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Coromandel zone management plan



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Executive summary

Purpose of this plan
This plan is the primary tool for the implementation of all river and catchment management activities within the Coromandel Zone

The purpose of this plan is to set the strategic direction for river and catchment management within the zone. This plan provides an overview of the zone and a description of management activities to achieve the strategic direction, including levels of service, risk management and financial management. This plan contributes to Waikato Regional Council's (WRC's) vision and mission via the three flagship goal in particular goal one:

"the values of land and water resources are sustained across the Waikato Region."

The Coromandel Zone
The Coromandel Zone is one of eight zones within the Waikato Region. The zone has around 6% of the total land area within the Waikato region, 5% of the region's population and contains around 20% of the region's native vegetation.

The zone is dominated by the Coromandel Range – a chain of rugged hills that run the length of the Coromandel Peninsula. As a result of the zone having many short, steep catchments, most of the services are non-asset based, such as soil conservation, river management and pest management.

65% of the zone area is covered by indigenous vegetation, 22% by pasture and 12% by production forestry. The landscapes within the zone provide habitats for a range of indigenous and threatened native flora and fauna including kauri forest, scrubland, tuataras, weta, frogs, kiwi and seabirds.

There have been significant changes in land use within the zone since the early 1800's, including Kauri logging, mining, farming and forestry. The development of small settlements on river flood plains has also led to significant risks from flooding.

River and catchment management
The geology, climate and human occupation of the Coromandel Peninsula have created a need to actively manage the rivers and catchments. Prior to 2004, river and catchment management activities were ad-hoc and reactive.

Comprehensive river and catchment management began with the introduction of the Peninsula Project in 2004. The aim of the Peninsula Project is to *"Improve the health of the environment and the safety of communities on the Coromandel Peninsula"*. The Peninsula Project is a collaborative project between four partner organisations – Waikato Regional Council, Thames Coromandel District Council, Department of Conservation and Hauraki Maori Trust Board.

River and catchment management activities within the zone include catchment oversight, information and advice; catchment works programmes, river management, flood protection, animal pest management and coastal marine area works and services. Work is directed towards priority catchments based on key considerations including water quality, erosion potential, biodiversity values, community usage, economic importance and flood risk mitigation. River and catchment management activities are coordinated under "whole of catchment management", which means that on-going efforts are made to identify and establish linkages between all issues and activities that contribute to successful catchment management.

Vision and goals
The Coromandel zone vision is:

"Healthy and stable rivers, catchments and harbours, within a framework that recognises:

- *community and cultural needs and aspirations*
- *natural risks*
- *economic and environmental sustainability."*

The objectives in support of the vision are:

"Over the next 20 years, the Peninsula Project will have far-reaching benefits for both the environment and the people who live and holiday on the Peninsula. It will:

- *Better protect people, property and essential services from flooding*
- *Reduce sedimentation in rivers, harbours and estuaries*
- *Improve water quality*
- *Reduce plant and animal pests such as possums and goats*

- *Improve the diversity and habitat of plants and animals*
- *Improve and stabilise catchments*
- *Sustain the mauri of the Peninsula from the mountain ranges to the sea."*

Trends and issues
A number of trends and issues have been identified as being of particular importance within the zone. These include climate change, growth, treaty settlements, land use change, local Government reorganisation, transportation networks, natural hazards, water quality, soil erosion/sedimentation, biodiversity, community expectations and awareness, sites of significance and pest management.

Stakeholders
Key stakeholders within the zone include ratepayers and community members, territorial authorities, central Government agencies (particularly DOC), and the Coromandel Liaison Subcommittee.

Relationships with iwi
Tangata whenua are key partners in river and catchment management, and WRC recognises the need to work closely with Iwi in river and catchment management. The Coromandel Zone covers the Hauraki rohe, and WRC has a range of formal and informal relationships with Hauraki Iwi.

River and catchment management assets
The physical scheme assets within the zone are limited, and comprise 695m of stopbanks, 806m of timber flood walls, 514m of timber flood walls with earth bulking, 678m of riprap and 313 km of managed natural river and stream channels. The total Optimised Replacement Value of the scheme assets is approximately $676,000. The assets have an average age of less than five years, and as a result are in near-new condition overall. In addition to the above scheme assets, river and catchment management works and services are undertaken on approximately 700 ha of soil conservation and Clean Streams catchment works on private land.

Levels of service
The following levels of service have been confirmed:

- **Flood protection:** river and flood protection schemes provide the standard of flood protection agreed with communities
- **River management:** management of identified priority rivers and streams to achieve a balance between maintaining channel capacity, channel stability and environmental values
- **Environmental enhancement:** to provide land and catchment management services to enhance water quality, biodiversity and promote the sustainable use of land and soil; to complete new riparian, coastal and land protection measures within the zone according to the established priorities and within budget estimates, to prepare plans and undertake works to ensure the sustainable management of harbour catchments.
- **Community engagement:** work with all stakeholders to achieve mutual objectives; work in partnership with all relevant Iwi to sustain the Mauri of the Peninsula; Co-management arrangements are incorporated within river and catchment management decision-making; decision-making processes are transparent and easily understood
- **Reliability and responsiveness:** response to events, requests and complaints is timely, and appropriate solutions are provided; services are provided and performed to agreed levels and standards
- **Affordability:** costs for services are distributed equitably; services are managed for the benefit of current and future generations

Risk management
The primary risks to river and catchment activities within the zone are:

- Natural hazards resulting in damage to zone assets
- Riverbank and hillslope erosion
- Sand and gravel management
- Stopbank/flood wall failure
- The impacts of animal pests
- Harbour sedimentation.

The above risks are drawn from a risk register, which identifies all risks within the zone. The above risks are addressed by a draft Risk Action Plan, which identifies current practice and specific management actions.

Financial management
The Coromandel zone services are provided on an annualised maintenance cost basis. While there are activities on specific types of assets that are not carried out each year, the work is spread as evenly as possible across each year.

Historical maintenance costs from 2006/07 – 2010/11 indicates a steady trend at approximately $1 million, and planned maintenance cost for 2012/13 onwards remains at a similar level - $1.1 million annually.

Historical capital expenditure indicates an increasing trend during the period 2006/07 – 2010/11, with the development of flood protection schemes for Thames Coast communities. Capital expenditure, planned for Coromandel zone in 2012/13 is $122,000, being the start of new capital works at Grahams Creek, Tairua.

Total revenue for 2012/13 is $1.45 million this sourced by general rates and targeted rates. The reserve balance for Coromandel catchment remains negative until 2016/17.

Improvement planning
The on-going development and improvement of Zone Management Plans is integral to WRC's implementation of improvements to business processes and practices. The draft improvement plan identifies the key areas for development and improvement, and sets a plan in place to achieve improvements over time.

The following improvement actions are considered to be the highest priority:

- Development of a monitoring and reporting programme
- Improvement of asset data on completeness, condition and performance
- Completion of the risk action plan
- Resolution of financial issues, including valuation of assets and depreciation
- Completion of the zone improvement plan.

