Maritime

Asset Management Plan 2024-2034

FINAL

Executive Summary

The Bay of Plenty Regional Council (Council) is mandated with ensuring 24/7 maritime oil response and navigation safety in the navigable waters within its authority, in alignment with regulations and Council requirements. This includes the coastal areas to 12 nautical miles out to sea, as well as the navigable waters of rivers, harbours, estuaries and the Rotorua lakes.

The purpose of this Asset Management Plan (AMP) is to formally set out the long-term approach we will follow to manage our Maritime asset portfolio and the services that contribute towards achieving Council's strategic direction. The AMP describes how the Council currently manages and maintains approximately $2,122 million worth of Maritime aids to navigation (AtoN) assets. The AtoN portfolio comprises beacons, buoys, markers and signs.

Asset type	Quantity	Value (Optimised Replacement Cost)
Beacons	278	$642,887
Buoys	447	$1,083,971
Markers	83	$102,435
Signs	127	$292,807
Total	**935**	**$2,122,102**

Our Maritime portfolio is predominantly young, with most assets being less than 30 years old. The latest condition assessments have determined 98% of all AtoN assets to be in 'Good' to 'Excellent' condition.

Grade	Description	2018	2021	2024
1	Excellent	30	196	148
2	Very Good	354	399	517
3	Good	290	296	251
4	Poor	68	0	16
5	Very Poor	11	0	3
	Total	753	891	935

Ensuring the AtoN assets are in 'Good' or better condition has resulted in achieving the defined levels of service for navigational assets as set out in Council's 2024-34 Long Term Plan (LTP).

The key issues currently facing our AtoN assets are collisions, vandalism, and damage from natural hazard events. There are two assets deemed critical: Mōtītī Island and Mayor Island light beacons.

The AMP also identifies five key future demand drivers: demographic change, climate change, legislative and regulatory shifts, stakeholder expectations, and economic development. Among these, climate change and stakeholder expectations are deemed most significant. Forecasts are presented within the AMP for each demand driver and a qualitative assessment of how the forecast demand may affect Maritime asset portfolio is provided.

Demand management encompasses both asset and non-asset approaches. Our focus is centred on non-asset demand management strategies as priority. Our aim is to optimise existing assets and resources, improve processes, and enhance stakeholder engagement and communication. We have endeavoured to develop an integrated approach where the strategies address more than one demand driver.

Management Strategy	Demand Driver				
	Demographic change	Climate change	Legislation/ Regulatory	Stakeholder expectations	Economic
Education and awareness	✓			✓	
Monitoring, response and enforcement	✓	✓	✓	✓	
Stakeholder engagement and collaboration	✓		✓	✓	✓
Climate change initiatives		✓		✓	
Bylaw review			✓	✓	
Risk management		✓			✓

The AMP discusses our approach to managing our AtoN assets throughout their entire lifecycle, ensuring we meet agreed service levels, accommodate future demand, and manage any associated risks. Lifecycle management strategies are presented spanning asset creation, through their maintenance and renewal phases, to asset disposal. Our maintenance strategy is grounded in regular inspections and condition assessments to ensure the AtoN assets remain in a condition that meets or exceeds the expected service levels. Our approach to renewals also focuses on achieving agreed service levels, employing a blend of age-based and condition-based renewal strategies.

A central theme of the AMP is continuous improvement, as we strive to achieve a 'core' level of maturity in line with the International Infrastructure Management Manual (IIMM). The AMP identifies eight improvement items which have been collated into an asset management improvement plan to be implemented over the next three years.

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Part 1: **Introduction**

WHAT IS ASSET MANAGEMENT?
Infrastructure is essential for the health, safety, and transport of people, freight and all other things. It supports community wellbeing and enables businesses and communities to develop and grow. Failure to invest in and maintain infrastructure, poses a risk to the economic prosperity and sustainable future of people and regions. Asset management is considered internationally, as the preferred choice for driving improvement in most organisations that derive value by managing and operating infrastructure assets. It is now widely recognised that asset management can provide a framework and systematic approach to enable organisations to achieve improved performance and deliver community outcomes. 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', but it can be defined further as the systematic and coordinated activities and practices of an organisation, to deliver on its objectives through the cost-effective lifecycle management of infrastructure assets. Asset management planning aims to translate community outcomes and organisational objectives into the operational delivery of asset-based services, through defined levels of service.

1.1 **Purpose of the Asset Management Plan**

WHAT THE PURPOSE OF THIS PLAN?
The way that Council invests in infrastructure has a significant influence on the extent to which it will deliver on its vision, strategic priorities and community outcomes set out in the 2024-2034 LTP. This AMP formally documents and defines how Council manages its infrastructural assets across the Maritime activities and services. The AMP also demonstrates compliance with legislative and regulatory requirements. The purpose of this AMP is to formally set out the long-term approach the Bay of Plenty Regional Council (Council) will follow, to manage the Maritime asset portfolio and the services that contribute towards achieving its strategic direction, in particular our community outcomes. The purpose of this plan is to: • Achieve organisational and asset management objectives. • 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. • Ensure sustainability and resilience are integrated within the activity.

1.2   Document relationship

HOW DOES THE AMP FIT IN COUNCIL?

The **Maritime AMP** sets out the long-term approach Council will take to manage its Maritime assets and links Council's organisational objectives and community outcomes with the asset management objectives and Maritime service levels.

The Council has a number of other key strategic documents, all working towards achieving the community outcomes. The relationship between these documents is illustrated and described below. Appendix 1 provides a list of other relevant plans, policies and documents.

Asset Management Framework

Long Term Plan:
- Our vision
- Our mission
- Our values — Enablers and how we work
- Community outcomes
- Infrastructure Strategy
- Climate Change Action Plan

AM Framework:
- Asset Management Policy — Asset management principles and commitment
- Strategic Asset Management Plan — Asset management objectives and practices
- Asset Management Plans — Levels of service, lifecycle activities, forecasts, asset descriptions.
- Service Plans

Document	Description	Relationship to AMP
Organisational Strategic Plan	The Organisational Strategic Plan assesses and adjusts the organisation's direction in response to a changing operational environment, while articulating the organisational and customer expectations to be delivered through the organisation.	The Maritime AMP converts the organisational objectives of the strategic plan into day-to-day activities, so that assets are able to provide defined levels of service.
Long Term Plan	The Long Term Plan (LTP) sets Council's strategic direction, including Community Outcomes that Council is seeking to achieve. The LTP establishes the work we will deliver to our community over the next 10 years, as well as setting out how work will be funded, including through rates and various fees and charges.	The AMP provides the projected expenditure and work programmes to deliver agreed levels of service, for Council to consider in its budgeting and decision-making, where trade-offs between risk, cost and performance are considered.

Asset Management Policy	The Asset Management Policy outlines the objectives, requirements and responsibilities for undertaking asset management across the organisation.	The AMP converts the principles and actions into day-to-day actions and activities to deliver organisational objectives.
Strategic Asset Management Plan	The SAMP sets out the long-term approach Council will take to manage its assets, and links organisational objectives with AM objectives.	The AMP takes direction from the SAMP to convert AM objectives into day-to-day operations and asset-based Maritime activities.

1.3　Asset Management Plan structure

This document is structured into the following nine sections.

WHAT DOES THE AMP DESCRIBE?	
Introduction	The scope and purpose of the asset management plan is provided in this section. It illustrates the relationship and links between other key Council documents. The plan's timeframe, status, limitations, and structure are outlined.
Organisational Overview	This section provides an overview of the Bay of Plenty region and presents context on the internal and external environment that the Council operates within relating to the Maritime activity, including Council's strategic direction.
Activity and Asset Overview	This section provides an overview of Council's Maritime activity and presents a summary of the asset portfolio covered by the AMP. Information includes asset type, quantity, age, value, condition, performance, issues, and data confidence.
Levels of Service	Levels of service sections provides the link between the higher-level organisational objectives and community outcomes, with the agreed asset service levels and technical performance measures for the Maritime portfolio.
Future Demand	This section sets out the key demand drivers, impact analysis and management strategies that the Maritime group has, is or will undertake in order to plan ahead to manage the future demand projected for the assets and activities.
Lifecycle Management	This section provides an overview of the Maritime asset lifecycle process. Lifecycle management categories are presented and lifecycle strategies outlined for the Maritime assets and activity in order to achieve levels of service.
Risk Management	This section outlines the risk management approach for the Maritime activity, indicating how risks are identified, assessed, analysed and treated. It discusses critical assets, and presents the risk register and risk management action plan.
Financial Planning	Financial requirements for the operation, maintenance, renewal and new capital works for the Maritime activity and asset portfolio are outlined alongside financial policies, strategies, assumptions and valuations.
Audit and Improvement Plan	The improvement plan is a fundamental part of this AMP. It outlines what the Maritime activity plans to do over the following three years to improve its asset management practices. This includes resources, timeframes and reporting.

1.4   Status of the Asset Management Plan

AMP STATUS AND REVIEW

This Maritime AMP is the draft version underlying the 2024-2034 LTP. It covers a 10-year time horizon and will be reviewed during annual budget planning processes and amended to show any material changes in service levels and/or resources available to provide those services because of budget decisions.

As such the AMP will be updated annually to ensure it represents the current:

- State of the asset portfolio and asset values.
- Service levels.
- Projected future demand.
- Projected asset lifecycle expenditures, which will be incorporated into the long term financial plan; and
- Risk management.
- State of the improvement plan.

The AMP will be comprehensively reviewed at three yearly intervals aligning with Council's LTP planning schedule every three years. It is a 'live' document and will be reviewed and updated when and where necessary to reflect:

- Responses to legislative and policy changes.
- New and/or improved data collected and subsequent analysis;
- Outcomes from service level reviews;
- New and/or improved management systems or tools;
- Emergency events that materially affect the AMP;
- Advances in asset management practices.

LIMITATIONS

This AMP has been prepared based on the following:

- Existing strategic objectives and community outcomes (2024-2034 Long Term Plan);
- Currently available asset information;
- Existing levels of service;
- A high-level future demand analysis;
- Existing lifecycle management plans, strategies, and intervention levels;
- Financial forecasts spanning 10 years.

The following key limitations have been identified:

- The AMP is based on information from the 2021 Valuation.
- The AMP is based on condition data from 2021 and does not reflect any changes since.
- Some demand forecasts are qualitative and may not accurately assess potential impacts from certain drivers.
- There is uncertainty around the number of AtoN assets that may fall within Maritime Operations management following the completion of the Ōpōtiki Harbour Development and Te Rāhui Marina in Whakatāne. This requires ongoing coordination with relevant stakeholders to ensure effective management of these assets

Part 2: **Organisational overview**

2.1   **Overview of the Bay of Plenty region**

The Bay of Plenty is located on the east coast of the North Island. The region incorporates the full extent of the coastline from Cape Runaway in the east, to Waihi Beach in the west. Capturing the coastal townships of Tauranga, Whakatāne and Ōpōtiki. The region extends inland, generally to the ridge of the catchments that drain into the Bay of Plenty, including the Rotorua Lakes.

The furthest point from the coast is the top of the Rangitāiki River Catchment which is 139 kms from the sea. On the ocean side, the region includes 18 offshore islands including the volcanically active White Island, and the sea extending out to the 12-nautical-mile boundary. The area of the region is 21,740 square kilometres, comprising 12,231 square kilometres of land and 9,509 square kilometres of coastal marine area (Figure 1).
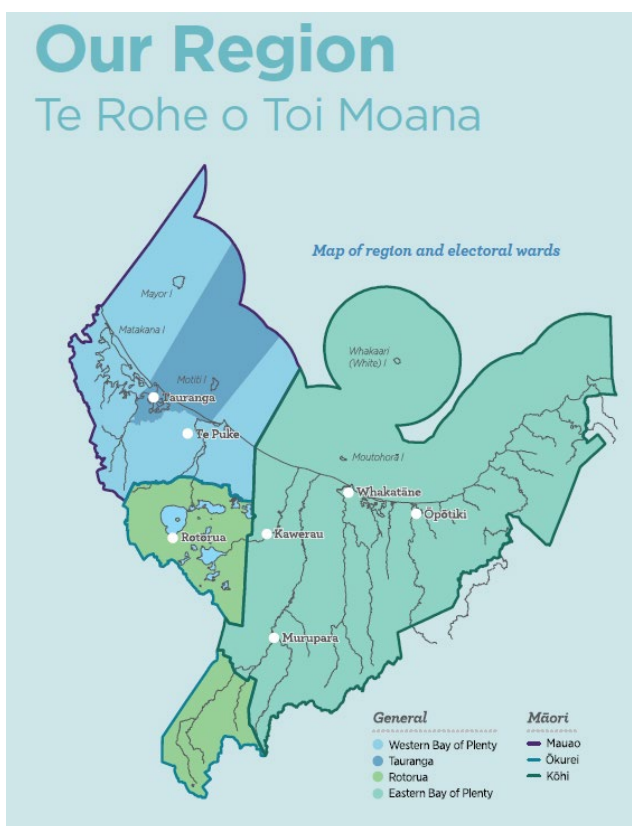
Figure 1: Locational map of region

2.1.1   **Natural environment**

The Bay of Plenty region has a number of prominent features, including islands such as Matakana, Tuhua (Mayor) and an active volcano; Whakaari (White Island). Other distinctive landmarks include numerous lakes of the Rotorua district, the Tauranga, Ōhiwa and Ōpōtiki harbours, and Mauao (Mount Maunganui).

The region is volcanically active with the Taupo Volcanic Zone crossing the area between Whakaari (White Island) and Lake Taupo. The two major features of this zone include a number of extensive geothermal areas and a number of earthquake fault lines that run parallel to each other within this zone.

Eight major rivers flow into the Bay: Raukōkore, Mōtū, Waioeka, Whakatāne, Rangitāiki, Tarawera, Kaituna, and Wairoa rivers. There are seven large estuaries: Maketu, Little Waihi, Whakatāne, Waiotahe, Waioeka/Otara, Tauranga, and Ōhiwa.

The abundance of waterways in the area combine to enhance the active lifestyle opportunities for the Bay's residents and visitors, it also presents a number of challenges regarding provision of access to waterways whilst protecting the surrounding areas from extreme flooding events.

2.2 Organisational overview

The Bay of Plenty Regional Council (Council) has the responsibility for sustainably managing the region's natural resources on behalf of the community, for the benefit of present and future generations. Council is charged with the integrated management of land, air, and water resources and building more resilient communities in the face of a changing climate and natural hazards.

Council is governed by fourteen Councillors elected from four general constituencies: Tauranga, Rotorua, western Bay of Plenty and eastern Bay of Plenty. Voters on the Māori roll elect one councillor from three Māori constituency areas: Khoi, Mauao and Ōkurei. They in turn elect a chairperson who facilitates decisions about the committee structure that Council uses for decision-making. Work is overseen by a Chief Executive and a team of general managers. There are approximately 500 staff who are based around the region.

Council acknowledges the unique status of the relationship between the Crown and Māori under the Treaty of Waitangi. Council also acknowledges that the relationships it has with Māori are central to the fulfilment of its statutory responsibilities and will continue to utilise a range of different mechanisms to engage with the wider Māori community and ensure their views are represented. This is considered a priority.

2.3 Strategic environment

All organisations operate within specific environments and are influenced by various drivers and variables. The organisational environment will impact but also provide direction for the management of Maritime assets. Assets and services need to be managed within the context of multiple changing environments: social, environmental, economic, cultural, technological, political and legal. Council's Strategic Asset Management Plan (SAMP) covers these at a strategic level.

Part 5: of this AMP outlines Council's key drivers and influences relevant to the Maritime Operations activity. These range from the climate and how it affects the Maritime asset portfolio, to the legislative and regulatory requirements that drive the way the activity is managed, to Council's own Strategic Direction, vision and community outcomes it seeks to achieve.

The internal context of the organisation will also influence the direction and scope of asset management, where visions and goals will in turn drive policies and objectives for asset management practice. Council's Strategic Direction is presented below.

A portion of Council's work involves ensuring the region's navigable waterways are safe and to be prepared to respond to marine oil spills to protect our coastal environment and habitats. An overview of the activity is provided in Part 1:

2.3.1 Strategic Direction

*Council's Strategic Direction has been developed to support the well-being of our community and ties together our vision, community outcomes, strategic priorities and the way we work (*Figure 2: Council's Strategic Direction 2024-2034*). Council's vision is* **"Bay of Plenty Thriving Together – mō te taiao, mō ngā tāngata".** *To support and deliver this vision, Council has agreed on five community outcomes and eighteen goals to enable and support community this vision.*

The Maritime activity directly contributes to three community outcomes and, all of the community well-beings. Table 1 illustrates the links between the Maritime activity and Council's Strategic Direction. The Maritime activity promotes navigational safety through a combination of enforcement and education and our aim is to ensure people are kept safe on the water and our maritime environments are protected from spills.

Figure 2: Council's Strategic Direction 2024-2034

Table 1: Maritime Operations contribution to Council's Strategic Direction

Maritime operations		
Community Outcomes	A Healthy Environment *He taiao ora*	
	Future Ready Communities *He hapori mata-hī awatea*	
	Connected and enabled communities *Ngā hapori e honoa ana, e whakamanatia ana hoki*	
	Sustainable Development *He whanaketanga mauri tū roa*	
	The Pursuit of Excellence* *Te Ara Poutama*	
Community Wellbeing	Social	
	Cultural	
	Economic	
	Environmental	

* Whilst not a direct translation, 'Pursuit of Excellence' is a close approximation to Te Ara Poutama. Te Ara Poutama has its origins in Te Ao Māori and references the pathway ascended by Tāne to retrieve the three baskets of knowledge that represent humanity's consciousness. From a contemporary perspective, Te Ara Poutama serves to inspire a commitment to innovation, excellence, and continuous improvement.

Asset Management Policy

Council developed its first Asset Management (AM) Policy in April 2015. It is currently in its second iteration having been updated and approved by Council in 2020[1]. The next review is scheduled for 2023/24.

> **Improvement: Integrate the principles and actions from the updated AM Policy into the Maritime Operations AMP and activities.**

The intent of the AM Policy is to set the overarching framework for the delivery of Council's services that rely on the use and management of infrastructure assets. The framework is set to help achieve Council's strategic direction by outlining the principles, objectives, roles and responsibilities for undertaking asset management across Council.

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[1] https://objective.envbop.net:8643/id:A3574175

The underlying principles the AM Policy is based on that Council uses to support its delivery of services and community outcomes indicate good asset management is based on:

▶ Governance and asset stewardship.

