Plant	Replacement cost	Sum of ODRC*	Sum of AD**
Puarenga	\$315,200	\$240,850	\$16,977
Utuhina	\$395,000	\$260,180	\$21,339
Waitangi Soda Springs	\$382,600	\$328,750	\$18,979
<b>Grand Total</b>	<b>\$1,092,800</b>	<b>\$829,780</b>	<b>\$57,296</b>

\* ODRC: Optimised depreciated rate of cost \*\* AD: Asset depreciation



## 8.2 De-Stratification plant – Lake Rotoehu

The De-Stratification plant (DSP) forces air through diffusers into the lake at different depths to eliminate stratified layers of temperature, plant or animal life. This ensures that more oxygen is available at the lower levels of the lake, leading to improvements in water quality.

The DSP is located at the southern end of Lake Rotoehu and is operated by BoPRC's Lake Operations Officer, University of Waikato and external consultants and contractors. This is a pilot plant and monitoring and sampling has now been completed.



The gross replacement costs for the DSP is \$456,600.

## 8.3 Tikitere Nitrogen Reduction plant – Lake Rotorua

The Tikitere Nitrogen Reduction plant (TNRP) is located at State Highway 30, Tikitere. It is operated by BoPRC and its consultants/contractors. Originally, this site was set up as a de-nitrification pilot plant which was decommissioned. Components from the de-nitrification plant such as control systems, transmitter units and pumps were reused in plant trials.

The geothermal flows that originate from the Tikitere Hells' Gate thermal field, are high in nitrogen and are discharged into Lake Rotorua via the Waiohewa Stream. The TNRP aims to improve water quality in the lake by absorbing the nitrogen which is in the form of ammonia.

At the December 2014 Rotorua Te Arawa Lakes Strategy Group meeting, construction of the full-scale plant was delayed until the 2018/19 financial year. The main reason for this delay is that the benefits of the nitrogen reduction from that this plant would need to be combined with other reductions of nitrogen for there to be a noticeable impact on lake water quality. Therefore, it was agreed to delay construction of the plant and not incur the \$700,000 per annum operating expense until other reductions in nitrogen within the catchment are made. Adjustments to the forecast expenditure of the Programme as a result of this delay in construction were also approved by BoPRC at the 10 February 2015 meeting. Staff intend to proceed with obtaining the resource consents for the project and complete final detail engineering design and build costing estimates before proceeding to build the plant in 2018/19.



*De-nitrification plant*

#### 8.4 Water quality monitoring buoys

BoPRC manages seven water quality monitoring buoys. The University of Waikato (UoW) has installed and maintains them on BOPRC's behalf and output information is available online to the public.

Lake	Date deployed	Depth
Tarawera (meteorological)	September 2006	N/A
Rotorua	July 2007	21 m
Rotoiti (narrows)	July 2008	19 m
Rotoehu	April 2011	10.5 m
Rerewhakaaitu	February 2016	13.6 m
Okaro	January 2013	1.5 m
Rotokakahi	To be installed	N/A



A water quality monitoring buoy

The gross replacement cost for the seven buoys is \$204,500

## 8.5 Koaro Fish pass/Trout Barrier

The Koaro Fish Pass is located in the Hamurana Stream on the northern edge of Lake Rotorua. It was built in 2012.

The assets that form the fish pass include the following:



- 💧 3 x base slabs
- 💧 2 x wing walls

The gross replacement cost for the fish pass is \$26,000 and this structure was installed in 2012.

## 8.6 Ōhau Channel diversion wall

The Ōhau diversion wall is located in Lake Rotoiti and was built in 2008. The diversion wall has been built to reduce the amount of nutrients reaching Lake Rotoiti from Lake Rotorua via the Ōhau Channel. Water from Lake Rotorua is now diverted down the Kaituna River rather than entering Lake Rotoiti, and due to the reduced nutrient loading has helped to improve the water quality in the lake significantly.

The assets that form the diversion wall include the following:

- 💧 King piles (up to 70 m deep)
- 💧 Sheet piles (1,300 m long wall)
- 💧 Timber facing
- 💧 Timber walers
- 💧 Mesh
- 💧 Navigation equipment



The gross replacement cost for the diversion wall is \$11,368,500 and the assessed fair value (from the recent June 2014 valuation) is \$8,047,480. Annual depreciation is approximately \$700,000 (annual depreciation will be revised and reduced once protection system is put in place – see Asset condition below).

Corrosion identified on the diversion wall in 2014 has led to the development of a structural management plan to ensure the wall meets its service life of 50 years. Structural components are scheduled to be installed in 2018/19 to delay major remediation by 10 years.

## 8.7 Wetlands

The Bay of Plenty Regional Council manages a number of wetlands. One land based constructed wetland – the Okaro Wetland, and a 2,800 m<sup>2</sup> floating wetland in Lake Rotoehu. Two small wetlands (70 m<sup>2</sup>) in Lake Rotoiti, and a small wetland in Lake Rotorua (around 70 m<sup>2</sup>).

Wetlands act to reduce nitrogen and phosphorous levels in lakes Rotorua and Rotoehu whereby plants extract nitrogen from lake water or land runoff and use for growth.

The floating wetlands also provide additional benefits once they are fully established and are towed to their final location. These benefits include acting as a nursery for Koura, nesting for birds, enhancing fisheries and dampening wave action in the lake.



Floating Wetland — Lake Rotoehu

The gross replacement cost for the wetlands is \$1,119,200.

## 8.8 Groundwater monitoring bores

Bay of Plenty Regional Council has 16 ground water monitoring bores. Four of these are located around Rotorua and the remainder around the greater Tarawera Lake Catchments



The gross replacement cost for the groundwater monitoring bores is \$1,353,218. The ODRC is \$1,233,490 reflecting that the assets are in as new condition. The assets have been valued in total and have not been itemised down to component level.

## 8.9 Aquatic weed harvester trailer

The weed harvester trailer provides the ability to transport the harvester to problem lakes where the weed harvester is used to reduce in-lake nutrient recycling and the impact on amenity values.

The gross replacement cost for the trailer is \$63,335.

## 8.10 Outlet structure

The Bay of Plenty Regional Council own and holds a resource consent to operate an outlet pipeline from Lake Ōkāreka to the Waitangi Stream (which flows into Lake Tarawera). The purpose of the pipeline is to manage lake levels. The pipeline has been partially upgraded in 2015 to replace failing asset and increase maximum discharge. BoPRC staff operate an adjustment valve from open (to a maximum consent limit of 239 L/s in winter) to fully closed in summer using a control operating protocol.

The gross replacement cost for the structure is \$263,443.

## 8.11 Pioneer pump canopy unit

In 2017 a temporary pipeline was used at Lake Ōkāreka to supplement the existing outlet pipeline, reducing critically high lake levels caused by extreme weather events that occurred between March and August. The temporary pipeline requires a pump to function and the cost of hiring a pump becomes excessive over long periods of operation. It was decided that purchasing a pump would provide long term cost benefits verses hiring.

The gross replacement cost for the pump is \$86,141.

## 8.12 Asset Management Plan review

This plan is a living document, which is relevant and integral to daily activity. To ensure the plan remains useful and relevant the following on-going process of AMP monitoring and review activity will be undertaken:

- Formal adoption of the AMP by Council
- Work on AMP's Improvement Plan annually
- Review and formally adopt LoS to comply with Community Outcomes
- Revise AMP three yearly prior to LTP to incorporate and document changes to works programmes, outcome of service level reviews and new knowledge resulting from the AMP's Improvement Plan

## 8.13 Improvement Plan

The purpose of the Improvement Plan is to identify and develop improvements to the AMP process to ensure it is fit for purpose and effective. This includes:

- Identify indicative time-scales, priorities, human and financial resources required to achieve asset management planning objectives.
- The development of this AMP is based on existing LoS, the best available current information and the knowledge of BOPRC staff. It is intended that the development of this Plan is part of an ongoing process and that the document will be reviewed and updated regularly. This review process involves using improved knowledge of customer expectations (community consultation) and information from asset management systems and databases. This will enable BOPRC to optimise decision-making, review outputs, develop strategies, improve risk management and extend the planning horizon.

# Maritime Operations Asset Management Plan 2018-2028

Executive summary

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## Asset management team

Eddie Grogan	General Manager Regulatory Services
Peter Buell	Bay of Plenty Harbourmaster/Manager
Dan Rapson	Deputy Harbourmaster
Isaac Tait	Senior Maritime Officer (Eastern)
Ross Powell	Senior Maritime Officer (Lakes)
Adrian Heays	Maritime Pollution Control Officer
Bruce Rutherford	Maritime Officer
Donna Polmear	Moorings Officer
Jo Kapua	Administration Officer (Lakes)
Jacqui Sinclair	Safe Boating Officer (Mount Maunganui)
Kirsty Brown	Asset Management Specialist

### **Approved for issue:**

Signed \_\_\_\_\_ Date \_\_\_\_\_

Eddie Grogan  
**General Manager Regulatory Services**

Signed \_\_\_\_\_ Date \_\_\_\_\_

Peter Buell  
**Bay of Plenty Harbourmaster/Manager**

Signed \_\_\_\_\_ Date \_\_\_\_\_

Kirsty Brown  
**Asset Management Specialist**

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## Introduction

This Asset Management Plan (AMP) Executive Summary describes how the Bay of Plenty Regional Council (BOPRC) currently manages and maintains approximately \$558,000 worth of Maritime assets on behalf of the Bay of Plenty region. These assets include moorings and specific navigational aids (lights, beacons, buoys, markers and signs).

The Maritime Operations Activity ensures navigation safety and maritime oil spill response is provided 24/7 in the Bay of Plenty region as required by regulations and Council requirements.

Table 1: Assets covered under the Maritime Activity

Asset type	No.	Carrying value
Beacons	347	\$405,424
Buoys	352	\$107,186
Markers	52	\$10,857
Signs	45	\$31,964
Lights	1	\$3,190
<b>Total</b>	<b>798</b>	<b>\$558,621</b>

## Overview of asset management planning

### Asset management objectives

The overall goal of asset management is 'to provide the required level of service in the most effective and efficient manner for present and future customers'.

In order to fulfil the Community Outcomes, Vision, Goals and Objectives outlined in the Management Overview (next section), BOPRC have adopted a systematic approach to the long-term management of its assets and services by preparing this AMP.

Council is committed to best **appropriate** practice asset management in order to achieve the following key objectives:

- ▶ Meet the service expectations of stakeholders.
- ▶ Ensure capital projects and maintenance activities achieve efficient results that align with required outcomes.
- ▶ Demonstrate Council's approach to managing risk and working towards a sustainable future.
- ▶ Comply with all statutory requirements.

### Purpose of this plan

The purpose of this Asset Management Plan (AMP) is to outline and summarise the Regional Council's long-term asset management approach for the delivery and maintenance of Maritime Operations Activity. The AMP also demonstrates compliance with respective legislation requirements and responsibilities. It aims to:

- ▶ Ensure environmental, economic and financial sustainability.
- ▶ Recognise and balance risk.
- ▶ Ensure the appropriate level of service required is provided at the lowest long-term costs.
- ▶ Improve knowledge of the Maritime assets and its service.

This AMP should be read in conjunction with the Bay of Plenty Regional Council's Long-Term Plan (LTP) and fulfils the requirements of Schedule 10 of the Local Government Amendment Act 2002.

## Plan timeframe

This AMP covers a 10-year timeframe. It assumes that plant and equipment have a life of between 3 - 25 years. The plan documents the strategies required for maintaining, rehabilitating and renewing components over the next 10 years as well as planning for future capital works. This AMP provides the detail underlying the LTP, and ideally will also be completed or updated every three years.

## Management overview

The navigable waters of the Bay of Plenty region includes the coastal areas stretching 12 nautical miles out to sea, the navigable stretches of rivers, harbours, estuaries and the Rotorua Lakes. Within these waters the Regional Council is the statutory and regulatory harbour authority, with responsibility for navigation safety managed by the Harbourmaster and the Maritime Team. These responsibilities include:

- ▶ Maritime emergency response.
- ▶ Marine oil pollution response, mitigation and clean up at Tier II level.
- ▶ Tsunami response.
- ▶ Oversight of commercial shipping and recreational boating safety.
- ▶ Navigational aids.
- ▶ Patrol of waterways to educate the boating public and ensure compliance with the bylaws.
- ▶ Navigation Safety Bylaws including issuing of warnings and infringements for breach of the bylaws.
- ▶ Incident response.
- ▶ Pilotage, licensing and exemptions.
- ▶ Administration of the swing moorings.
- ▶ Education including boat shows and aquatic events displays, publications and brochures.
- ▶ Removal of hazards to navigation including driftwood and logs.
- ▶ Facilitating the volunteer wardens.
- ▶ Maintaining the Tauranga Port and Harbour Safety Management System.
- ▶ Administration of all the legislation governing use and behaviour on the regional waters. These are; the local bylaws, Maritime Transport Act 1994, Resource Management Act 1991 and the Local Government Amendment Act.

The region's harbours and navigable waterways include:

- ▶ Tauranga Harbour.
- ▶ Ohiwa Harbour.
- ▶ Whakatāne Harbour.
- ▶ The Rotorua Lakes.
- ▶ The Rangitāiki, Kaituna, Whakatāne, Tarawera, Waioeka and Mōtū Rivers.
- ▶ Aniwhenua and Matahina Dams (Rangitāiki River).
- ▶ The Pacific Ocean out to the regional boundary.

## Infrastructure assets included in this plan

The physical assets managed by the Maritime Operation Activity include:

Table 2: *Maritime Operations asset summary*

Asset group	No.	Carrying value
<b>Beacons</b>	<b>347</b>	<b>\$405,424</b>
Cardinal beacon light	3	\$7,898
Channel beacon	181	\$259,690
Channel beacon light	162	\$137,552
Light beacon	1	\$284
<b>Markers</b>	<b>52</b>	<b>\$10,857</b>
Markers	53	\$10,857
<b>Signs</b>	<b>45</b>	<b>\$31,964</b>
3 part	15	\$15,102
5 knot map	1	\$898
5 knot sign	3	\$2,156
Caution	5	\$3,593
Conditions	1	\$898
Old nav	15	\$5,005
Safety sign	1	\$719
Signage	3	\$2,695
Ski post and sign	1	\$898
<b>Buoys</b>	<b>352</b>	<b>\$107,186</b>
5 knot buoy	172	\$38,418
Channel buoy	20	\$7,783
Channel buoy light	1	\$3,178
Lake channel buoy	50	\$18,047
Lake isolated danger buoy	10	\$2,123
Lake special marker buoy	31	\$26,151
Ski lane buoy	50	\$11,486
<b>Lights</b>	<b>1</b>	<b>\$3,190</b>
Light	1	\$3,190
<b>Grand total</b>	<b>798</b>	<b>\$558,621</b>

### Notes

Maritime New Zealand owns most of the oil spill response equipment which Council stores and maintains.

In total there are 492 moorings of which Council owns eight. The majority of the remainder moorings are privately owned with Council issuing the mooring licences.

Maritime also have a number of vessels and jet skis which are held under the Property Plant Register.

## Linkages – Community Outcomes and Maritime

The latest Community Outcomes were adopted for the LTP 2018-2028 and support Council’s Vision and Mission. The Community Outcomes are shown in Figure 1. The levels of service for the Maritime Operations Activity links to the Safe and Resilient communities community outcome.

Figure 1 Community Outcomes



To support this Community Outcome, the Maritime Operations Activity contributes in the following ways:

Table 3: How the Maritime Operations Activity supports Council’s Community Outcomes

Community Outcomes	How the Activity contributes to Community Outcomes	Objectives
<b>Safe and resilient communities</b>	<ul style="list-style-type: none"> <li>Minimise risks and effects of maritime oil spills and navigation hazards</li> </ul>	<ul style="list-style-type: none"> <li>We provide systems and information to increase understanding of natural hazard risks and climate change impacts</li> <li>We support community safety through flood protection &amp; navigation safety</li> <li>We work with our partners to develop plans &amp; policies, and we lead &amp; enable our communities to respond and recover from an emergency</li> </ul>

## Funding

Operational funding for the Maritime Operations Activity is sourced 60 - 80% from general funds , 20 - 40% from fees and charges and 0 – 20% Operating grants. User fees for mooring charges were set at the level that fully recovered the costs of the activity, however this is under review. Port levies are set to recover approximately 40% of the cost of the Maritime Operations Activity in Tauranga, estimated to be the percentage of the activity related to the commercial activity.

Capital funding is required when purchasing and maintaining maritime safety equipment to provide the services of the programme.

Operational costs for Maritime Operations are estimated to be around \$3.2 million per annum. Detailed breakdowns are provided in financial forecasts section of the full AMP.

## Levels of service

Council consults with its community and customers on the Maritime Operations Activity every three years through the Long Term Plan (LTP) and annually under the Annual Plan (AP) processes. More targeted consultation and engagement is also carried out to determine the customers' needs and wants. These consultation methods are used to form the basis of Customer Levels of Service.

This Asset Management Plan (AMP) considers that a customer is anyone who uses or is impacted by the Maritime Operations Activity. Customers receive a direct benefit from the Maritime assets while stakeholders share an interest in the assets and/or services they provide.

A key Level of Service (LoS) for the Maritime Operations Activity is that navigation hazards and risks in the aquatic environment are minimised. The Key Performance Indicator for this LoS is to have 90% of the percentage of navigation aids rated as being good quality (3 for us) or higher.

The LoS along with customer and technical performance measure are reported in the full AMP.

## Risk management

BOPRC has a Risk Management Framework and Policy. The risk criteria and matrices established as the basis for risk evaluation were developed in accordance with the AS/NZ4360 and the IOS 31000 Risk Management Standard.

A Risk Register of possible risks affecting the Maritime Operations Activity has been developed in consultation with key staff and is contained in the full AMP. The register highlights the most significant residual risks faced by the Activity. Actions that are required to achieve the desired improvements are indicated along with how progress on these actions will be monitored and reported. Where applicable, action tasks will detail timeframes for achievement, and responsibility for these actions.

## Lifecycle management

The Lifecycle Management (LCM) section of the AMP provides the broad strategies and work programmes required to achieve the goals and objectives set out earlier in the AMP.

To manage the Maritime assets to best meet levels of service at an optimised (minimised) whole of life cost, Council needs to balance three different work programmes, namely:

- Operations and maintenance programmes for lakes assets: Reactive and proactive maintenance and day to day operations to ensure efficient operation and serviceability of the assets.
- The Asset Renewals Programme: Renewal programmes allow for the progressive replacement of the asset base to restore assets to their original LoS.
- The Development Works Programme: Involves the augmentation of assets to improve system capacity and performance.