1 Introduction and purpose

1.1 Overview

The Coromandel zone covers most of the Coromandel Peninsula, and has a total area of approximately 193,000ha. The Zone includes all land within the Thames Coromandel District Council boundary excluding those catchments that are incorporated within the Waihou-Piako Zone including the Kauaeranga, Tararu and catchments flowing into Thames town. It also includes part of the Hauraki District Council area between Whangamata and Waihi.

The zone is dominated by the Coromandel Range which is volcanic in origin, and has numerous short, steep catchments that are vulnerable to flash flooding. The zone is also susceptible to tropical storms, and has the highest annual average rainfall of any zone within the region - often over 3,000mm, and sometimes in excess of 4,500mm.

The Coromandel Zone has an estimated 3,900 kilometres of rivers and streams (the Waikato region has more than 45,000 kilometres) and more than 500 kilometres of coastline. Around a third of the area, predominantly the ranges, is Department of Conservation estate.

It is important that our waterways and catchments are managed in a way that minimises erosion and flooding and their associated damage. Sound river and catchment management assists to reduce natural risks to people and property and promote stable rivers and streams for a range of benefits. These objectives can only be achieved where there is recognition of the impacts and interdependencies across the entire catchment. Working with landowners, communities and agencies is an essential part of river and catchment management.

Environmental benefits of river and catchment management works include reduction in sediment entering waterways and harbours and the protection and enhancement of native vegetation and wetlands. Other issues such as recreational and cultural use of rivers and their environs, protection of productive farmland, the enhancement of biodiversity and overall aesthetic improvement are all important for the community and region as a whole.

1.2 Purpose

This plan is the primary tool for the implementation of all river and catchment management activities within the Coromandel Zone, and includes:

- A vision for the zone
- A strategy to achieve that vision
- Activities to implement the strategy
- A set of service levels and performance standards for the activities.

A key component of this plan is provision of detail on the long-term management of river and catchment management assets. This plan is intended to fulfil asset management planning requirements for river and catchment management assets in the Coromandel Zone.



Otama beach taken by Shaun Barnett, Black Robin Photography

In summary, the purpose of this plan is to:

- Provide a document that sets out the long-term strategic direction for river and catchment management within the zone.
- Provide an overview of the zone generally, with specific focus on the work programmes and associated activities within the zone.
- Provide a communication tool for staff, Council committees and subcommittees, iwi, and key stakeholders, including the general public.
- Improve understanding of service level standards, options and costs to

smooth peak funding demands, while improving customer satisfaction.

- Manage the environmental, service delivery and financial risks of asset failure.
- Identify lifecycle costs to provide agreed levels of service over the long term.
- Explain how the long term works programmes have been developed and how they will be funded.
- Provide a management tool that is
- Live and adaptable, and that can address changing needs over time.

1.3 Relationship to Waikato Regional Council vision, mission and flagship goals

WRC has established its strategic direction over the council triennium – from 2010 to 2013. The "strategy"[1] sets out what we do, why we do it and the value provided to the community. The strategy identifies WRC's vision, mission and flagship goals as follows:

Vision for the Waikato region
"Competing globally, caring locally"

Mission
"To provide regional leadership to balance economic and environmental outcomes to enable the social, economic, environmental and cultural wellbeing of current and future generations"

Flagship goals

1. *The values of land and water resources are sustained across the Waikato region.*
2. *The people of the region collaborate to achieve a shared vision of the Waikato competing globally, caring locally.*
3. *The Waikato Regional Council meets its legislative co-governance requirements by working together in good faith and a spirit of cooperation.*

Council's first flagship goal is of most relevance to this plan. The strategy guides how rivers and catchments will be managed, and recognises the importance of Zone Plans in relationship to the first flagship goal as follows:

Flagship Goal – *"the values of land and water resources are sustained across the Waikato Region"*

- **To achieve this goal we will**
  - Manage rivers and catchments within a framework that recognises:
  - community and cultural needs and aspirations
  - natural risks
  - economic and environmental sustainability.
- **This goal will be measured by making sure**
  - Integrated catchment management services are managed to the performance standards agreed with communities and as set out in zone plans.

WRC's strategy provides the framework within which to develop a zone specific vision[2]. The zone vision will be implemented through specific objectives and goals, as outlined in section 3.1.

1.4 Relationship to overview of river and catchment management in the Waikato region

This plan is one of eight zone management plans that will cover the management of river and catchment activities across the Waikato region. This plan is supported by an overview document titled "*Overview of River and Catchment Services – Waikato region*" (Doc# 1717271).

The "*Overview of River and Catchment Services – Waikato region*" document provides an overview of:

- The nature of the region and the key issues we face in the future.
- How river and catchment activities are managed across the region.
- Responsibilities for river and catchment management.

[1] "*Strategic direction for the Waikato Regional Council 2010–2013*", Waikato Regional Council.

[2] Refer to section 3.1.

- How river and catchment management relates to other activities.
- The legislative and policy requirements for river and catchment management.
- How links with the community are developed and maintained.

This plan complements the overview document by providing zone-specific detail on river and catchment management within the Coromandel Zone.



Wells QE11 covenant looking north towards Devil's Point

2 The Coromandel zone

2.1 Regional context

The Coromandel zone represents around six percent of the total land area within the Waikato region. It has around five percent of the region's population, contains around 20 percent of the region's native vegetation and is home to the only regional marine reserve.

Figure 1 shows the relationship of the Coromandel zone to the other management zones within the region. The Waikato region comprises four primary catchment groups being:

- Waikato River catchment
- Waihou-Piako catchments
- Coromandel
- West Coast

For management purposes, the Waikato River catchment is divided into five separate sub catchments or management zones, being:

- Lake Taupo
- Upper Waikato
- Central Waikato
- Waipa
- Lower Waikato

2.2 Overview

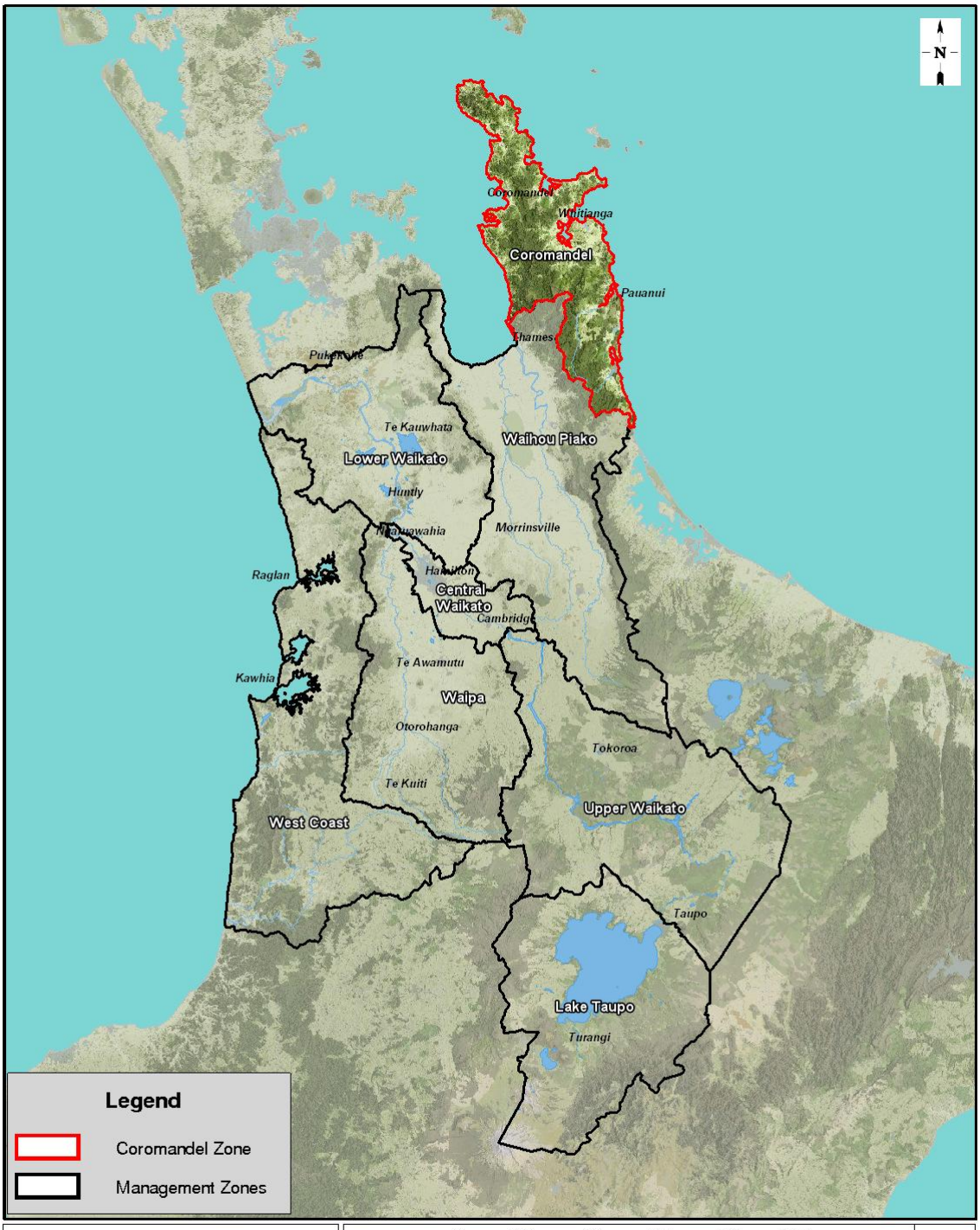
The dominant feature of the Coromandel zone is the Coromandel Range, a chain of rugged hills that run the length of the peninsula. The highest point is Mount Moehau, which rises to 892m at the northern end of the peninsula within the Moehau Range. There are also numerous peaks over 600m high.

A number of pressures are present in the zone, including growth and development, management and protection of coastal areas, protection of water quality, management of plant and animal pests and the threat to life and property from flooding.

Geography

The Coromandel Range is volcanic in origin. The peninsula comprises the eroded remnants of the Coromandel volcanic zone, which became active around 18 million years ago. Volcanic activity ceased around 2 million years ago, and has subsequently shifted southeast to the Taupo volcanic zone. Despite this, Mayor Island was recently active (around 6,500 years ago) some 25 km to the east. Geothermal activity is still present on the peninsula, with hot springs in several places, notably at Hot Water Beach, in the central east coast between Whitianga and Tairua.

Figure 1 Relationship of Coromandel zone to other management zones



The Coromandel Range is rugged and well dissected, with a prominent, steep-faced fault scarp along its western margin. The zone contains almost 3,900km of perennial rivers and streams – these are generally short and steep, except for the Tairua River. The coastline consists mostly of short beaches and bays separated by rocky cliffs. The Coromandel township area and eastern coast of the peninsula are characterised by natural harbours with protecting islands and/or sand spits, and bay head sand dune complexes. Mangroves and mudflats are present in most protected areas, whereas exposed areas generally have sandy beaches.[3]

Soils within the zone are young in geological terms, and have been altered by hot water intrusion. There are three main types of soils within the zone:

1. Central Coromandel Range, Thames Coast and steep country – thin soils over weathered rock, with granular clays common
2. Moehau Range to Coromandel town, Kereta and Tapu – more fertile brown earths and alluvial soils, with a mixture of well drained and poorly drained soils
3. Whitianga south – yellow to brown earths that have better soil fertility.

Landuse and ecology

The total area covered by the zone is approximately 193,000ha. 65 percent of the zone area is covered by indigenous vegetation, 22 percent by pasture and 12 percent by production forestry. The majority of pasture land is used for drystock, with a small percentage used for dairy and horticulture.

The landscapes within the zone provide habitats for a range of indigenous and threatened native flora and fauna including kauri forest, scrubland, tuataras, weta, frogs, kiwi and seabirds. The effects of human activities and the threat of introduced animal pests such as possums and goats are all placing pressure on ecosystems. As the number of people and dwellings in the Thames Coromandel District continues to grow, it is becoming increasingly important that these ecosystems are managed sustainably.[4]

Community

While there are no major cities within the zone, the Thames Coromandel District is home to over 50 diverse coastal settlements and rural communities, each with its own unique character. The District is serviced by three main towns at Thames, Whitianga and Whangamata, as well as several smaller settlements including Coromandel, Matarangi, Tairua and Pauanui.

The main settlements are connected by State Highway 25, which forms a circuit around the lower half of the peninsula. In addition to the main settlements, there are a large number of smaller settlements located across the District, including those at Cooks Beach, Whangapoua, Port Charles, Te Puru, Tapu and Hikutaia.

The total resident population within the zone is estimated at 19,000, while the total number of ratepayers is around 23,000. There are 23,000 dwellings of which 51 percent are permanently occupied, the remainder being non-resident holiday homes. Currently, the main economic activities are primary production (farming, fishing and forestry) and tourism.

The boundaries of the zone and key features are shown in Figure 2.

[3] Adapted from Loomb, C. (2007): "*Coromandel Peninsula Blueprint: Physical Environment*". Beca Carter Hollings & Ferner Ltd, Auckland. (p. 2)

[4] Adapted from http://www.tcdc.govt.nz/Council/Our-Communities/

Figure 2 Coromandel zone features



2.3 Background

2.3.1 People, economy and land use

River and catchment management within the Coromandel Zone has been greatly influenced by human occupation on the Coromandel Peninsula over time.

Pre-European Maori history extends back to about 900AD, to such tribes as Ngati Huarere and Ngati-Hei, using Arawa genealogies. The later Tainui-descended tribes of Ngati-Maru and others moved in after about 1600.[5] The Coromandel Peninsula provided an abundance of natural resources for Maori, both from the land and the sea.