▶ Knowledge of customer and stakeholder requirements now and going forward.

▶ Knowledge including condition and performance required to deliver service.

▶ Knowledge of the risks associated with our assets.

▶ Understanding of the long-term works and costs associated with the assets.

▶ Understanding what is required to provide services sustainably.

▶ Legislative compliance.

Asset Management objectives

Council is committed to best appropriate practice in asset management to fulfil its Strategic Direction. To guide its asset management practices and decision-making, Council has developed a set of objectives and actions that align with its organisational objectives and community outcomes. These objectives are as follows:

▶ Recognise the importance of AM planning and adequately resource the AM System.

▶ Actively and transparently engage stakeholders on how assets are to be managed.

▶ Manage asset networks in a prudent manner.

▶ Maintain the AM System to a high quality.

▶ Take a continual improvement approach.

▶ Use the most appropriate approach for service delivery.

▶ Consider climate change and implications for Māori.

The AM objectives convert the organisational objectives and community outcomes into actions to be achieved across Council. By adopting these objectives, the Maritime group ensures that the development of the AMP and the delivery of its activities are in line with Council's overall goals and community outcomes. The AM Objectives serve as a guide for decision-making and provide a clear direction for the management of the Maritime portfolio.

Continuous improvement

Section	Item	Description
2.3.1	1	Integrate the principles and actions from the updated AM Policy into the Maritime Operations AMP and activities.

Part 3: **Activity and asset overview**

3.1 **Activity overview**

3.1.1 **Why do we do it?**

The Maritime Operations activity ensures navigational safety and Maritime oil spill response is provided 24/7 in the Bay of Plenty region as required by regulations and Council requirements. The navigable waters of the Bay of Plenty region includes the coastal areas to 12 nautical miles out to sea, the navigable waters of rivers, harbours, estuaries, and the Rotorua lakes (Figure *3*). Within the navigable water boundaries, the Regional Council is the statutory and regulatory harbour authority with responsibility for navigation safety.

Figure 3: Locational map of navigable areas managed by Maritime Operations

The Maritime Transport Act (1994) (and its amendments and instruments) is the main legislation under which the Harbourmaster and Maritime Team operate. It includes local regulation of Maritime activity, setting of navigation bylaws, and marine oil pollution response. Legislative and regulatory context is covered in 0.

Service provision is also guided by the Council's strategic objectives and the levels of service agreed with the community. Council's Strategic Direction has been developed to support the well-being of our community and ties together our vision and community outcomes**.** The Maritime Operations Activity is an important service provided to the community for both the recreation and economic activity that it helps promote, contributing to the social and economic wellbeing of the community. The activity also supports other parts of the Council to conduct activities on the water.

The Local Government Act (Schedule 10) requires an outline of any significant negative effects that an activity may have on community well-being. The Maritime activity and services generally provide significant public good to the community with respect to safety and recreation. This activity is currently not associated with any significant negative effects.

3.1.2 What do we do?

Within the navigable water of the Bay of Plenty Region, the Council is the statutory and regulatory harbour authority, with responsibility for navigation safety, managed by the Harbourmaster and Maritime Team. These responsibilities include:

▶ Carrying out regular patrols to ensure that harbour and lake users know the rules and are abiding by the Bay of Plenty Navigation and Safety Bylaw.

▶ Provision and maintenance of navigation aids, lights beacons and signs around the region.

▶ Removing hazards (when accessible) such as large logs and fallen trees from waterways.

▶ Maritime emergency response, marine oil pollution response, Civil Defence support.

▶ Pilotage, licencing and exemptions.

▶ Administration of the swing moorings.

▶ Education including boat shows, publications and brochures.

▶ Manage aquatic events and lake closures for navigational safety.

▶ Maintaining the Tauranga Port and Harbour Safety Management System.

▶ Regulation of commercial shipping and recreational boating safety through the Maritime Transport Act, and Bay of Plenty Regional Navigation Safety Bylaw.

3.1.3 How do we do it?

To ensure the region's navigable waterways are safe and to enable timely response to marine oil spills the Council has a dedicated Maritime team working towards providing the Maritime Operation Activity. The management and staff structure is illustrated below:
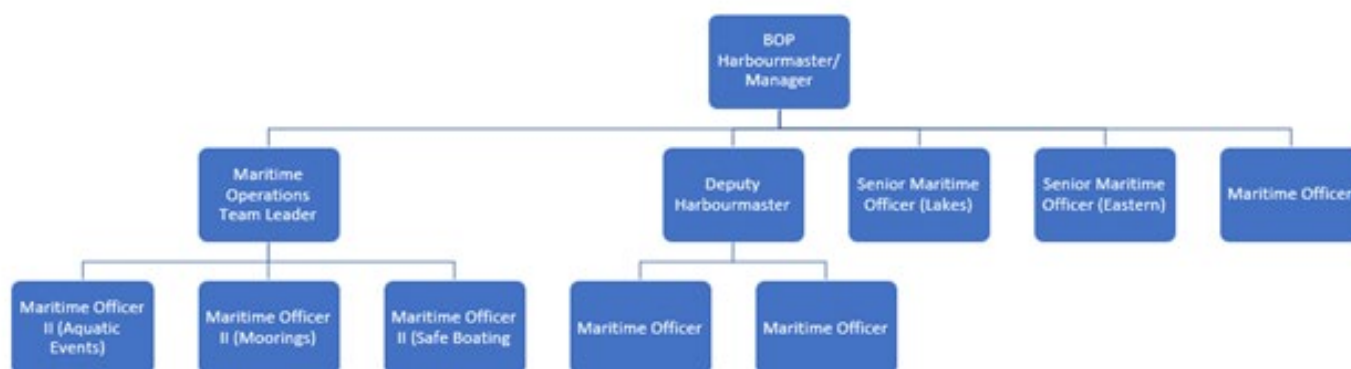
Figure 4: Organisational structure for Marine Operations activity

The Maritime Operations Activity ensures navigation safety and Maritime oil spill response is provided 24/7. This involves operating an around-the-clock call centre and duty roster.

The Maritime Operations group needs to work with other councils, community groups, businesses, central government, iwi/hapū and other organisations to effectively achieve and deliver on the community outcomes it contributes to. In addition to working alongside key stakeholders, Council maintains relationships with key service providers to deliver the outcomes of the Maritime activity.

3.2 Asset overview

Council currently manages and maintains approximately $2,122,102[2] worth of Maritime assets (gross replacement cost) on behalf of the Bay of Plenty region (Table 2). This includes 935 navigational assets located within the navigable waters of the region, including lakes, rivers, harbours and seas. There are four key asset types: beacons, buoys, markers and signs. A more detailed summary of each asset is provided in 3.7. You can also use this link to explore the aids to navigation assets (AtoN): Map of Navigational Aids.

There has been a 5% increase in the number of AtoN assets (44 assets) since 2021. There are several reasons for the net increase, such as capturing assets not previously recorded, acquiring new assets to better manage risks, as well as meet customer expectations and demand (Part 5:). For changes to valuation numbers since 2021 refer to (Table 2: Asset quantities and value by asset type (Table 2).

Table 2: Asset quantities and value by asset type

Asset type	2021 Quantity	2024 Quantity	2021 % +-	Optimised Replacement Cost (ORC)	Optimised Depreciated Replacement Cost (ODRC)	Annualised Financial Depreciation (AFD)
Beacons	270	278	+3	$642,887	$422,629	$21,959
Buoys	416	447	+7	$1,083,972	$826,740	$36,339
Markers	83	83	-	$102,435	$77,656	$3,043
Signs	122	127	+4	$292,808	$182,683	$15,437
Total	**891**	**935**	**+5%**	**$2,122,102**	**$1509,708**	**$76,778**

The Regional Council is one of the key providers of AtoN assets in the region. However, it is important to note that other providers of AtoN include port companies, marina operators, marine farms and other facility providers such as city and district councils.

In the Tauranga Harbour, BOPRC and Port of Tauranga (PoT) have a Memorandum of Understanding (MOU), which clearly defines that PoT is responsible for erecting and maintaining all AtoN in the commercial shipping channel. Council is responsible for erecting and maintaining all other AtoN in Tauranga Harbour.

In total, there are 492 swing moorings of which Council owns only eleven (primarily for emergency situations). All of the remaining moorings are privately owned, with Council issuing the mooring licences.

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[2] As of the latest valuation effective 30 April 2024.

3.3 Asset inventory

Council's Maritime Operations assets are currently managed using Accela. Accela is a platform that streamlines the Council-wide use of application/programs, including asset management, Maritime have been using Accela since late 2016. The Maritime group use Accela to manage infrastructure assets, where a work order system is used to generate and capture proactive maintenance work with due dates, capture inspection and maintenance information in the field and record photos of the assets, it links any service requests from public with the asset record, and it also records geospatial information which is then able to be viewed as a layer in Geoview.

An asset hierarchy (or data structure) provides a framework for structuring data in an information system to assist in collection of data, reporting information and making decisions. The assets in Accela are based on hierarchical standardised assets with reliable attribute information overall (see 3.8 on data confidence).

In 2025/26, along with 8 other Councils across New Zealand, Council will transition to IRIS Next Gen. IRIS Next Gen is an integrated management system which includes asset management in a similar capacity to Accela. This is an opportunity to build on the improvements already achieved by Maritime Operations in its asset management processes and improve consistency with other Councils across New Zealand.

3.3.1 Age

Figure 5 shows the total number of AtoN assets grouped into remaining useful life year ranges. A significant portion (50%) of AtoN have between 11-20 years of useful life remaining. Over the next ten year period, 21 AtoN assets will reach the end of their useful life. Around 47% of AtoN assets have over 21 years of remaining useful life. This information is based on the 2024 valuation.

Table 3: Age distribution

Figure 5: Number of AtoN assets grouped into remaining useful life ranges
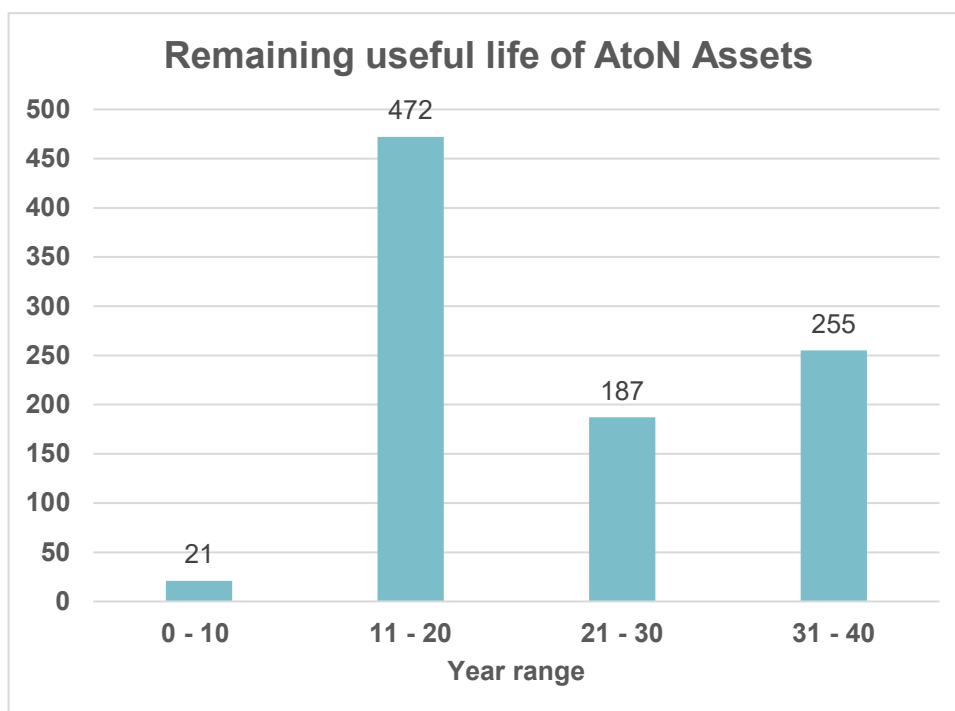
Year	Quantity
2008	2
2009	39
2010	60
2011	10
2012	28
2013	7
2014	20
2015	52
2016	522
2017	41
2018	61
2019	21
2020	1
2021	30
2022	24
2023	17
2024	0
Total	**935**

The Maritime AtoN portfolio is relatively young, with the oldest AtoN assets being installed in 2008. There have generally been consistent installations each year, albeit fluctuating year from year. A significant peak can be observed in 2016 with 547 installations, note this is when BOPRC transitioned to Accela and improved asset management records. For more detail on asset ages refer to the asset type summaries in 3.7.

3.3.2 Value

Council currently manages and maintains approximately $1,509,708 worth of maritime assets on behalf of the region. This number represents the optimised depreciated replacement cost (ODRC) for the assets and is sourced from the 2024 Maritime Asset Revaluation. The asset (re)valuation is discussed further in 8.3. These assets include specific aids to navigation (beacons, buoys, markers and signs). A detailed description of each of the asset types can be found in 3.7.

Table 4: Summary of Maritime asset portfolio

Maritime assets	Optimised Replacement Cost (ORC)	Optimised Depreciated Replacement Cost (ODRC)	Annual Financial Depreciation (AFD)	No. of assets
Western Bay - Beacons Total:	$600,452	$386,431	$20,352	267
Western Bay - Buoys Total:	$427,997	$309,431	$17,384	104
Western Bay – Markers Total	$28,383	$20,047	$968	15
Western Bay - Signs Total:	$131,267	$78,760	$6,240	**60**
WESTERN BOP TOTAL:	**$1,188,099**	**$794,852**	**$44,944**	**429**
Rotorua Lakes – Beacons Total	$26,111	$22,780	$607	5
Rotorua Lakes - Buoys Total:	$609,979	$477,640	$16,821	326
Rotorua Lakes - Markers Total:	$74,052	$57,609	$2,075	68
Rotorua Lakes - Signs Total:	$119,908	$74,182	$6,627	49
ROTORUA LAKES TOTAL:	**$830,049**	**$632,210**	**$26,130**	**448**
Whakatāne – Beacons Total	$16,325	$13,418	$1,000	6
Whakatāne – Buoys Total	$45,997	$39,486	$2,134	17
Whakatāne - Signs Total:	$41,633	$29,742	$2,571	18
EASTERN BOP TOTAL:	**$103,954**	**$82,646**	**$5,704**	**41**
BOP REGION TOTAL	**$2,122,102**	**$1,509,708**	**$76,778**	**935**

There were 44 net additions between the 2021 and 2024 valuation datasets.
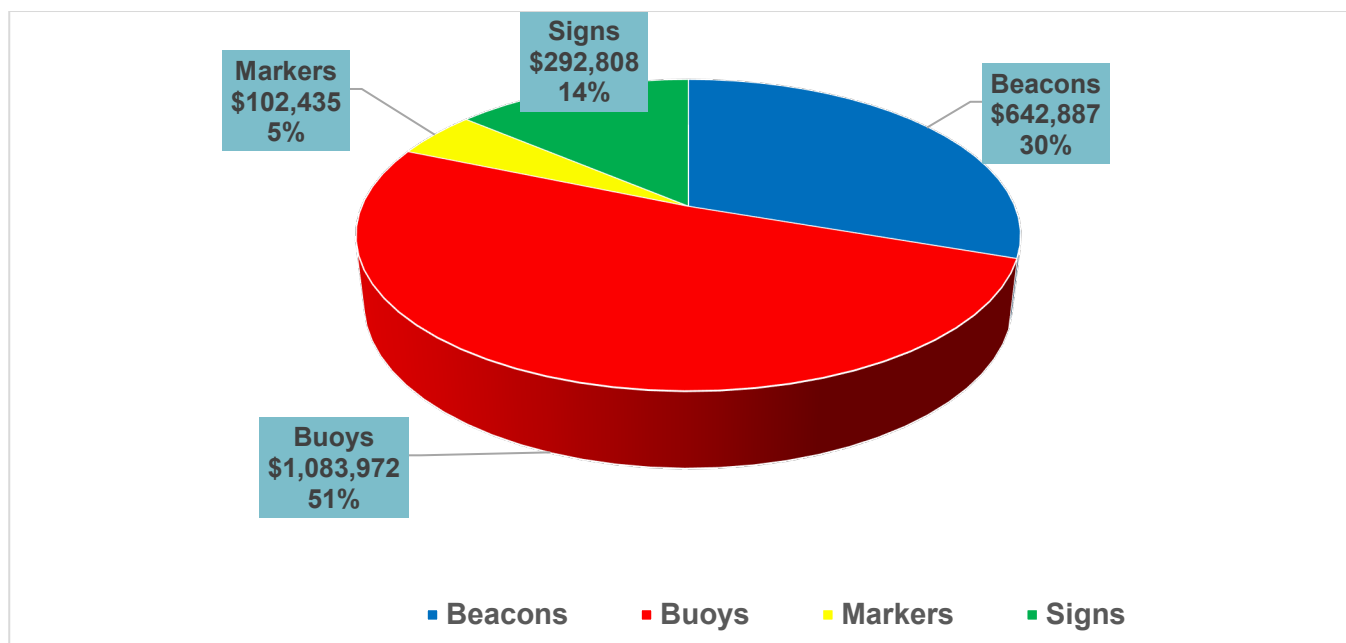
Figure 6: Total replacement costs by asset type

Buoys contribute over half (51%) of the total replacement cost for the Maritime Operations asset portfolio, followed by beacons who contribute approximately a third (30%). Signs and markers respectively make up 14% and 5% of the rest of the total replacement cost.

3.4   Asset condition

Keeping AtoN operating is an important task, and the Maritime Team use best practice by following the Maritime New Zealand Aids to Navigation Guidelines[3]. The condition of our AtoN assets are assessed on a six monthly rotation where they are assigned a rating from 1 to 5 as indicated in Table 5: Asset condition grading system for Maritime assets (Table 5) below.

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[3] https://www.maritimenz.govt.nz/content/commercial/ports-and-harbours/documents/Aids-to-navigation-guidelines.pdf

Table 5: Asset condition grading system for Maritime assets

Grade	Description	Interpretation
1	Excellent	Only normal maintenance required (e.g. cleaning)
2	Very Good	Minor defects and minor maintenance required
3	Good	Minor maintenance required to return to accepted service level
4	Poor	Major maintenance required to return to accepted service level
5	Very Poor	Asset unserviceable and needs to be replaced

For AtoN assets, where a defect is identified and/or a lower condition score given, these are remedied as soon as practical and often immediately by Maritime Operations staff. This is reflected in the bar graph below which shows the condition of AtoN assets, where 98% of all the assets are sitting in the 1 to 3 (Excellent to Good) condition rating category.