The right combination of these three works programmes will assist with attaining an optimal level of asset management for the Maritime Operations Activity, given current resources.



5 knot navigational buoy

## Asset groups

### Beacons

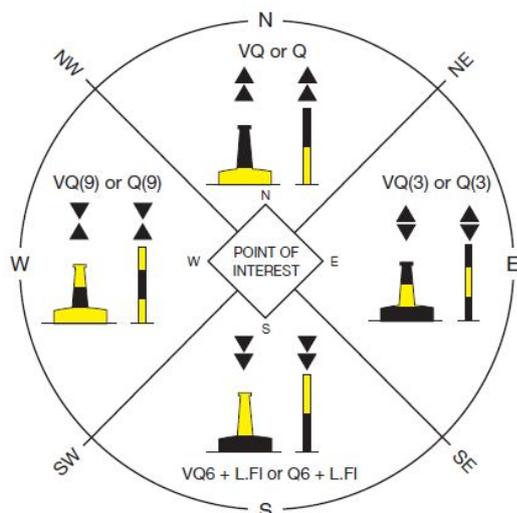
**Beacons** are navigational markers fixed to the ocean or lake floor. Beacons can be lighted or unlighted. They mark channels for vessels to assist with safe navigation.

There are three different types of beacons that are managed by Bay of Plenty Regional Council. These are:

- ▶ Lateral beacons.
- ▶ Cardinal beacons.
- ▶ Virtual navigation aids.

**Lateral beacons** are upright posts consisting of either railway iron or H-Beams. These are either painted or topped with a PVC sleeve and some have solar power lighting.

**Cardinal beacons** indicate the position of a hazard and the direction of safe water. The mark is named after the quadrant in which it is placed.



**Virtual navigation aids** electronically provide navigational information for recreational and commercial boating users.

### Asset summary

Beacons make up the largest proportion of the Maritime Group assets by value and number. The total replacement costs for beacon assets is \$1,509,200. Channel beacons make up the largest proportion of assets.

Table 4: *Beacons asset summary.*

Beacon	No.	Carrying value
Cardinal beacon - light	3	\$7,898
Channel beacon	181	\$259,690
Channel beacon – light	162	\$137,552
Light beacon	1	\$284
<b>Grand total</b>	<b>347</b>	<b>\$405,424</b>

### Signage

There are a number of advisory notices around the region:

- ▶ Advisory notices contained within a galvanised steel frame and mounted on a concrete base. These can be 1, 2 or 3 panelled signs.
- ▶ “Coroplast” information signs are not included in the GIS database and therefore were excluded from the valuation as they were considered to be temporary.
- ▶ “Old nav” are navigational signs that are due to be replaced and have been assigned a condition Grade 4 to prioritise renewal.



*Pilot Bay navigational and safety sign*

### Asset summary

There are 45 signs recorded across the region. On average these assets are around three years old.. Three part signs make up the largest proportion of assets.

*Table 5: Signs assets summary.*

Sign	No.	Carrying value
3 part	15	\$15,102
5 knot map	1	\$898
5 knot sign	3	\$2,156
Caution	5	\$3,593
Conditions	1	\$898
Old nav	15	\$5,005
Safety sign	1	\$719
Signage	3	\$2,695
Ski post and sign	1	\$898
<b>Total</b>	<b>45</b>	<b>\$31,964</b>

### Buoys

Council own and maintain 352 buoys. These are used to indicate a number of things including:

- ▶ 5 knot limits.
- ▶ Channels.
- ▶ Special marks.
- ▶ Safe water.
- ▶ Isolated danger.
- ▶ Ski lanes.
- ▶ Reserve areas.

Buoys are moored to the ocean or lake bed using a concrete block and line. Some buoys have solar lighting.



*Special mark buoy*

### Asset summary

On average these assets are around 20 years old. The total replacement costs for buoy assets are \$233,035. 5 knot buoys make up the largest proportion of assets.

*Table 6: Buoys asset summary.*

Buoys	No.	Carrying value
5 Knot buoy	172	\$38,418
Channel buoy	20	\$7,783
Channel buoy light	1	\$3,178
Lake channel buoy	50	\$18,047
Lake isolated danger buoy	10	\$2,123
Lake special marker buoy	31	\$26,151
Ski lane buoy	68	\$11,486
<b>Total</b>	<b>352</b>	<b>\$107,186</b>

### Markers

Council own and maintain 52 markers for ski lanes. On average these assets are around 19 years old.

*Table 7: Marker asset summary.*

Marker	No.	Carrying value
Ski lane beacon	52	\$10,857

## Moorings

The Maritime Operations Team manages a moorings database and keeps eight moorings for the Harbourmaster to assist with navigational safety.

The majority of the 492 are privately owned with Council managing eight. The Group manages a database of assets and issue mooring licences.

The moorings licences require that an annual fee is paid and that the licence holder has their mooring serviced every two years.

## Vessels and plant

The Maritime Operations Team use a number of vessels and trailers on a day to day basis.

These assets are currently managed by the property team and the assets sit under the Property portfolio.

## Future capital projects

A number of future projects are likely to proceed in the next five year period to help meet levels of service obligations.

These projects include:

Table 8: Proposed maritime projects 2018-2028

Project	Cost	Commissioning year
Navigational assets	\$104,000	2018/2019
Navigational assets	\$250,000	2019/2020
Navigational assets	\$104,000	2020/2021
Navigational assets	\$104,000	2021/2022
Navigational assets	\$250,000	2022/2023
Navigational assets	\$104,000	2023/2024
Navigational assets	\$104,000	2024/2025
Navigational assets	\$250,000	2025/2026
Navigational assets	\$104,000	2026/2027
Navigational assets	\$104,000	2027/2028

## Improvement plan

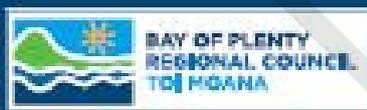
The purpose of the improvement plan is to identify and develop improvements to the AMP processes to ensure it is fit for purpose and effective. This includes:

- The cycle of AMP monitoring, review, revision and audit to improve the effectiveness of AMP outputs and compliance with audit criteria, legislative requirements and best appropriate practice.
- The definition of service standards reflecting community outcomes through public consultation. The AMP is used to identify service level options and costs, and the delivery of services is a key objective of asset management planning.
- Identify and prioritise ways to cost-effectively improve the quality of the AMP, and therefore decision-making and service delivery.
- Identify indicative time-scales, priorities, human and financial resources required to achieve asset management planning objectives.
- The development of this AMP is based on existing LoS, the best available current information and the knowledge of BOPRC staff. It is intended that the development of this Plan is part of an ongoing process and that the document will be reviewed and updated regularly. This review process involves using

improved knowledge of customer expectations (community consultation) and information from asset management systems and databases. This will enable BOPRC to optimise decision-making, review outputs, develop strategies, improve risk management and extend the planning horizon.

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# Regional Parks Asset Management Plan

2018/2019 - 2027/2028

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Regional Parks  
Asset Management Plan  
Executive Summary

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## Activity Management Plan

### Asset Management Overview

Asset Management aims to achieve optimised management of infrastructure assets to provide a service to the community in a cost-effective manner. Delivery of these activities is now largely governed by the Local Government Act 2002 (LGA) (Amendment 2010) which requires local government organisations to develop a long term strategy for management of their infrastructure assets.

### About this Plan

This plan is Bay of Plenty Regional Council’s tactical plan for managing the Council’s Regional Parks in a cost-effective way whilst achieving levels of service and the long term strategic goals of the Council and the community. It provides an analysis of the assets and sets the foundation for the long-term service and financial requirements of the activity.

This plan has been developed taking into account the LGA and the general practice of the latest International Infrastructure Management Manual (IIMM 2015) where applicable.

Figure i summarises the sections and the structure of this document.

### Planning Horizon

Bay of Plenty Regional Council updates Asset Management Plans (AMP) on a three yearly basis to align with the Long Term Plan (LTP) cycle. This plan contributes to the 2018-2028 planning horizon and provides financial, strategic and tactical direction over the ten year planning period to ensure service delivery.

### Planning Assumptions

This plan aims to achieve a core level of asset management. The plan has generally been produced based upon the best available data at the time and financial information from the recent asset valuation (2017).

### Rationale for Involvement

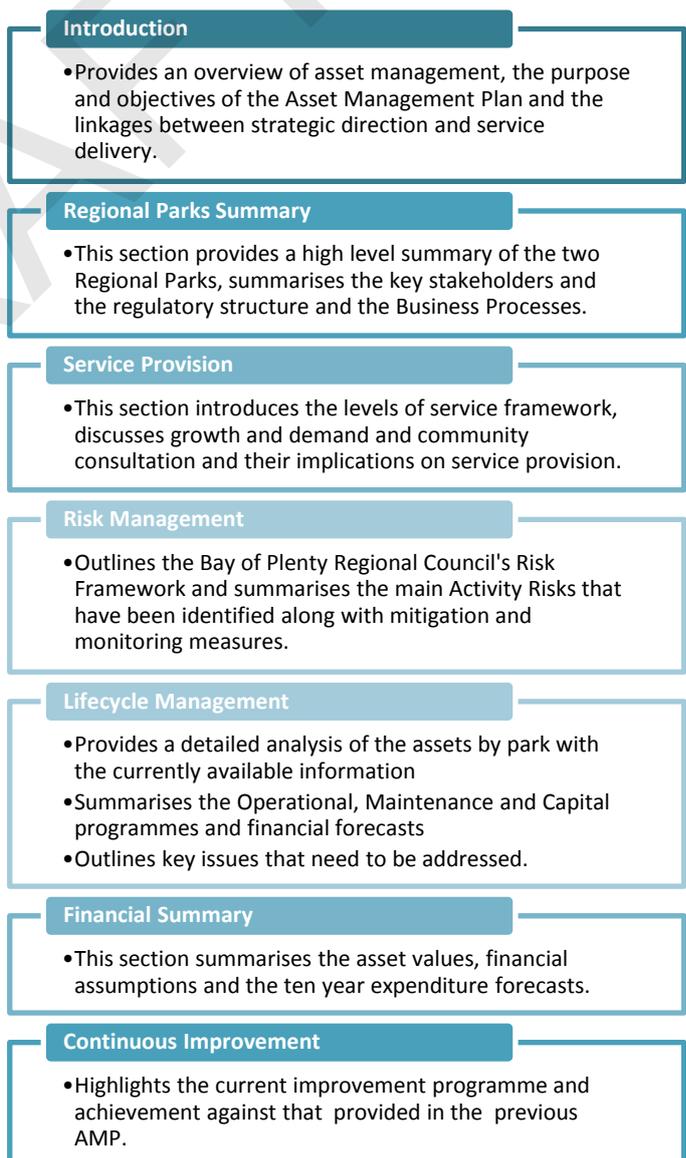
The regional community have requested for Council to be involved in providing regional parks. Council operates regional parks pursuant to the Local Government Act 2002.

## The Regional Parks Activity

Bay of Plenty Regional Council owns and operates two Regional Parks for the benefit of the community. The Parks are:

- Pāpāmoa Hills Regional Park
- Onekawa Te Mawhai Regional Park

**Figure i: AMP Structure**



Pāpāmoa Hills Regional Park is located close to Tauranga and the Onekawa Te Mawhai Regional Park is located near Ohiwa. Both sites have significant amenity value and cultural and archaeological significance. Two management plans have been developed for these parks and key elements of these plans have been captured in the AMP.

The regional parks are managed by the Land Management Team, with the majority of planning and operational/maintenance activities undertaken by Council Staff. Where required, specialist activities are undertaken by external contractors and consultants. The Asset Management (AM) functions for the Regional Parks are supported by the Manager - Kaituna Catchments with everyday maintenance and operational activities being managed by land management officers and one contracted park ranger.

## Park Summary

### Pāpāmoa Hills Regional Park – Summary

The Bay of Plenty's first recognised regional park, Pāpāmoa Hills Regional Park or Te Rae o Pāpāmoa, was first opened to the public in July of 2004. The park was initially owned and managed by Tauranga City Council, with BOPRC taking over management of the park in 2005 and eventually ownership in 2006.

The Pāpāmoa Hills Regional Park is a significant cultural, recreational and historical asset. The park is significant in New Zealand's archaeological landscape as there are few examples of historical occupation of such complexity.

The park has been created because of its heritage – the archaeological/cultural values that are present on the ridges and hilltops. Park stewardship will involve using specific physical protection works, education and farming.

### Onekawa Te Mawhai Regional Park

The Onekawa Te Mawhai Regional Park is located on the headland of the Ōhiwa Harbour above Bryans beach and the Ōhiwa Harbour settlement. The park is valued for its significant Māori cultural history, extensive archaeological features and landscape views.

In 2004, the Bay of Plenty Regional Council purchased the 20.5 ha ex-Gawn property as the first step to secure a regional park in the eastern Bay of Plenty. The ex-Tuck property, which provides access to the neighbouring Ōpōtiki District Council Scenic reserve, was acquired in August 2010 to complement the ex-Gawn property. Both properties sit side-by-side on the Ōhiwa headland and are part of the wider significant cultural and archaeological environment of the Ōhiwa Harbour. Adjoining the property is the 17 ha Ōpōtiki District Council Scenic Reserve.

## Key Stakeholders and Partnerships

Bay of Plenty Regional Council cannot achieve the Community Outcomes alone. Council interacts with a number of stakeholders and partners who assist in the delivery or the direction of the service. The stakeholders are as follows:

### Key Partnerships

- Local iwi and hapū
- Heritage New Zealand
- Tenants and graziers
- Neighbouring landowners
- Local authorities in the region
- Environmental, archaeological and other specialist consultants
- Contractors
- Department of Conservation

- Sport Bay of Plenty

### External Stakeholders

- Community
- Environmental groups (incl. Care Groups)
- NGO's (e.g. Environment Centres)
- Regional development partnerships
- Ministry for the Environment.
- Office of the Auditor General
- Emergency service providers

### PĀPĀMOA HILLS CULTURAL HERITAGE REGIONAL PARK – \$3,136,413



Assets	Value	Description
Assets	\$611,588	
Land Value	\$2,524,825	(not covered in this plan)

#### KEY ISSUES

- Park use is concentrated on a limited area when compared to the balance of the park available for the same experiences sought by those visitors. Plans are in progress to improve this.
- Access to the property directly from SH2 is limited to operational vehicles as part of the resource consent.
- Any ground disturbance is likely to have an impact on the archaeological features due to their number and extent.
- The presence of waahi tapu sites may restrict public access.
- Current activities on adjacent land may constrain some aspects of the parks future development.
- These constraints may restrict any significant building on the park.
- Enhancing public access to the park is an on-going issue.
- There is a diverse range of established activities on adjacent land which may positively and negatively impact on the park experience.
- There has been some land acquisition and pine removal project work near the entrance to enhance the park.



### ONEKAWA TE MAWHAİ REGIONAL PARK – \$3,893,981

Asset	Value	Description
Assets	\$505,092	
Land	\$3,388,889	(not included in this plan)

#### KEY ISSUES

- A 'low key' public profile for the park is the prevalent management tool until the future direction of the park is fully decided via the 2014 park management plan.
- Pests on the property will eventually have an impact on biodiversity.
- Retaining separation of vehicle and pedestrian access for public safety.
- One dwelling was removed in 2017.

### VISITOR EXPERIENCE -

#### The Pāpāmoa Hills Cultural Heritage Regional Park Visitor Experience

This park provides a range of visitor experiences related to tangata whenua customs, cultural and archaeological history together with recreation opportunities in a natural setting with what have been described as the best views of western and eastern Bay of Plenty from one vantage point.

This park will provide appropriate interpretation of the cultural, heritage and environmental values in such a way that it reaffirms the park's significance and increases visitor education.

Emphasis is on activities requiring little infrastructure and few facilities, for example, walking, cultural ceremonies and events, nature study and picnics. Park management will ensure that park users are able to fully enjoy the park in a manner that is safe, cognisant of the cultural, heritage and environmental values of the park and is considerate of other park users. The vision for the park may be achieved through partnerships with other agencies and organisations such as Western Bay District and Tauranga City Councils.

#### The Onekawa Te Mawhai Visitor Experience

The interim focus is on enhancing the visitor experience and maintaining the integrity of the cultural and archaeological features of the park whilst addressing threats to native species.

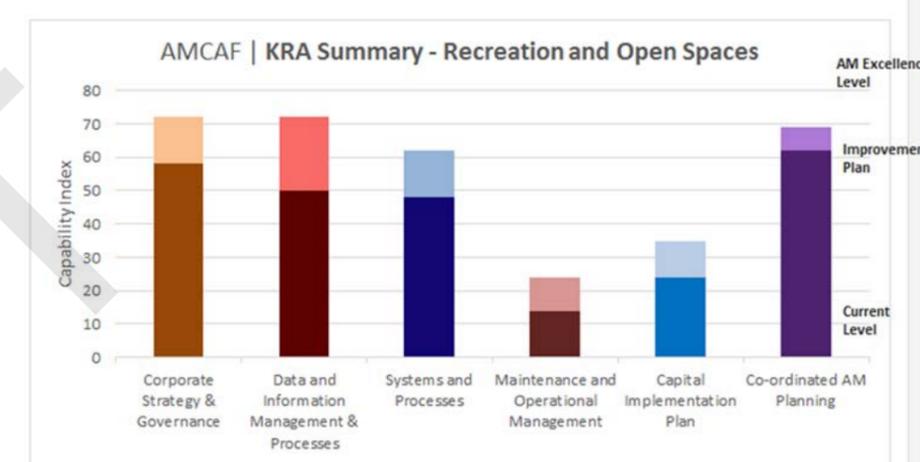
Actions to improve the visitor experience include installing a temporary toilet facility, maintaining direction signs between the summit and the neighbouring Ōpōtiki District Council Scenic Reserve, protecting significant ridgelines and removing farm fencing from some of them, an 'exit strategy' for some existing buildings and structures, sight lines and vistas of the Pa sites from development, and installing a wider network of walking tracks that join to the Ōpōtiki District Council Scenic Reserve.