To local Māori, the Coromandel Zone sits within the Hauraki region, encompassing the waters and lands ranging from Mahurangi on the coast north of Auckland to the northern entrance to Tauranga Harbour in the south-east – 'Mai i Mahurangi ki Ngā Kurī-a-Whārei', which means from Mahurangi to Ngā Kurī-a-Whārei (a prominence just north of the harbour entrance).[6]

Europeans first came in the late 1840's following Captain Cooks visit in 1769, and engaged in trading, kauri logging, mineral development, farming and fishing. Later in the 19th century the peninsula became a hive of activity, and Thames was the third largest town in the country.[7] From 1860 to 1920, timber, gold and kauri gum were exploited to exhaustion with little consideration for the natural environment. Many catchments were denuded of vegetation and subjected to repeated burning, while rivers and streams were used for transporting Kauri via dams and waste disposal. Eventually the kauri and accessible gold resources were exhausted and the gum market destroyed.

From the early 1900's onwards, agriculture became the primary activity, despite early attempts to establish farms being hampered by erosion, poor soil fertility and invasive pest plants. Tourism has contributed to the economy since the 1940's, and during the 1970's, the Coromandel Peninsula became well known for its alternative values, commune lifestyles and environmental politics. Today, the beaches and coastline, dramatic landscapes and abundant bush and wildlife make the Coromandel Peninsula popular with tourists and holidaymakers alike.

While early development of the Coromandel Peninsula was low density, development of residential areas along the low lying coastal areas and river valleys has become increasingly intensified – particularly from the 1970's onwards. Development and intensification of these low lying areas has created river flood hazards in many of the towns around the peninsula.

Today the Coromandel Peninsula is made up of numerous distinct rural and coastal communities. Tourism, retirement and aquaculture play key roles in the economic vitality of the district.

2.3.2 River and catchment management

The geology, climate and human occupation of the Coromandel Peninsula have created a need to actively manage the rivers and catchments.

Severe weather events and associated river flooding have been common throughout recorded history. On the Thames Coast, there have been 14 significant flood events recorded since 1873, with numerous other minor floods affecting the whole peninsula.[8] Significant flood events[9] occurred in 1881, 1893, 1917, 1936, 1954, 1960, 1978, 1981, 1985, 2002 and 2003.

Prior to local Government amalgamation in 1989, the responsibility for river and catchment management throughout most of the Coromandel Zone lay with the Thames and Coromandel County Councils and their predecessors. Involvement in river and catchment management throughout this period was ad-hoc and reactive, mainly involving clean-up following river flood events. The jurisdiction of the Hauraki Catchment Board did not extend north beyond Tapu, and therefore there were no comprehensive or coordinated river and

[5] http://www.organicexplorer.co.nz/Old-Directory/Coromandel/Barry+Brickells+History+of+Coromandel+Peninsula.html

[6] http://www.teara.govt.nz/en/hauraki-coromandel-region/1

[7] http://www.tcdc.govt.nz/Council/Our-Communities/

[8] Waikato Regional Council; Thames Coromandel (2003): "*Reducing the risk River flooding on the Thames Coast A business case to Central Government*". Waikato Regional Council, Hamilton. (p. 65)

[9] Those estimated at 1-in-20 year recurrence intervals or greater

catchment management programmes put in place.

The exclusion of the Coromandel County from the Hauraki Catchment Board was at the request of local communities, who did not see a need to be brought within the catchment board area. However, the Kauaeranga river catchment and Thames township/Tararu catchments were included in the Waihou Valley scheme following significant flooding in May 1954, and a request from the Thames County Council.

Despite the lack of comprehensive river and catchment management in the zone, the Hauraki Catchment Board provided some flood monitoring, river gauging following flood events and river engineering design support to the County Councils from the 1940's onwards. An example of this was the design of a flood scheme for Te Puru following the 1981 flood event. Some support for river and catchment management north of Tapu was provided by the Ministry of Works from 1967 to 1983 under the Water and Soil Conservation Act 1967.

The transfer of responsibility for river and catchment management to regional councils was formalised in 1989 as a part of the amalgamation of local government. Limited river and catchment works were undertaken during the 1990's as a result of the lack of a comprehensive funding system for the Coromandel Peninsula above Tararu.

2.3.3 The "Weather bomb"

On 19 June 2002, the Met Service advised that a potentially damaging low[10] was approaching the far north of the country bringing torrential rain and east to northeast gales to Northland and Auckland. The feature of this storm was the speed at which it developed.

Overnight on the 20-21st June, the band of heavy rain and gales associated with the low moved south onto the Coromandel Peninsula producing rainfall intensities of up to 125mm in 25 minutes with wind gusts peaking at 120 km/hr, causing widespread damage across the Thames-Coromandel and South Waikato Districts. Normally docile streams became raging torrents in a few minutes. A Civil Defence Emergency was declared on the western side of the Peninsula at 2.30 a.m. on the 21st of June due to high winds damaging roofs and cutting power, and torrential rain causing flooding, forcing evacuations and isolating communities.

The event produced rainfall intensities registering return periods of 1-in-100 years and rapidly creating flood flows in local rivers ranging from 1-in-5 year to 1-in-100 year return interval events. In places the flows were of sufficient strength to move caravans, garages, boats and cars and carry fallen trees, boulders, and many thousand tonnes of mud through homes, properties and across roads. There was one death when an elderly woman drowned after being swept away by flood waters at Waiomu. Two people sustained serious injuries.

The Weather Bomb event led to flood risk management proposals for five main communities on the Thames Coast, and development of the Peninsula Project - a comprehensive river and catchment management system for the Coromandel Peninsula.

2.4 The Peninsula Project

2.4.1 Overview

Waikato Regional Council (WRC) has increasingly sought to address catchment based issues within a whole of catchment management framework. In the past, activities associated with land and rivers were often dealt with in isolation to related issues such as management of natural hazards and risks, pest management, water quality management and regional and district planning.

A significant step toward the whole of catchment approach occurred with the adoption of the "Peninsula Project" in 2004. The Peninsula Project was initiated by Waikato Regional Council to address river and catchment problems within the Coromandel Zone. The Peninsula Project provides the umbrella under which all river and catchment works are carried out. The aim of the Peninsula Project is to:

> ***"Improve the health of the environment and the safety of communities on the Coromandel Peninsula."***

[10] Called a "Weather Bomb", and defined as "*a low pressure system which rapidly deepens causing barometric pressure to drop at least 25 hPa in a 24 hour period*"

There are four key areas of work:

1. River and catchment management – hillslope and streambank planting and river maintenance
2. Flood protection – engineering works and planning controls to reduce risks to life and property
3. Animal pest management – controlling possums and feral goats
4. Coastal marine area works and services – in relation to harbours and estuaries including vegetation management, erosion protection and biodiversity.

2.4.2 Peninsula Project partners

The Peninsula Project is a collaborative project between Waikato Regional Council, Thames-Coromandel District Council, Department of Conservation and Hauraki Maori Trust Board.

The roles and responsibilities of each of the partners are as follows:

Waikato Regional Council
Responsible for the overall management of our Region's rivers and their catchments, including the effects of flooding and erosion. As part of the Peninsula Project, Waikato Regional Council is working with local communities to better protect them from frequent flooding and erosion. This will be achieved by undertaking work that helps to maintain stable rivers and streams, and productive land and soil.