Note: the condition data is based on the 2023 inspection programme which aligns with the 2024 valuation, which provides information throughout this section.
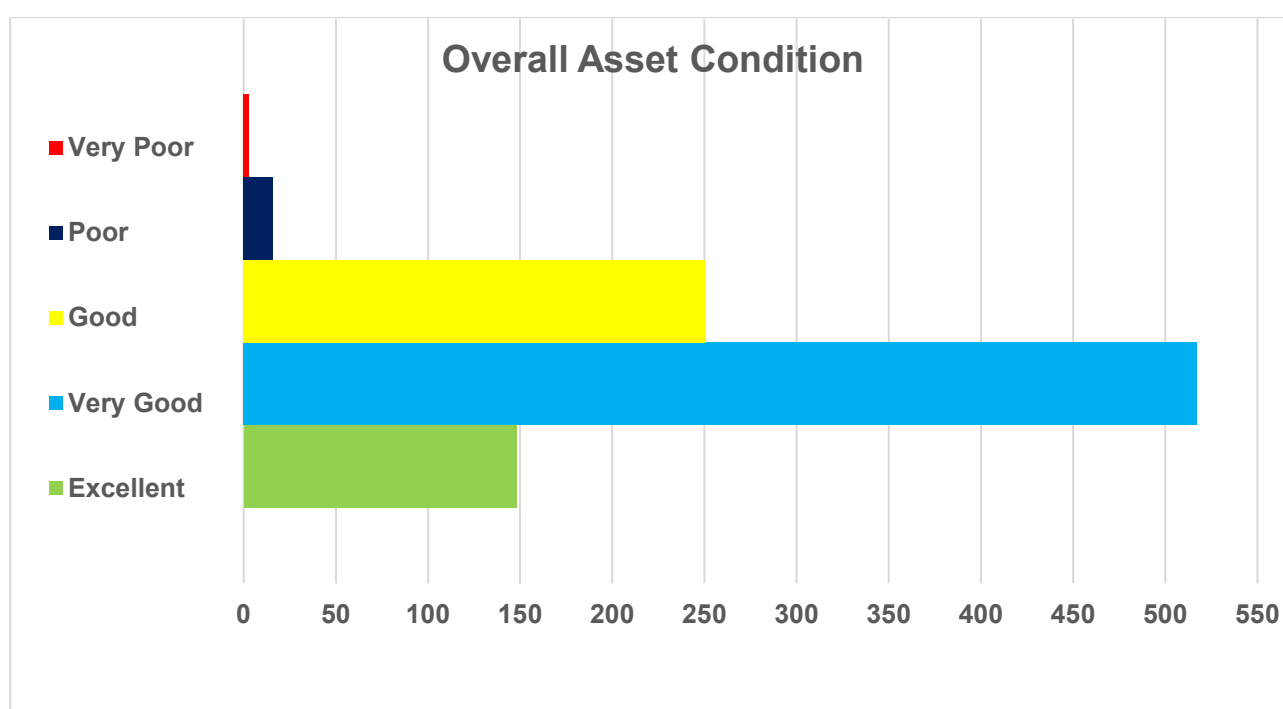
Figure 7: Overall asset condition for Maritime asset portfolio (2021 data).

Maritime levels of service are discussed in the next chapter (Part 4:), but it is worth noting that one of the performance measures relates to the number of AtoN assets in 'Good' condition or higher. The current target is 95%. The graph above illustrates that 98% of our AtoN assets are rated in Excellent to Good condition, indicating that we are currently achieving this defined level of service. 71% of assets are in either Excellent or Very Good condition. The 251 assets (27%) in Good condition will need to be monitored closely.

The chart below illustrates the condition of the Maritime portfolio by asset type and reiterates the majority of assets are in Good condition or higher.

Condition by Asset Type
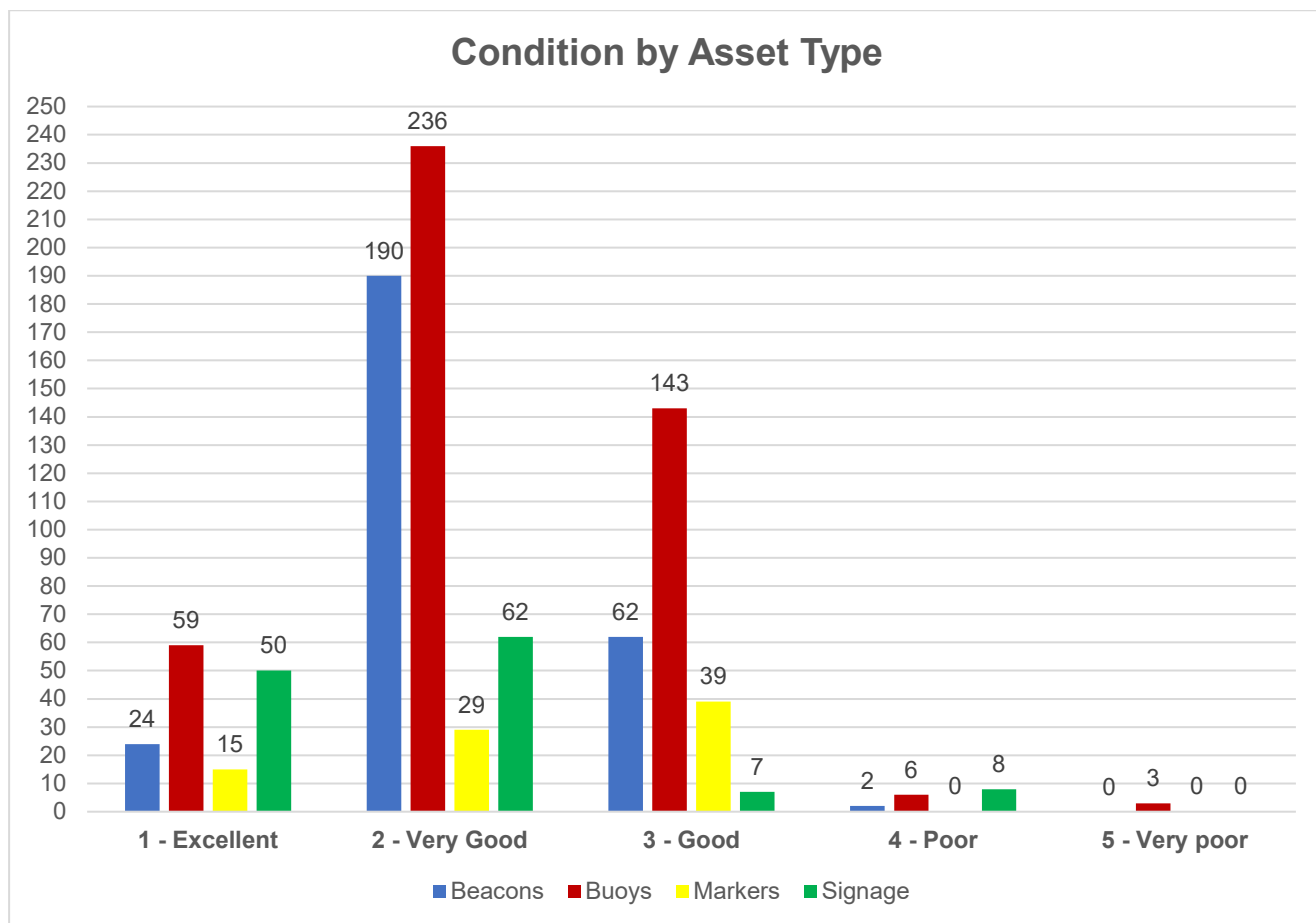
Figure 8: Asset condition of Maritime asset portfolio by asset type (2021 data).

Table 6: Asset condition data comparisons between 2021 and 2024

Grade	Description	2021	2024	Quantity +/-
1	Excellent	196	148	-48
2	Very Good	399	517	118
3	Good	296	251	-45
4	Poor	0	16	16
5	Very Poor	0	3	3
	Total	891	935	44

3.5 Asset Performance

Performance can be expressed by being able to state with confidence that there is an appropriate asset for the defined level of service, in the appropriate condition, and therefore know it will perform reliably. In other words, when an asset fails to meet the required level of service.

Earlier in this section we discussed the level of service measure which relates to asset performance. This measure relates to the proportion (95%) of assets in a 'Good' or better condition. We are currently achieving this performance measure. Performance is discussed further in the next chapter on Levels of Service.

3.6 Summary of Key Issues

Every year there are a small number of AtoN that are damaged as a result of either vandalism or poor boating practices. With continued population growth, and the popularity of recreational boating and other water-based activities also increasing, this may impact on asset condition where accidental damage caused by users could increase. However, this potential increase is anticipated to be minor.

It is expected that ongoing environmental changes, such as movement of channels, will continue, and Maritime staff will be able to respond as required. There are currently no wider significant issues related to the overall condition and performance of the AtoN assets. Issues bespoke to each asset type are provided in the subsequent asset type summary.

3.7 Asset type information

3.7.1 Beacons

Asset type	Beacons	Quantity	278
ORC	$642,887	ODRC	$422,629

Overview

Beacons are poles set into the ocean/lake floor, are lighted or unlighted (unlighted beacons have reflective marking strips to aid visibility at night), and can have top shapes fitted. The majority of beacons in the Bay of Plenty region are set in the Tauranga Harbour and consist of railway iron, galvanized poles, steel poles, wooden 2 pile and large I Beam types.

Due to availability and cost of installation, railway iron beacons are being replaced with 100 mm galvanized round poles (standardising of material type) as they reach the end of their asset life or are damaged. Likewise, 2 pile wooden poles are being replaced with 150 mm square steel poles (standardising of material type) as they reach the end of their asset life or are damaged.

Asset Summary

Beacons make up 30% of the optimised replacement cost value of the Maritime asset portfolio (based on the 2024 valuation).

99% of beacon assets are rated as Excellent to Good condition. 77% of beacon assets are in Excellent or Very Good condition. There are only two beacon assets in Poor or Very Poor condition.

Condition	Excellent	Very Good	Good	Poor	Very Poor	Total
Quantity	24	190	62	2	0	278

Key Issues	
▶	Damaged as a result of either vandalism or poor boating practices.
▶	Environmental changes such as shifting sandbanks, resulting in movement of channels.

3.7.2 Buoys

Asset type	Buoys	Quantity	447
ORC	$1,083,972	ODRC	$826,740

Overview
Buoys are secured or moored to the ocean/lake floor using a weight and either rope or chain, or a combination of both. Buoys are lighted or unlighted and can have top shapes fitted. Buoys range from small yellow special marks in sheltered waters to indicate 5 knot limits, to large ocean buoys which are exposed to large breaking seas at times.

Asset Summary
Buoys make up 51% of the optimised replacement cost value of the Maritime asset portfolio (based on the 2024 valuation).
98% of buoy assets are rated as Excellent to Good condition. 66% of buoy assets are in Excellent or Very Good condition. There are nine buoy assets in Poor or Very Poor condition.

Condition	Excellent	Very Good	Good	Poor	Very Poor	Total
Quantity	59	236	143	6	3	447

Key Issues	
▶	Damaged as a result of either vandalism or poor boating practices.
▶	Breaking free.

3.7.3 Markers

Asset type	Markers	Quantity	83
Replacement cost	$102,435	ODRC	$77,656

Overview
Markers are land-based and include Water Ski Access Lane and Reserved Area marker poles.

Asset Summary
Markers make up only 5% of the optimised replacement cost value of the Maritime asset portfolio (based on the 2024 valuation).
100% of marker assets are rated as Excellent to Good condition. 53% of marker assets are in Excellent or Very Good condition; 39 assets (47%) are in Good condition and need to be monitored. There are no marker assets in Poor or Very Poor condition.

Condition	Excellent	Very Good	Good	Poor	Very Poor	Total
Quantity	15	29	39	0	0	83

Key Issues	
▶	Vandalism of markers.
▶	Erosion from storm events.

3.7.4 Signs

Asset type	Signs	Quantity	127
Replacement cost	$292,808	ODRC	$182,683

Overview

Signs range from simple single panel signs, through to large three panel signs. These are typically mounted in galvanised steel frames or wooden pole style frames.

Signs are positioned at boat ramps, giving water users key Navigation Safety information, and larger signs include maps that indicate the location of designated areas under the Bay of Plenty Regional Navigation Safety Bylaw 2017 (such as mooring areas, reserved areas, water ski access lanes, shipping channels), location of aids to navigation, and other useful information.

The Bay of Plenty Regional Navigation Safety Bylaw 2017 came into force on 1 July 2017. There were a number of changes from the old Bylaw, and hence signage required to be updated to reflect these changes. As such, the signs around the Tauranga Harbour have been updated with new stickers using the existing frames, and Rotorua/Whakatāne have had some completely new signs and frames installed at the time. The Bylaw is currently under review and will require new stickers to reflect any changes to the BOP Regional Navigation Safety Bylaw 2017.

Asset Summary

Signs make up 14% of the optimised replacement cost value of the Maritime asset portfolio (based on the 2024 valuation).

94% of sign assets are rated as Excellent to Good condition. 88% of sign assets are in Excellent or Very Good condition. There are eight assets in Poor or Very Poor condition.

Condition	Excellent	Very Good	Good	Poor	Very Poor	Total
Quantity	50	62	7	8	0	127

Key Issues

▶ Vandalism of signs.

▶ Potential changes to the by law (e.g. changes to lifejacket rules, changes to designated areas e.g. ski areas) may result in some updates being required on signs.

3.8 Data confidence

Clear data reliability provides clarity over the robustness of plans and provides decision-makers with confidence. It is important to understand its strengths and weaknesses of data. Data reliability has been scored using (Table 8) and is based on technical estimates from a professional team within the Council's Maritime group (Table 7).

Table 7: Data confidence scores for Maritime asset portfolio

Data	Unknown	Very Uncertain	Uncertain	Reliable	Highly reliable
Asset inventory					
Location	🟩	🟩	🟩	🟩	🟩
Quantity	🟩	🟩	🟩	🟩	🟩
Value	🟩	🟩	🟩	🟩	
Condition	🟩	🟩	🟩	🟩	
Performance	🟩	🟩	🟩	🟩	
Criticality	🟩	🟩	🟩	🟩	

Table 8: Data confidence scoring system

Confidence Grade	Description
Highly reliable	Data based on sound records, procedures, investigations and analysis, documented properly and agreed as the best method of assessment. Dataset is complete and estimated to be accurate ± 2%
Reliable	Data based on sound records, procedures, investigations and analysis, documented properly but has minor shortcomings, for example some of the data is old, some documentation is missing and/or reliance is placed on unconfirmed reports or some extrapolation. Dataset is complete and estimated to be accurate ± 10%
Uncertain	Data based on sound records, procedures, investigations and analysis which is incomplete or unsupported, or extrapolated from a limited sample for which grade A or B data are available. Dataset is substantially complete but up to 50% is extrapolated data and accuracy estimated ± 25%
Very Uncertain	Data is based on unconfirmed verbal reports and/or cursory inspections and analysis. Dataset may not be fully complete and most data is estimated or extrapolated. Accuracy ± 40%
Unknown	None or very little data held.

Part 4: **Levels of Service**

The purpose of asset management is to provide desired levels of service (LoS), for current and future customers, in the most cost-effective manner, whilst meeting legislative requirements. "Levels of Service" is an asset management term that incorporates the service element of delivering a community activity (Maritime Operations) in conjunction with measurable targets that can be used to determine how effectively the activity is delivered.

Asset management planning enables the relationship between LoS and the cost of the service to be determined. The aim is to provide affordable service levels that the community both desire and are willing to pay for. This is achieved through community consultation, customer research, and service level reviews. Performance against service level delivery is reported to the community and Council each year.

LoS provide the basis for lifecycle management strategies and works programmes identified in this plan. Improvements have been identified and are highlighted at the end of the section.

4.1   Linking LoS and community outcomes

The Local Government Act (LGA) prescribes local authorities to determine its role in promoting social, economic, environmental, and cultural wellbeing of their communities. It provides a framework for local authorities to decide how they will undertake activities. The LGA requires service levels to be developed with the community in mind, to ensure that there is a community perspective applied to the development of technical service levels.

Schedule 10 of the LGA (Appendix 4) outlines the general requirements for the development of service levels. These requirements are:

- Statement of intended LoS provision for the activity including performance measures.

- Performance measures and targets that will enable the community to assess the LoS 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.

This AMP is prepared under the direction of the Council's Strategic Direction and 2024-34 LTP. The LTP outlines the community outcomes and goals, outlined in 2.3.1, that the Council's vision and objectives aim to achieve through the provision of services. Table 9 shows how the Maritime activity contributes to community outcomes.

Table 9: How the Maritime activity contributes to community outcomes

Community Outcomes	How the Activity contributes to Community Outcomes	Objectives
Future Ready Communities	Maritime users and the environment are kept safe, by: • Safe navigation • Education and enforcement • 24/7 response to spills	We ensure our navigation aids are in good condition and maintained. We support community safety through navigation safety and safe boating practices. Ensure compliance with the Navigation Safety Bylaws through education and enforcement. We work with our partners to develop plans and policies. We lead and enable our communities to respond and recover from an emergency.

4.2 Developing and reviewing LoS

To develop LoS, there are a number of steps that need to be taken. The SAMP provides detail on how service levels are determined from a Council-wide organisation level.

The LoS statements, measures and performance targets, outlined further below, have been developed through historical trends of the service, staff judgement and experience, and consultation and engagement with customers and stakeholders. These measures are linked to Council's Strategic Direction where the Maritime Operations Activity contributes to directly to the community outcome: 'Safe and resilient communities'.

LoS can be reviewed at any time by consultation between communities and Council, initiated by either group. In addition, community groups and individuals can contribute to Council's LTP and Annual Plan processes.

4.2.1 Reporting LoS and performance measures

LoS performance measures are monitored every month by the Maritime Operations staff. Every four months, at October, February and June, Maritime Operations staff report to the Organisational Asset Management Steering Group (OAMSG) on the progress made in achieving performance targets and delivering the LoS. Activity performance, activities undertaken and planned work programmes are also discussed at the meetings.

Support for proposed future work programmes along with their funding requirements is sought at the time of preparing draft annual plans and the draft LTP, in preparation for consultation with the wider community.

At the end of the financial year, the progress made over the 12-month period is reported to the community through the Council's Annual Report, which is audited.