Pāpāmoa Hills Regional Park  
\$3,136,413

Onekawa Te Mawhai Regional Park  
\$3,893,981

## The AMP Highlights

<b>The AMP</b>	<p><b>General</b></p> <ul style="list-style-type: none"> <li>Full inventory of assets retained on council's system for both parks.</li> <li>An enhanced and current AMP is used as the basis for asset management appropriate with the scope of services and available resources.</li> <li>Comprehensive, targeted continuous improvement plan.</li> <li>Effective from July 2018 - June 2028.</li> <li>A positive trend in increasing visitor numbers (e.g. Pāpāmoa Hills) will require increased investment.</li> <li>Completion of major pine harvesting operation in 2017 has significantly improved the Pāpāmoa Hills park entrance and provided opportunities for enhancement.</li> <li>Dwelling removal at Onekawa Te Mawhai has improved the park.</li> </ul> <p><b>Significant Negative Effects</b></p> <ul style="list-style-type: none"> <li>Health and safety risks associated with the operation.</li> <li>Impact of visitors on archaeological heritage.</li> <li>Potential risks due to presence of Asbestos in possibly two older buildings at Onekawa Te Mawhai Regional Park.</li> <li>Potential for animal damage impacting on archaeological sites and increasing soil erosion.</li> <li>Competing use between heritage protection and recreational use of the park.</li> </ul>	<p style="text-align: center;"><b>Service Levels</b></p> <table border="1"> <tr> <td> <p><b>Outcome Statement</b></p> <p><b>Regional Collaboration &amp; Leadership:</b></p> <p>We have established the region's priorities and strategic direction with our partners and communities. We have collaborated to achieve integrated planning across the Bay of Plenty.</p> <p><b>Environmental Protection:</b></p> <p>We maintain and enhance regional biodiversity and our air, land, freshwater, geothermal and coastal resources for the benefit of our communities. We support others to do the same.</p> </td> <td> <p><b>Regional Parks' Contribution to Outcomes</b></p> <p>Pursuing an effective co-management framework with Tangata Whenua.</p> <p>Our stakeholders and community are proactively involved in influencing our future.</p> <p>Integrating with the Bay of Plenty's open space network and providing for recreation.</p> <p>Implementing outcomes as the result of collaborative processes that have led to approved park management plans.</p> <p>Protecting, conserving, restoring and enhancing the quality of our natural, cultural and heritage resource values for our Regional Parks.</p> <p>Increasing awareness and understanding of natural, cultural and heritage values within our community and amongst visitors.</p> <p>Providing for appropriate recreation and aligning activities, service offerings and facilities within the parks' core values.</p> </td> </tr> </table>	<p><b>Outcome Statement</b></p> <p><b>Regional Collaboration &amp; Leadership:</b></p> <p>We have established the region's priorities and strategic direction with our partners and communities. 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This is up to date and valuation is up to date.</li> <li>Onekawa Te Mawhai Regional Park Operational Management Plan in place directing priorities for maintenance programmes in the Asset Management module.</li> <li>Work with the Asset Accountant has ensured that appropriate asset reporting is integrating with the Asset Management Module which is providing for the inventory needs of the activity.</li> </ul> <p><b>Ongoing Opportunities for Continuous Improvements:</b></p> <ul style="list-style-type: none"> <li>Continued data capture and reporting out of the Works and Assets module and aligning with other systems and processes.</li> <li>Undertake an assessment of resourcing requirements.</li> <li>Review the way in which the activity is governed, i.e. using external parties.</li> <li>Assess the sensitivity of altering the existing levels of service and providing "costs and options" to the stakeholders for further discussion.</li> <li>Improve the use of business cases, which consider the social, environmental, cultural and economic impact of projects.</li> <li>Formally assign staff members to manage the update of data management processes, review of legislative changes and general management of Asset Management processes.</li> <li>Commence implementing improvement items and report back to the Steering Committee as required to show progress to the Steering Committee and for Audit New Zealand.</li> </ul>			
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## Parks Financial Highlights

### Network Management Strategies and Expenditure

To undertake a sustainable, long-term approach to asset management, it is essential to prepare long-term financial forecasts. This allows a long-term view of how the asset will be managed, how much this will cost and when additional funding may be required to meet expected service levels. The table below contains the Parks uninflated Financial Statement, which incorporates the projected income and funding sources to fund operational and capital expenditure for the next 10 years (2018/2019 – 2027/2028).

Table 1: Parks and Reserves Element of Financial Performance 2018/19-2027/28 (uninflated)

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	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10
	LTP									
	2018/19	2019/20	2020/21	2021/22	2022/23	2023/24	2024/25	2025/26	2026/27	2027/28
	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$
<b>OPERATING</b>										
<b>Operating revenue</b>										
General Rates - Allocated	(200,140)	(200,140)	(186,408)	(226,988)	(271,548)	(268,628)	(257,913)	(287,105)	(325,401)	(340,161)
Investment Income	(313,590)	(290,852)	(276,140)	(334,873)	(393,157)	(383,189)	(360,856)	(384,463)	(423,578)	(430,936)
Fees and Charges	(8,000)	(8,000)	(8,000)	(8,000)	(8,000)	(8,000)	(8,000)	(8,000)	(8,000)	(8,000)
<b>Total revenue</b>	<b>(521,730)</b>	<b>(498,992)</b>	<b>(470,548)</b>	<b>(569,860)</b>	<b>(672,705)</b>	<b>(659,817)</b>	<b>(626,769)</b>	<b>(679,568)</b>	<b>(756,979)</b>	<b>(779,097)</b>
<b>Operating expenditure (before charges and recoveries)</b>										
Depreciation - Buildings	29,646	35,830	67,407	162,909	236,740	196,668	152,140	152,112	151,175	150,863
Depreciation - Plant & Equipment	0	3,500	7,000	7,000	7,000	7,000	7,000	7,000	7,000	7,000
Depreciation - Other	0	0	0	0	0	1,000	3,000	24,000	44,000	44,000
Accommodation	1,285	1,285	1,285	1,285	1,285	1,285	1,285	1,285	1,285	1,285
Course & Conference Fees	714	714	714	714	714	714	714	714	714	714
Legal Fees	22,000	32,000	7,000	2,000	2,000	2,000	2,000	2,000	2,000	2,000
Electricity/Gas	5,433	5,433	5,433	5,433	5,433	5,433	5,433	5,433	5,433	5,433
Rates - Council Owned Properties	0	0	0	0	0	0	0	0	0	0
Grants & Contributions	5,000	5,000	5,000	5,000	5,000	5,000	5,000	5,000	5,000	5,000
Contract Work	276,461	217,568	162,639	151,656	149,725	154,742	153,796	155,888	161,007	160,148
Consultancy Fees	0	0	0	0	0	0	0	0	0	0
Materials	3,000	3,000	3,000	3,000	3,000	3,000	3,000	3,000	3,000	3,000
Consumables	3,698	3,698	3,698	3,698	3,698	3,698	3,698	3,698	3,698	3,698
	<b>347,237</b>	<b>308,028</b>	<b>263,176</b>	<b>342,695</b>	<b>414,595</b>	<b>380,540</b>	<b>337,066</b>	<b>360,130</b>	<b>384,312</b>	<b>383,141</b>
<b>Overhead charges and recoveries</b>										
Corporate Additional Levels of Services Recharged	170,325	171,836	178,980	171,236	172,985	180,288	172,119	172,368	178,754	170,574
Rates Cost Recharged	15,574	15,605	13,965	16,015	18,283	17,386	15,722	16,701	18,196	17,915
Job Costing Expense	0	0	0	0	0	0	0	0	0	0
	<b>185,899</b>	<b>187,441</b>	<b>192,944</b>	<b>187,251</b>	<b>191,268</b>	<b>197,675</b>	<b>187,840</b>	<b>189,070</b>	<b>196,951</b>	<b>188,489</b>
<b>Total operating expenditure</b>	<b>533,135</b>	<b>495,469</b>	<b>456,121</b>	<b>529,946</b>	<b>605,863</b>	<b>578,214</b>	<b>524,906</b>	<b>549,200</b>	<b>581,263</b>	<b>571,630</b>
<b>Total Net (surplus) deficit</b>	<b>11,405</b>	<b>(3,522)</b>	<b>(14,427)</b>	<b>(39,915)</b>	<b>(66,842)</b>	<b>(81,602)</b>	<b>(101,863)</b>	<b>(130,368)</b>	<b>(175,716)</b>	<b>(207,467)</b>
<b>Operating Funding</b>										
Transfer from Equalisation Reserve	0	0	0	0	0	0	0	0	0	0
Transfer to Equalisation Reserve	(11,405)	3,522	14,427	39,914	66,842	81,602	101,863	130,368	175,716	207,467
<b>Total operating funding</b>	<b>(11,405)</b>	<b>3,522</b>	<b>14,427</b>	<b>39,914</b>	<b>66,842</b>	<b>81,602</b>	<b>101,863</b>	<b>130,368</b>	<b>175,716</b>	<b>207,467</b>
<b>Total Net (surplus) deficit</b>	<b>(0)</b>	<b>0</b>	<b>(0)</b>	<b>(0)</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
<b>Capital expenditure</b>										
Pāpāmoa Hills Car Park and Interpretation Project	30,000	287,391	1,075,690	1,130,368	324,895	322,194	100,000	2,000,000	0	0
<b>Total capital expenditure</b>	<b>30,000</b>	<b>287,391</b>	<b>1,075,690</b>	<b>1,130,368</b>	<b>324,895</b>	<b>322,194</b>	<b>100,000</b>	<b>2,000,000</b>	<b>0</b>	<b>0</b>

Regional Parks  
Asset Management Plan  
Introduction

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## Overview of Asset Management Planning

### Asset Management and Service Delivery

Asset Management relates to the prudent management of infrastructure assets to provide a service to the community in a cost-effective way linked to mandated levels of service via council's community consultative process.

### Asset Management Objectives

This Asset Management Plan (AMP) has been specifically developed to represent the current investment, resources and objectives of the Parks Team and Bay of Plenty Regional Council. The overall goal of this AMP is to express the required outcomes of the Regional Parks programme, how the assets incorporated as part of this activity will be maintained and operated, the type and level of services that will be provided and how these will be funded over the next ten year period.

In order to fulfil the Council Outcomes, Vision, Goals and Objectives outlined in this document, the Bay of Plenty Regional Council is adopting a systematic approach to the long-term management of its assets and services by preparing this Asset Management Plan.

Bay of Plenty Regional Council is committed to best appropriate practice asset management and to achieving the following key objectives:

- Comply with all statutory requirements.
- Continually improve service delivery to the community.
- Ensure capital projects are robust, meet sustainability criteria and are delivered to plan.

### Purpose of this Plan

The purpose of this plan is to formally document the management philosophy that is applied to the parks assets and services. This approach ensures that acceptable levels of service are provided in the most cost effective manner and contributes to the achievement of the LTP.

This long-term planning approach is considered necessary to appropriately identify the future projected capital and operating expenditure.

The key purpose of this plan is to:

- Provide a document which outlines the long-term strategy for the management of Council's two Regional Parks and their physical assets.
- Detail the level of service that is provided to the community and how this is expected to change so that appropriate funding can be allocated to achieving and maintaining these levels of service.
- Identify and manage the potential risks involved with the provision of these Regional Parks.
- Identify the lifecycle costs needed to provide the required level of service to the community.
- Provide robust justification for future works programmes.
- Provide clarity around the future direction of the Activity and the key asset management improvements that will assist the team to prudently manage assets.

### Timeframe for the Plan

This AMP has been developed to cover a ten year timeframe and considers that the assets included for the Regional Parks have an indefinite life overall. The intention is to review this AMP on a three yearly basis in line with the development of the Long Term Plan. This current review (2017) is complete and will see the next review undertaken in the 2020/2021 financial year.

## Plan Assumptions and Limitations

As mentioned above this plan covers a ten year timeframe to align with the LTP and has been prepared based upon the following assumptions:

- Current policy e.g. the Regional Parks Policy 2003.
- Currently available information and data.
- Forecasts are for a ten year period.
- Existing levels of service, remaining unchanged.
- Limited increase in community aspirations.
- Current trends for increasing park visitation being manageable in the short term using current resources.

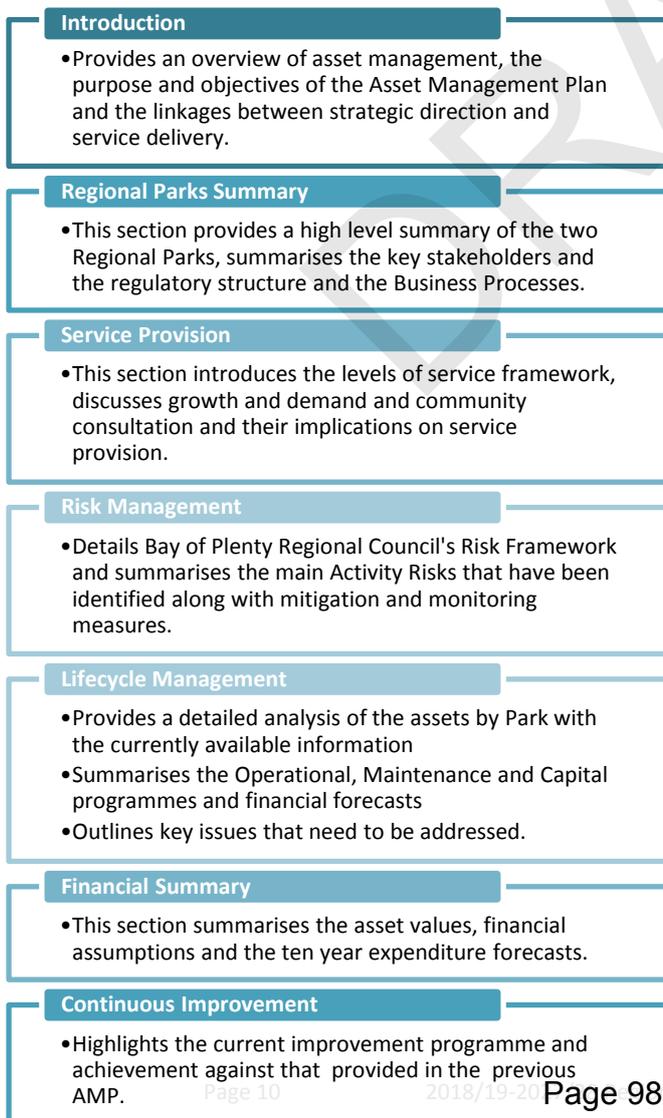


## Scope of the Plan

This plan is Bay of Plenty Regional Council’s tactical plan for managing Regional Parks in a cost-effective way whilst achieving levels of service and long term strategic goals. It provides an analysis of the assets and sets the foundation for the long term service and financial requirements for the Activity.

This plan has been developed taking into account the Local Government Act and the general ethos outlined in the International Infrastructure Management Manual (IIMM). The plan has been developed to a “Minimum-Core” level as defined by the AM Continuum in the latest IIMM (2015).

**Figure 2: Key sections of the AMP**



## Relationships with Other Plans

Asset Management Plans are a key component of service delivery and infrastructure management. A number of other strategic, tactical and operational plans relate to and support the delivery of the service and are linked into the AMP. The most relevant documents are highlighted in the following figure with a more detailed summary of the key documents and their relevance shown in Figure 3.

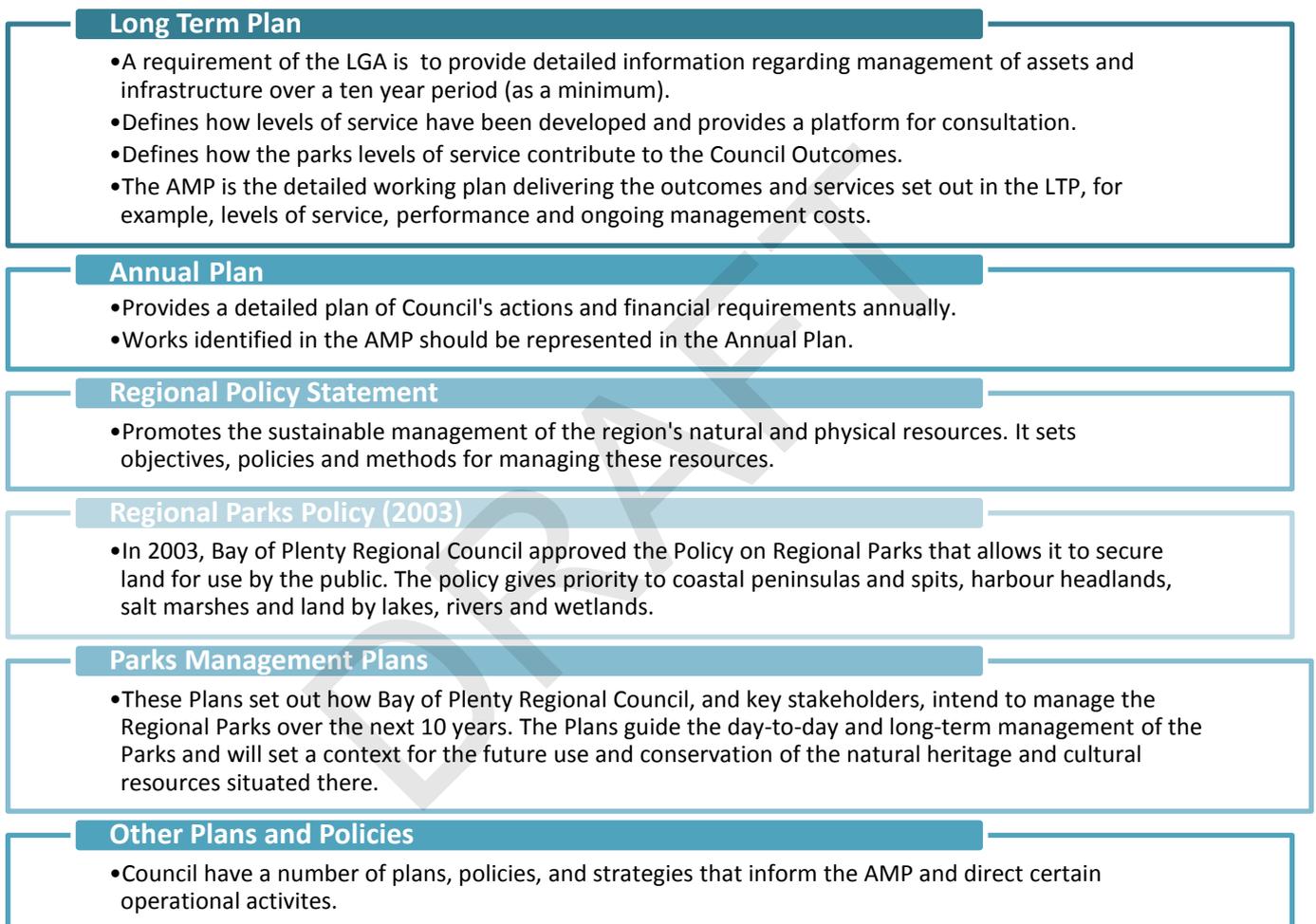
**Figure 3: Linkages with Other Plans and Documents**



There are a number of key Acts that help to direct the provision of the Regional Parks programme. These include:

- The Resource Management Act 1991 and Amendments.
- The Local Government Act 2002 and Amendments.
- Health and Safety at Work Act 2016.
- Heritage NZ Act (2014).