Thames-Coromandel District Council
Responsible for ensuring the Peninsula's communities have the services and infrastructure they need. The Council has a key role in determining and planning for appropriate land use so that communities are safe and sustainable.

Department of Conservation
Responsible for protecting and enhancing the diversity of our native plants and animals on Crown land. The Department manages the Coromandel Forest Park and is responsible for the control and eradication of animal pests in this area. It also has a key role in the Peninsula Project as project manager of animal pest control on both Crown and private land on the Thames Coast.

Hauraki Maori Trust Board
Responsible for developing policies and strategies that will improve and sustain the mauri of Hauraki. This role includes a strong interest in protecting and enhancing the water quality and stability of our rivers, streams and estuaries and our cultural heritage on the Peninsula.

2.4.3 Business case to Central Government

In April 2004, a business case application was delivered to Central Government on behalf of Waikato Regional Council, Thames-Coromandel District Council and the Thames Coast communities for assistance in three key areas:

1. Central Government agencies (namely DOC and Transit NZ) meeting their responsibilities as landowners and infrastructure managers
2. Provision of funding to support the removal of high risk properties
3. Support for the Peninsula Project (the overall strategy and work programme)

The business case also stressed the importance of an integrated, comprehensive package, agencies and the communities working together; a model for the rest of the country.

On 22 September 2004, the Government announced it had agreed to fully support the business case by contributing a multi-million dollar package towards this integrated river and catchment management plan for the Thames Coast. The Government viewed the integrated approach as being pivotal in lowering the risks to life and addressing the many complex river and catchment issues on the Thames Coast over the longer-term.

2.4.4 Work activities and programmes

River and catchment activities are undertaken in partnership with landowners, other agencies, Maori and/or communities. Issues are considered on a whole of catchment basis, from the mountains to the sea.

The core river and catchment services activities undertaken in the Coromandel Zone are:

- Catchment oversight
- Information and advice
- Catchment works – land management and soil conservation

- River management
- Flood protection
- Animal pest control
- Works and services in the coastal marine area.

Further details on each of these activities are outlined in section 4.1.

Harbour and catchment management planning

The mountains to the sea approach has been the leading concept in the development of Harbour and Catchment Management Plans for the key harbours around the Peninsula. They have been a response to recognition of increasing pressures on the coastal environment, increasing demand from communities for services and as an implementation tool to deliver on key strategic and policy directions such as the proposed Waikato Regional Policy Statement and the Coromandel Peninsula Blueprint.

The harbour and catchment plan process will:

- Encourage partnerships between community, key agencies and stakeholders
- Create a proactive community working towards resolving identified issues
- Support sound economic, social, environmental and cultural outcomes.

Priority plans identified are Whangamata, Wharekawa, Tairua, Whitianga, Whangapoua and Coromandel/Manaia.

Programme status

The following points provide a summary of the status of the Peninsula Project programme and some of the key challenges:

- There has been good uptake by landowners in terms of the soil conservation programme. Landowners have shown a strong interest in protecting and enhancing the biodiversity features of their properties. A key challenge remains in gaining the participation of the larger drystock properties.
- River management is a significant activity on the Peninsula with the numerous streams and tributaries. This is the strongest demand for service area within the programme.
- Flooding is a high risk for communities, particularly those on the Thames Coast built at the base of short steep catchments where streams can be volatile in a heavy rainfall event. The cost and implications of managing flood risk can be a challenge for these small communities.
- Animal pest control is a key component of the integrated approach taken to managing catchments on the Coromandel Peninsula. The Thames Coast programme in association with the Department of Conservation has been very successful, and in 2010 entered a maintenance phase. This programme involves possum and goat control on both Crown and private land between the Kauaeranga Valley and Coromandel town. Balancing community views, desirable environmental and catchment outcomes and cost effectiveness has been and will be an ongoing challenge.
- Communities on the Peninsula can be very passionate about their concerns and their causes, and this is evident in the case of the mangrove issue at Whangamata. Waikato Regional Council is increasingly being faced with demands for works and services in the Coastal Marine Area and this is currently being tested with proposals for mangrove management in the Whangamata harbour. Harbour and catchment management planning in the Wharekawa and Tairua catchments has identified similar concerns and it is anticipated these will be present in other harbour communities around the peninsula also.

2.5 Coromandel Peninsula Blueprint

2.5.1 Overview[11]

The Coromandel Peninsula Blueprint (CPB) is the strategic framework for managing growth and sustainable development within the Thames Coromandel District Council. The CPB has developed from recognition that the increasing pressures of growth on the District's water, land, coast and marine uses needed to be managed in an integrated manner. While the CPB is not a statutory document, its information and directions will help to guide the statutory policies and plans of local government and other key stakeholders.

The CPB brings together plans at the community, district, regional and national levels, as well as the thoughts of local communities to ensure consistent planning and sound decisions for the future.

The CPB is overseen by a Political Steering Group with representatives from the Thames-Coromandel District Council, Waikato Regional Council, Department of Conservation and Hauraki Whaanui. The steering group is driving the project, and has worked together to develop the strategic framework for managing growth and associated development of land, water and coastlines within the District.

The CPB vision is:

> "*The year is 2050:*
>
> *The Coromandel Peninsula is a place:*
> - *that embraces its natural taonga – treasures*
> - *that has diverse and vibrant centres*
> - *where generations can live, work and enjoy*
> - *that has resilient communities*"

The CPB is based around three residential, commercial and industrial hubs - as illustrated in Figure 3

2.5.2 Importance of the Coromandel Peninsula Blueprint

The CPB has a high degree of importance for river and catchment management within the Coromandel Zone. This is because it provides robust general information about the District, its issues and preferred future, and detailed information on community-specific local development issues and directions.

The "Coromandel Peninsula Blueprint - Framework for our Future Summary"[12] provides the following general information that informs river and catchment management:

- Background information on the Thames Coromandel District profile and trends – including demographics, economy, biodiversity, infrastructure, landscape, natural hazards and the physical environment
- An outline of the key issues facing the District, including those of particular relevance to river and catchment management such as:
  - Ongoing pressure on open spaces, including farms, forestry and the coast
  - The need to protect biodiversity in the face of development and tourism pressures
  - The need to avoid natural hazards in the future, and manage existing development to minimise the effects of natural hazards
  - Climate change, which will have a significant impact on weather patterns and sea levels, and will also impact upon biodiversity, water and living space.
- Community "bottom-lines" that have relevance to river and catchment management – the need to protect outstanding landscapes, no degradation of water quality, protection and enhancement of biodiversity and reduced risks from hazards.