4.3 Customers and stakeholders

4.3.1 Who are our customers and stakeholders?

This AMP considers that a customer is anyone who uses or is impacted by the Maritime activity. The customers for aids to navigation are predominantly recreational and commercial users navigating the waters within the areas overseen by Maritime Operations.

Customers receive a direct benefit from the Maritime assets, while stakeholders share an interest in the assets and services provided. The customers and stakeholders of the Maritime activity have distinct needs and expectations that must be addressed, to ensure successful and efficient service delivery. They seek value for money, the ability to navigate waterways safely and comfortably, clear and consistent rules, fair charges, and opportunities to participate in decision-making processes. Moreover, they emphasise the importance of well-maintained signage and navigational aids, minimised disruptions, efficient debris removal, and quick response to incidents and queries.

Furthermore, key stakeholder groups, such as tangata whenua, Government agencies, territorial local authorities (TLAs), internal staff, and various groups and forums, have an interest in the Maritime activity. Their needs include recognition of their status, meaningful consultation (particularly for tangata whenua on cultural matters), compliance with statutory requirements, involvement in decision-making processes, and cooperation in providing services to other organisations and Regional Council staff.

The following table outlines the categories and groups of Maritime customers and their specific needs relating to the activity.

Category	Customer group	Specific needs relating to these services
People	Residents – water users, licence holders (mooring licences, navigation safety licence – kayak companies etc.). Non-residents but ratepayers. Non-residential users.	• Value for money.
		• Users are able to enjoy navigational waterways safely, comfortably and with minimal conflict with other users.
		• Opportunities to participate in decisions.
		• Clear and consistent rules.
		• Fair charges.
		• Appropriate signage is maintained to enable safe navigation.
		• Navigational aids are installed and maintained to provide safe access across the region's harbour and navigational waterways.
		• Minimised disruptions (closing of waterways for events).
		• Moorings are available (high demand for mooring in the Tauranga mooring areas) safe and reliable.
		• Debris is removed quickly and efficiently.
		• Risks are minimised.
		• Clear communication and information (fast response to queries and information requests).
		• Education – around boating rules, bylaw requirements and best practice.
		• Complaints/incidents and oil spills – quick response, effective clean-up.
		• Monitoring patrols – want to see fair and reasonable rules in place and that they are enforced.
Businesses	Commercial/industry.	• Opportunities to participate in decisions.
		• Opportunities to grow.
		• Reasonable cost.
		• Clear and consistent rules.
		• Minimise red tape.
		• Quick responses to incidents, emergencies etc.
		• Waterway markings are maintained to provide clear direction for boats and ships.
		• Promotes area.
		• Health and safety – minimise hazards and risks, meet legislative requirements.
Key stakeholder groups	Tangata whenua. Government agencies and TLAs. Internal – staff, elected members. Groups, forums etc.	• Recognition of status.
		• Consultation (for tangata whenua – cultural and environmental).
		• Meets statutory requirements.
		• Involved in decision-making.
		• Understanding of conflicting needs.
		• Cooperation – providing a service to other organisations and Regional Council staff.

4.3.2 What do they value?

Customer values provide the cornerstone to the development of LoS from both a customer and technical point of view. The customer values considered important for the Maritime Operations activity and their associated strategic objectives are summarised below.

Table 11: Strategic outcomes for Maritime activity and corresponding customer values

Activity strategic outcomes (Levels of service)	Customer value			
	Safety	Responsive	Access	Quality
Provide an effective and efficient approval system for licences and certification	✓	✓	✓	✓
Water users are aware of the rules and regulations and apply best practice.	✓	✓	✓	✓
Signage and navigational aids are installed and maintained to enable efficient and safe access.	✓	✓		✓
Good practice is followed in design specifications, maintenance and management of moorings.	✓	✓		✓
Minimising risks and effects of maritime oil spills and navigation hazards.	✓	✓		

4.3.3 Consultation and engagement

Maintaining an understanding of changing customer expectations is an ongoing process and is carried out through formal and informal consultation with customers.

Council consults with its stakeholders on the Maritime Operations activity every three years through the LTP process, and every year through the Annual Plan process. The outcome of consultation and engagement is to review existing, and confirm any new, customer values to form the basis of the levels of service and performance measures.

Informal customer liaison is also undertaken by Maritime Operations staff who encounter customers and stakeholders during operational activities on a regular and ongoing basis.

The Maritime Operations group also engage and consult with the public and stakeholders during reviews of key Maritime documents, such as the Navigational Safety Bylaw, Marine Oil Spill Contingency Tier II Plan, and Council's Port and Harbour Marine Safety Code.

4.4 Existing levels of service

Table 12 below shows the asset-specific LoS statements and associated performance measures and targets for the Maritime activity. These LoS provide the link between the higher-level community outcomes, to the more detailed operational activities. This is represented in (Table 12) below which shows the links between community outcomes, customer values, and levels of service and performance measures. There are twelve other activity LoS statements that are not captured in the table below because they do not directly relate to the asset portfolio. These have been distilled into a one-page Annual Service Plan for the Maritime Operations activity: Service Plan 23-24 Maritime.

One of the asset-specific LoS statements is represented in Council's 2024-34 LTP; this is highlighted in **bold** in the table below. This is primarily in relation to minimising navigation hazards and risks in the aquatic environment. The performance target for this LoS measure is to have 95% of navigation aids rated as being 'Good' condition or higher (Table 5, 3.4). As can be seen below, this target is currently being met.

Another asset-specific LoS presented below, not included in Council's LTP, is related to the condition of onshore signs. The set target for this LoS is 90% and this is also currently being achieved. How we determine the performance of these LoS is outlined in (Table 13).

Table 12: Maritime levels of service and performance measures

Community Outcome	Customer value	Level of Service Statement	Technical performance measures						Performance measure procedures
			Measure	Current target	20/21	21/22	22/23		
Future Ready Communities	Safety Responsive Quality	Signage and navigational aids are installed and maintained to enable efficient and safe access.	**Percentage of navigation aids rated 'good' quality (condition) or higher.**	95%	99%	99.9%	99%		Asset inspection and condition assessment
			Percentage of onshore maritime signs of "good" quality (condition) or higher.	90%	100%	95%	92%		

Table 13: Performance measure procedures of asset specific levels of service

Performance Measure	Procedure	Data source	System used	Duty	Frequency
Percentage of navigation aids rated 'good' quality (condition) or higher.	Asset inspection and condition assessment.	Visual inspection	Accela	Maritime Officer	6-monthly
Percentage of onshore maritime signs of "good" quality (condition) or higher.					

Part 5: **Future Demand**

5.1   Overview

Planning for future demand is imperative to provide an economically sustained pathway to meet the needs of the region. The provision of the Maritime activity and its management is considered an important element to enable Council to achieve its Strategic Direction and service its communities effectively.

Schedule 10 of the Local Government Act (Appendix 4) requires that future demand be considered as part of asset management planning, to ensure that future requirements are identified and planned for. The Schedule 10 requirement will reduce the chances of unforeseen surprises or 'financial shocks', and ultimately provides a sustainable, economic pathway to meet the needs of our future communities. The ability to predict future demand for Maritime assets enables Council to plan ahead and identify how best to meet demand.

This section outlines the key demand drivers that influence Maritime Operations activities. Forecasts are presented for demand drivers where data is currently available, and a qualitative assessment of how the forecast demand may affect future service delivery or the Maritime asset portfolio is discussed. Demand management strategies are indicated.

Limited data is available for assessing and forecasting future demand for this AMP. Improvements have been identified and these are highlighted below and referenced at the end of this section.

> **Improvement: Update demand forecasts when new information becomes available.**

> **Improvement: Improve demand impact analysis by collecting further information, with a focus on potential impacts to existing assets or need for additional assets.**

Key demand drivers affecting this activity and discussed in the subsequent sections are:

- Demographic Changes
- Climate Change and Sustainability
- Legislative/Regulatory
- Economic
- Stakeholder Expectations

5.2 Demand Driver Summaries

5.2.1 Demographic Changes

Demand Driver	Demographic Changes

Overview

Population projections from Significant Forecasting Assumptions LTP 2021-2031 - Volume Rua						
	2018	**2023**	**2028**	**2033**	**2038**	**2043**
Total New Zealand by region	4,900,600	5,222,400	5,460,500	5,679,000	5,876,400	6,055,800
Bay of Plenty region	320,800	346,900	361,700	374,400	385,500	395,500
Kawerau District Council	7,460	7,910	8,000	8,020	7,970	7,860
Ōpōtiki District Council	9,670	10,250	10,350	10,400	10,300	10,150
Rotorua District Council	74,800	78,900	80,700	82,200	83,400	84,200
Tauranga City Council	142,100	156,900	166,300	175,000	183,300	191,400
Western Bay of Plenty District Council	53,300	58,100	60,900	63,300	65,200	66,700
Whakatāne District Council	37,100	38,800	39,300	39,500	39,500	39,300

The Bay of Plenty is the second-fastest-growing region in New Zealand according to the 2018 Census data which informed Council's 2021-2031 Long Term Plan. The following is a summary of trend information from the population forecasts.

- The Bay of Plenty region currently has a population of 320,800. This is projected to grow by approximately 23% to 2043, a rate slightly slower than that for New Zealand as a whole (24%).

- The population of Tauranga City is projected to grow from 142,100 in 2018 to around 191,400 in 2043 (+35%).

- The population in the Western Bay of Plenty District is projected to grow from 53,300 in 2018 to around 68,700 in 2043 (+28%).

- The population of Rotorua District is projected to grow slightly from 74,800 in 2018 to 84,200 by 2043 (+12.5%).

- The population of the Whakatāne Districts projected to remain approximately stable with slow growth from 37,100 in 2018 to 38,300 in 2043.

- Projections for Kawerau district are extremely uncertain but are projected to remain stable with 7,460 in 2018 and a projected 7,860 in 2043.

- The Ōpōtiki District is projected to remain stable with 9,670 in 2018 and a projected 10,150 in 2044 (+2%).

However, it is worth noting that these population forecasts likely do not take into account recent initiative and developments such as offshore mussel farming, Ōpōtiki Harbour, and the Whakatāne Marine (Te Rāhui). All of these have the potential to draw more people in to living in these areas and change projected forecasts. At the very least, they are very likely to attract more Maritime users. The effect of these developments on the Maritime assets is covered further in 5.2.5.

Population trends are important for the Maritime activity because an increase in the number of people living in the region is likely to influence the number of Maritime users, particularly in Tauranga where population growth is significant, or Whakatāne and Ōpōtiki where new Maritime infrastructure is planned.

Demographic changes are also an important factor to consider in relation to demand for Maritime services and assets. An ageing population can lead to an increase in the number of retired people who have more time to use the navigable areas Council is responsible for.

Note: the 2023 Census is due to commence in March 2023 with provisional results due in 2024. The outcomes of this Census will need to be incorporated into this AMP and any analyses updated.

Bay of Plenty Region - Demographic projections

Bay of Plenty Region - Demographic projections (%)
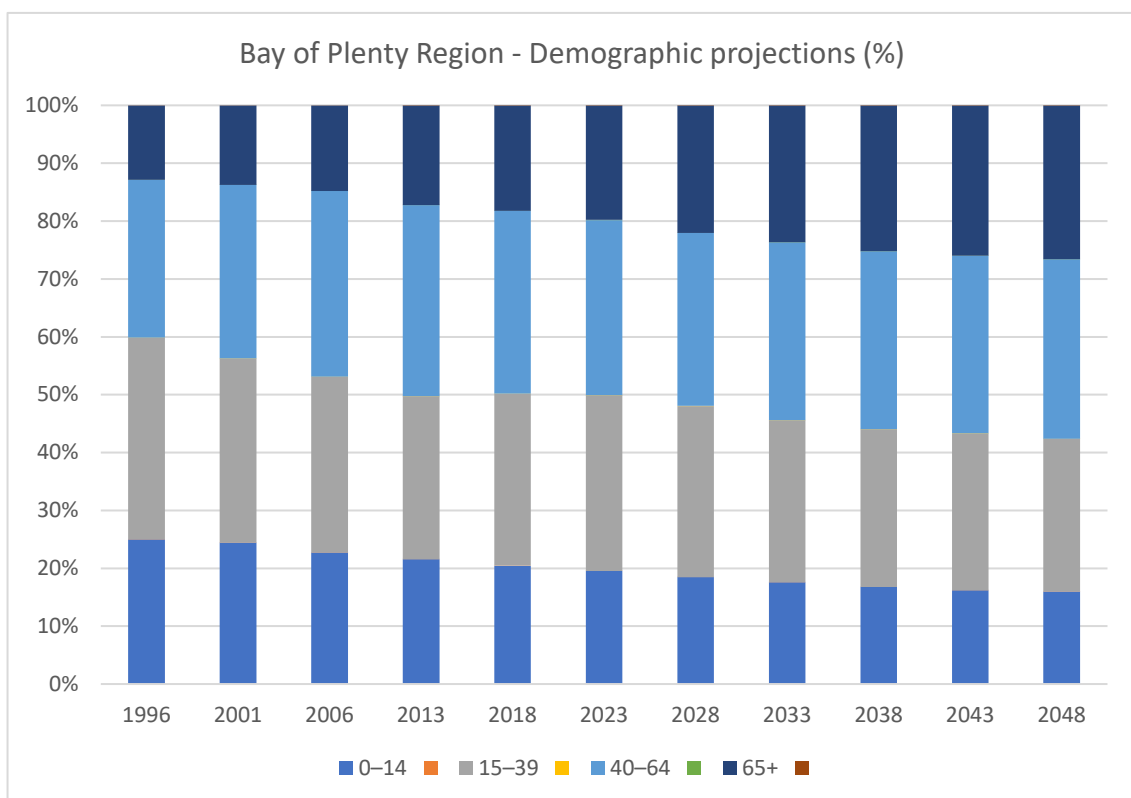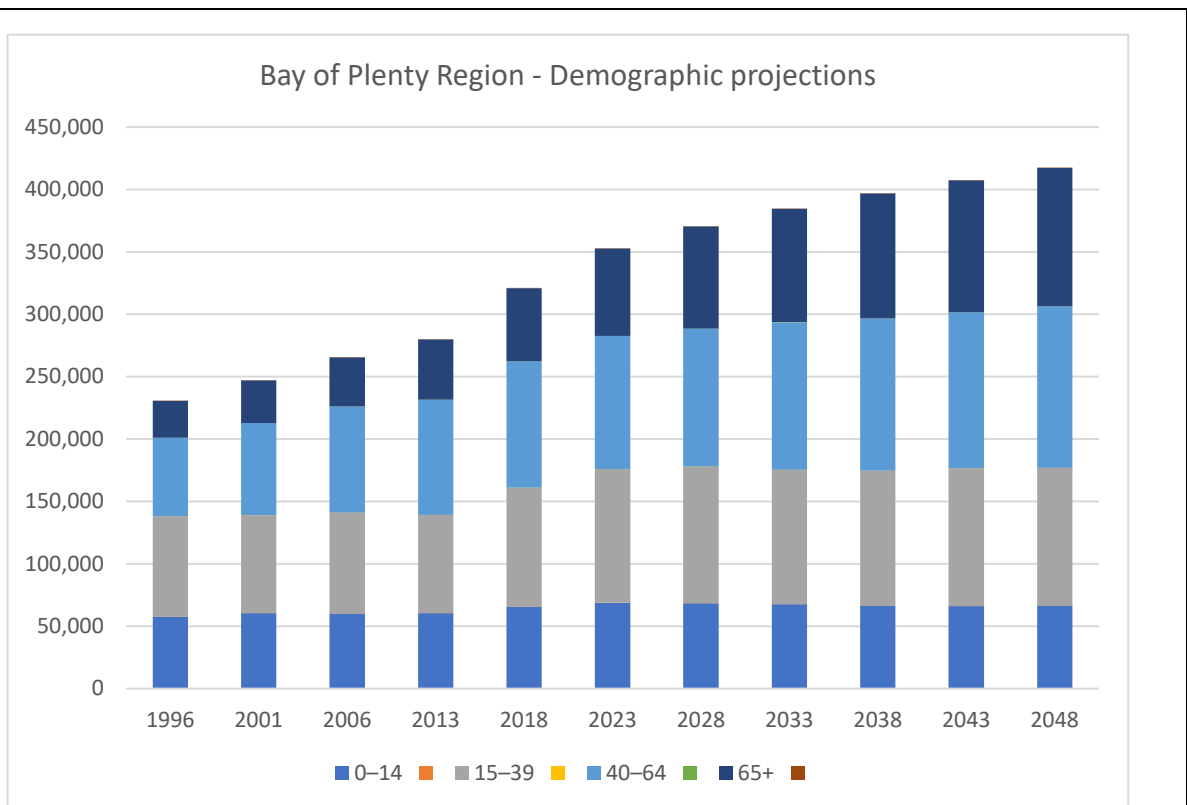
Trends across the region and each territorial area show an ageing population into the future, with people aged 65+ accounting for a quarter (25%) of the regional population by 2048.

A new community outcome from Council's 2024-2034 Long Term Plan relates to Partnerships with Māori. One of the Maritime activity levels of service relates to the number of hours of education or training provided to Māori groups. The proportion of people with Māori ethnicity is projected to increase across the region and in every territorial area. Māori will account for over a third (34.3%) of the region's population by 2043 but will be significantly higher in some territorial areas such as Rotorua (50.3%), Whakatāne (59.3%), Kawerau (67.4%) and Ōpōtiki (77.2%).

Impact on Activity/Assets

An increasing population leads to more people and more variety of activities on the water. There is potential for this to result in an increase in conflict between different water activities (jet-skiing, wakeboarders, yachters, fishers, commercial activities – shipping, cruise ships, ferries, etc). There may also be an increase in the volume and type of Maritime recreation; this is covered under 'Customer Expectations' in 0.

With more Maritime users, the risk of a collision with a Maritime navigation asset increase, however, based on the current number of collisions per year, these effects are considered negligible. The increased use of designated areas and navigable channels could require an increase in marker assets, however, increases are not deemed significant.

Population changes will also impact the scale and breadth of education material provided by the Maritime group to help educate Maritime users. This is also true for the increase in the number of people with Māori ethnicity, as one of the Maritime levels of service directly relates to the number of hours of education and training provided to Māori groups. As such, this will require a corresponding increase in budget to cover the increase in training material and delivery.

Population increases and demographic changes will impact the use of designated areas (governed by Bay of Plenty Navigation Safety Bylaw 2017) that Maritime Operations provide and maintain, and, therefore, impact the requirement for enforcement. As such, a general increase in population and/or demographic changes, will require an appropriate increase in Maritime Operations activity budget over time, to respond to these impacts and maintain the level of service provided.