**Figure 2: Summary of AMP Scope**



## Rationale for Provision

### Why we do this programme:

Over the past few years a number of statutory agencies and community groups have requested that the Bay of Plenty Regional Council become involved in the acquisition and provision of regional parks. The Local Government Act 2002 provides for the Regional Council to own and operate regional parks.

### Council Outcomes that the programme contributes to:

The Long Term Plan outlines the Council Outcomes that set out how Council's work will make a difference to the community. There are five Council Outcomes that set the direction for Council's activities as set out in the LTP. Regional Parks contributes to two Council Outcomes as set out below:

- **Regional Leadership & Collaboration:**  
We have established the region’s priorities and strategic direction with our partners and communities. We have collaborated to achieve integrated planning across the Bay of Plenty.
- **Environmental Protection:**  
We maintain and enhance regional biodiversity and our air, land, freshwater, geothermal and coastal resources for the benefit of our communities. We support others to do the same.

Figure 3: Council Outcomes



## How Regional Parks support the Council Outcomes:

The following table shows how the regional parks programme contributes to the Council Outcomes.

Table 1: Contribution to Council Outcomes and Linkages to Levels of Service

Outcome Statement	Regional Parks Contribution to Outcomes	Customer Levels of Service
<p><b>Regional Collaboration &amp; Leadership:</b></p> <p><i>We have established the region's priorities and strategic direction with our partners communities. We have collaborated to achieve integrated planning across the Bay of Plenty.</i></p>	<p>Pursuing an effective co-management framework with Tangata Whenua.</p> <p>Our stakeholders and community are proactively involved in influencing our future.</p> <p>Integrating with the Bay of Plenty's open space network and providing for recreation.</p> <p>Implementing outcomes as the result of collaborative processes that have led to approved park management plans.</p>	<ul style="list-style-type: none"> <li>▪ The regional community has <b>access</b> to and enjoys the unique characteristics of the Bay of Plenty through an <b>integrated system</b> of open space.</li> <li>▪ Costs are <b>appropriate</b> for the services and facilities</li> </ul>

<p><b>Environmental Protection:</b></p> <p><i>We maintain and enhance regional biodiversity and our air, land, freshwater, geothermal and coastal resources for the benefit of the communities. We support others to do the same.</i></p>	<p>Protecting, conserving, restoring and enhancing the quality of our natural, cultural and heritage resource values for our regional parks.</p> <p>Increasing awareness and understanding of natural, cultural and heritage values within our community and amongst visitors.</p> <p>Providing for appropriate recreation and aligning activities, service offerings and facilities within the parks' core values.</p>	<p>provided.</p> <ul style="list-style-type: none"> <li>▪ <b>Decision-making</b> processes are <b>transparent</b> and easily <b>understood</b> and enables <b>participation</b>.</li> <li>▪ Regional parks are <b>well maintained</b>.</li> <li>▪ <b>Health and Safety</b> risks are minimised.</li> <li>▪ <b>Values</b> in parks are <b>identified, protected, enhanced, interpreted</b> and <b>promoted</b>.</li> </ul>
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## Asset Management Maturity Index

As mentioned previously, due to the nature and small number of assets to be managed, Council has decided to set this Parks Asset Management Plan at a “Minimum-Core” level of maturity as it is ‘fit for purpose’ at the current stage.

The following table provides comment on the key elements of Asset Management for the Activity and a statement of the Maturity based upon the Maturity Index provided in the IIMM Manual 2015. The blue bars show current progress and the dark blue line shows where Council are aiming to be following implementation of the three year Improvement Plan (See Section Continuous Improvement).

**Table 2: Asset Management Maturity Index**

AM Element	Minimum	Core	Intermediate	Advanced	Comments
AM Policy Development					N/A – No Policy in place but there is an expectation that the main Activities will update AMPs every three years.
Levels of Service and Performance Management					Levels of service and performance measures are in place covering a range of service attributes but these are not currently reported against annually.
Demand Forecasting					No explicit forecasting has been undertaken to determine growth and demand impacts, however vehicle and pedestrian numbers are being tracked at one of the parks. This will be monitored.
Asset Register Data					Detailed inventories have been completed. An asset register with appropriate hierarchy and condition information together with a valuation has been undertaken. This was as a result of the Improvement Plan (IP).
Asset Condition					Asset condition assessment work is in place and this programme will be maintained from 2017.
Risk Management					A risk framework is in place although critical assets have not been identified. A hazards assessment is planned and included in the IP.
Decision Making					Decision making is in alignment with the Regional Parks’ Policy and led by the Onekawa Te Mawhai Regional Park Management Plan and is also based upon staff judgement and aligns with corporate policy.
Operational Planning					High level operational planning is documented in the Park Management Plans and summarised in the LCM section. No emergency response plans are in place.

AM Element	Minimum	Core	Intermediate	Advanced	Comments
Maintenance Planning					No maintenance plan is in place and maintenance is generally undertaken on an adhoc basis or as agreed in the grazing agreements.
Capital Works Planning					Projects for the next three years are partially scoped.
Financial and Funding Strategies					Asset valuation is in place for asset management functions, financial forecasts are provided for a ten year period and these are based upon previous information where applicable.
AM Teams					AM experience within the team is limited and staff resourcing is limited and has recently changed. An AM Steering Group has been set up and is guiding AM improvement.
AM Plans					The plan contains basic information on assets, service levels, planned works, financial forecasts and future improvements, an executive summary, description of services and a 3 year improvement programme.
Information Systems					The available Asset Management System is sophisticated and can meet all of the teams' needs, following a valuation and condition assessment information can be entered and then the system can be set up to assist the team more effectively.
Service Delivery Mechanisms					Service delivery roles are clearly defined, contracts are in place for external service provision, and competitive tendering approaches are applied where appropriate.
Resource Audit					Undertake a resource audit as part of the above item prior to the next AMP review to determine if the AMP programme can be delivered with current resources and if the need for greater parks sector emphasis/ focus is required.
Improvement Planning					An improvement plan is in place which identifies actions and allocates resources, timeframes, requirements etc. and is based upon assessed performance gaps. Formal monitoring and reporting of the improvements will be reported to the Steering Group for Asset Management.

## Business Systems

Bay of Plenty Regional Council has developed its IT infrastructure around a number of key products that provide a platform for all IT applications. The table below sets out BOPRC's cornerstone IT applications used by Parks.

**Table 3: Existing Business Systems Used for Delivery of the Service**

Function	Product	Group Responsible	Primary users
Word, spread sheets, email, project, access, Word 2010	Microsoft Office	Technology	All Council Activities
Financial accounting and reporting Finance One AM module project in progress, team requirements and training yet to be undertaken	Tech One/AM Module	Technology, Business Solutions Services	All Council Activities
Corporate Planning Microsoft Excel Spreadsheets, Internal memos, Finance One,	Tech One	Business Information	All Council Activities
Document and record management	Objective	Technology	All Council Activities
Geographical Information System	GeoView	Information Systems	All Council Activities
Works and Asset Management System Currently no formal system and use spreadsheets, this data in future is to populate the Finance One Module Asset Register.	Spreadsheet/ Tech One AM module	Land Management section	Land Management section Finance team
Complaints, works orders Information from tenants and onsite contractor Majority of complaints dealt with by the rangers	Job Tracker (internal system)	Information systems	All Council
Consents Management	CSVue	Information systems	Planning Frameworks section
Business Continuity Entire network backup completed daily and stored at an offsite location. Business Continuity plan outlining procedures during a major or catastrophic event.	N/A	Technology	All Council Activities

## AMP Review & Monitoring

This plan is a living document, which is relevant and integral to daily activity. To ensure the plan remains useful and relevant the following on-going process of AMP monitoring and review activity will be undertaken:

- Formal adoption of the AMP by the AM Steering Group/Council.
- Review and formally adopt levels of service to comply with Council Outcomes (options vs costs):
- Revise AMP three yearly to incorporate and document changes to works programmes, outcome of service level reviews and new knowledge resulting from the AMP improvement programme.
- Quality assurance audits of Asset Management information to ensure the integrity and cost effectiveness of data collected.
- Peer review and external audits will be undertaken to assess the effectiveness with which this plan meets corporate objectives. Periodic internal audits will be undertaken to assess the adequacy of Asset Management processes, systems and data and external audits will be undertaken to measure Asset Management performance against 'best practice'.

Table 4 outlines the procedures and timetables adopted to achieve these objectives and Council Outcomes.

**Table 4: AMP Timetable**

Activity	Action	Milestones
<b>AMP Development</b>	▪ Adoption of AMP by Council.	October 2017
	▪ Annual update and enhancement to achieve an intermediate AMP.	Annually
	▪ Complete next revision of AMP.	2017
	▪ Update operational plans in alignment with AMP.	2017 for LTP cycle Annually
<b>AMP Review</b>	▪ Annual review of plan content by Parks Manager. <ul style="list-style-type: none"> <li>– Check AM plan content for consistency with adopted council programmes and plans.</li> <li>– Compliance with agreed AM improvement programmes.</li> <li>– Effectiveness and adequacy of AMP processes, systems and data.</li> </ul>	Annually
	▪ External review of technical content, with results reported in the Long Term Plan (LTP).	3 yearly
	▪ External review of AM plan information by Audit New Zealand.	30 November triennially
<b>Asset Management Data</b>	▪ Develop data collection and data standards, specifications, and quality assurance.	2017
	▪ Undertake quality audits on data integrity and report results.	2017
<b>Level of Service</b>	▪ Review current levels of service (LoS options vs costs), key performance indicators (KPIs), including public consultation process.	On-going
	▪ Measure levels of service delivered and reporting process (in terms of social, economic, environmental and cultural well-being) in Annual Report.	
	▪ Review and implement community consultation process.	Every 3 years.
	▪ Adopt LoS through the LTP.	

Regional Parks  
Asset Management Plan  
Regional Parks Summary

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## Overview of the Regional Parks Activity

### Activity Summary

Bay of Plenty Regional Council owns and operates two regional parks for the benefit of the community. The parks are:

- Pāpāmoa Hills Regional Park
- Onekawa Te Mawhai Regional Park

Both parks are covered under one AMP. The AMP is recent, but defined by comprehensive inventories with a high level of confidence in condition ratings and valuation. As aspirations and longer term management direction becomes more defined for both parks, the AMP is in the position to support ongoing management through Council's systems and the AMP Improvement Plan.

### Parks Assets

The settings and values at both parks provide regional infrastructural assets that unlike other infrastructure include a number of appreciating and "intangible" assets. These assets include significant trees, tracts of regenerating native bush, significant archaeological and cultural sites.

Many assets present at the parks are 'attached to the land' and don't depreciate. The majority of assets have come from the legacy of farming on the land prior to becoming parks.

The majority of assets are in condition 2 or 3 and have long life spans ahead of them. The asset profile of the parks sees these assets anticipated to see out their entire useful lifespan. Only interpretive signs and the natural short lifespan these normal have are the main renewal priority.

Assets are typically:

- fencing and styles
- pathways/walkways car parks
- dams
- toilets
- farm buildings and dwellings
- water supply-tanks and pumps
- park furniture
- timber plantations
- signage

## Funding and Expenditure

To manage the activity, funding for capital land purchases is provided from a range of sources including internal and external loans and general funds including reserves. The operating costs required to manage the parks comes from Council's general funds. Council will assess the most appropriate sources of funding when it reviews its Revenue and Financing Policy as part of a Long Term Plan or Annual Plan process.

## How is the Service Managed?

### Overview

Regional Park management in the Bay of Plenty is undertaken with multi-jurisdictional and co-management collaboration between parks agencies and tangata whenua<sup>1</sup>. Tangata whenua are partners in both BOPRC regional parks and the relationship is one defined by with ongoing mahi and korero on key issues.

### The Team Structure and Partnerships

The internal management team who oversee the operation and management of the regional parks in Council is small, with half a FTE (Full Time Employee) being provided for the management of the parks and the responsibility for the asset management processes.

With increasing visitation, particularly at Papamoa Hills, there is the need to plan for a future resource audit to ensure the resources are in place to deliver the outcomes desired. Council is unusual in that it is a parks agency that does not have dedicated parks staff in name or a named 'parks department'.

There are a number of other stakeholders and partners who help to oversee and deliver the parks activity and these are listed under Key Partnerships and Stakeholders in the above summary section.

### Significant Negative Effects

The LGA requires an outline of any significant negative effects (not positive effects) that the activity may have on the social, economic, environmental and cultural well-being of the (local) community.

Regional parks services generally provide a significant public good to the community with respect to recreation and the less studied benefits to the economy, the environment, our social conditions and public health. However there are some adverse impacts that are generally well managed. Most issues are easily mitigated through appropriate management and operational techniques and on-going monitoring.

The following table summarises the key negative effects:

**Table 5: Potential Negative Effects**

Negative Effect	Potential Mitigation
<b>Social</b>	
Health and safety risks associated with the operation	Parks are closed during extreme weather events, hazard assessments are undertaken for each park, hazards are identified on park information boards and any high risk areas have barriers in place etc., levels of service for maintenance is consistent so as to limit trips and falls etc.
Impact of visitors on archaeological heritage	The construction of defined walkways to prevent erosion. Visitors have the sensitivity of site brought to their attention and more overt interventions pending greater heritage protection measures being in place if required.

<sup>1</sup> Council, the Department of Conservation, the Mauao Trust and Western Bay of Plenty and Tauranga City Councils are also all situated in Tauranga and work closely together in areas of joint policy, joint planning and at operational levels.

<b>Economic</b>	
Health and safety risks associated with the operation	Costs of potential claims are minimised through undertaking appropriate risk identification and mitigation measures.
Costs of providing the service increase, impacting on rates	<p>Manage the investment needed via investment plans to secure non rate revenue funding to ameliorate the rate investment requirement.</p> <p>Ongoing vigilance to the cost of operation through reducing costs where possible, working with other partners and stakeholders to secure joint benefits. Business planning to articulate the longer term view to income and expenditure including income initiatives.</p>
<b>Environmental</b>	
Environmental Impacts relating to chemical handling	Ensure that chemicals are stored correctly and HSNO chemical handling standards are followed.
Animal damage impacting on archaeological sites and increasing soil erosion	Stock restricted from sensitive areas, suitable areas of land retired and vegetated. Regenerating areas are fenced off.
Control of pests	Implement pest control plans to protect native flora and fauna.
<b>Cultural</b>	
Competing use between heritage protection and recreational use of the parks	Quarterly meetings with Iwi Advisory Committees to discuss conflicting uses or new ideas.

Additional details of both parks, their assets and the management strategies are provided in the Lifecycle Management Section of this AMP.

Regional Parks  
Asset Management Plan  
Levels of Service

DRAFT

## Overview

The regional parks activity has one LoS. It is linked to the LTP Community Outcome, “Environmental Protection, Regional Collaboration and Leadership”.

The regional parks activity LoS is:

*Pāpāmoa Hills Cultural Heritage Regional Park and the Onekawa Te Mawhai Regional Park are managed for the enjoyment of the community and to protect their (the parks’) heritage values.*

The Key Performance Indicator (KPI) for this LoS is:

*Percentage of regional park users who rate their experience as satisfactory or higher.*

## LGA 2002/2010 Requirements

### Overview

The Local Government Act provides for Council to play a broad role in providing a framework and powers for Council to decide how it will undertake activities.

Levels of Service are community focused, rather than technical, to ensure that there is a community perspective applied to the development of traditionally technical service levels.

Part 1 of the Act, Section 4, outlines the general requirements for the development of service levels. These requirements are:

- Statement of intended levels of service provision for the programme including performance measures.
- Performance measures and targets that will enable the community to assess the level of service for major aspects of the service that have not already been set as standard measures.
- A summary of any material changes to the cost of providing the service and the associated reasons for the change.

### Decision Making and Reporting

The LGA also sets out how levels of service should be reported and consulted on.

Sections 76-81 outline the decision making process and the various requirements in relation to making decisions, incorporating community views, including Māori in the decision making process and identifying inconsistencies.

The Act requires Council to report against its Long Term Plan levels of service in the Annual Report. The key requirements are:

- Comparing LoS achieved against targets.
- Specifies whether intended changes have been achieved.
- Provide reasons for any significant variance between actual and expected service provision.

### Community Consultation

Council consults the regional community on the regional park programme each year through the Long Term Plan and Annual Plan processes. Council also undertakes more targeted consultation and engagement for each of the regional parks. The Pāpāmoa Hills Advisory Committee for the Pāpāmoa Hills Cultural Heritage Regional Park meets quarterly to discuss matters regarding the park. This provides a forum for iwi/hapū representatives to provide advice on cultural and technical aspects of operations within the park. The Onekawa Te Mawhai Operational Management Plan states that

Council will engage with the community, iwi, Heritage New Zealand and other interested parties on appropriate operational matters.

### Visitor Usage – Growth and Demand

Council is continually reviewing the best cost-effective way to ensure the regional community has access to open space opportunities. This includes working with other land owners (such as other government agencies) to ensure opportunities are investigated across the region to ensure appropriate and cost effective provision of open space for the region.

Maximising the use and potential of the existing parks is important. Increasing visitor numbers will have the added benefit of raising the profile of the park and conversely also the expectations of what the park delivers. By maximising the use of the existing parks there is likely to be more public involvement and potential opportunities for external funding.

#### Pāpāmoa Hills Cultural Heritage Regional Park

Demand management is practiced continuously to maintain the total demand at reasonable and sustainable levels. Visitor numbers have steadily increased over the last two years. Steps to meet the increased visitor demand are highlighted in the park's management plan.

Areas for development/improvement will include:

- Way finding and interpretation.
- Trails.
- Car parking and visitor facilities.
- Native plantings.
- Alternative access.

#### Onekawa Te Mawhai Regional Park

The 2014 Onekawa Te Mawhai Operational Management Plan will continue to address growth and demand issues. A range of actions have been developed that will improve the facilities at the park and will assist in encouraging additional users to the park.