[11] Text adapted from http://www.corobluepprint.govt.nz/uploads/69933/files/FINAL_CPB_Summary_Bro_2010.pdf

[12] http://www.corobluepprint.govt.nz/uploads/69933/files/FINAL_CPB_Summary_Bro_2010.pdf

Community-specific development issues and directions are detailed within the "*Coromandel Peninsula Local Area Blueprints (in draft)*"[13] document. The purpose of Local Area Blueprints is to understand and provide responses to[14]:

- Catchments and natural processes including protection of ecological values and management of natural hazards
- Testing growth scenarios including the implications of phased development on natural resources and values, physical built form and infrastructure investment
- Urban design opportunities, including the role of each settlement in the wider Peninsula, the role of collective settlements, and at a local level, possible solutions for open space, harbours, transport, land uses and Iwi related interests
- Allocation of land and water uses
- Forward thinking implementation actions in terms of how each LAB could be delivered over short, medium and longer term horizons.

The CPB provides a robust strategic framework for river and catchment management within the Coromandel Zone, and will further strengthen integration of work amongst the key CPB and Peninsula Project partners - Thames-Coromandel District Council, Waikato Regional Council, Department of Conservation and Hauraki Whaanui.

2.6 Management areas

The Coromandel Zone is split into 12 management areas for the purposes of harbour, river and catchment management. The management areas are:

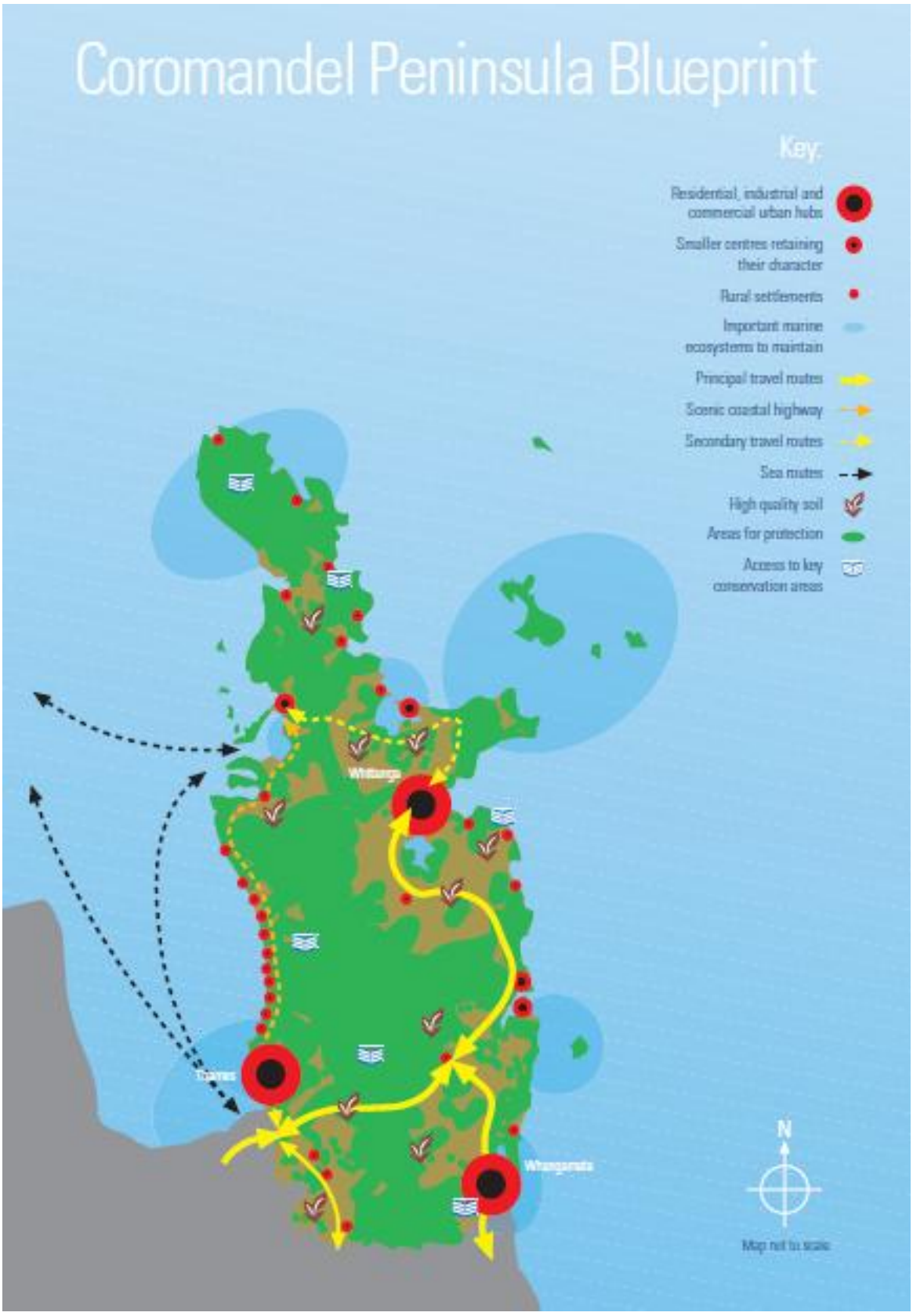
Northern Coromandel	Whitianga
Colville/Waikawau	Thames Coast
Kennedy Bay	Tairua
Whangapoua	Wharekawa
Coromandel	Whangamata
Manaia	Otahu/Whiritoa

The management areas are shown in Figure 6.

[13] Refer to "Draft LAB Summary" link on http://www.coroblueprint.govt.nz/176233/html/page.html