Note: The Bay of Plenty Navigation Safety Bylaw 2017 is currently being reviewed with the view of updating following public consultation. This is covered in 0.

A new marina is planned for Whakatāne (Te Rāhui). This is due to open in 2024 and will provide safe berthage and marine services in this area. This is covered in more detail in 5.2.5, but it is worth noting here, as this new development is likely to attract more people to live in (or near) Whakatāne and potentially increase the number of Maritime users. A small number of additional navigational assets are likely to be required as part of this development, but it is not clear who will own/maintain these assets as these discussions are currently taking place. Once information becomes available on the associated impacts of these developments, this AMP will be updated.

Increases in Maritime users may lead to the need for additional Maritime vessel(s) and/or storage areas, however these assets currently belong to the Property group of Council and are not covered by the scope of this AMP.

Management Strategy

Education and awareness: Campaigns to educate Maritime users about safe navigation practices, rules, and regulations. Promote responsible boating behaviour, emphasise importance of following navigation aids, and raise awareness about risks associated with collisions. Provide clear and accessible educational materials, including brochures, signage, and online resources, to ensure that users are well-informed and knowledgeable about navigation safety.

Monitoring and enforcement: Increase monitoring and enforcement activities to ensure compliance with navigation rules and regulations. Implement regular patrols and monitoring programs to detect and address any unsafe navigation behaviours or violations. Collaborate with relevant authorities, such as Maritime New Zealand, to enhance enforcement efforts and deter unsafe navigation practices that could lead to collisions with navigation assets.

Stakeholder engagement and collaboration: Actively participate in discussions and negotiations regarding the development of the new marina in Whakatāne (Te Rāhui). Determine the roles and responsibilities for the ownership and maintenance of the associated navigational assets, ensuring clear agreements and coordination between involved parties. Continuously monitor the impacts of the new marina on Maritime Operations and adjust strategies accordingly.

5.2.2 Climate change and sustainability

Demand Driver	Climate change and sustainability

Overview

In June 2019, BOPRC declared a climate change emergency alongside the adoption of our first Climate Change Action Plan, which was updated in 2021. Indications of climate change by the Intergovernmental Panel on Climate Change (IPCC) from a report completed by NIWA in 2019, are that the Bay of Plenty region may receive less rainfall in future, however, the intensity and frequency of high rainfall events will likely increase. Sea level is predicted to rise with increased magnitude of tidal storm surges.

LIKELY CLIMATE CHANGE IMPACTS FOR THE BAY OF PLENTY*

Air temperature — Current: Coastal 14-15°C, Inland 10-11°C; 2040: 0.5-1.0 °C increase; 2090: 2.5-3.0°C increase

Hot days (>25°C) per year — 32; 52; 99

Frost days (<0°C) per year — 7; 5; 2

Annual likelihood of extreme rainfall event (>240mm in 24 hours) eg: April 2017 - Eastern Bay, April 2018 - Ngongatahā — 2040: 1.5 times more likely; 2090: 3 times more likely

Sea level rise (metres): 1.25m — 2130; 0.74m — 2090; 0.28m — 2040; 0.09m — Current; 1953 Moturiki Vertical Datum

*Based on current greenhouse gas emission rates. We may be able to slow or reduce the scale of these changes if sufficient local and global action is taken to decrease emissions.

Key findings from the NIWA report that relate directly to Maritime activity and assets are as follows:

- The average number of hot days (>25°C) is expected to increase with time. The area between Maketu, Whakatāne, and Murupara may observe 20-25 more hot days per year by 2040 and 70-80 more hot days per year by 2090.

- Extreme, rare rainfall events are projected to become more severe in the future. Short duration rainfall events have the largest relative increases compared with longer duration rainfall events. The depth currently projected for a 1-in-100-year rainfall event (e.g. 248 mm in Tauranga) is projected to become a 1-in-34-year event by 2090 under RCP8.5, i.e. a rainfall event of this magnitude may occur three times as often under this scenario.

- There is good evidence that storms originating from the sub-tropics in the summer that impact on the Bay of Plenty have more intense circulation that is likely to lead to stronger winds, greater storm surge and higher rainfall accumulations.

In 2017, Council signed the New Zealand Local Government Leaders' Climate Change Declaration, and in 2019 Council declared a climate change emergency. This has led to a number of initiatives and commitments. Council's first climate change action plan was developed in 2019 and updated in 2021. Climate change is also acknowledged as a Strategic Priority in Council's 2021-2031 Long Term Plan.

Council is currently developing an Asset Management Sustainability Framework, which will specifically relate to Council's assets and how they can contribute to Council's climate change and sustainability goals. Council's Property group are also currently developing a sustainability strategy for the organisation which is likely to impact on activity deliver and asset management.

Impact on activity/assets

Climate change is likely to increase the frequency and magnitude of extreme rainfall events that lead to erosion and deposition of eventual maritime hazards to coastal environments. Maritime Operations are not mandated to maintain or dredge certain channels, so, therefore, increased sea levels and changes to the coastal environment will not have a significant impact on the activity.

Maritime Operations are tasked with clearing hazards (e.g., debris, driftwood) in and around coastal environments, and, therefore, this frequency of this service is likely to increase with the forecast increases in stronger winds, greater storm surge and higher rainfall accumulations, which will likely lead to an increase in debris, such as trees, that are washed out to the coast.

Storm events pose a risk to the integrity of Aids to Navigation (AtoN) assets. As was seen in neighbouring regions following the Cyclone Gabrielle event in February 2023, AtoN can be damaged, and/or lost out to sea, resulting in increased maintenance and expenditure. Estimating the number of AtoN failures from a changing climate is very difficult, but Maritime can expect to see increases in damages and/or failures.

Climate change may mean that the lifespan of our assets is shorter than planned, or that maintenance costs increase. It may also mean that repairs are needed more frequently or that materials deteriorate more quickly.

Any climate change initiatives developed by Council are also likely to impact on the way the Maritime activity is delivered and the way that the Maritime assets are managed. Examples include new levels of service and performance measures relating to climate change and sustainability, increased reporting requirements and compliance costs, changing to alternative vessels that use more sustainable fuel, upgrading/replacing assets with longer lasting materials or additional components, or using technology that reduces the amount of carbon used.

Alternatives to fuel oil are being assessed around the world. The most advanced alternatives to fuel oil are liquefied natural gas, electricity, biodiesel and methanol. Other fuels that could play a role in the future are liquefied petroleum gas, ethanol, dimethyl ether, biogas, synthetic fuels and hydrogen. As of 2021, there are around five hydrogen plants under advanced evaluation in Australia and two potential plants in New Zealand.

This may result in higher capital costs to implement new technology or upgrade/replace assets, but conversely may reduce operational costs over the life of the assets. Asset lifecycle costs may reduce over the long term, but the Maritime activity may see spikes in expenditure costs of the service over the short term (~10 years), which will need to be agreed and funded by the community, stakeholders, or other sources.

Management strategy

Monitoring and response: Maritime have a contract in place for 24/7 on-water response to remove navigation hazards in the southern end of the Tauranga Harbour, out to the harbour limits.

Resilience planning and adaptation: Develop and implement a comprehensive resilience plan to anticipate and mitigate the effects of climate change on Maritime assets and activities. This plan should include strategies for addressing increased storm events, rising sea levels, and changes in rainfall patterns. Identify vulnerable areas and assets that may require additional protection or modifications to withstand climate-related impacts.

Climate change initiatives: Explore opportunities to reduce carbon emissions associated with Maritime operations. Investigate the feasibility of transitioning to alternative fuels, such as liquefied natural gas, electricity, biodiesel, or hydrogen, for vessels and equipment. Consider the use of resilient and sustainable materials when upgrading or replacing assets to enhance their longevity and minimise the need for frequent repairs. An example of this is the installation of remote monitoring technology. The purpose of remote monitoring is to reduce the need for physical inspections, resulting in reduced travel and associated carbon emissions.

5.2.3 Legislative/regulatory changes

Demand Driver	Legislative/regulatory changes
Overview	

Mōtītī Protection Areas: On 24 April 2020, the Environment Court released its final decision which directs BOPRC to implement new rules within its Regional Coastal Environment Plan to protect three reef systems near Mōtītī Island, and complete scientific monitoring to inform future integrated marine management solutions.

The new rules created three protection areas (called the Mōtītī Protection Areas) around Mōtītī Island, where the taking of all plants and animals (including fish and shellfish) would be prohibited due to their significant marine biodiversity, landscape and cultural values. Those three areas comprise of Ōtaiti (Astrolabe Reef) including Te Papa (Brewis Shoal), Te Porotiti, and O karapu Reef, Motuhaku Island (Schooner Rocks) and Motunau Island (Plate Island).

Navigation Bylaw: To ensure that water users are following the Bay of Plenty Navigation Safety Bylaw 2017 (Bylaw), Maritime Operations maintains 7 days a week, on water patrol presence from mid-December to mid-February every year. Council are currently reviewing the 2017 Bylaw, which will include public consultation, with the goal of having updated bylaws by June 2024. The outcomes of this review and consultation may affect the Maritime activity and associated recreation, and potentially the subsequent need for more assets.

Waahi Tapu: There are a number of Waahi Tapu areas across the navigable areas managed by Council. There are also a number of Hapū/Iwi Resource Management Plans (HIMP) in operation and that are recognised by Council. There is also specific legislative requirements that place a duty on Council staff to take these HIMPs into account.

Resource Management Act: The Government is repealing the Resource Management Act 1991 (RMA) and enacting new laws to transform the way the environment is managed. Three new pieces of legislation are planned to be enacted: Spatial Planning Act, the Natural and Built Environment Act, and the Climate Adaptation Act. One of the objectives of the new RMA that relates most to the Maritime activity is 'to better prepare for adapting to climate change and risks from natural hazards and better mitigate the emissions'. Transitioning to the new RMA system is planned within the next ten years.

Other legislation: There is a variety of other legislation and policies that influence the way the Maritime activity is delivered and associated assets managed. A summary of key legislation and policies affecting the Maritime Operations activity is provided in Appendix 1. The Maritime Transport Act (MTA) 1994 (and Amendment 2013) is the main legislation under which the Maritime group operates. It covers functions such as local regulation of Maritime activity, setting of navigation bylaws, and marine oil response. The Maritime and Marine Protection Rules are statutory instruments under the MTA and contain detailed technical standards and procedures relating to safety of ships and people, such as the installation, performance and use of lights for collision avoidance.

In 2021 there was an amendment to the Maritime Transport Act, however, this change has not directly affected the Maritime asset portfolio, but highlights the real potential of legislative change which may affect the way the Maritime activity is delivered and associated assets managed.

In line with international best practice and general direction of national legislation, Council and the Port of Tauranga Ltd commissioned South Maritime Solutions, to complete a detailed report in August 2021 comprising a Marine Risk Assessment for the Tauranga Port and Harbour. The outcomes of this report observed that the present provision of Aids to Navigation appeared to be appropriate, but also offered a few recommendations (covered below). There were also a number of recommendations offered which, if adopted, would influence the Maritime activity in terms of more staff time.

Impact on Activity/Assets

Mōtītī Protection Areas: The impact of the new rules for the Mōtītī Protection Area is that there was an increase in staff requirements to meet this additional area of patrolling and associated management activities. There has been no impact to the Maritime asset portfolio.

Navigation Bylaw: The review of the Bay of Plenty Navigation Safety Bylaw 2017 and public consultation may result in the need for more assets. For example, changes to water ski access lanes.

Resource Management Act: Council is not anticipating any significant impacts to the Maritime activity or associated asset portfolio in relation to the proposed changes to the RMA, but will monitor developments and re-evaluate impacts during future revisions of this AMP.

Other legislation: As a Local Government organisation, Council endeavours to fulfil its role and meet any statutory requirements. Any changes to existing legislation, or the addition of any new legislation, may directly affect the Maritime activity and associated assets. This may result in the need for more assets and/or an increase in activity expenditure to meet any new requirements.

The recommendations from the Marine Risk Assessment that directly relate to the Maritime activity and associated assets have not significantly impacted the Maritime asset portfolio. A number of the recommendations have already been implemented, the impacts to the asset portfolio are assessed to be negligible. However, it is worth noting that future marine risk assessments that may take place in other navigable areas managed by Council, may impact on the way the activity is delivered and the associated assets are managed.

Examples of impacts include:

- An increase in education and awareness initiatives and associated material, requiring more budget and staff time.

- The need for more speed signs in areas with new/changing speed restrictions.

- An increase in recreational assets due to improvements to risk management practices and safety, and/or an increase in recreational types or volume, or in response to conflicts between different recreational users.

Management Strategy

Navigational Safety Bylaw review: The Navigational Safety Bylaw 2017 is being reviewed through 2023, with a final version due June 2024. Council have received nearly 350 pieces of feedback following the first round of initial consultation during in-person events. Maritime Operations will monitor the progress of the Navigational Safety Bylaw review and assess any potential impacts on asset requirements.

Monitor legislative updates: Stay abreast of legislative and regulatory changes affecting the Maritime activity. Conduct regular reviews of bylaws, regulations, and legal requirements.

Stakeholder engagement: Engage with relevant stakeholders, including maritime users, boating communities, regulatory authorities, and advisory groups, to gather insights and perspectives on potential asset needs, resulting from legislative/regulatory changes relevant to the Maritime activity. Foster strong partnerships with Māori communities through effective engagement, consultation, and collaboration. Recognise and respect Waahi Tapu areas and Hapū/Iwi Resource Management Plans in the delivery of the Maritime activity.

5.2.4 Stakeholder Expectations

Demand Driver	Stakeholder expectations

Overview

There have been significant advances in technology over recent decades and there are no signs of changes slowing down. For the Maritime Operations activity, there is increasing customer demand for better quality information when it comes to real time monitoring of conditions. This is in line with broader population expectations across all facets of modern life when it comes to the availability of real time information. In response to these expectations, Council have recently installed a new bar camera and wave buoys in response to needs and expectations.

Outdoor recreation is becoming more popular and the volume and different type of recreation in navigable areas is also increasing. During and following the Covid-19 Pandemic which significantly reduced international travel, the Maritime Operations Team observed an increase in the number of recreation users. For example, observations found an increase in the number of jet skis being used in navigable areas.

While all Maritime users are considered customers/stakeholders, other groups that may not be users of the Maritime service but are considered stakeholders, are wider Council teams, including elected members and Councillors. The Maritime Operations group takes direction from the LTP, including community outcomes and strategic priorities. Climate change is recognised as a strategic priority and Council has and is planning numerous initiatives to address the effects of a changing climate. Some of these initiatives will affect the way the Maritime activity is delivered and how the associated assets are managed. A couple of examples include the Asset Management Sustainability Framework and the organisational Sustainability Strategy. Maritime have and will continue to respond to climate change initiatives where applicable. An example is the installation of telemetric remote monitoring. Climate change and sustainability for future demand was covered in 0.

Another Strategic Priority from Council's LTP 2024-2034 relates to Partnerships with Māori. One of the Maritime Operations' levels of service relates to the number of hours of education or training provided to Māori groups. The proportion of people with Māori ethnicity is projected to increase across the region and in every territorial area (StatsNZ, 2023). Māori will account for over a third (34.3%) of the region's population by 2043 but will be significantly higher in some territorial areas such as Rotorua (50.3%), Whakatāne (59.3%), and Ōpōtiki (77.2%).

Impact on activity/assets

The cost of the technology that enables real time monitoring of condition is now more affordable, and, therefore, drives the push for Maritime to include new assets such as bar cameras and wave buoys. Customers and stakeholders that use navigable areas and Maritime facilities that currently do not have the same technology as other places, such as the Whakatāne bar camera or Bowentown wave buoy, may make requests for this technology. This is likely to lead to the installation of more of these or similar assets in areas where they do not currently exist. This will lead to additional assets and associated capital and operational expenditure.

The scale to which this technology is implemented could have an impact on capital costs, particularly if new standards are implemented or assets are replaced earlier than expected in order to implement the technology quicker. However, it is expected that the implementation of this technology will be at a gradual pace. The broader impact of the proliferation of new technology is that users are enabled to better make informed decisions regarding boat and water safety.

There are a number of subsequent impacts to the Maritime activity and asset portfolio associated with forecasted increases in the volume and type of Maritime recreation. Such as, increased tension between recreation users which can result in an increase in the number of patrols required, an increase in the number of collisions, either between vessels or with navigation assets, or enforcement activities related to Council's Navigation Bylaw. Additional or larger recreation zones can result in the need for more assets, such as Markers or signage.

The projected changes in demographics and ethnicity in the Bay of Plenty region, particularly the increase in the number of people with Māori ethnicity, will lead to an increase in the number of hours of training or education provided to Māori groups, as per the related level of service discussed above. Furthermore, there may be an increase in Waahi Tapu areas and/or Hapū/Iwi Resource Management Plans across the region, which may coincide with navigable areas that the Maritime Operations group manage. This could affect the way the Maritime activity is delivered or result in the need for more navigation assets related to these areas.

Management Strategy

Education and awareness: Campaigns to educate Maritime users about safe navigation practices, rules, and regulations. Promote responsible boating behaviour, emphasise importance of following navigation aids, and raise awareness about risks associated with collisions. Provide clear and accessible educational materials, including brochures, signage, and online resources, to ensure that users are well-informed and knowledgeable about navigation safety. Foster stronger partnerships with Māori communities through effective engagement and collaboration.

Monitoring and response: Implement regular patrols and monitoring programs to detect and address any unsafe navigation behaviours or violations. Regularly assess the need for additional assets, such as markers and signage, in high-activity areas to enhance safety and compliance.

Climate change initiatives: Integrate climate change and sustainability initiatives into the Maritime activity by aligning with the organisation's sustainability goals.

5.2.5 Economic

Demand Driver	Economic
Overview	

Ōpōtiki Harbour Development Project: The existing Ōpōtiki Harbour entrance is limited to smaller boats, which can only cross the bar in calm conditions. The Ōpōtiki Harbour Development (OHD) Project will provide access for larger boats by creating an entrance that is navigable in all but the worst conditions, enabling Ōpōtiki to become a service and processing base for aquaculture and other marine related industries. The OHD Project will provide a platform for sustainable economic growth by:

- Capitalising on opportunities from the existing 3,800 ha offshore marine farm.
- Enabling other aquaculture and marine-related development in the eastern Bay of Plenty.
- Increasing overall social, economic and cultural wellbeing in Ōpōtiki and the wider region.
- Enhancing recreation opportunities and public access to the coast.