## Regional Parks Levels of Service, Performance Measures

Table 6: Levels of Service Table

Community Outcome	Activity Strategic Outcomes (Levels of Service)	Customer Performance Measure			Technical Performance Measure					Performance Measure Procedure
		Measure	Current Target	Proposed Target	Factors of Influence	Measure	Current Target	Current Performance	Proposed Target	
A healthy environment  Freshwater for life	The regional community has <b>access</b> to and enjoys the unique characteristics of the Bay of Plenty through an <b>integrated system</b> of open space.	No. of Regional Parks provided. (Internal KPI)	2 Parks	None, optimising current parks as the opportunity arises.	Core information regarding regional parks.	Core information such as opening hours are available on the website.	100% of the time	100%	100% of the time	Annual review of regional parks opening hours and information advertised on the website, in brochures and on signage.
					Wayfinding and Interpretation. (Directional/Educational)	In place for all operative regional parks in accordance with management plans.	100% of the time	50%	100%	Annual review park management plans. Maintenance contract reporting (frequency as per contract).
					Usage of parks.	No. of people and vehicles per annum for all parks.	20,000	20,000	3% per year to 25,674 by 2019	Track counter tabulated annually. Vehicle counter tabulated annually.
A vibrant region	Costs are <b>appropriate</b> for the services and facilities <b>provided</b> .	Total cost per hectare of regional park maintained (based on operative budget). (Internal KPI)	< \$2,100	As for current (inflation adjusted).	Operational and maintenance expenditure.	Managed to within ±10% of operational budget as per the Annual Plan programme.	100% compliance	100%	100% compliance	Quarterly and Annual Report to the Council.
				Maximise external funding (capital and maintenance).	Review yearly prior to Annual Plan process.	100% compliance	0%	100% compliance		

Community Outcome	Activity Strategic Outcomes (Levels of Service)	Customer Performance Measure			Technical Performance Measure					Performance Measure Procedure
		Measure	Current Target	Proposed Target	Factors of Influence	Measure	Current Target	Current Performance	Proposed Target	
<b>A healthy environment</b>  <b>Freshwater for life</b>  <b>A vibrant region</b>	Manage our Regional Parks sustainably	Satisfaction level of Regional Park users	Pāpāmoa = >85% Onekawa = >85%		Parks management plan and supporting documents. Maintain a health and safety register and system to identify and mitigate potential health and safety incidents and a system to record and investigate incidents.	Develop and maintained in accordance with management plans for all regional parks. Review AMP and management plans on a three yearly basis along with the AMP. Each parks management plan is to address the cultural, heritage, landscape or other values as appropriate. 100% of reported incidents and hazards are recorded and investigated.	100% compliance 100% compliance	100%		Satisfaction assessed by survey of at least 50 visitors in December-January every second year using 5 point Likert scale. Measure is based on 85% being in the top two categories of satisfaction (eg Satisfied, Very Satisfied)  Annual reporting. Annual performance review against park management plans. Triennial Asset Condition survey. Annual review parks management plan.
		Number of visitors to our Regional Parks	New target	100,000 visitor across both parks in year one, increasing by +5% per year						

Community Outcome	Activity Strategic Outcomes (Levels of Service)	Customer Performance Measure			Technical Performance Measure					Performance Measure Procedure
		Measure	Current Target	Proposed Target	Factors of Influence	Measure	Current Target	Current Performance	Proposed Target	
					Parks management plan and supporting documents.	Develop and maintained in accordance with management plans for all regional parks. Review AMP and management plans on a three yearly basis along with the AMP. Each parks management plan is to address the cultural, heritage, landscape or other values as appropriate.	100% compliance	100%	By 2018	Annual reporting. Annual performance review against park management plans. Triennial Asset Condition survey. Annual review parks management plan.

Regional Parks  
Asset Management Plan  
Risk Management

DRAFT

## Overview

This section covers the risk management implemented by Bay of Plenty Regional Council and how these apply to the current and future activities. In addition, an overview of Risk Management is provided along with suggested improvements to current practices.

The objective of Risk Management is to identify the specific business risks, together with any possible risks to the health and safety of employees, other contractors and the general public, associated with the ownership and management of the assets. This can be used to determine the direct and indirect costs associated with these risks, and form a priority-based action plan to address them.

### Putting the Risks into Perspective

Council policy and operation cannot influence all the factors contributing to these events. Council has a responsibility to assess the risks in order to best manage the assets with the resources available to avoid and mitigate the effects of any event.

In addition, Bay of Plenty Regional Council has highlighted a number of key risk areas across the activity including:

- *General:* Public Health and Safety Incident – causing injury and or damage.

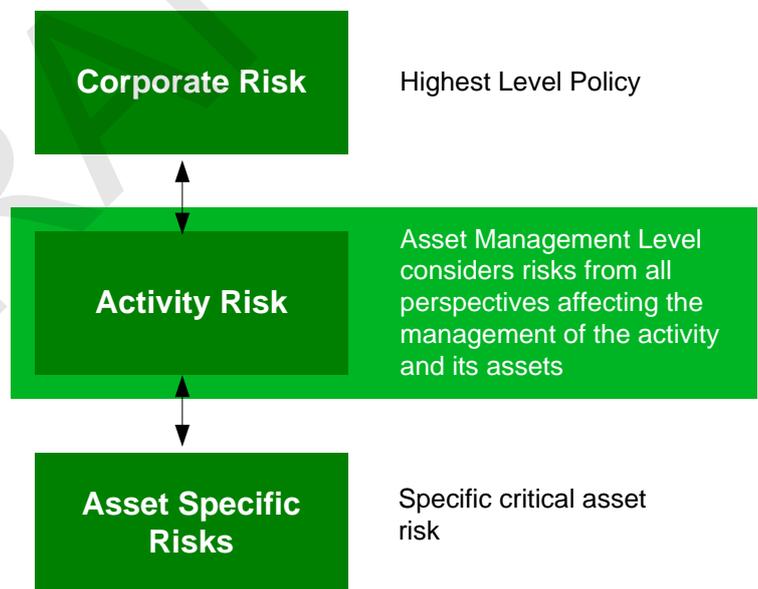
These are discussed in further detail in the Risk Registers and the overall Action Plan contained in this section of the AMP.

### Level of Risk

The purpose of this risk plan is to identify the risks associated with the activity and assets. This requires approaching the risks from many perspectives including financial, operational, organisational and public health and safety.

These risks are pertinent to both a higher, corporate level, and to a more detailed asset – specific level, but do not substitute for more specific risk analysis at those levels (see diagram).

The next step beyond this risk analysis is to develop more detailed risk plans where the criticality of specific assets is assessed and an action plan developed as appropriate.



## Current Situation

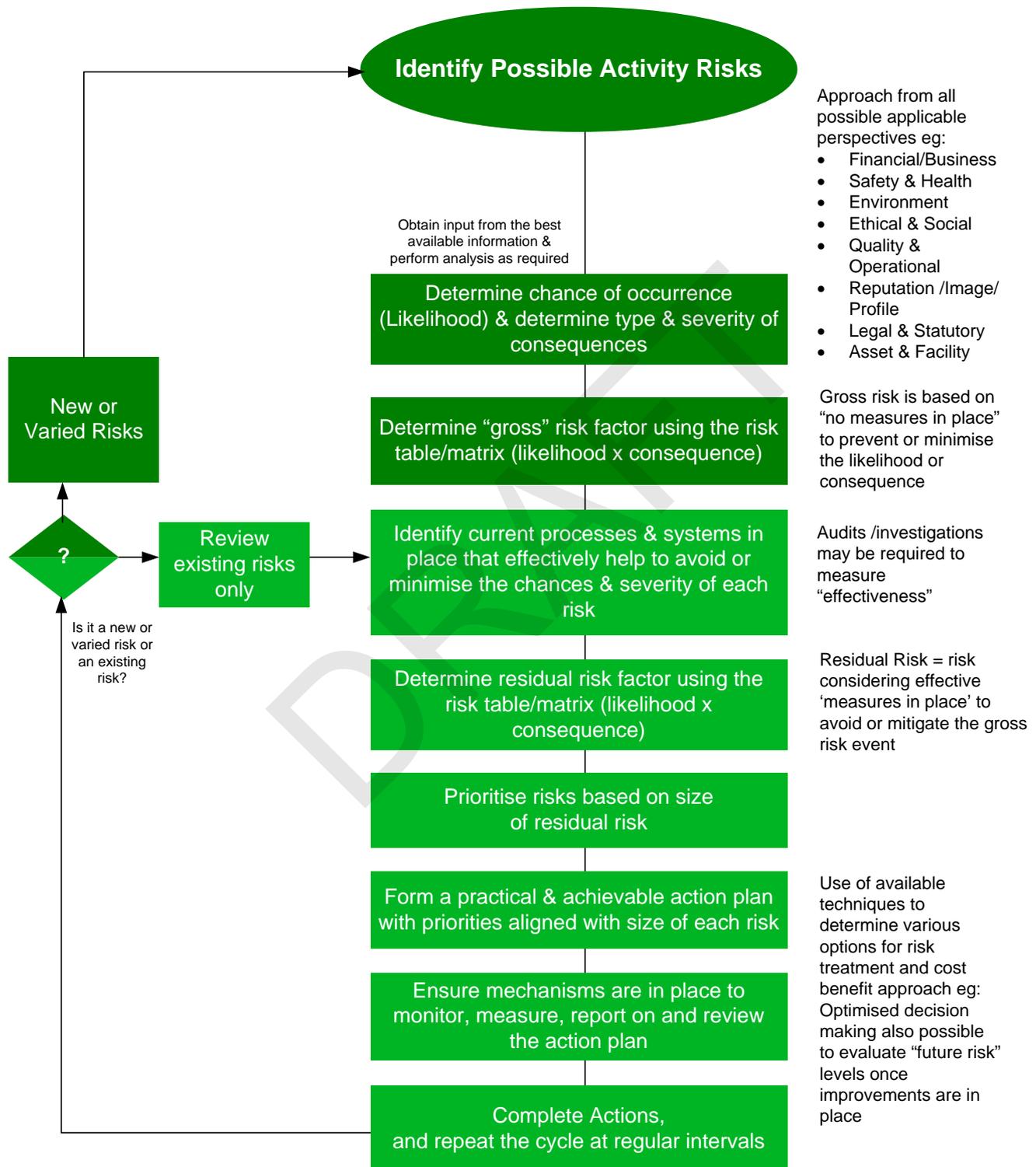
### Corporate Policy

Bay of Plenty Regional Council has introduced risk management initiatives across the organisation, but do not have an adopted risk framework for the assessment of risk consequences and a risk priority treatment matrix. However, the risk criteria and matrices used here are consistent with the approach taken for the Rivers and Drainage and Property Activities and have been developed from the NZS 4360 National Risk Management Standard.

## Risk Management Process

The following flowchart and text details the key elements of the Risk Management Process undertaken.

Figure 17: Risk Management Process



The following sections expand upon the risk management process as identified in the flowchart (previous page). The risk assessment process has been generally based upon the Australian New Zealand Risk Management Standard 4360:2004 to establish a Risk Matrix as shown in Table 13.

This matrix provides a tool to quantify a risk by identifying the likelihood of the risk occurring and the outcomes, or consequences should the risk occur.

## Identify Possible Activity Risks

All possible risks affecting the asset activity need to be identified. Risks can include financial, environmental, social, operational and health and safety considerations. Once identified, risks are entered into the risk register (see Table 15 and Table 16

The register is used to record and summarise each risk and to outline current mitigation measures and potential future management options.

## Determine Likelihood and Consequence for Gross Risk Factor

Table 11 and Table 12 demonstrate the scales used to determine the likelihood and consequence levels, which are input into the risk calculation to consider the effect of a risk event.

The likelihood of occurrence and severity of consequences should be based on as much real data as possible, for example local knowledge or recorded events such as maintenance records, weather events etc. Some analysis may be required for verification.

The likelihood scales identify how likely, or often, a particular event is expected to occur, these are shown in the table below:

**Table 11: Likelihood of Occurrence**

Likelihood	Descriptor	Probability
<b>Frequent</b>	Continuous or will happen frequently. Major Risk: Will most certainly occur in the foreseeable future.	5
<b>Often</b>	5 – 12 times per year. Major Risk: Will possibly occur in the foreseeable future.	4
<b>Likely</b>	1 – 5 times per year. Major Risk: There is always a chance it will occur in the foreseeable future.	3
<b>Possible</b>	Once every 2 to 5 years. Major Risk: There is little chance of occurrence in the foreseeable future.	2
<b>Rare</b>	Less than once every five years. Major Risk: Occurrence is unlikely in the foreseeable future.	1

The Consequence descriptors in Table 12 indicate the level of possible consequences for a risk.

**Table 12: Consequence Rating**

Consequence	Descriptor	Score
Catastrophic	Loss of life, major financial loss, prolonged national media and political attention.	5
Major	Major financial impact, widespread damage, serious harm, national media.	4
Moderate	Moderate financial impact, potential litigation, loss of image, regional media.	3
Minor	Minor financial impact, involves management time	2

Consequence	Descriptor	Score
Insignificant	Negligible effects.	1

After the likelihood and consequence factors have been determined, the level of risk is calculated by multiplying the Likelihood of Occurrence (Table 11) and Consequence Rating (Table 12) together.

**Risk = the likelihood of an event occurring X the consequence of such an event.**

The final outcome is a risk rating. The risk rating enables definition between those risks that are significant and those that are of a lesser nature. Having established the comparative risk level applicable to individual risks, it is possible to rank those risks. Four risk categories have been used: Extreme, High, Moderate, and Low (see Tables 3 and 4).

**Table 13: Risk Assessment Matrix**

Likelihood	Consequence				
	Insignificant (1)	Minor (2)	Moderate (3)	Major (4)	Catastrophic (5)
Frequent (5)	5	10	15	20	25
Often (4)	4	8	12	16	20
Likely (3)	3	6	9	12	15
Possible (2)	2	4	6	8	10
Rare (1)	1	2	3	4	5

Once the impact has been ranked according to the relative risk level it poses, it is then possible to target the treatment of the risk exposure, by beginning with the highest risks and identifying the potential mitigation measures.

**Table 14: Comparative Levels of Risk**

15 - 25	Extreme Risk	<b>Requires immediate remedial action</b>
8 - 12	High Risk	<b>Requires remedial planning and action via the AMP</b>
4 - 6	Moderate Risk	<b>Address via new procedures and/or modification of existing practices and training</b>
1 - 3	Low Risk	<b>No formal requirement for further action, unless escalation of risk is possible</b>

Initially, the gross risk needs to be calculated, so likelihood and consequences need to be considered as if there were no measures in place to prevent or mitigate the risk occurrence. Essentially gross risk is an exercise to determine “What is the worst that could happen?” Once the gross risk is determined it is possible to investigate the current systems and processes to identify the residual risk and then formulate an action plan to further reduce the likelihood or consequences of identified risks occurring.

## Identify Current Systems, Processes, and their Effectiveness

Current systems and processes are identified, and as far as resources allow, their effectiveness measured. It is often practical to identify these processes and systems initially, and rank the effectiveness conservatively until the audits and actual practice prove otherwise. Audits can be identified as part of the improvement process.

Effectiveness of existing systems and processes is expressed in the following categories:

<b>Excellent</b>	Fulfils requirements thoroughly, very robust and positive measurable effects
<b>Good</b>	Fulfils requirements, robust and measurable, room for improvement
<b>Fair</b>	Barely fulfils requirements, effects hard to measure (or haven't been audited or measured), improvement required
<b>Poor</b>	Not fulfilling requirements, little measurement or effect on overall risk
<b>Very Poor</b>	Totally ineffective in avoiding or mitigating associated risk events

## Determine Residual Risk

The residual risk is the actual risk that exists considering the effective measures implemented. The measures in place reduce either, or both, the consequence and the likelihood of a risk occurrence. The revised factors are input into the same risk matrix to obtain the Residual Risk Factor.

## Prioritise Residual Risks and Formulate Action Plan for Risk Management

A priority order of issues to be addressed is obtained by sorting Residual Risk Factors by risk level. The most suitable actions are determined considering available options and resources. The costs and benefits of these actions need to be analysed. The best available techniques are required to analyse the options e.g. optimised decision-making (ODM).

Application of ODM applies a 'value chain' to the proposed actions rather than just working from the highest risk down regardless of cost, for example:

- *A high risk may have to remain due to the inhibitive costs associated with avoidance or mitigation.*
- *A medium risk event could be easily and cost-effectively avoided within resources available.*

From an Asset Management perspective, the options for mitigating risks considered to reduce the cause, probability or impact of failure, are typically:

<b>Do nothing</b>	Accept the Risk
<b>Management Strategies</b>	Implement enhanced strategies for demand management, contingency planning, quality processes, staff training, data analysis and reporting, reduce the target service standard, etc.
<b>Operational Strategies</b>	Actions to reduce peak demand or stresses on the asset, operator training, documentation of operational procedures, etc.
<b>Maintenance Strategies</b>	Modify the maintenance regime to make the asset more reliable or to extend its life.
<b>Asset Renewal Strategies</b>	Rehabilitation or replace assets to maintain service levels.
<b>Development Strategies</b>	Investment to create a new asset or augment an existing asset.
<b>Asset Disposal/ Rationalisation</b>	Divestment of assets surplus to needs because a service is determined to be a non-core activity or assets can be reconfigured to better meet needs.

## Monitor, Measure, Report, Review Plan and Actions

The management structure needs to be in place to ensure that actions are monitored, reported on and reviewed regularly. It is important to identify and constantly review the following:

<b>Responsibility</b>	Nominated person responsible for ensuring the risks are managed and improvements carried out in accordance with the programme.
<b>Best Appropriate Practice</b>	The practices that should ideally be carried out to manage risks to an acceptable level.
<b>Audit Trail</b>	Date of entries and revisions, target date for actions to be taken and actual task completion dates.

In addition, management options should be ranked via benefit/cost analysis using Net Present Value (NPV) calculations. The inputs considered in the NPV calculation are:

- Capital investment costs.
- Changes in operating and maintenance costs.
- Reduction in business risk exposure (BRE).
- Increase in effective asset life/value.
- Increase in level of service.

All capital development projects should be ranked corporately for inclusion in the Long Term Plan/Annual Plan consultation process using benefit/cost analysis plus the following additional criteria;

- Contribution to Council's Strategic Plan objectives.
- Contribution to the region's business objectives.
- Level of project commitment (contractual and legal issues).

The resulting action plan for risk treatment needs to be practical and achievable such that the necessary resources and time frames are realistically met. The actions also need to be able to be monitored and measured. Table 15 provides more detail with regard to future actions/tasks required for future stages of Risk Management, which include the ranking outlined above.

## Review Risks

Most of the time, the risks identified will remain the same and reviews will occur in the context of these risks. However, it will be important to recognise when a new risk arises, or an existing risk changes in nature. In the latter case, the gross risk also needs to be re-evaluated.

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## Risk Register

The risk registers provided in the following tables consider the most pressing for the current and future regional parks activities of Bay of Plenty Regional Council.