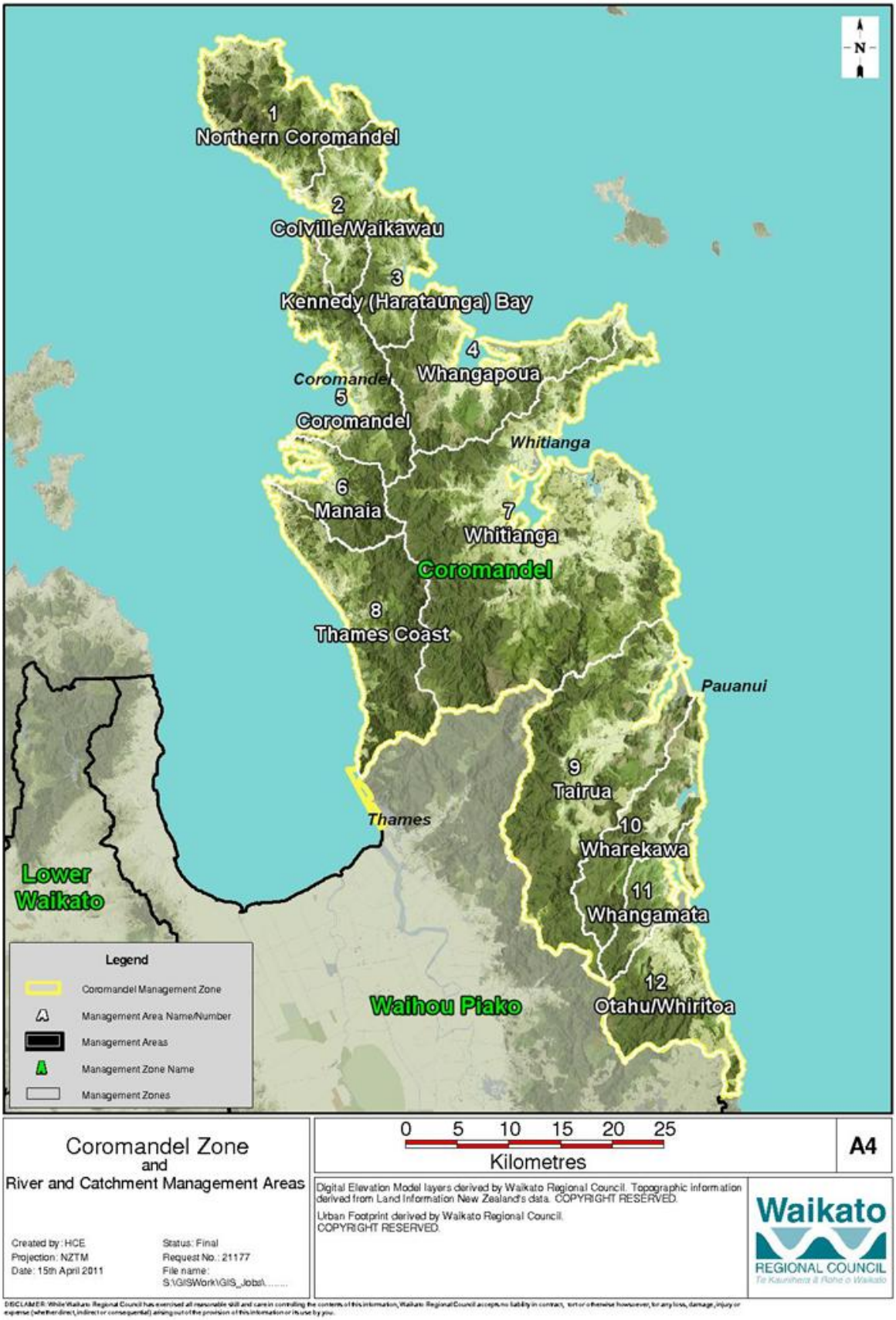
[14] Refer to p. 4 "Draft Local Area Blueprints - Pages 1-22" link on http://www.coroblueprint.govt.nz/176233.html/page.html

Figure 3 Coromandel Peninsula Blueprint illustration[15]



[15] Refer to p. 13 http://www.coroblueprint.govt.nz/179159/html/page.html

Figure 4 Coromandel Zone management areas



3 River and catchment objectives in the Coromandel zone

3.1 Coromandel zone vision and objectives

3.1.1 Vision

The proposed Coromandel zone vision is:

> *Healthy and stable rivers, catchments and harbours, within a framework that recognises:*
>
> - *community and cultural needs and aspirations*
> - *natural risks*
> - *economic and environmental sustainability*

3.1.2 Objectives

The Coromandel Zone objectives below are those originally developed for the Peninsula Project by the four partners:

> *"Over the next 20 years, the Peninsula Project will have far-reaching benefits for both the environment and the people who live and holiday on the Peninsula. It will:*
>
> - *Better protect people, property and essential services from flooding*
> - *Reduce sedimentation in rivers, harbours and estuaries*
> - *Improve water quality*
> - *Reduce plant and animal pests such as possums and goats*
> - *Improve the diversity and habitat of plants and animals*
> - *Improve and stabilise catchments*
> - *Sustain the mauri of the Peninsula from the mountain ranges to the sea."*

The above aims of the Peninsula Project will be achieved by delivering core river and catchment services in the Coromandel Zone as follows:

- Catchment oversight: including planning and management of the zone programmes, supporting subcommittees and the development of relationships with key stakeholders.
- Information and advice: includes responses to enquiries, providing advice and information to ratepayers and interest groups and environmental monitoring programmes to assess the impacts of the activities being undertaken.
- Catchment management: this includes work to protect and stabilise land in a catchment, promoting best land management practices that further enhance the protection of waterways, wetlands and bush fragments, maintaining catchments to provide high quality water resources for downstream users and reducing the effects of land-related hazards such as subsidence and erosion.
- Animal pest control: includes work to reduce animal pest numbers (mainly possums and goats) in the upper catchments which lead to the destruction of forest and vegetation, increasing catchment erosion and instability and increasing runoff.
- River management: this work includes stabilising river and stream banks through fencing and planting, construction of works, removing gravel, debris and blockages and co-ordination of landowner works if required.
- Flood protection: this work usually involves design and construction of flood protection structures and river channel/drainage improvements, purchase/removal of houses or raising of floor levels. Flood protection has strong linkages with catchment management work – soil conservation and animal pest management.
- Works and services in the CMA: involves provision for the delivery of public works and services in the coastal marine area such as estuarine wetland protection and

enhancement, erosion protection and mangrove management, and includes the development of harbour and catchment plans.

3.1.3 River and catchment management issues, priorities and objectives

Some management areas within the Coromandel Zone have been assigned priority for river and catchment purposes based on the nature of the issue, its severity and impact on people and the environment

Priority is normally given to catchments where there are high levels of soil erosion, land loss, river instability or high downstream effects including sedimentation and water quality deterioration. Community demand and support for work is also considered in priority setting.

Table 1 provides an overview of the river and catchment management areas, their issues and priorities within the Coromandel Zone. Table 2 shows the work programme objectives and targets for the Coromandel Zone.



Table 1 Coromandel zone management areas

Area	Management area	Description of issues	Priority
1	Northern. Coromandel	Biodiversity hub for Coromandel with nationally significant and threatened species such as North Island Robin, Kiwi, Hochstetter and Archie's Frog, Patake and the Stag Beetle. Focus for works would be on land management practices and reducing sediment form pastoral lands.	Low
2	Colville/Waikawau	Nationally significant wetland and dune system at Waikawau. Focus for works would be on reducing erosion on hill country land and stream banks and aiming for maintained high water quality levels.	Low
3	Kennedy (Harataunga) Bay	Significant coastal wetland areas and well vegetated upper catchment. Focus for work would be around land management, decreasing hill side and stream bank erosion and minimising flooding. Works would benefit local aquaculture (mussels) businesses. Area is very significant for Maori.	Low
4	Whangapoua	Strong support from local community for harbour and catchment management plan; significant harbour catchment; stronger rules for forestry than other areas. Large tidal prism leads to conflict between recreational harbour users particularly over summer months. Work would focus on reducing sediment entering the harbour. Issues include increased pressure on water supply, sedimentation, mangrove expansion, reduced navigation access.	Medium
5	Coromandel	Significant flood risk due to short sharp nature of the catchment. Very little pastoral lands so works would focus on establishing sound riparian zones within community, reducing weeds, maximising channel capacity during flood events and ensure a stable upper catchment that is well vegetated. Navigation access both for recreational and commercial users is a significant issue. Particularly with proposals to expand the aquaculture industry and a growing demand for boating facilities.	Medium
6	Manaia	Significant overland flow; flooding of State Highway 25 and Goldfields Road, farmland and school ground; significant disruption to area of low density population. Culturally significant site, focus of much discussion in recent years; high sediment loading in harbour; declining harbour and kaimoana gathering areas.	Medium
7	Whitianga	Whitianga South: significant overland flow; flooding of State Highway 25 and Wade Road; access to Whitianga cut off several times per year Whenuakite: flooding of State Highway 25 and surrounding land Number of existing community care groups; focus area for Blueprint; largest management area; priority areas for land and soils works; large portion of agricultural land use; existing significant fisheries streams. Key biodiversity values and rural hub for Coromandel Zone. Works include land management, reducing stream bank and hill side erosion, maximising channel capacity and minimising flooding as well as steps towards improving water quality.	High
8	Thames Coast	Priority area for flood protection schemes and for upper catchment protection through animal pest control (feral goats and possums). Additional works could focus on hill side erosion and stabilising erosion prone	High