The OHD Project is underway, funded by Government, Ōpōtiki District Council, and the Regional Council. The project is critical to unlocking the social and economic benefits and improve wellbeing, created by new jobs and increasing the average household income across the district. OHD construction is projected to be completed in 2023 (Ōpōtiki District Council Long Term Plan 2021-2031). A side effect of the OHD project is likely to be an increase in population (against current projections), as well as marine-related industries, and, therefore, a likely increase in the number of Maritime users, particularly with the provision of better access to the harbour.

Te Rāhui boat harbour, Whakatāne: A new boat harbour is due to open in 2024 that will provide safe berthage and world class marine services on the Whakatāne River. The new harbour will incorporate an upgraded recreational boat ramp and parking facilities. It will be built in two stages. Sixty berths will be created for commercial vessels in the first stage. Additional berths for recreational users will be created in the second stage including extra commercial space for marine businesses.

Similar to the OHD Project, the new boat harbour in Whakatāne is likely to attract more to live in the region, boost tourism numbers, and is likely to increase the number of Maritime users, particularly with the larger boat ramp and parking facilities.

Other developments: Following these two developments outlined above, it is quite possible that other areas along the region's coast may be developed in the future. The reasons for these

developments may vary, such as economic development like the above, or for future resilience from the effects of climate change. New navigable areas or zones may be developed which will influence the Maritime Operations activities and can certainly result in more navigation assets.

Impact on activity/assets

Ōpōtiki Harbour Development Project: The Maritime Operations group is yet to determine the impacts from this development on the Maritime activity, and whether another vessel is required. There will be an increase in staff time required to manage the larger harbour. There are currently no navigation assets owned or maintained by Council in the existing navigable areas in and adjacent to Ōpōtiki Harbour, and it remains unclear whether the OHD Project will result in new Council assets. Conversations are ongoing, and as soon as decisions are made regarding any new assets, this will be updated within this AMP.

Te Rāhui boat harbour, Whakatāne: Similar to the OHD Project above, it is currently not clear exactly what impacts this development will have with respect to Council's Maritime asset portfolio. Whakatāne District Council as Port Operator has a responsibility to keep the river mouth navigable for the berths that already exist in Whakatāne. However, it is likely that there may need to be an increase in the number of patrols and associated activities undertaken by the Maritime Operations Team, but there may not be a need to increase the number of navigation assets. As more information becomes available, Council will update this AMP accordingly.

There is the potential for increased tension between different water users, particularly because wakes from large vessels travelling at speed are an issue for smaller craft, such as kayaks, rowers and waka ama. Concerns have already been shared by these recreationists. All vessels will be required to travel at a speed of 5 knots or less when less than 200 m from shore or 50 m from another boat. This may result in the need for Council to install more speed signs, as well as more informative signage. There may also be an increased risk of collision, or an increase in the number of customer requests.

Based on the current information available, it is not possible to accurately determine the exact number of additional navigational assets that may be required in these two new areas of development. The need for these assets will depend on various factors, including the size of the expanded navigable areas, the volume of maritime traffic, and the specific safety requirements of each location. Capital expenditure and ongoing maintenance of these assets still needs to be confirmed. The funding and responsibility of these potential navigation assets is also currently unclear, and conversation are ongoing. Council will seek funding from developers for these assets.

Other developments: If other areas along the region's coast are developed in the future, this may result in new or larger navigable areas or zones that need to be managed and patrolled by the Regional Council. This could result in the need for more navigation assets in these areas, and depending on the location of these new developments, additional Maritime vessels and/or storage areas may be required.

Management Strategy

Stakeholder engagement and collaboration: Actively participate in discussions and negotiations regarding the development of Ōpōtiki Harbour and the new Te Rāhui Marina in Whakatāne. Determine the roles and responsibilities for the ownership and maintenance of the associated navigational assets, ensuring clear agreements and coordination between involved parties. Seek partnerships or funding opportunities with developers to support the installation and maintenance of necessary navigational assets. As further information becomes available on assets needs and ownership, Maritime Operations will assess how this may impact the asset portfolio and update this AMP.

Risk Management: Conduct regular risk assessments to identify potential hazards, challenges, and areas of increased collision risk due to changing navigational areas and increased vessel traffic in these new areas of development. Use this assessment to determine the optimal placement and types of navigational assets needed to mitigate risks and enhance navigational safety. Prioritise safety measures to ensure the well-being of users. This includes implementing speed limits, installing appropriate signage, enhancing navigation aids, and educating users about safe boating practices.

5.3 Demand management

Demand management refers to the strategies and actions implemented to effectively manage and address various demand drivers that impact the Maritime Operations activity and asset portfolio. It involves identifying and responding to the changing environmental conditions, the needs and expectations of stakeholders, engaging with these stakeholders, and implementing measures to mitigate potential risks and challenges.

Demand management encompasses both asset and non-asset approaches. Non-asset demand management strategies focus on addressing demand drivers without necessarily involving the acquisition or modification of physical assets. These strategies aim to optimise existing resources, improve processes, and enhance stakeholder engagement and communication. By effectively managing demand, non-asset strategies can help minimise the need for additional assets and reduce operational costs.

Several demand management strategies were presented in the above summaries for each demand driver. Some of these strategies address more than one demand driver, illustrated in (Table 14) below.

Table 14: Demand management strategies for Maritime activity

Management Strategy	Demand Driver				
	Demographic Change	Climate Change	Legislation/ Regulatory	Stakeholder Expectations	Economic
Education and Awareness	✔			✔	
Monitoring, Response and Enforcement	✔	✔	✔	✔	
Stakeholder Engagement and Collaboration	✔		✔	✔	✔
Climate Change Initiatives		✔		✔	
Bylaw Review			✔	✔	
Risk Management		✔			✔

Continuous improvement

Section	Item	Description
5.1	2	Update demand forecasts when new information becomes available.
5.1	3	Improve demand impact analysis by collecting further information, with a focus on potential impacts to existing assets or need for additional assets.

Part 6: **Lifecycle Management**

6.1 Overview

This section details how the Council plans to manage and operate its Maritime Operations asset portfolio. This is achieved through lifecycle management strategies and work programmes encompassing a whole-of-life asset approach. Lifecycle asset management is the cycle of activities associated with planning for, creating, operating, maintaining, replacing, rehabilitating, and disposing of assets (Figure 9).
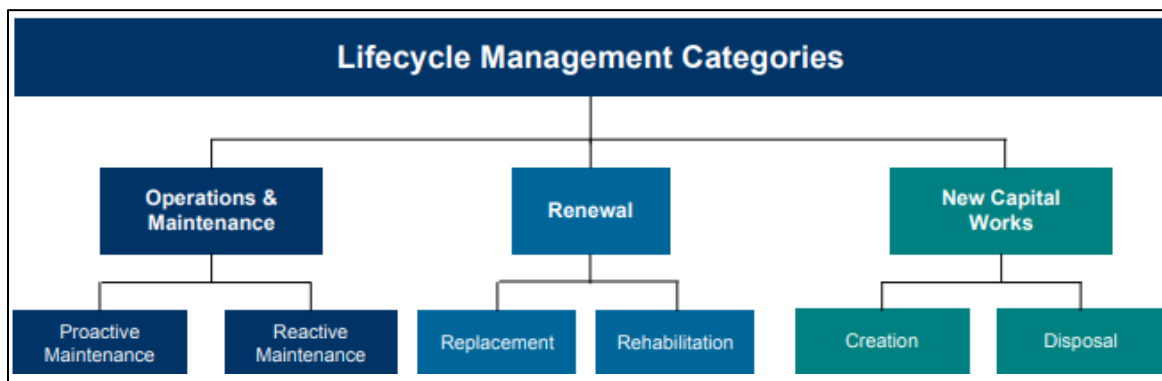
Figure 9: Lifecycle management categories

The Maritime Operations Lifecycle Management Programme covers the three key lifecycle categories necessary to manage a navigational asset over its whole life and also deliver required levels of service. These categories are described in (Table 15) below.

Table 15: Description of lifecycle management categories

Category	Description
Operations and maintenance	Operations and maintenance activities are those required for the ongoing work that is necessary to keep the Maritime AtoN assets operating. Maintenance includes all actions necessary for retaining an asset as near as practicable to the current levels of service, including the day-to-day work necessary and can include immediate repair work.
Renewals	Renewal is major work which does not increase the asset's service level, but restores, rehabilitates, replaces or renews an existing asset to its original level of service, performance and/or capacity.
New Capital Works	New Capital Works involve those that create a new asset that did not previously exist or works which upgrade or improve an existing asset beyond its existing capacity. They may result from future demand, social or environmental needs. New capital works also include activities necessary to dispose of decommissioned assets.

Improvement: Develop actions aligned to the Asset Management Sustainability Framework once it is complete. Incorporate sustainability considerations into all aspects of lifecycle management of the Maritime AtoN portfolio.

The following sections will provide a more detailed discussion on the specific strategies and programmes involved for each category, in the planning of lifecycle management for the Maritime AtoN portfolio.

6.2 Operations and maintenance planning

Operations involve routine activities that ensure the provision and proper functioning of aids to navigation (AtoN) assets. These operational activities are essential to maintain the efficient running of our maritime safety services, ensuring we meet agreed service levels.

Maintenance involves all actions necessary to retain an AtoN asset as close to its optimal service condition as possible. This includes regular, ongoing work essential for keeping AtoN functional and reliable. Maintenance may be classified into reactive or planned (proactive) work activities.

Reactive Maintenance: This type of maintenance involves unplanned repairs that are carried out in response to public notifications, remote monitoring, or damage from storm events or vandalism. Reactive maintenance addresses immediate issues to ensure the continued functionality and safety of our Maritime AtoN.

Planned (Proactive) Maintenance: This type of maintenance involves repairs and checks identified through routine inspections, condition assessments, manufacturer's specifications, or Maritime industry standards. Planned maintenance aims to keep the AtoN assets in good working condition, thereby reducing the likelihood of unexpected failures or more costly repairs in the future.

6.2.1 Operations and Maintenance Strategy

The primary objective of operations and maintenance (O&M) for AtoN infrastructure is to ensure the efficient, safe, and reliable performance of all navigation aids. This translates to maintaining the AtoN in a condition that meets or exceeds the expected service levels (see 4.4) and ensures minimal disruption to navigation throughout their lifespan.

Our maintenance strategy is grounded in regular inspections and condition assessments, as well as adherence to Maritime industry standards and manufacturer's guidelines. We carefully balance reactive and planned maintenance, focusing on preventive strategies to anticipate issues before they occur, but prioritising reactive maintenance to promptly address any unforeseen issues that arise.

Table 16: Operations and Maintenance Strategy for Maritime assets

O&M Strategy	Description
Scheduled Maintenance	These are routine activities performed according to a predetermined schedule, such as cleaning or inspections. The schedule is typically based on a six monthly inspection schedule.
Condition-Based Maintenance	This strategy is applied when an AtoN asset shows signs of impending failure or damage, as identified through regular inspections and monitoring. This proactive approach allows us to intervene before minor issues become major problems, thus ensuring our assets always function optimally.
Regulatory Compliance	Complying with relevant Maritime laws and safety regulations forms a key aspect of our maintenance planning. Activities are planned and executed to ensure full compliance.
Emergency Maintenance	We acknowledge reactive maintenance will be required in response to unforeseen events or emergencies. Our maintenance plan includes strategies for swift response to emergencies, ensuring any disruptions to navigation are managed and resolved quickly.

Sustainability	Our maintenance planning also incorporates sustainability objectives, such as minimising energy use or using remote monitoring where appropriate. We are committed to reducing the environmental footprint of our maintenance activities and to improving the sustainability performance of our AtoN assets.

6.2.2 Maintenance planning

Maintenance plans are developed informally for each asset type on an annual basis and are operated and maintained by the Maritime Operations group. These plans outline the maintenance activities that are required to ensure AtoN assets meet required service levels.

> **Improvement: Develop a maintenance plan for all AtoN assets to capture activities, frequencies and costs. Review performance and adjust maintenance plan annually.**

The Maritime Operations Team undertakes a six monthly inspection regime to ensure that each AtoN asset is inspected for condition defects, with any required maintenance usually being undertaken on-site. Staff use experience and judgement to determine what type of maintenance is required based on the outcome of the inspection. Any additional maintenance over and above that which can be immediately remedied, will be planned and scheduled accordingly based on the severity of the damage and importance of the asset.

Operations staff also conduct formal inspections following large events where damage to the assets is more likely. Inspections of critical assets are prioritised first. All condition issues recorded as defects using mobile technology, and remedial work is planned and delivered through the Accela information system. Asset inspections also occur informally on an ongoing basis through routine surveillance and observations. Maritime Operations also respond to information provided by the boating public when AtoN are underperforming.

Table 17: Key maintenance tasks for AtoN assets

Asset type	Maintenance requirements
Buoys	Six-monthly scheduled maintenance and inspections including water blasting to remove growth from the buoy and chain/rope. They are lifted for inspection and wear, with shackles, chain, or chafed rope replaced if necessary.
Beacons	Minimal maintenance required, with annual inspections to audit condition of beacon, checking for any damage to structure, colour is visible, tops shape, reflective tape or light is operational etc.
Markers	Six-monthly audit and maintenance as required.
Signs	Six-monthly inspections to audit condition of sign checking for any damage and to ensure it is clean, visible and messaging is current.

6.2.3 Operational and Maintenance Programme

For routine and scheduled activities like inspections or preventive maintenance, costs are estimated based on previous maintenance and known rates for labour and materials. These activities form a significant part of our O&M budget and are crucial in maintaining the operational functionality of our navigational assets.

Given the relatively short life span of AtoN assets (around 25-30 years) compared with other infrastructure assets, deterioration and subsequent budget planning for maintenance are somewhat predictable. A vital part of our O&M strategy includes condition-based maintenance, which can be more unpredictable over the shorter term. We also acknowledge the necessity of reactive maintenance and emergency repairs, which are inherently unpredictable. While these events make exact budgeting challenging, contingencies are in place to allow us to respond effectively and promptly to ensure minimal disruption to the AtoN assets.

We recognise the importance of aligning the above O&M strategies with effective financial planning. 0on financial planning will present projected expenditure associated with our O&M Programme.

6.3   Renewals planning

Renewal expenditure relates to major work which rehabilitates and replaces an existing AtoN asset to its original service potential. This includes tasks that bring an asset back to its original condition or functionality, rather than expanding or improving it beyond its original capacity. Any work that goes beyond restoring an AtoN asset to its original service potential is categorised under new Capital Works, which will be discussed later in this section. Renewal works for AtoN assets broadly fit into the following categories:

Rehabilitation: This process involves the comprehensive repair of an existing AtoN asset or its components, with the aim to restore its functionality without any planned increase in operating capacity. Rehabilitation ensures the asset continues to meet service levels and prolongs the asset's useful life, making it a cost-effective strategy.

Replacement: This process involves the complete substitution of an existing AtoN asset or its components, without the intention for a planned increase in operating capacity. While a minor increase in capacity may incidentally occur as a result of replacement due to advancements in technology or design, this is not the primary goal of replacement.

6.3.1   Rehabilitation versus maintenance

Maintenance and rehabilitation serve different purposes and are used at different stages in the asset's lifecycle. Maintenance is a continuous process carried out throughout the AtoN's service life, while rehabilitation is generally performed less frequently and usually when the asset has undergone significant wear or damage. Maintenance tasks include cleaning, inspecting, testing, and repairing minor wear and tear, which are usually less intensive and less costly than rehabilitation, which is more significant and extensive work carried out to restore an asset that has significantly deteriorated but not yet reached the end of its life.

6.3.2   Renewal Strategy

Renewal strategies in the context of AtoN assets aim for the gradual replacement or rehabilitation of individual assets or components that have reached, or are nearing, the end of their useful life. The execution of this strategy occurs at a pace that sustains current service levels and ensures the overall functionality of the AtoN assets are maintained.

The decision between replacement and rehabilitation requires analysis of several factors. These include the AtoN's current condition, projected remaining lifespan, costs associated with various renewal methods, and the potential risks linked to asset failure. A blend of renewal strategies is typically employed. The most common are age-based and condition-based strategies. Several other strategies are employed where applicable (Table *18*).

Table 18: Asset renewal strategies for AtoN assets

Strategy	Description
Age-based	Utilises estimated/known age as a primary factor for planning renewal. Although this method can be straightforward, it may not always accurately reflect the condition of the asset as factors such as exposure to harsh marine conditions and maintenance practices can lead to faster or slower deterioration than anticipated.
Condition-based	Involves regular inspections to evaluate the physical state of the asset, using this information to schedule renewals. Typically more efficient than an age-based approach as it allows for early identification of issues before they escalate, thereby extending the lifespan and maintaining the functionality of the navigational aids.
Demand-based	Renewal decisions are guided by changes in demand, such as new technology or customer expectations. An increase in maritime traffic in a particular area might necessitate earlier asset renewal to ensure adequate safety.
Sustainability	This approach considers environmental implications, energy efficiency, and long-term cost-effectiveness. It could lead to the earlier renewal of certain AtoN assets, especially if newer, more sustainable, or energy-efficient options are available.

6.3.3 Renewal Programme

The Maritime Operations activity is a mature activity that has a relatively static spending regime associated with the renewal of AtoN assets. Renewal plans and expenditure for AtoN assets have been calculated using technical estimates from the Maritime Operations group, and are developed based on previous expenditure, operational knowledge, asset inspections and asset lifecycle data.

The adequacy of these historic budgets is reviewed by assessing the anticipated ability of the team to continue maintaining the asset portfolio at or above the minimum condition requirements. For projected renewal expenditure over the next ten year period to help meet service levels, refer to (section 8.2 Financial Forecasts). Fluctuating asset renewals can present challenges for budgeting and planning. Maritime Operations aim to even the renewal expenditure over the next ten period by extending the life of certain assets without impacting service levels or risking asset failure, and will consider replacing more critical assets sooner.

6.4 New Capital Works

New Capital Works involve the creation of entirely new assets, substantial improvements to existing assets beyond their current functionality or performance or works which dispose of an existing asset. New Capital Works are typically undertaken in response to stakeholder needs, changes to levels of service, to accommodate changing demand (e.g. economic development, climate change, etc), or to manage risks.

Asset disposal includes any activity associated with disposal of a decommissioned Maritime asset that has reached the end of their useful life or is no longer required due to changes in demand, technology, obsolescence, or other factors. Asset disposal may include the sale, transfer, or recycling of materials and components.