**Table 15: Asset Management Risks – General**

**Table 13: Asset Management Risks - General**

Risk Reference	Risk Descriptor – details the main component and provides an example of a risk(s) that may be attributable	Risk Type	Gross Risk (No effective measures in place)			Current Practice/Strategy (Avoidance and mitigation measures)	Effectiveness	Residual Risk (Considering measures in place)			Person(s) Responsible	Management Options
			Consequence	Likelihood	Factor			Consequence	Likelihood	Factor		
PL01	<b>Lack of internal resources</b> – the ability to attract key staff and or retain skilled staff. High workload vs. lifestyle, insufficient resourcing to appropriately address asset management issues.	Organisational	3	5	<b>15</b>	<ul style="list-style-type: none"> <li>Career development programme and training.</li> <li>City/District promotion (lifestyle).</li> <li>Dedicated HR staff/ recruitment consultancies.</li> <li>Staff handover/exit process – HR processes.</li> <li>Benchmarked salary levels / remuneration review.</li> <li>Annual staff satisfaction surveys – best places to work.</li> <li>Promoting positive work environment – social, team building.</li> <li>Policies (e.g. EEO, Stress Management, Personnel).</li> <li>Flexible working hours.</li> <li>Good organisational structure.</li> <li>Succession planning.</li> </ul>	Good	2	4	<b>8</b>	<ul style="list-style-type: none"> <li>Organisational Capability Manager (OCM)</li> <li>Regional Parks Activity Manager</li> </ul>	<ul style="list-style-type: none"> <li>Review the requirements for the current activity and determine whether 0.5 FTE is appropriate for the requirements. Undertake a parks resource audit for BOPRC FTEs. Consider ‘parks’ titles and the formation of specific parks roles and at what stage in a specific parks department would be required.</li> <li>Continue current practice and review flexibility within individual contracts and working hours. Family/lifestyle friendly policies.</li> <li>Review and monitor work levels of staff.</li> <li>Instigate park ranger internship programme in conjunction with wider industry. Join a parks professional body, e.g., Parks Managers Group to grow involvement in a parks professional network to secure best practice information exchange and expertise, staff exchange and industry mentoring.</li> <li>Review and improve succession planning.</li> <li>Improve team approach, backup roles.</li> </ul>
PL02	<b>Loss of Knowledge</b> – inability to retain knowledge or have sufficient systems in place to manage data/information, especially regarding asset performance and condition. Loss of institutional knowledge. IT failure.	Organisational	3	3	<b>9</b>	<ul style="list-style-type: none"> <li>Processes and practices – guidelines to be followed e.g. Objective. Established, quality filing system.</li> <li>Team of competent, trained staff, development into roles.</li> <li>IT practices (backup, virus, security etc.).</li> <li>Asset changes/updating process – developing AMIS (GIS / Finance One).</li> <li>NZ Standards e.g. building code.</li> <li>Contracts manual.</li> <li>Responsibilities defined.</li> </ul>	Average	2	3	<b>6</b>	<ul style="list-style-type: none"> <li>LMMW</li> <li>Land Management Officer (LMO)</li> <li>Group Manager Finance</li> </ul>	<ul style="list-style-type: none"> <li>Continue development of integrated AMIS in-house.</li> <li>Develop processes to ensure that asset knowledge is transferred, stored and accessible and audited (externally), including maintenance information. Define mentors/coaches and successors.</li> <li>On-going training for staff.</li> <li>Programme condition surveys on assets.</li> <li>Best practice manuals e.g. NAMS, BOPRC environmental code of practice.</li> <li>Join a parks professional body, e.g., Parks Managers Group to grow involvement in a parks professional network where international parks AM best practice can be obtained as a part of membership.</li> </ul>

Table 13: Asset Management Risks - General

Risk Reference	Risk Descriptor – details the main component and provides an example of a risk(s) that may be attributable	Risk Type	Gross Risk (No effective measures in place)			Current Practice/Strategy (Avoidance and mitigation measures)	Effectiveness	Residual Risk (Considering measures in place)			Person(s) Responsible	Management Options
			Consequence	Likelihood	Factor			Consequence	Likelihood	Factor		
PL03	<b>Inadequate Asset Management</b> – not up to date, or insufficient quality of process and output.	Operational Legislative	3	4	<b>12</b>	<ul style="list-style-type: none"> <li>Asset Management processes and practices and organisation structure.</li> <li>Asset Management System (Spreadsheet, GIS, AMIS).</li> <li>Use of Professional Services.</li> <li>Resourcing of Internal Services.</li> <li>Identifying gaps.</li> </ul>	Fair	3	3	<b>9</b>	<ul style="list-style-type: none"> <li>LMMW</li> <li>LMO</li> </ul>	<ul style="list-style-type: none"> <li>Maintain Asset Management Plan - Improvement Plan.</li> <li>Continuing Staff Development in Asset Management, including Join a parks professional body, e.g., Parks Managers Group to grow involvement in a parks professional network where international parks AM best practice can be obtained as a part of membership.</li> <li>On-going external review of AM planning.</li> <li>On-going budget provision.</li> <li>Document asset management processes, develop business rules.</li> <li>Update and improve AMIS/AM information systems and interfaces e.g. with GIS or financial system.</li> <li>Improve information flow to asset management e.g. as-built drawings, contractor audit information.</li> </ul>
PL04	<b>Inadequate Condition/Performance Assessments</b> – reliable data for renewals/replacements and valuations.	Operational	3	4	<b>12</b>	<ul style="list-style-type: none"> <li>Internal and external feedback, Complaints / Job Tracker.</li> <li>Ongoing condition assessment programmes for most assets.</li> <li>Maintenance contracts.</li> <li>Asset Management Systems (e.g. GIS, AMIS).</li> </ul>	Fair	3	3	<b>9</b>	<ul style="list-style-type: none"> <li>LMMW</li> <li>LMO</li> </ul>	<ul style="list-style-type: none"> <li>Regular assessments.</li> <li>Staff training and continuity regarding assessments.</li> <li>Develop condition assessment programme and methodology for all assets.</li> <li>Develop a process to ensure that knowledge is transferred, stored and accessible. Define champions and successors. External backup.</li> </ul>
PL05	<b>Non-compliance with Legislation and Consent Conditions</b> – inability or failure to comply with consents, statute and national standards. Increase in requirements.	Legislative	3	3	<b>9</b>	<ul style="list-style-type: none"> <li>Compliance with resource consents, RMA and LGA.</li> <li>Contract Conditions. Service contract standards.</li> <li>Consents database and Monitoring of Consent requirements (CS-VUE).</li> <li>Internal audits and continuous monitoring.</li> <li>Dedicated Consents Manager.</li> <li>Knowledge and awareness among key staff.</li> <li>Local government and national networking.</li> <li>Feedback from and liaison with Councils, DoC, HPT and Iwi.</li> <li>Use of external advice/resources.</li> </ul>	Good	1	3	<b>3</b>	<ul style="list-style-type: none"> <li>LMMW</li> <li>LMO</li> <li>GM T&amp;ED</li> </ul>	<ul style="list-style-type: none"> <li>Monitoring of expiring consents and identifying new consents to be improved (define responsibilities).</li> <li>Identify upfront what resource consents are required and develop a framework to ensure all legislative requirements are met.</li> <li>Key staff to keep updated on current legislation.</li> <li>Maintain regular communications to staff.</li> <li>Development of Council procedures including handover from Capital to Operations.</li> <li>Continue communicating effects of legislative change to Council/ Annual Plan/ Long Term Plan process.</li> </ul>

Table 13: Asset Management Risks - General

Risk Reference	Risk Descriptor – details the main component and provides an example of a risk(s) that may be attributable	Risk Type	Gross Risk (No effective measures in place)			Current Practice/Strategy (Avoidance and mitigation measures)	Effectiveness	Residual Risk (Considering measures in place)			Person(s) Responsible	Management Options
			Consequence	Likelihood	Factor			Consequence	Likelihood	Factor		
PL06	<b>Moderate Natural Hazard Damage</b> – (slips/flooding/coastal erosion/wind) causing damage to assets and or hindering development.	Public and Environmental Health Organisational	4	3	<b>12</b>	<ul style="list-style-type: none"> <li>Emergency/Incident Response Plan.</li> <li>District Plan.</li> <li>Hazard identification, iMap, monitoring, use of geotech consultants.</li> <li>Complaints/Job Tracker feedback.</li> <li>Maintenance contracts (with out of region resources).</li> <li>Resource sharing agreement between councils.</li> <li>National and Council Engineering Standards.</li> <li>Building code/standards.</li> <li>Management Plans.</li> </ul>	Fair	3	3	<b>9</b>	<ul style="list-style-type: none"> <li>LMMW</li> <li>LMO</li> </ul>	<ul style="list-style-type: none"> <li>As per current practice.</li> <li>Liaise with national and regional policy makers to identify hazards and ensure emergency response mechanisms are in place in the event of a hazard occurring.</li> <li>Undertake certified arborist assessment of potential dangerous trees, likely to be unmanaged farm forestry species.</li> <li>Consider additional pohutukawa plantings by design in targeted groupings and locations to secure slope areas.</li> <li>Close trails in high winds/storms.</li> </ul>
PL07	<b>Extreme Natural Hazards Damage</b> – (earthquake/tsunami/volcanic/major storm event) causing damage to assets and or hindering development.	Environmental Public Health Organisational Financial	5	3	<b>15</b>	<ul style="list-style-type: none"> <li>Emergency/Incident Response Plan.</li> <li>District Plan.</li> <li>Hazard identification.</li> <li>Complaints/Job Tracker feedback.</li> <li>Civil Defence.</li> <li>Maintenance contracts (with out of region resources).</li> <li>Resource sharing agreement between councils.</li> <li>National and council engineering Standards.</li> <li>Building code/standards.</li> <li>Lifelines Group.</li> </ul>	Fair	5	2	<b>10</b>	<ul style="list-style-type: none"> <li>LMMW</li> </ul>	<ul style="list-style-type: none"> <li>Liaise with national and regional policy makers to identify hazards and ensure emergency response mechanisms are in place in the event of a hazard occurring.</li> <li>Staff training, awareness of roles.</li> <li>Implementation of policies and management plans.</li> <li>Close trails in high winds/storms.</li> <li>Site signage and identification of safe height zones for Tsunami both for park users and nearby beach users and residents likely to seek the park's high ground for both regional parks.</li> </ul>
PL8	<b>Lack of Political Alignment</b> – or inability of elected members to fulfil roles and responsibilities or disregard for community views. Change in the make-up of Council could alter ability to achieve long-term objectives.	Organisational Reputation/ Image	3	4	<b>12</b>	<ul style="list-style-type: none"> <li>Councillors roles well defined and implemented.</li> <li>Legislative requirements/Long Term Plan process.</li> <li>Reports to Council.</li> <li>Induction of new politicians (Councillor induction/handbook/workshop/conferences/inter-council tours).</li> <li>Bulletins to Councillors. One-on-one contact and forums. Councillors are made aware of who to talk to.</li> </ul>	Good	2	3	<b>6</b>	<ul style="list-style-type: none"> <li>CE</li> <li>ELT</li> <li>LMMW</li> </ul>	<ul style="list-style-type: none"> <li>Continued communication to Council.</li> <li>Manage process through CE/Executive Leadership Team (ELT).</li> <li>Join a parks professional body, e.g., Parks Managers Group to link decision makers to other decisions makers from other agencies to discuss governance-to-governance, alternate investment streams (non-rate revenue) and best practice leadership that can be obtained as a part of membership</li> </ul>

Table 13: Asset Management Risks - General

Risk Reference	Risk Descriptor – details the main component and provides an example of a risk(s) that may be attributable	Risk Type	Gross Risk (No effective measures in place)			Current Practice/Strategy (Avoidance and mitigation measures)	Effectiveness	Residual Risk (Considering measures in place)			Person(s) Responsible	Management Options
			Consequence	Likelihood	Factor			Consequence	Likelihood	Factor		
PL9	<b>Decrease in Funding</b> – Both internal to pay debt, rates and including failure to acquire external subsidies.	Organisational	4	3	<b>12</b>	<ul style="list-style-type: none"> <li>Monitor other funding opportunities.</li> <li>Prioritising projects/Annual Plan/Long Term Plan process.</li> <li>Liaising with other councils.</li> <li>Skill of staff/resources submitting external applications and reporting internally to Council.</li> </ul>	Good	3	2	<b>6</b>	<ul style="list-style-type: none"> <li>LMMW</li> <li>Group Manager Finance</li> </ul>	<ul style="list-style-type: none"> <li>Maintain and manage clear lines of communication with key external agencies.</li> <li>Forecast likely scenarios regarding effects of budget changes.</li> <li>Increasing efficiency.</li> <li>Undertake investment plan to programme the implementation of securing alternate investment streams (non-rate revenue).</li> <li>Rationalise spending – prioritise activities.</li> </ul>
PL10	<b>Inadequate Communications and PR Management</b> – e.g. a lack of communication, or information overload being ignored, reporting only negative information, promising the undeliverable and raising expectations, coming on too strong.	Reputation/ Image Public Health Safety Financial Operational	3	3	<b>9</b>	<ul style="list-style-type: none"> <li>Dedicated corporate communications team.</li> <li>Some timely communication to affected customers (public/ratepayers, councillors, staff, contractors).</li> <li>Existing corporate communications procedures and protocols (who gets what &amp; when).</li> <li>“Customer service interface.</li> <li>Access to communications tools – internet, intranet, newsletters, bulletins.</li> <li>Communications Plan.</li> <li>Management committee.</li> </ul>	Good	2	2	<b>4</b>	LMMW	<ul style="list-style-type: none"> <li>Communications and promotions plans to grow understanding of park values amongst a new ‘constituency’ for the parks.</li> <li>More communication/PR involvement at earlier stage of contracts/capital works/projects.</li> <li>Improve integration of communications across BOPRC/Contractors to inform external customers.</li> <li>Include communications/customer service component in project debrief process.</li> <li>Build further customer service understanding of Council issues/projects.</li> <li>Develop education resources.</li> <li>Rebrand signage in BOPRC branding.</li> <li>Develop interpretation signage and wayfinding at sites.</li> <li>On line virtual tours, to save on expenses and reprint park brochures.</li> </ul>

Table 13: Asset Management Risks - General

Risk Reference	Risk Descriptor – details the main component and provides an example of a risk(s) that may be attributable	Risk Type	Gross Risk (No effective measures in place)			Current Practice/Strategy (Avoidance and mitigation measures)	Effectiveness	Residual Risk (Considering measures in place)			Person(s) Responsible	Management Options
			Consequence	Likelihood	Factor			Consequence	Likelihood	Factor		
PL11	<b>Public Health and Safety Incident</b> – causing injury and or damage to residents/visitors/staff or property resulting in claims and or negative publicity (e.g. poorly designed or maintained facilities etc.).	Public Health Reputation/ Image	5	4	<b>20</b>	<ul style="list-style-type: none"> <li>Inspection contract, hazard identification (certified arborists/toilet block).</li> <li>Complaints/Job Tracker feedback.</li> <li>Maintenance contracts including vegetation control/ track maintenance.</li> <li>Structure/safety audits and renewals (dam).</li> <li>Local council's engineering standards.</li> <li>Building code/standards/guidelines.</li> <li>Building WoF.</li> <li>Specialised standards (e.g. agrichemical).</li> <li>Programmes in place to identify areas, issues, risks that may impact on assets.</li> <li>Fencing.</li> <li>Signage.</li> <li>Long Term Plan Consultation.</li> <li>ACC/Indemnity insurance.</li> <li>Health and Safety Representative.</li> <li>Corporate Auditing of Health and Safety.</li> <li>Approved Health and Safety Contract Plans.</li> <li>Emergency response.</li> <li>Training/staff induction/manuals/Personal Protective Equipment/Incident Register (HR).</li> <li>Contractor inductions.</li> </ul>	Good	4	3	<b>12</b>	<ul style="list-style-type: none"> <li>LMMW</li> <li>OCM</li> </ul>	<ul style="list-style-type: none"> <li>Undertake a Hazards Review for the two regional parks.</li> <li>Develop Standard Operating Procedures for both regional parks.</li> <li>Review Council's liability and H &amp; S Policy.</li> <li>Monitor usage and Complaints/Job Tracker.</li> <li>Design standards maintained.</li> <li>Asset management planning.</li> <li>Levels of service determined from community consultation (Long Term Plan process).</li> <li>Local government networking.</li> <li>Ensure BOPRC is carrying out appropriate renewals and managing the budget correctly.</li> <li>Review and develop safe working methods and practices where necessary.</li> <li>Incident reporting.</li> <li>Monitor usage and complaints.</li> <li>Identify problem areas quickly and respond.</li> <li>Condition assessments.</li> <li>Improved fencing and signage where identified in the Hazards Review.</li> </ul>
PL12	<b>Vandalism</b> – of assets (e.g. furniture, structures, signs, graffiti).	Reputation/ Image Operational Public Health Financial	3	5	<b>15</b>	<ul style="list-style-type: none"> <li>Design, planting and lighting.</li> <li>Security patrols, custodians.</li> <li>Safety inspections.</li> <li>Maintenance contracts.</li> <li>Complaints/Job Tracker.</li> <li>Respond to community concerns/visitor book.</li> <li>Fencing and locking parks and depots.</li> <li>Restricting vehicular access.</li> </ul>	Good	2	3	<b>6</b>	<ul style="list-style-type: none"> <li>LMMW</li> </ul>	<ul style="list-style-type: none"> <li>Monitor reoccurrence and investigate appropriate design.</li> </ul>

**Table 13: Asset Management Risks - General**

Risk Reference	Risk Descriptor – details the main component and provides an example of a risk(s) that may be attributable	Risk Type	Gross Risk (No effective measures in place)			Current Practice/Strategy (Avoidance and mitigation measures)		Residual Risk (Considering measures in place)			Person(s) Responsible	Management Options
			Consequence	Likelihood	Factor	Description	Effectiveness	Consequence	Likelihood	Factor		
PL13	<b>Staff Abuse</b> – Staff receiving physical, verbal or emotional abuse from members of the public (field or office).	Health Reputation/ Image	4	3	<b>12</b>	<ul style="list-style-type: none"> <li>Workplace support in place for staff.</li> <li>Review procedures for threats to staff at remote locations.</li> <li>Wellness leave.</li> <li>Appropriate people with good knowledge.</li> <li>Training.</li> <li>Health and Safety incident register.</li> <li>Carry cell phones.</li> </ul>	Good	2	3	<b>6</b>	<ul style="list-style-type: none"> <li>LMMW</li> <li>HMR</li> </ul>	<ul style="list-style-type: none"> <li>Develop Standard Operating Procedures for both regional parks.</li> <li>Ongoing training depending on individual needs.</li> <li>Make public aware of contractors role.</li> <li>Available back up.</li> </ul>

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Table 16: Asset Management Risks – Park &amp; Land

Table 16: Asset Management Risks – Regional Parks													
Risk Reference	Risk Descriptor – details the main component and provides an example of a risk(s) that may be attributable	Risk Type	Gross Risk (No effective measures in place)			Current Practice/Strategy (Avoidance and mitigation measures)			Residual Risk (Considering measures in place)			Person(s) Responsible	Management Options
			Consequence	Likelihood	Factor	Description	Effectiveness	Consequence	Likelihood	Factor			
PL14	<b>Accessibility to parks and facilities</b> – Limited access (e.g. disabled, elderly) causing negative publicity and drop in usage.	Reputation/ Image Financial Public Health	3	3	9	<ul style="list-style-type: none"> <li>Building code/standards.</li> <li>Respond and react to issues as they arise.</li> <li>Provision of alternative access on request, lease adjoining land.</li> </ul>	Fair	3	2	6	LMMW	<ul style="list-style-type: none"> <li>Review sites with stakeholder groups.</li> <li>Land purchase/acquisition.</li> <li>Continue current practice.</li> <li>Adopt design standards for council facilities and walkways.</li> <li>Monitor usage and complaints.</li> </ul>	
PL15	<b>Lost Opportunity for Future Parks</b> from delays in purchasing, increases in land development rates, increased site-specific costs due to previous land management regimes.	Reputation/ Image Financial Public Health	3	5	15	<ul style="list-style-type: none"> <li>Ongoing negotiation with adjoining landowners/willing sellers.</li> <li>Regional Parks Policy.</li> </ul>	Poor	3	3	9	CE LMMW	<ul style="list-style-type: none"> <li>Build political support.</li> <li>CE lead negotiations.</li> <li>Demonstrate wins with existing parks.</li> <li>Designation/public works.</li> <li>Direct approach to sellers.</li> </ul>	
PL16	<b>Fire on Parks and Reserves</b> – also spreading to/from neighbouring properties.	Public Health Operational	4	3	12	<ul style="list-style-type: none"> <li>Park policy.</li> <li>Maintenance of parks.</li> <li>Bylaw controls.</li> <li>Fire danger signs.</li> <li>Dams on site.</li> <li>Insurance.</li> </ul>	Fair	3	3	9	LMMW	<ul style="list-style-type: none"> <li>Park policy sets ‘park-centric’ measures.</li> <li>Fund control of exotic weed pest species.</li> <li>Enlarge dam capacity.</li> <li>Install alternative water supply.</li> <li>Public education.</li> <li>Neighbour liaison.</li> <li>Stock management/grazing regime.</li> <li>Enforcement of consents/permits/bylaws.</li> <li>More fire danger signs.</li> </ul>	
PL17	<b>General Tenant Dissatisfaction/Tenant not meeting lease or rental requirements.</b> Dissatisfaction with standard of building, cost, accessibility or visual amenity due to layout or lack of maintenance. BoPRC breach of the lease agreement or Residential Tenancies Act.	Operational Public Image	2	3	6	<ul style="list-style-type: none"> <li>Lease agreements.</li> <li>Regular ongoing condition assessments.</li> <li>Complaints and feedback.</li> <li>Potential tenants approved (checks run). Pre-approval process.</li> <li>Residential Tenancies Act.</li> </ul>	Fair	2	2	4	LMMW	<ul style="list-style-type: none"> <li>As per current practice.</li> </ul>	
PL18	<b>Inadequate Pest Control</b> resulting in damage to native flora and fauna from lack of pest control, or accidental poisoning of flora and fauna.	Operational Environmental	2	4	8	<ul style="list-style-type: none"> <li>Staff Training.</li> <li>Pest control programmes in accordance with industry good practice.</li> </ul>	Good	2	2	4	LMMW	<ul style="list-style-type: none"> <li>As per current practice.</li> </ul>	
PL19	<b>Inadequate Fertiliser Application</b> – resulting in accidental poisoning of flora and fauna	Operational Environmental	2	3	6	<ul style="list-style-type: none"> <li>Staff training</li> <li>Agrichemicals - under the grazing licences must apply agrichemicals in accordance with NZS8409: 2004</li> </ul>	Good	2	2	4	LMMW	<ul style="list-style-type: none"> <li>As per current practice.</li> </ul>	

Table 16: Asset Management Risks – Regional Parks

Risk Reference	Risk Descriptor – details the main component and provides an example of a risk(s) that may be attributable	Risk Type	Gross Risk (No effective measures in place)			Current Practice/Strategy (Avoidance and mitigation measures)		Residual Risk (Considering measures in place)			Person(s) Responsible	Management Options
			Consequence	Likelihood	Factor	Description	Effectiveness	Consequence	Likelihood	Factor		
PL20	Damage to Archaeological Sites or Re-vegetation Areas – from stock or visitors.	Operational Environmental	4	3	12	<ul style="list-style-type: none"> <li>On site presence (through occupation in the dwelling and grazing licence).</li> <li>Visitor encouragement is low key, until the infrastructure is in place to handle a larger capacity.</li> <li>Track development.</li> </ul>	Good	2	2	4	<ul style="list-style-type: none"> <li>LMMW</li> </ul>	<ul style="list-style-type: none"> <li>Monitoring programme.</li> <li>Visitor services plan.</li> <li>As per current practice.</li> <li>Plan for visitor increase.</li> </ul>

## Risk Action Plan

Table 17 is compiled from the Risk Register and highlights the most significant residual risks faced by the parks activity. The main risks are listed in order of severity (Residual risk) as assigned in consultation with key council officers.

Actions that are required to achieve the desired improvements are indicated along with how progress on these actions will be monitored and reported. Where applicable, Action Tasks will detail timeframes for achievement, and responsibility for these actions.

### Monitor, Measure, Report, Review, Plan and Actions

Management options listed in the risk tables have been refined into actions for each risk listed. These are the actions that are required to cost-effectively reduce the residual risk by increasing the region's ability to minimise the chances of the risk event occurring, or minimising the consequences should it occur.

Actions should consider the overall management of the asset, not just the minimisation of risk. If possible, proposed actions should align with other initiatives to:

- Reduce capital investment costs.
- Reduce operating and maintenance costs.
- Reduce business risk exposure (BRE).
- Increase effective asset life/value.
- Increase level of service.

The resulting action plan for risk treatment needs to be practical and achievable such that the necessary resources and time frames are realistically met. The actions also need to be able to be monitored and measured.

The monitoring/reporting column of the Risk Action Table specifies:

- **Responsibility:** Nominated person responsible for ensuring the risks are managed and that improvements are carried out in accordance with the programme;
- **Timeframe:** Achievable target date to be monitored and reported against; and
- **Method and Frequency of Monitoring:** This entire Action Table will be monitored by the Asset Management Steering Group, but there will be certain actions that are being monitored and reported in other forums. These forums are to be specified and the frequency with which these actions will be reviewed.

The actions listed will be reported, monitored and reviewed regularly at the Asset Management Steering Group.

As necessary, this group will need to revise timeframes, responsibility, and even the appropriateness of continuing with the proposed action, or adding new actions.

As actions are complete, the residual risk should reduce in most cases. The risk tables will need to be reviewed against these and updated to reflect these improvements.

**Table 17: Asset Management Risk Action Plan – Park & Land**

Risk Reference	Risk Descriptor	Risk Type	Residual Risk	Action	Responsibility	Monitoring / Reporting	Timeframe
PL11	<b>General: Public Health and Safety Incident</b> – causing injury and or damage to residents/visitors/staff or property resulting in claims and or negative publicity (e.g. poorly designed or maintained facilities etc.).	Public health reputation/ Image	12	<ul style="list-style-type: none"> <li>Review council’s liability and H &amp; S Policy.</li> <li>Develop Hazards Plans for each park.</li> <li>Design standards maintained.</li> <li>Asset management planning.</li> <li>Levels of service determined from community consultation (Long Term Plan process).</li> <li>Ensure BOPRC is carrying out appropriate renewals and managing the budget correctly.</li> <li>Review and develop safe working methods and practices where necessary.</li> </ul>	<ul style="list-style-type: none"> <li>LMMW</li> <li>OCM</li> </ul>	<ul style="list-style-type: none"> <li>On-going monitoring (e.g. quarterly AM steering group meetings).</li> </ul>	E.g. Quarterly
PL03	<b>General: Inadequate Asset Management</b> – not up to date, or insufficient quality of process and output.	Operational Legislative	9	<ul style="list-style-type: none"> <li>Maintain Asset Management Plan - Improvement Plan.</li> <li>Continuing staff development in asset management.</li> <li>On-going external review of AM planning.</li> <li>On-going budget provision.</li> <li>Document asset management processes, develop business rules.</li> <li>Update and improve AMIS/AM information systems and interfaces.</li> </ul>	<ul style="list-style-type: none"> <li>LMMW</li> </ul>	<ul style="list-style-type: none"> <li>On-going monitoring (e.g. quarterly AM steering group meetings).</li> </ul>	E.g. Quarterly
PL04	<b>General: Inadequate Condition/Performance Assessments</b> – reliable data for renewals/replacements and valuations.	Operational	9	<ul style="list-style-type: none"> <li>Regular assessments.</li> <li>Staff training and continuity regarding assessments.</li> <li>Develop condition assessment programme and methodology for all assets.</li> <li>Develop a process to ensure that knowledge is transferred, stored and accessible. Define champions</li> </ul>	<ul style="list-style-type: none"> <li>LMMW</li> </ul>	<ul style="list-style-type: none"> <li>On-going monitoring (e.g. quarterly AM steering group meetings).</li> </ul>	E.g. Quarterly

Risk Reference	Risk Descriptor	Risk Type	Residual Risk	Action	Responsibility	Monitoring / Reporting	Timeframe
				and successors. External backup.			
PL08	<b>General: Moderate Natural Hazard Damage</b> – (slips/flooding/coastal erosion/wind) causing damage to assets and or hindering development.	Public and Environmental Health Organisational	9	<ul style="list-style-type: none"> <li>As per current practice.</li> <li>Liaise with national and regional policy makers to identify hazards and ensure emergency response mechanisms are in place in the event of a hazard occurring.</li> <li>Undertake certified arborist assessment of potential dangerous trees, likely to be unmanaged farm forestry species.</li> <li>Consider additional pohutukawa plantings by design in targeted groupings and locations to secure slope areas.</li> <li>Close park/car park in high winds/storms.</li> </ul>	<ul style="list-style-type: none"> <li>LMMW</li> </ul>	<ul style="list-style-type: none"> <li>On-going monitoring (e.g. quarterly AM steering group meetings).</li> </ul>	E.g. Quarterly
PL15	<b>Regional Parks: Lost Opportunity for Future Parks</b> from delays in purchasing, increases in land development rates, increased site-specific costs due to previous land management regimes.	Reputation/ Image Financial Public Health	9	<ul style="list-style-type: none"> <li>Build political support.</li> <li>CE lead negotiations.</li> <li>Demonstrate wins with existing parks.</li> <li>Designation/public works.</li> <li>Direct approach to sellers.</li> </ul>	<ul style="list-style-type: none"> <li>CE</li> <li>LMMW</li> </ul>	<ul style="list-style-type: none"> <li>On-going monitoring (e.g. quarterly AM steering group meetings).</li> </ul>	E.g. Quarterly
PL16	<b>Park and Land: Fire on Parks and Reserves</b> – also spreading to/from neighbouring properties.	Public Health Operational	9	<ul style="list-style-type: none"> <li>Enlarge dam capacity and upgrade vehicle track to dams and for emergency use.</li> <li>Install alternative water supply.</li> <li>Public education.</li> <li>Neighbour liaison.</li> <li>Stock management/grazing regime.</li> <li>Enforcement of consents/permits/ bylaws.</li> </ul>	<ul style="list-style-type: none"> <li>LMMW</li> </ul>	<ul style="list-style-type: none"> <li>On-going monitoring (e.g. quarterly AM steering group meetings).</li> </ul>	E.g. Quarterly

Risk Reference	Risk Descriptor	Risk Type	Residual Risk	Action	Responsibility	Monitoring / Reporting	Timeframe
PL01	<b>General: Lack of internal resources</b> – the ability to attract key staff and or retain skilled staff. High workload vs. lifestyle	Organisational	8	<ul style="list-style-type: none"> <li>More fire danger signs.</li> <li>Continue current practice and review flexibility within individual contracts and working hours. Family/Lifestyle friendly policies.</li> <li>Review and monitor work levels of staff.</li> <li>Continuing Staff Development in Asset Management, including Join a parks professional body, e.g., Parks Forum to grow involvement in a parks professional network where international parks AM best practice can be obtained as a part of membership.</li> <li>Review and improve succession planning.</li> <li>Improve team approach, backup roles.</li> </ul>	<ul style="list-style-type: none"> <li>HRM</li> <li>LMMW</li> </ul>	<ul style="list-style-type: none"> <li>On-going monitoring (e.g. quarterly AM steering group meetings).</li> </ul>	E.g. Quarterly

Regional Parks  
Asset Management Plan  
Lifecycle Management

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## Overview

The following Lifecycle Management Plan provides a summary of the current strategies and works programmes that are needed to ensure the delivery of levels of service and the achievement of the overall goals and objectives of this plan.

The plan covers the following aspects of lifecycle planning:

- Operations
- Maintenance
- Renewals
- Capital Programmes
- Asset Disposals.

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## Lifecycle Management Explained

Lifecycle management can be defined as:

“The time interval that commences with the identification of the need for an asset and terminates with the decommissioning of the asset or any liabilities thereafter”.<sup>2</sup>

Lifecycle management therefore covers all of the processes and practices and strategies that cover any physical asset from the initial planning stages to the disposal of an asset.

The following figure represents the lifecycle asset management processes that are evident along an assets lifecycle.

**Figure 18: The Lifecycle Management Cycle<sup>3</sup>**



<sup>2</sup> Section 1.2.2 International Infrastructure Management Manual 2015.

<sup>3</sup> Section 1.2.2 International Infrastructure Management Manual 2015.

These stages in the lifecycle of an asset can be described as follows:

- **Requirements Definition**

This stage identifies the need for an asset and will consider the Council's strategic goals and vision, the levels of service required by the community and relevant legislative or regulatory requirements.

- **Asset Planning**

Once an asset has been determined as being required, the service required from the customer/community can be confirmed and the most appropriate and economically prudent solution can be determined.

- **Asset Creation**

This is the physical provision of an asset or the improvement of an existing asset to meet customer/community requirements.

- **Operations and Maintenance**

These are the on-going day to day functions that the management team undertake to continue to provide the service and will vary depending upon the type of asset and its expected life span.

- **Asset Monitoring**

During the assets life, on-going condition and performance monitoring will be undertaken to ensure that required levels of service are met and to understand the need for potential capital works programmes or altered maintenance programmes.

- **Renewal/Rehabilitation**

This stage involves the replacement of an asset or a significant upgrade of an existing asset component to restore the asset to a level where it can continue to meet the required level of service.

- **Disposal**

If an asset or service is no longer required or other methods of delivery are available an asset may be disposed of. This phase can have long term implications depending upon the type of asset.

This lifecycle management section will mainly focus on the phases from Operations and Maintenance to Renewal, however it will also touch on Requirements Definition and asset planning.

## Pāpāmoa Hills Cultural Heritage Regional Park

### Key Issues

The main issues that relate to the Pāpāmoa Hills Cultural Heritage Regional Park are as follows:

**Table 18: Pāpāmoa Hills Regional Park Key Considerations**

Key Issues/Considerations	Importance
Access to the park from SH2 is limited to operational vehicles as part of the resource consent.	
Access from SH2 is not supported by roading authorities as intersections are substandard.	
Any ground disturbance is likely to have an impact on the archaeological; features due to their number and extent.	

Key Issues/Considerations	Importance
The presence of waahi tapu sites may restrict public access.	
There are public safety concerns associated with the old quarry.	
Current activities on adjacent land may constrain some aspects of the parks future development.	
These constraints may restrict any significant building on the park.	
Enhancing public access to the park is an on-going issue.	
A concept plan has been developed for the park.	
There is a diverse range of established activities on adjacent land which may positively and negatively impact on the park experience.	
Fire rules have not been developed for the park.	

## Key Policies and Actions

**The Park Management Plan outlines a number of goals, policies and actions for on-going sustainable management of the park. Some of the actions and policies will result in operational or capital works programmes and these have been included in**

Table 19.

The identified goals for the management of the park include:

1. Promote and manage the park in ways that are not in conflict with its cultural values.
2. Protect the archaeological features within the park.
3. Maintain an undeveloped character to the park that conserves the dominant open rural landform punctuated with native plantings.
4. Native habitats will be protected and/or enhanced where practicable.
5. To manage introduced and pest plants and animals in a manner that preserves and protects heritage and ecological values.
6. To promote a range of opportunities for the community to appreciate the park.
7. To provide for commercial activities within the park where such activities do not compromise the cultural and historical values of the park and are consistent with the park vision.
8. To provide vehicle and pedestrian access to the park that is consistent with the park vision.
9. To provide for on-going pastoral and forestry management in the park that provides for the efficient use of the land in a manner that protects the cultural and heritage values of the park in the future.
10. Buildings and structures will be provided and maintained only where they are necessary to achieve park management policies or are specifically provided for in this Plan.
11. To recognise that tangata whenua need to be able to promote, and provide important advice relevant to, kaitiakitanga in regards to the management of the park.
12. To recognise that the future of the park will be dynamic and that opportunities to protect and enhance the park and the overall visitor experience will need to be provided for.