6.4.1 New Capital Planning

New Capital Works (including disposal) or the upgrading of existing assets are identified from various sources (Table 19) such as routine inspections, customer requests, increased service levels, demand management, strategic objectives, technology and compliance.

Table 19: Identification of new capital works for Maritime assets

Source	Description
Inspections	Routine inspections can reveal defects or performance issues, safety hazards, or functional deficiencies. These findings could necessitate new capital works.
Demand Management	Assessing current and projected demand for AtoN assets helps to identify needs for AtoN assets.
Legislation/ regulatory	Changes in legislation and regulation, such as Maritime safety codes, can necessitate Capital Works to ensure compliance. For example, new assets as a result of the Navigational Bylaw review.
Sustainability	Council's sustainability goals may require capital projects that improve the environmental performance of the Maritime assets, such as installing solar-powered lights, or implementing sustainable designs or remote monitoring.
Technology	Technological advancements can present opportunities for capital improvements in AtoN infrastructure. For instance, the adoption of smart AtoN technology could improve energy management, enhance navigational efficiency, or offer other operational benefits.
Economic	Economic growth and development projects may necessitate the need for new AtoNs, or the upgrade of existing AtoNs. Two examples being the Port Ōpōtiki development and the Te Rāhui Marina in Whakatāne. As Maritime traffic increases due to these developments, additional or enhanced AtoN may be required to ensure safe and efficient navigation in these areas.

Continuous improvement

Section	Item	Description
6.1	4	Develop actions aligned to the Asset Management Sustainability Framework once it is complete. Incorporate considerations into all aspects of lifecycle management of the Maritime AtoN portfolio.
0	5	Develop a maintenance plan for all AtoN assets to capture activities, frequencies and costs. Review performance and adjust maintenance plan annually.

Part 7: **Risk Management**

7.1 Overview

Council has developed A 'Key Risk Framework'. The risk criteria and matrices established as the basis for risk evaluation were developed in accordance with the ISO 31000:2009 international risk management standard. The organisational risk management process can be found in the Strategic Asset Management Plan. Maritime Operations have tailored this approach to their activity, which is presented further below.

This section covers the risk management implemented by the Maritime group and provides a snapshot of Maritime's risk assessment approach, including current risk register and action plan, and a summary of the Maritime critical assets.

Risks are recorded and tracked through risk registers and actions plans. Risks that have the highest residual score after mitigating actions have been applied, are escalated on to the organisational 'Key Risk Register' and are reported to the Leadership Team and the Audit and Risk Committee, at intervals dependent on their risk velocity. Risk velocity is the time to impact. It is an estimate of the timeframe within which a risk may occur.

7.2 **Maritime Activity Risk Assessment**

For the Maritime asset portfolio, risk is defined as the product of two factors: the probability (or likelihood) of an asset failing, combined with the consequences should the asset fail.

A documented Maritime risk assessment may be undertaken for a number of reasons and due to various internal and external circumstances. These include, but are not limited to:

- Periodic internal audits on risk management.

- The occurrence of an incident, accident or emergency.

- Changes in traffic volumes and/or patterns.

- Other decisions, changes, or modifications to Council and/or Maritime Operations.

- A stakeholder request or complaint.

Maritime Operations are working towards a five-step approach to Maritime risk assessment. This approach is aligned to both Council's organisational risk management standards and the Formal Safety Assessment[4] outlined in the risk management guideline administered by the International Association of Marine Aids to Navigation and Lighthouse Authorities (IALA). Both of these are aligned to the ISO 31000:2009 risk management standard.

The five steps are outlined in (Table 20) below which includes key questions that are addressed by each step, as well as the outputs that are obtained by executing each step.

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[4] https://www.iala-aism.org/product/g1018/?download=true

Table 20: Five-step risk assessment process

Step	Name	Key question	Outputs
1	Hazard identification	What might go wrong?	A list of all relevant potential accident scenarios with potential causes and consequences.
2	Risk analysis	How likely is the risk to occur? How severe would be the consequence?	Estimation of likelihood and consequences of the potential accident scenarios, ranking of these scenarios.
3	Risk control options	Can matters be improved?	Potential measures to reduce the likelihood of occurrence of the identified risks or limit their consequences should they occur.
4	Cost-benefit assessment	What would it cost? How much better would it be?	Costs associated with the different risk control options, and an assessment of how cost-effective they are compared to how much they reduce the risk.
5	Decision-making recommendations	What actions should be taken?	Documented information about the hazards, their associated risks and the cost effectiveness of alternative risk control options is provided to decision makers.

It is important to note that there is not a 'one size fits all' method to undertaking a risk assessment. It is more often that risks are to be assessed on a case-by-case basis and largely depends on the nature of the case to be assessed, the availability and reliability of information, and the financial and human resources. However, each risk assessment will be based on factual data, as far as available.

The next section will discuss Maritime's current approach for the first three steps of the risk assessment process. As the Maritime Operations continues to improve its risk management practices, Council will look to plan and implement the final two steps.

1   **Hazard identification**

Across the Maritime region of the Bay of Plenty, environmental conditions, volume of traffic, and the degree of risk vary. By dividing the Maritime area into defined geographical zones, a risk assessment of each zone can be carried out and risk control options developed for that zone. This structured approach allows asset and location-specific risks to be better identified. We have divided our navigable areas into geographical zones but are yet to undertake a risk assessment for every zone. In 2021, a risk assessment for Tauranga port and harbour was undertaken. Our focus has been on addressing the risks identified.

Improvement: Undertake risk assessments for each geographical zone to identify asset risks.

The identification of hazards will, where available, be based on available information such as environmental data, adequacy of nautical charts, sea state and wind force, tidal flow, restricted visibility, background lighting, natural hazards and dangers, the nature of the seabed, changing bathymetry, volume and mix of traffic, among other factors.

Hazards are identified for the Maritime asset portfolio and activity through the following:

Risk review workshops

- Routine visual inspections
- Condition assessments
- Daily operations
- Public/staff notification

Once identified, hazards are entered into the Maritime Operations Risk Register. As the hazards identified may lead to several different undesired incidents or scenarios, each hazard is carefully considered by the Maritime Operations group, and the possible scenarios it may cause are identified and recorded during risk review workshops and other hazard identification exercises.

2 Risk analysis

For each risk, the likelihood and consequence of occurrence are both assigned a score. There are five levels for both likelihood and consequence. These scores will be based on as much evidence as possible but will be assessed on a case-by-case basis and be dependent on available information and resources.

In determining likelihood of occurrence, there are a range of possible methods, depending on the asset, location, service, age, or material. For example, for some asset-related risks, asset condition can be used as proxy for risk likelihood (Table 21). Where a quantitative assessment of the likelihood or consequence of failure cannot take place, scores will be assigned by Maritime Operations during risk review workshops and will be based on all information available, such as similar/historical events and sound knowledge. This may initiate processes of collecting more data that will inform a quantitative assessment.

Table 21: Likelihood scoring for risk occurrence

Likelihood	Likelihood description	Scoring	Condition	Probability %
Frequent	Will almost certainly occur, and at least once in a month.	5	Very Poor	91-100
Often	Will probably occur 6–12 times per year.	4	Poor	71-90
Likely	1–5 times per year. Likely to occur as least once in the next 2-3 months. There is a chance in foreseeable future.	3	Average	51-70
Possible	May occur at least once in the next year. Little chance of occurrence in the foreseeable future.	2	Good	21-50
Rare	Not expected to occur this year but may occur in a future period - unlikely in the foreseeable future.	1	Very Good	1-20

Table 22: Consequence scoring for risk occurrence

Rating level	Consequence description	Score
Catastrophic	• Catastrophic loss of public/stakeholder confidence or breakdown in standards, requiring major recovery action to restore reputation/ effectiveness. • Significant negative economic, social or cultural impact on a large proportion of the Bay of Plenty community. • Clearly threatens operations or ability of organisation to achieve its objectives. • Major unexpected financial overspend or loss. • Loss of life. • Prolonged national media and political attention.	5
Major	• Major unexpected financial overspend or loss. • Significant dissatisfaction expressed by stakeholders. • Moderate negative economic, social or cultural impact on a large proportion of the Bay of Plenty community. • Serious harm. • National media attention. • Unexpected failure to meet a standard.	4
Moderate	• Failure leading to review of project or operation that will require changes to processes or goals. • Likely to cause some damage or, disruption or breach of controls. • Significant negative economic, social or cultural impact on a small proportion of the Bay of Plenty community. • Moderate financial overspend or loss. • Regional media attention, loss of image. • Injury to staff or contractor.	3
Minor	• Localised or isolated failure to meet stakeholder requirements or standards. • Moderate negative economic, social or cultural impact on a small proportion of the Bay of Plenty community. • Unlikely to cause damage or threaten the effectiveness of the project. • Minor financial impact, involves management time.	2
Insignificant	• Very low impact that will not be visible, negligible. • Minor negative economic/social/cultural impact on Bay of Plenty community.	1

A risk score is then determined by multiplying the likelihood and consequence scores (Table 23). The risks and associated scores are grouped into comparative levels of risk (Table 24). Four risk categories have been used: Extreme, Significant, Moderate, and Low. This initial assessment is based the risk without any effective measures in place (gross risk).

Table 23: Risk 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

Table 24: Risk evaluation

Risk score	Risk level	Action required	Attention of/ Assigned to
15-25	**Extreme**	Requires immediate assessment of actions.	ELT/Council (as required), Statutory Bodies.
8-12	**Significant**	Requires remedial assessment and action via the annual planning process.	GM, Programme Sponsor, Programme Steering Group.
4-6	**Moderate**	Address via new procedures and/or modification of existing practices and training.	Programme Manager, Workstream Leaders.
1-3	**Low**	No formal requirement for further action unless escalation of risk is possible.	Workstream Leads, Project Mangers.

Once the initial (gross) risk score has been determined, it is then possible to investigate the current systems and processes to identify the residual risk, which is the actual risk that exists considering the effective measures currently in place. The measures in place reduce either/both the likelihood and consequence of risk occurrence, therefore, risk scores need to be revised using the same risk matrix above to obtain the residual risk score.

3   **Risk control options**

The objective of this phase is to identify risk mitigation options for each undesired incident that would reduce the risk to an acceptable level. For risks that are deemed unacceptable, or where further risk reduction can be achieved with little cost, risk control options are considered by the Maritime Operations group. Due to the nature of this process, the outcome is initially qualitative or subjective, but the aim is to reach a consensus on each risk control option so that preferred options can be investigated and scoped more fully, so the necessary evidence can be put forward to decision makers for approval and funding.

7.2.1 Maritime Risk Register

The risk register provided below outlines the Maritime Operation's asset-related risks. These have been developed in consultation with key BOPRC staff.

Table 25: Maritime asset risk register

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 practices/Strategies — *What are we doing to avoid the risk or reduce its effect?*	Residual risk (Considering measures in place)			Person(s) Responsible	Management options
			Consequence	Likelihood	Factor	Description	Consequence	Likelihood	Factor	Risk owner (Name and title)	Management options available — *What can we possibly do (brainstorm) to further reduce the risk level or provide assurance that current practices remain effective?*
MO05	**Inadequate condition/performance assessments** - reliable and accessible data for maintenance/renewals/ replacements and valuations. Six monthly condition assessment.	Operational	3	4	12	▪ Audit for all assets underway on a 6 monthly basis. ▪ Lifecycle management plan developed. ▪ Asset Register in place. ▪ Established Levels of Service.	3	2	6	▪ HM ▪ DHM ▪ SMO ▪ MO	▪ Understand lifecycle assessments. ▪ Maintain the six-monthly condition assessment programme and methodology for all assets. ▪ Maintain a robust process to ensure that knowledge is transferred, stored and accessible.
MO06	**Natural hazards damage** – Tsunami/volcanic/wind/major storm event causing damage to assets.	Environmental Public Health Organisational Financial	3	2	6	▪ Group Civil Defence Emergency/ Management Plan. ▪ Designs meet New Zealand standards. ▪ Emergency response plans are established for marine emergency incidents and annual training exercises and seminars are programmed.	2	2	4	▪ HM	▪ Continue with the current measures and ensure that any continuous improvement items that are identified are continued. ▪ Ensure appropriate ongoing funding for training and training exercises etc.
MO14	**Vandalism –** of assets.	Reputation/Image Operational Public Health and Safety Financial	3	3	9	▪ Design to minimise accessibility. ▪ Safety inspections. ▪ Prompt repair response. ▪ Complaints promptly addressed. ▪ Keep good communications with community and stakeholders.	2	2	4	▪ HM ▪ DHM ▪ SMO ▪ MO	▪ Maintain six-monthly inspections. ▪ Customer call centre keeps accurate reports from public of any issues with assets, these are recorded as a Service Request in Accela and linked to the relevant asset file.
MO16	**Damage/Breakdown of AtoN** – causing inability to operate.	Operational Public Health Reputation/Image	4	3	12	▪ Condition assessments. ▪ Maintenance standards. ▪ Operational procedures in place. ▪ Staff training.	4	2	8	▪ HM ▪ DHM ▪ SMO ▪ MO	▪ Maintain six-monthly inspections. ▪ Customer call centre keeps accurate reports from public of any issues with assets, these are recorded as a Service Request in Accela and linked to the relevant asset file. ▪ Maintenance contracts in place with 24/7 response required.

7.3 Critical assets

Critical assets for Maritime Operations were first identified as part of the latest update of this AMP in 2023. The definition for a critical asset is taken from Council's SAMP, defined as: "*Assets that have a high consequence of failure, but not necessarily a high probability of failure*". Therefore, assessing consequence of failure is a key element in determining critical assets. The consequence criteria that qualifies a Maritime asset as 'critical' is based on the failure or incident being assessed as 'Major' or 'Catastrophic' (Table *26*).

Table 26: Critieria qualifying an asset as critical should it fail

Rating level	Consequence description	Score
Catastrophic	• Catastrophic loss of public or stakeholder confidence, or breakdown in standards, which requires major recovery action to restore reputation or effectiveness. • Significant negative economic, social or cultural impact on a large proportion of the Bay of Plenty community. • Clearly threatens operations or ability of organisation to achieve its objectives. • Major unexpected financial overspend or loss. • Loss of life. • Prolonged national media and political attention.	5
Major	• Major unexpected financial overspend or loss. • Significant dissatisfaction expressed by stakeholders. • Moderate negative economic, social or cultural impact on a large proportion of the Bay of Plenty community. • Serious harm. • National media attention. • Unexpected failure to meet a standard.	4

Following a workshop with key Maritime Operations staff, the following assets were identified as the most critical.

- Mayor Island light beacons.
- Mōtītī Island light beacons.

By identifying critical assets, Council can better target and refine investigative activities and maintenance and capital expenditure plans, towards these critical assets.

Continuous improvement

Section	Item	Description
7.2	6	Undertake risk assessments for each geographical zone to identify asset-specific risks and record in risk register.

Part 8: **Financial planning**

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 financial forecasts are a culmination resulting from all the information presented in the previous sections of this AMP. This includes the lifecycle management strategies and work programmes for the operation, maintenance, renewal and new Capital Works required to deliver the agreed levels of service and projected future demand on the Maritime activity and asset portfolio, whilst also managing any unacceptable risks.

Financial policies and strategies are presented alongside the financial forecasts that are accompanied by key assumptions and data confidence.

8.1 **Funding strategy and policies**

Section 101(1) of the Local Government Act requires us to manage our revenue, expenses, assets, liabilities, investments and general financial dealings prudently, and in a manner that promotes the current and future interests of the community. Council must determine the appropriate sources of funding that will meet the funding needs of each activity.

The legislative assessment of funding considerations for operating and capital expenditure for the Maritime Operations activity, taken from Council's Funding Needs Analysis, is summarised below. The Revenue and Financing Policy describes how Council will use revenue and financing sources to fund its activities. Council has assessed the sources of revenue and finance for each activity using specific criteria. Sources of revenue and finance for the Maritime activity is outlined below.

Operational costs for Maritime Operations are estimated at around $4.4 million per year. Operational expenditure funding for this activity is currently sourced from the following:

- 60%-80% from general funds,

- 20%-40% from fees and charges, and

- 0%-20% from operating grants and subsidies.

Benefits are evenly spread across the region's population. General funds are the best available proxy for benefit to all people in the region. User fees for mooring charges were set at the level that fully recover 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.

Note: The 20%-40% nominated above is an average recovery of costs for the activities. It does not constitute a target cost recovery but indicates an ongoing average level of funding from user charges.

Capital expenditure on new assets is generally not directly funded by rates as this places the entire cost on current ratepayers. Instead, the use of reserves and/or borrowing, allows for the cost to be spread over time through interest and depreciation so that all beneficiaries of the asset contribute towards the cost. Any net operating surpluses are accumulated into various reserve funds. A specific asset replacement reserve is accumulated through funding depreciation and available for renewal of existing assets.

Capital expenditure funding for the Maritime Operations activity is currently sourced from external/internal loans and reserves. Council maintains some reserve funds for capital expenditure. Capital funding is required when purchasing and maintaining maritime safety equipment to provide the services of the programme. The broader Council Financial Strategy for capital funding can be found in the LTP.

8.2   Financial forecasts

The Maritime Statement of Financial Performance is summarised below, which incorporates the projected income and funding sources, to fund operational and capital expenditure for the next ten years (2024–2034). The funding strategy for Maritime Operations is discussed in the next 8.1.

The financial projections will be improved as further information becomes available on asset data, desired levels of service, future demand, and risk management. Refer to 1.1 for key assumptions and data confidence related to the financial forecasts.