**Table 19: Management Actions and Programmes**

Maintenance, Operation and Capital Actions	Type
Develop management protocols for the sites of cultural significance throughout the park.	AM
Conserve pa to retain them in a stable state.	Operational
Promote the significance of walking links from Otanewainuku to the coast.	Operational/ Capital
Control of burrowing pests animals such as rabbits and Norway rats.	Operational
The use of low ground impact plant species where re-vegetation is necessary for erosion control or conservation or maintenance purposes.	Operational
No ground disturbance is permitted except where work is restricted as stated in the management plan.	Management
Protective measures (both urgent and long-term) will be implemented for at risk archaeological/cultural features.	Capital/ Operational
Artefacts found at the park will be displayed in the park where possible.	Operational
Obtain required authorities under the Heritage New Zealand Act for works and activities (including protective measures, and remedial and mitigation works).	Operations
Develop and implement a detailed Interpretation Plan to promote cultural values within the park and provide educational information to the public. Appropriate translations for signage within the park.	Capital
Undertake an inventory of cultural/heritage sites within the park and surrounding cultural landscape.	Operational
Enhance walking paths to control encroachment on archaeological sites. This is to be undertaken through least impact works (for example boardwalks not fixed to the ground, crushed rock pathway and signage).	Capital
Native vegetation will only be removed or pruned for operational reasons such as track maintenance, to preserve vistas, protect public safety, protect cultural and heritage sites, for cultural harvests or to cultivate plans for re-vegetation.	Operational
Management programme for the removal of introduced pest plants and animals and the restoration of native species.	Maintenance
Develop a re-vegetation plan and a Native Vegetation Inventory.	Management
Fencing of native vegetation areas where stock control is required.	Capital
Develop a pest and plant and animals strategy and work with neighbouring property owners to manage this.	Management
Provision of signage for visitor facilities.	Capital
Develop a visitor shelter.	Capital
Education programmes for school children and adults.	Management
Informal and formal walkways and viewing points are provided within the park.	Capital
Camping opportunities are provided.	Management
Provide signage regarding restrictions for visitors.	Capital
Establish a visitor area in proximity of the hay barn.	Capital
Develop protocols for lodging, reviewing and approving permit applications for commercial	Management

Maintenance, Operation and Capital Actions	Type
activities.	
Provide a public walking track from Otanewainuku to the Coast via the park.	Capital
Patterns of usage for the Park will be monitored and opening hours adjusted to match the level of demand.	Operations/ Levels of Service
Prepare a planned maintenance plan which identified planned maintenance of walking tracks, public access areas, carpark areas and signage.	Maintenance
Improve access through some of the following: markers, signage, steps, small timber boardwalks, timber bridges etc., seats and safety railings at viewing points.	Capital
Stocking rates and management will be established so that archaeological and cultural features are not damaged.	Operational
Existing fencing patterns will be altered as re-vegetation fencing or new fencing is required to remove the potential for damage to archaeological sites or to reduce landscape effects.	Capital/ Operational
Existing forestry areas to be removed unless required for land stabilisation or amenity reasons.	Management
Existing Dams will be maintained for farming use.	Operational
Toilets to be provided at the visitor area if demand is established.	Capital
A visitor shelter to be established including information displays.	Capital
A BBQ site to be established if fire risks can be managed accordingly.	Capital

## Asset Summary

The component breakdown table for both parks is Appendix 1.

There are also 10.2 hectares of forestry within the park; primarily *Pinus radiata*. There are four stands of *Pinus radiata* with small areas of *Acacia melanoxylon* and *Cupressus lusitanica* of varying ages. The *Pinus radiata* stand that was planted over the former quarry site is planted on thin soils was removed in 2014. The harvest value of these stands fluctuates with the market and the value of these wood lots is consistently variable. The pine stand was removed in 2017.

## Data Confidence

Data confidence for the parks assets is high and previous work has addressed inventory, valuation and data confidence levels pursuant to the AMP improvement plan. This work undertook an asset data capture project where assets and condition data were recorded and the assets valued at a component level.

## Pāpāmoa Operational Management and Key Asset Descriptions

### Leases and Licences

The park are maintained as an operating farm for park management purposes.

Three grazing licences have been issued. One licence is for the majority of the Park while the other two are for the lower land at the northern and southern ends of the Park up to State Highway 2. The licences do not prevent public access to the land.

There are water easements across Lot 2 DP 345423 and Lot 5 DP 309001 which are used to provide water to the neighbouring properties. The public access, toilets and carpark in Poplar Lane are on land leased from the Poplar Lane Quarry (Fulton Hogan Ltd BOP).

### Fire Control

At the present time there are no formal procedures in place for fire protection, other than the Park rules, which state that fires are not permitted.

### Access into Park

Vehicle access to the Park is for operational and service vehicles only and this access is from State Highway 2, opposite Bell Road intersection. No disabled access is currently available. A range of access options were considered as part of the resource management issues scoping study for the park. It was concluded that of the four access options available, the Poplar Lane option would obtain resource consent approval and be cost effective. This is the current access point to the park for the public. The public access point and carpark are located on land owned by Fulton Hogan Ltd and access is by way of a lease.

### Structures

#### Civil Defence Repeater Station

The combined Tauranga and Western Bay of Plenty District Civil Defence Emergency Management Office has a repeater site located within the Park boundaries. This consists of a modified circular concrete farm shed, which contains radio equipment and power supplies, and an adjacent six metre wooden pole on which a variety of high-gain 'Yagi'-type antennae are mounted. This repeater station is an important part of an extensive emergency communications network across the sub-region.

#### Trig Station

A survey benchmark is located on top of Karangaumu Pa and is marked by a trig station. The Trig is significant to the Institute of Surveyors and the surveying sector. Although such markers are no longer absolutely required by surveyors the removal of Trigs around New Zealand from pa sites e.g., Maungawhau/Mt Eden, Mauao and at this site remains a latent conversation.

An effect of the trig is that it draws attention to the fact that it is the highest point within the Park and as a consequence it is a common destination point for park visitors. This has created problems by the establishment of a desire line over the fragile pa terraces.

### Access Track and Car Park

There is also an internal gravel access track that is suitable for four-wheel drive vehicles. The consent conditions specify that this access track is to provide for operational vehicles only. The full distance of the track to the top of the Park is 1,500 m. The track is not open to the public and is primarily used by the Park Ranger.

### Investment property

Properties leased to third parties under operating leases are classified as investment property unless the property is held to meet present or future service delivery objectives, rather than to earn rentals or for capital appreciation. Investment property is measured initially at its cost, including transaction costs. After initial recognition, Bay of Plenty Regional Council measures all investment property at fair value as determined annually by an independent valuer. Gains or losses arising from a change in the fair value of investment property are recognised in the income statement. The Tasmanian blackwood and radiata pine wood lots have been assessed on this basis.

### Water and Sanitary Assets

There are four dams on the park fed by natural springs that are used for retaining water for farming activities. Two of the dams hold resource consents from Bay of Plenty Regional Council, the other two are small and do not require consents.

The public toilet is a Novaloo unit system connected to an Eco Toilet Aquatron Low Flush System. The building is re-locatable and sits on a concrete footing.

## Water Sources

Pāpāmoa Hills Cultural Heritage Regional Park Pāpāmoa utilises dam water for stock purposes.

## Onekawa Te Mawhai Regional Park

### Key Issues and Comments

The main issues that relate to the Onekawa Te Mawhai Regional Park are as follows:

**Table 20: Onekawa Te Mawhai Regional Park Key Considerations**

Key Issues/Considerations	Importance
The future direction of the park will be guided by the 2014 park management plan.	High
The Onekawa Te Mawhai park is in the boundary of Upokorehe of Te Whakatohea. Ngati Awa and Tuhoē also have interests in the park.	Note
The park encompasses part of the wider Onekawa – Te Mawhai archaeological complex which is diverse and possesses very high archaeological and cultural values.	Note
The Onekawa pa occupies a strategic position above the Ohiwa Harbour and has been identified as one of the four primary centres of political influence within the Ohiwa Harbour catchment prior to European arrival.	Note
Rats, possums, mustelids, feral cats and rabbits are all present on the park and will inevitably be having an impact on the biodiversity values.	High
All of the biodiversity sites on Onekawa Te Mawhai are under pressure from grazing, invasive pest plants and naturalised exotic trees and pest animals. Very few indigenous flora species have been recorded at the park however, there is a grey faced petrel colony on the coastal cliffs of the park.	Medium
A significant pohutukawa forest is on the site and has potential for re-vegetation.	Note
Vehicle access is from Bryans Road and is the shared driveway for a remaining dwelling on the park. In the interest of public safety vehicle access and pedestrian access has been separated and alternative pedestrian planning needs to be put in place.	Med – High
A health and safety plan is to be developed and signage to be installed to reflect all hazards and mitigation measures.	Medium
The ex-Gawn property has a water easement across the area nearest to Bryans Road. This easement is for water piping for the water supply to Bryans Beach settlement. There is also a water easement to the ex-Tuck property.	Note

### Key Policies and Actions

The Park Management Plan outlines a number of actions for on-going sustainable management of the park. These actions have been developed for a three year period and are included in the following table.

**Table 21: Management Actions and Programmes**

Maintenance, Operation and Capital Actions	Type
Complete the Communications and Engagement Plan, to include park name consultation (December 2010).	Strategic

Maintenance, Operation and Capital Actions	Type
Complete an archaeological survey for the ex-Tuck property to inform all operational actions.	Strategic
An asset need and condition assessment (including extra parking, fence lines, toilet, as well as existing facilities and structures) has been completed.	Strategic
Consultation process for the park to become a regional park.	Complete
Work with community, iwi and Heritage New Zealand to plan wider track system to access the park.	Strategic
Develop cultural protocols with tangata whenua.	Strategic
Prepare a biodiversity restoration plan.	Strategic
Establish visitor monitoring photopoints.	Operational Maintenance
Review grazing agreement for the park and implement any recommendations in 2018..	Operational Maintenance
Complete a Site Hazard Register and Health and Safety Plan.	Operational Maintenance
Complete the biodiversity assessment and arboriculture inspection.	Operational Maintenance
Initial stages of loop track including signage complete.	Operational Maintenance
Undertake seasonal plant pest control.	Operational Maintenance
Complete dwelling repairs and urgent asset maintenance.	Operational Maintenance
Implement recommendations of archaeological surveys.	Operational Maintenance
Complete ongoing pest plant and animal control and restoration.	Operational Maintenance
Implement asset changes as a result of the need and condition assessment.	Operational Maintenance
Develop further walking tracks if identified and agreed.	Operational Maintenance
Complete on-going driveway maintenance.	Operational Maintenance

## Asset Summary

### The component breakdown table for both parks is Appendix 1. Water and Sanitary Assets

Water is reticulated as required for domestic and farming activities. The park uses bore water shared with a neighbouring property.

## Operations & Maintenance Plan

Land management staff work directly on the park. This includes weed and animal pest control.

Most of the built assets are farm related and the 2014 park management plan will see the onus of maintenance on the grazing licensee evolve into more integrated park management.

They include fences (except boundary fences) gates, drains, water supply and other improvements on the land.

The house has been rented out which provides some income toward maintenance, prevents vandalism, waste dumping and accelerated dilapidation typical of vacant properties. Grazing is on a month-to-month basis. The grazing licence has been allowed to lapse and Council is soon to return some of the grazed land to native revegetation.

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Regional Parks  
Asset Management Plan  
Financial Summary

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## Overview

To undertake a sustainable, long-term approach to asset management, it is essential to prepare long-term financial forecasts. This allows a long-term view of how the assets will be managed, how much this will cost and when additional funding may be required to meet expected service levels. These financial forecasts are a culmination of the previously discussed aspects of the Asset Management Plan.

The above forms the basis of the long-term operations, maintenance and capital requirements. Funding requirements have also been included in the financial statements.

## Asset Management Assumptions

The following Asset Management assumptions have been made in reviewing the AMP for the LTP expenditure forecasts:

- Asset information is as complete as possible at 1 October 2017. This followed earlier work undertaken in 2014 for Pāpāmoa Hills Regional Park and Onekawa Te Mawhai Regional Park. This is based on the book values. Valuation data and reports have previously been compiled in 2014 by two registered valuers - Boyes Campbell Ltd (effective 1 July 2008) and Property Solutions (effective 2nd September 2008). These valuations were for financial reporting purposes. Comparable information for Onekawa Te Mawhai is not available.
- The valuation context for dwellings at Onekawa Te Mawhai has led to the dwellings being written off/ expressed as zero as at 13 October 2014.
- All projected expenditure is stated in dollar values as at 1 October 2017, with no allowance made for inflation.
- Operational costs are largely based on historical expenditure, except for Onekawa Te Mawhai where this information has been assessed.
- Maintenance and operations allocations are largely based on maintaining current service levels.
- Confidence in the data used to produce the 10-year forecasts for this AMP has been reviewed in October 2017 and now has high levels of confidence.
- Council considers input from the regional community from formal submissions to the Long-Term Plan next in 2018 and informal feedback on this document. Council also considered public feedback on the Pāpāmoa Hills Cultural Heritage Regional Park Management Plan and the development of the Onekawa Te Mawhai Operational Management Plan.
- It is assumed that regulations relating to parks assets will remain essentially the same over the planning period.

## Policies

Assumptions about what we expect to happen, that will directly affect what we do and how we do it, are:

- The current intent of the Policy on Regional Parks remains in place;
- Cultural and natural heritage will remain a Section 6 matter under the Resource Management Act;
- Council's responsibilities under the Resource Management Act 1991 remain constant;
- Park operations are subject to service delivery review in the medium term with reviews, if necessary, as further parks are acquired.

### Risk to Significant Forecasting Assumptions

The points below outline the risks to significant forecasting assumptions. Should these assumptions prove to be incorrect there could be a significant effect on the level of rates to be collected from the community. In this instance Council would review the works programmes accordingly.

The risks that threaten the expected future or outlook are:

- Delays in purchasing land means opportunities for the future may be lost
- Previous land management regimes on acquired land may create increased site-specific costs
- A National Policy Statement or Legislation may change Council's level of responsibility significantly in an adverse way for the parks and heritage elements.

### Summary Financial Forecast – All Properties

The following tables contain the Parks Statement of Financial Performance, which incorporates the projected income and funding sources to fund operational, renewal and capital expenditure for the next 10 years (2018/19 – 2027/28). This is based upon the best available information at the time of preparation and projects are available in the Improvement plan to improve data knowledge and cost management practices that will assist with more robust financial reporting in the future.

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**Table 28: Regional Parks Long Term Plan 2018/19 – 2027/28 (uninflated)**

	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10
	LTP									
	2018/19	2019/20	2020/21	2021/22	2022/23	2023/24	2024/25	2025/26	2026/27	2027/28
	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$
<b>OPERATING</b>										
<b>Operating revenue</b>										
General Rates - Allocated	(200,140)	(200,140)	(186,408)	(226,988)	(271,548)	(268,628)	(257,913)	(287,105)	(325,401)	(340,161)
Investment Income	(313,590)	(290,852)	(276,140)	(334,873)	(393,157)	(383,189)	(360,856)	(384,463)	(423,578)	(430,936)
Fees and Charges	(8,000)	(8,000)	(8,000)	(8,000)	(8,000)	(8,000)	(8,000)	(8,000)	(8,000)	(8,000)
<b>Total revenue</b>	<b>(521,730)</b>	<b>(498,992)</b>	<b>(470,548)</b>	<b>(569,860)</b>	<b>(672,705)</b>	<b>(659,817)</b>	<b>(626,769)</b>	<b>(679,568)</b>	<b>(756,979)</b>	<b>(779,097)</b>
<b>Operating expenditure (before charges and recoveries)</b>										
Depreciation - Buildings	29,646	35,830	67,407	162,909	236,740	196,668	152,140	152,112	151,175	150,863
Depreciation - Plant & Equipment	0	3,500	7,000	7,000	7,000	7,000	7,000	7,000	7,000	7,000
Depreciation - Other	0	0	0	0	0	1,000	3,000	24,000	44,000	44,000
Accommodation	1,285	1,285	1,285	1,285	1,285	1,285	1,285	1,285	1,285	1,285
Course & Conference Fees	714	714	714	714	714	714	714	714	714	714
Legal Fees	22,000	32,000	7,000	2,000	2,000	2,000	2,000	2,000	2,000	2,000
Electricity/Gas	5,433	5,433	5,433	5,433	5,433	5,433	5,433	5,433	5,433	5,433
Rates - Council Owned Properties	0	0	0	0	0	0	0	0	0	0
Grants & Contributions	5,000	5,000	5,000	5,000	5,000	5,000	5,000	5,000	5,000	5,000
Contract Work	276,461	217,568	162,639	151,656	149,725	154,742	153,796	155,888	161,007	160,148
Consultancy Fees	0	0	0	0	0	0	0	0	0	0
Materials	3,000	3,000	3,000	3,000	3,000	3,000	3,000	3,000	3,000	3,000
Consumables	3,698	3,698	3,698	3,698	3,698	3,698	3,698	3,698	3,698	3,698
	<b>347,237</b>	<b>308,028</b>	<b>263,176</b>	<b>342,695</b>	<b>414,595</b>	<b>380,540</b>	<b>337,066</b>	<b>360,130</b>	<b>384,312</b>	<b>383,141</b>
<b>Overhead charges and recoveries</b>										
Corporate Additional Levels of Services Recharged	170,325	171,836	178,980	171,236	172,985	180,288	172,119	172,368	178,754	170,574
Rates Cost Recharged	15,574	15,605	13,965	16,015	18,283	17,386	15,722	16,701	18,196	17,915
Job Costing Expense	0	0	0	0	0	0	0	0	0	0
	<b>185,899</b>	<b>187,441</b>	<b>192,944</b>	<b>187,251</b>	<b>191,268</b>	<b>197,675</b>	<b>187,840</b>	<b>189,070</b>	<b>196,951</b>	<b>188,489</b>
<b>Total operating expenditure</b>	<b>533,135</b>	<b>495,469</b>	<b>456,121</b>	<b>529,946</b>	<b>605,863</b>	<b>578,214</b>	<b>524,906</b>	<b>549,200</b>	<b>581,263</b>	<b>571,630</b>
<b>Total Net (surplus) deficit</b>	<b>11,405</b>	<b>(3,522)</b>	<b>(14,427)</b>	<b>(39,915)</b>	<b>(66,842)</b>	<b>(81,602)</b>	<b>(101,863)</b>	<b>(130,368)</b>	<b>(175,716)</b>	<b>(207,467)</b>

## Projects

The following table provides a summary of the works that are likely to occur in the next three-year period. These projects have also been alluded to in the Parks Operational Management Plans. Council has scheduled to fund these projects in the Long-Term Plan. It has provided funding for the projects listed under 2018/2019 in Year One of the Long-Term Plan. Council will reassess providing funding for the remaining projects in developing Annual Plans for 2019/2020 and 2021/2022.

**Table 29: Proposed Capital Projects (uninflated)**

	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10
	LTP	LTP	LTP	LTP	LTP	LTP	LTP	LTP	LTP	LTP
	2018/19	2019/20	2020/21	2021/22	2022/23	2023/24	2024/25	2025/26	2026/27	2027/28
Pāpāmoa Hills Car Park and Interpretation Project	30,000	287,391	1,075,690	1,130,368	324,895	322,194	100,000	2,000,000	0	0
<b>Total capital expenditure</b>	<b>30,000</b>	<b>287,391</b>	<b>1,075,690</b>	<b>1,130,368</b>	<b>324,895</b>	<b>322,194</b>	<b>100,000</b>	<b>2,000,000</b>	<b>0</b>	<b>0</b>