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UNINFLATED	2024/25 $000	2025/26 $000	2026/27 $000	2027/28 $000	2028/29 $000	2029/30 $000	2030/31 $000	2031/32 $000	2032/33 $000	2033/34 $000
Operating revenue										
Targeted rates	-	-	-	-	-	-	-	-	-	-
General funding	2,945	2,908	3,093	3,102	3,163	3,218	3,258	3,277	3,282	3,313
Operating grants and subsidies	-	-	-	-	-	-	-	-	-	-
Fees and charges	1,212	1,203	1,197	1,190	1,187	1,185	1,158	1,154	1,151	1,120
Other revenue	76	76	75	75	74	74	72	72	72	70
Total operating revenue	**4,232**	**4,187**	**4,366**	**4,367**	**4,425**	**4,477**	**4,488**	**4,503**	**4,504**	**4,503**
Operating expenditure										
Other Operating Costs	2,178	2,171	2,166	2,160	2,156	2,150	2,121	2,117	2,114	2,086
Finance costs	20	25	34	38	46	54	57	59	62	64
Depreciation and amortisation	95	103	110	115	123	131	131	133	137	141
Sub total expenditure	**2,293**	**2,299**	**2,311**	**2,314**	**2,325**	**2,334**	**2,309**	**2,310**	**2,313**	**2,292**
Corporate Costs	1,905	1,943	2,043	2,055	2,067	2,070	2,059	2,074	2,085	2,091
Total expenditure	**4,198**	**4,242**	**4,354**	**4,368**	**4,392**	**4,404**	**4,368**	**4,384**	**4,399**	**4,383**
Net deficit (surplus) to fund	**(34)**	**55**	**(12)**	**1**	**(34)**	**(73)**	**(120)**	**(119)**	**(106)**	**(120)**
Funding required										
(Increase) / decrease in reserves	(34)	55	(12)	1	(34)	(73)	(120)	(119)	(106)	(120)
Total operating funding	**(34)**	**55**	**(12)**	**1**	**(34)**	**(73)**	**(120)**	**(119)**	**(106)**	**(120)**
Capital										
Navigational Assets	127	305	126	125	300	124	121	120	120	120
Total capital expenditure	**127**	**305**	**126**	**125**	**300**	**124**	**121**	**120**	**120**	**120**
Capital funding										
Grants, subsidies and insurance revenue	-	-	-	-	-	-	-	-	-	-
Increase in debt	127	305	126	125	300	124	121	120	120	120
Total capital funding applied	**127**	**305**	**126**	**125**	**300**	**124**	**121**	**120**	**120**	**120**

8.3   Asset valuation

8.3.1   Overview

Asset valuations are used for calculating long-term renewal requirements, identifying loss of service potential (depreciation), and for financial reporting purposes. Statutory financial reporting requires Council to revalue its fixed assets at least every five years. Council undertakes to value the Maritime Operations assets every three years. The last valuation was undertaken for Council's Maritime Operations is effective from 30 April 2024[5].

The valuation has been prepared on the understanding that there is adequate service potential in the business when considered in relation to the value of the total assets employed. This in general terms means that the assets have been valued on an as is, where is, basis as part of the overall grouping for its asset class and, therefore, if any asset was removed and sold, it would not achieve this value due to costs associated with removal, transport, installation and other associated costing.

Council is a Tier 1 public benefit entity (PBE) in respect to its business of using its infrastructure maritime assets to provide a public service. For such entities, revaluations are completed in accordance with Public Benefit Entities International Public Sector Accounting Standards 17, Property, Plant and Equipment (PBE IPSAS 17) issued by the External Reporting Board (XRB) for financial reporting purposes. Fair Value is defined in PBE standards as "The amount for which an asset could be exchanged, or a liability settled, between knowledgeable, willing parties in arms' length transaction.

8.3.2   Process and method

The scope was to complete a valuation of Maritime assets within the district comprising Maritime assets owned by Council and used for operational activities provided for the Tauranga (Western BOP), Rotorua (Rotorua Lakes) and Whakatāne (Eastern BOP) networks. The assets included and excluded from the valuation are outlined below.

Table 27: Assets included and excluded from Maritime asset valuation

Included	Excluded	
AtoN beacons	Land	Biosecurity assets
AtoN buoys	Buildings	Lakes Operations assets
Shore Based Markers	Employee personal effects	Work in Progress
Shore Based signs	AtoN assets owned by the Port of Tauranga	Intangible assets

Infrastructure assets are generally classified as specialised assets which rarely sell and for which there is no market evidence. For these assets, PBE standards recommend a Depreciated Replace Cost (DRC) as the appropriate method to determine fair value.

The DRC methodology is used to value specialised assets which are deemed to be seldom traded on an open market or have a restricted market for the use of the asset. The DRC reflects the minimum cost to provide the current level of utility or service. This method uses the assessment of replacement cost new of a modern equivalent asset as the starting point and applies optimisation and depreciation to adjust for asset age, condition, performance and remaining useful life. For more details on the method refer to the valuation report.

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[5] BOPRC Maritime Assets Valuation Report 30 April 2024 – https://objective.envbop.net:8643/id:A4665576

8.4 Assumptions

8.4.1 Valuation Assumptions

The following limitations were applied for assets that have reached the end or exceeded their base lives:

- A minimum fair value of 2.5% of replacement cost to recognise the assets' residual service potential.

- Annual finance depreciation is ceased to recognise the asset has reached its full financial potential.

Base lives from the 2018 valuation were adopted for this valuation. These were assessed from deterioration profiles of iron and steel-based assets as follows:

- Saline Water – 25 years

- Fresh Water – 40 years

- Shore Based – 15 years

The remaining useful life (RUL) is based on the base life with adjustments dependent on age and condition. In general, the RUL of the assets in service that existed in 2021 has been reduced by three years. For the asset summary earlier in the AMP, we reduced the RUL by a further two years.

The condition assessments that were completed by Council were accepted as evidence by the valuer without the need to visit the sites. Graded condition adjustments were applied to the assets remaining useful lives (RUL) as per below (Table 28).

Table 28: Graded condition adjustments applied to valuation

Grade	Description	RUL assumption	Condition % factor
1	Excellent	100%>RUL>90%	95%
2	Very good	90%>RUL>70%	80%
3	Good	70%>RUL>50%	60%
4	Poor	50%>RUL>10%	30%
5	Very poor	10%>RUL>0%	5%

8.4.2 Financial assumptions

Significant forecast assumptions have been used in preparing this plan. Those assumptions have come from:

- Legislative requirements,

- Council's funding, financial and operational policies and strategies,

- Relevant financial reporting standards issued by the New Zealand Institute of Chartered Accountants,

- Industry best practices and norms, and

- Generally Accepted Accounting Practice (GAAP).

Risks that threaten our expected future or outlook have been identified. If the risks were to eventuate, they would have an effect on our intended levels of service, actions and assets.

The assumptions made when preparing these forecasts were adopted in June 2023 and incorporate known financial results as at that date and estimates for the year to 30 June 2024. Events occurring after this date may have a significant effect on these forecasts.

The expenditure and valuation projections in this AMP are based on best available data. Currency and accuracy of data is critical to effective asset and financial management.

Continuous improvement

Section	Item	Description
8.2	13	Implement a framework to better quantify the trade-offs between service levels, costs, and risks.

Part 9: **Audit and Improvement**

Audit and improvement planning are important asset management (AM) practices that assist Council to develop and implement continuous improvement programmes. Improvements to AM practices can occur for several reasons, including innovation and technology, changes in strategic direction, regulation, and meeting customer expectations.

Council's approach to audits and improvement planning is outlined in the Strategic Asset Management Plan (SAMP), which also discusses the role and purpose of the Organisational Asset Management Steering Group (OAMSG).

9.1   **Past audits**

In addition to the past audits outlined below, the Maritime Operations group undertakes informal continuous improvement audits of management processes on an ad-hoc basis.

9.1.1   **External Audit of Maritime AM Maturity (2011)**

In 2011, Babbage Consultants Ltd undertook an activity gap analysis of AM practices for the Maritime group. The review employed the Asset Management Capability Assessment Framework (AMCAF). At that time, the review deemed the Maritime activity to be in the 'Aware' stage of asset management practices, defined as "actively starting to change and has basic systems in place to manage critical assets but is formulating an overall strategy".

Following this gap analysis, a significant number of improvements were identified to advance Maritime asset management practices. However, it was noted at the time that the Maritime group did not have the capacity to implement the majority of the improvements and that current resourcing issues will need to be addressed.

9.1.2   **External Audit of Bay of Plenty Regional Council AM Maturity (2019)**

An audit was undertaken by KPMG in 2019 which assessed the maturity of Council's AM practices against specific aspects of the IIMM (International Infrastructure Management Manual, 2015) and ISO 55001 (2014), recognised global standards for AM. The audit was completed comparing the AM processes employed across all Council activity portfolios. Noting that the scope of work for the audit specifically excluded review of the activity AMPs.

The overall rating assigned across Council's AM practices was 'developing'. The review established 16 improvement opportunities relating to five key priority areas. Actions to address the areas for improvement are either already complete, in progress, or planned through improvement action planning, through the SAMP or individual AMPs.

9.1.3   **External Audit of Maritime AMP (2022)**

A high-level review of Council's 2021 Maritime AMP was undertaken by Asset BowManagement Ltd in 2022[6], which assessed the maturity of Council's AMP against international best practice guidance. An asset management maturity tool, originally developed for New Zealand Treasury in 2011, was employed for this AMP review. The tool was modified and tailored towards assessing the maturity of AMPs.

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[6] https://objective.envbop.net/id:A4249116/document/versions/latest

In general, the review found positive areas within the 2021 AMP, but noted there was a number of areas for improvement. The Maritime AMP was deemed to be at the 'Basic' maturity level. Improvement items were identified for each section of the Maritime AMP. Fifteen improvement items were established to advance the AMP to meet the 'Core' level of maturity, as stipulated within Council's 2021 SAMP. All 13 improvement items were progressed in 2023 as part of the latest update of this AMP.

9.2   Improvement planning

This section outlines the continual improvement process used and the current improvement actions for Maritime Operations over the next three years.

In order to advance asset management, Council have adopted a continuous improvement cycle where current AM performance is assessed, a desired future state is determined, and improvement items are identified to close the gap between current and future performance. Refer to the SAMP for further detail. Establishment of a robust, continuous improvement process ensures we are making the most effective use of resources to achieve an appropriate level of AM practice.

Any number of improvements may be identified during this process, and they will likely need to be prioritised to ensure the most effective improvements are progressed with the limited resources available. As improvements are being implemented, Maritime Operations will monitor the effectiveness of the outcomes, and subsequently make any changes necessary.

9.2.1   Improvement plan

The purpose of the improvement plan is to document the key improvements that Maritime Operations can undertake to maintain and improve AM practices that assist in optimising service provision to our communities and stakeholders.

The previous improvement plan was reviewed to confirm what improvements had been progressed, which were to be carried over, and which were to be removed. Improvements were also identified from the 2022 maturity assessment of the Maritime AMP. Further improvements were also identified during the latest update of this AMP.

All identified improvements have been collated into a single repository to enable items to be monitored, updated and reported. Each improvement item has been assigned a project manager, and resources and timeframe for completion (Table 29). There are eight improvement items in total. We intend to complete these over the next three years.

> **Improvement: Develop project briefs for significant improvement items**

9.2.2   Monitoring and reporting

Monitoring and reviewing the improvement plan ensures that the performance and progress of each improvement item, as well as the effectiveness of the outcomes, are monitored and reported at specific periods throughout the year.

Ongoing implementation of each improvement item will be the responsibility of the identified Project Lead. They are responsible for ensuring the work will be completed on time, within budget and to an agreed quality. The overall improvement plan will be actively monitored by the Deputy Harbourmaster on an ongoing basis.

The improvement plan will be updated, and changes recorded, to reflect:

- Progress made on each improvement item,
- New information that is made available,
- Additional improvement items identified throughout the year,
- A change in desired maturity.

The improvement plan will be formally reviewed annually ahead of Council's Annual Plan submission, and comprehensively reviewed at three-yearly intervals at the same time the AMP is reviewed, aligning with Council's LTP planning schedule.

The OAMSG oversees progress of the improvement plan, and ensures the necessary resources are allocated to the improvement items. Improvement plan performance and progress will be reported to the OAMSG by the Deputy Harbourmaster at the end of each quarter. This will include any risks relating to delivering the improvements.

Table 29: Maritime Operations AM Improvement Plan

Item	Section ref	Improvement action	Project Lead	Hours	Timing
1	2.3.1	Integrate the principles and actions from AM Policy into the Maritime Operations AMP and activities.	HM DHM	20	2024 Q1
2	5.1	Update demand forecasts when new information becomes available.	HM DHM	10	2026 Q4
3	5.1	Improve demand impact analysis by collecting further information, with a focus on potential impacts to existing assets or need for additional assets.	HM DHM	40	2026 Q4
4	6.1	Develop actions aligned to the Asset Management Sustainability Framework once it is complete. Incorporate considerations into all aspects of lifecycle management of the Maritime AtoN portfolio.	HM DHM	50-100	2024 Q3 & Q4
5	0	Develop a maintenance plan for all AtoN assets to capture activities, frequencies and costs. Review performance and adjust maintenance plan annually.	HM DHM	150	2025 Q4
6	7.2	Undertake risk assessments for each geographical zone to identify asset-specific risks and record in risk register.	HM DHM	400	2025 Q1 & Q2
7	8.2	Implement a framework to better quantify the trade-offs between service levels, costs, and risks.	HM DHM	50	2026 Q2
8	9.2.1	Develop project briefs for significant improvement items.	HM DHM	5	2024 Q1

Appendix 1
Key legislation and policies relevant to this Asset Management Plan

There is a range of legislation that impacts delivery of Maritime activities and services. Council has also developed various policies and works in partnership with other agencies, to fulfil its Maritime role and align its activities to other agencies and organisations throughout the region.

Legislation	Summary
Local Government Act 2002	The Local Government Act 2002 provides councils with a framework of powers to carry out democratic decision-making and action for and on behalf of its community. It also imposes accountability for prudent management and stewardship of community assets in the present and into the future.
Resource Management Act 1991 (RMA) and Amendments	The main legislation that sets out how we should manage our environment. It provides a national framework to manage land, air, water and soil resources, the coast and the control of pollution and contaminants.
Mōtītī Protection Areas	In April 2020, the Environment Court released its financial decision directing the Bay of Plenty Regional Council to create protection areas around Mōtītī Island prohibiting the taking of all plants and animals. These new maritime protection areas will drive increased demand for Maritime Operations activities.
Maritime Transport Act 1994 (and Maritime Transport Amendment Act 2013)	Is the main legislation under which the Maritime Operations Team operates. It promotes maritime safety and the protection of the marine environment in New Zealand. It covers functions like local regulation of maritime activity including the appointment, functions and general powers of Harbour Masters, the setting of navigation bylaws and marine oil pollution response. The Act also sets of out duties relating to maritime activity and requirements for construction and survey of ships and equipment that must be carried.
Maritime Rules	The maritime and marine protection rules are statutory instruments (or secondary legislation) made by the Minister of Transport under the Maritime Transport Act 1994. While the Maritime Transport Act stipulates broad principles of maritime law, the rules contain detailed technical standards and procedures that relate to the safety of ships and people. For example, Maritime Rule Part 22: Collision Prevention which provides the 'rules of the road' for ships including pleasure craft. It includes the standards for the installation, performance and use of lights for collision avoidance.
Civil Defence and Emergency Management Act 2002	The CDEM Act defines the duties, functions and powers of Central Government, Local Government, emergency services, lifeline utilities and the general public in the event of a civil defence and emergency management. Under the CDEM Act, the Regional Council must ensure that it is able to function during and after an emergency. The Port of Tauranga is defined as a lifeline utility.

Appendix 2
Standards and guidelines relevant to this Asset Management Plan

9.2.1 Aids to Navigation Guidelines

This is a guideline document for those applying to erect, place or alter aids to navigation, as well as providing guidance for the ongoing operation and maintenance of aids to navigation. This guideline also provides information about the requirements set out in the Maritime Transport Act (MTA) 1994 and makes reference to external delegation of the power to approve aids to navigation under section 20(7) of the MTA.

Published by Maritime NZ in 2019, the guideline was developed in consultation with harbourmasters from around New Zealand and the NZ Hydrographic Authority in Land Information New Zealand.

9.2.2 New Zealand Port and Harbour Marine Safety Code

This Code, first published by Maritime NZ in 2004 and recently updated in 2020, provides national best practice guidance to port operators and councils to manage the safety of marine activities in their ports and harbours.

The objective of the Code is to ensure the safe management of ships navigating in New Zealand ports and harbours, including the prevention of injury to people, loss of life and damage to the marine environment, including property. It is a voluntary standard.

The Code is supported by a number of other guidelines of good practice. Access to these guidelines and additional resources can be made through this link.

9.2.3 Tauranga Port and Harbour Risk Assessment

This risk assessment was undertaken as part of proactive action to oblige with the NZ Port & Harbour Safety Code. South Maritime Solutions were engaged to complete a detailed report to assist understanding of Tauranga's port and harbour marine risks. The risk assessment and report[7] was completed in August 2021.

The report provides an explanation of threats to maritime safety in Tauranga Port and Harbour and recommends appropriate risk control options where practicable.

The review highlighted the disruption caused by Covid-19 and the resulting changes in trade patterns that would have been relatively predictable previously. Furthermore, predictions for the future are clouded by fast-evolving technology and notable improvements in international good industry practice.

The qualitative risk assessment focused on eight common marine risks as stipulated in the Code, discussing each in detail. They were: collision, grounding, contact, loss of stability, fire and explosion, oil spill, weather event, and mooring breakouts.

The report made a number of conclusions, including that marine safety in Tauranga port and harbour is in a good state and well resources. Several recommendations were presented for further reducing marine risk.

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[7] https://objective.envbop.net:8643/id:A3908347

Appendix 3
LGA 2002 Schedule 10 requirements

LGA 2002 Schedule 10 requirement	LGA 2002 reference	AMP section
Identify the rationale for delivery of the group of activities (including the community outcomes to which the group of activities primarily contributes).	LGA 2002 Schedule 10 – 2(1)(b)	3.1.1
Outline any significant negative effects that any activity within the group of activities may have on the social, economic, environmental, or cultural wellbeing of the local community.	LGA 2002 Schedule 10 – 2(1)(c)	3.1.1
A statement of the intended levels of service provision that specifies any performance measures specified in a rule made under Section 261B of the Act.	LGA 2002 Schedule 10 – 4(a)	4.4
The performance measures that the local authority considers will enable the public to assess the level of service for major aspects of groups of activities.	LGA 2002 Schedule 10 – 4(b)	4.4
The performance target or targets set by the local authority for each performance measure.	LGA 2002 Schedule 10 – 4(c)	4.4
A funding impact statement in relation to each group of activities of the local authority.	LGA 2002 Schedule 10 – 5	8.1
A statement of the authority's revenue and financing policy.	LGA 2002 Schedule 10 – 10	8.1
The amount of capital expenditure that the authority has budgeted to meet additional demand for an activity.	LGA 2002 Schedule 10 – 24(2)(a)	8.2
The amount of capital expenditure that the authority has budgeted to improve levels of service.	LGA 2002 Schedule 10 – 24(2)(b)	8.2
The amount of capital expenditure that the authority has budgeted to replace existing assets.	LGA 2002 Schedule 10 – 24(2)(c)	8.2