Area	Management area	Description of issues	Priority
		pastoral lands. Direct relationship to the Firth of Thames.	
9	Tairua	Graham's Creek: flooding of State Highway 25 and Manaia Road; enters properties on Ocean View Road; issues with causeway and capital costs Hikuai: significant overland flow; flooding of State Highway 25 and farm land High level of community interest; high sediment loading of the harbour; potential future goat control area.	High
10	Wharekawa	Significant overland flow; flooding of State Highway 25. Harbour and Catchment Management Plan developed for this catchment with strong level of community support. Opportunities for coastal wetland development and enhancement. Existing mangrove seedling consent in place as well as salt water paspalum control trial site. Concerns around the rate of sedimentation of the harbour with significant contributions coming from forestry and pastoral lands. Works focused on riparian and farm management. Animal Pest control in the upper catchment would significantly benefit this site as would changes in harvesting practices in forested land.	High
11	Whangamata	Flooding of State Highway 25 and golf course. High recreational use area, particularly the harbour placing pressures on space and resources. Strong desire held by the community for extensive mangrove removal. Sedimentation rate of the harbour is an issue with steps being taken on the small amount of pastoral lands that exist to minimise this. Upper catchment in poor condition with areas of the Wentworth in canopy collapse. Animal pest control needed and strong community demand for a review of plantation forest harvesting.	High
12	Otahu/Whiritoa	Small feasible area that can be linked to the Whangamata Harbour and Catchment Management Plan; high uptake of works from landowners already; high ecological value with significant harbour and coastal wetland area.	Medium

Table 2 Coromandel river and catchment works programme objectives and targets

Activity	Objectives / priorities	Targets
Catchment oversight	Complete zone plan in 2011 Contribute to Hauraki Treaty Settlement process in respect to river and catchment issues Ensure an integrated approach is taken to river and catchment management in the Zone. Develop and maintain relationships with key stakeholders and politicians to ensure support and understanding for work programmes and objectives.	Audit NZ requirements as to asset planning are met. Implementation of zone plan Progressive improvement and development of the plan Integration of work programmes across Waikato Regional Council activities. Clear connections and partnerships with other agencies.
Catchment maintenance	Implement annual inspection programme. Carry out works on a priority basis as needed.	Follow up of the property inspections made in terms of maintenance works programmes. Works programmed where identified.
Catchment new works	Promote new works in the following priority catchments:	Complete works in priority catchments.

Activity	Objectives / priorities	Targets
	Thames Coast Whangamata/Otahu Wharekawa Tairua Whangapoua Manaia Whitianga	Promote new works on properties across the zone. Promote margin fencing and planting around unfenced river areas, wetlands and bush fragments as agreed with property owners. Promote community awareness and continued engagement through newsletters, media releases, community networks and field days.
River management	Carry out routine river management in the following high priority catchments: Te Puru Waiomu Tapu Manaia Coromandel Whitianga Tairua Wharekawa Whangamata	Reduce risks of localised flooding in priority catchments through removal of willow congestion and blockages Provide long term environmental benefits through improved water quality, keeping stock out of streams and fencing and planting of streambanks to reduce stream bank erosion. Provide a facilitative approach and coordination where works are needed across multiple properties.
Flood protection	Completion of Te Puru and Waiomu flood mitigation projects Maintain and manage existing schemes in Coromandel, Tapu, Pohue, Waiomu and Te Puru Focus on the future priorities as follows: Highest priorities Manaia Tairua [Graham's Creek] Other priorities Whitianga South [vicinity of Wade Stream and Whangamaroro River] Whenuakite Hikuai Wharekawa Whangamata [3 sites]	Ensure level of service for flood protection assets maintained. Sale of former Waiomu campground Ensure funding for upgrade of the Graham's Creek causeway is retained in Thames-Coromandel District Council's Long Term Plan Progress works in other priority catchments/communities.

Pest Management	Maintenance of possum and goat control areas on the Thames Coast in association with the Department of Conservation Initiate goat control on the east coast in the Tairua and Whitianga catchments	Thames Coast maintained at 5% Targeted Residual Trap Catch. Goat control targets set and met for east coast.
CMA works and services	**Routine works and services** Stream mouth clearance on the east coast streams Minor vegetation management in key harbours e.g. Wharekawa, Tairua Support to coastal habitat enhancement (ie coastal wetlands) **Consents and associated works** Whangamata harbour mangrove management **Harbour and Catchment Management planning** Ongoing implementation of the Whangamata, Wharekawa and Tairua plans	Continue implementation in Whangamata, Wharekawa and Tairua over the next 10 years. Carry out mangrove removal in the Whangamata harbour in accordance with the harbour and catchment management plan objectives. Develop plans for the remaining priority catchments Maintain stream mouths to reduce flooding and stagnation. Implement funding mechanisms where needed and supported by communities for coastal vegetation management, in accordance with existing funding policy. Support coastal habitat restoration works such as coastal wetland enhancement where funds allow.

4 Managing the zone

4.1 Overview of river and catchment management activities

Waikato Regional Council's river and catchment management activities include physical works and services, and advice and information provided to landowners and the wider community. The aims of river and catchment management activities are to:

- Manage issues on a 'whole of catchment' basis
- Manage hazards and effects associated with soil erosion and flooding
- Reduce sediment entering waterways
- Improve water quality
- Improve river stability
- Improve river environments by creating better habitats for a wider variety of plants and animals
- Maintain and manage existing river and catchment assets.

In the Coromandel zone, river and catchment management activities include:

4.1.1 Catchment oversight

This involves the overall management and coordination of zone activities and programmes including implementation of the zone plan. Annual and forward programmes are considered by community representatives in the form of the zone catchment liaison subcommittee and reported to the wider community and the Council.

Catchment oversight also includes the maintenance of partnerships and relationships with key stakeholders across the zone.

4.1.2 Information and advice

This activity enables response to enquiries and provision of advice and information on river and catchment management in each zone. It also includes monitoring programmes to assess the environmental changes resulting from the activities undertaken.

4.1.3 Catchment works programmes (maintenance and new works)

Land throughout the Waikato region is susceptible to soil erosion. Services and programmes promoted by Waikato Regional Council in relation to the stability and use of land include:

- Liaison with property owners as to land instability issues.
- Preparation of land protection plans.
- Management of existing protection schemes/assets.
- Promotion of retirement from grazing and conservation planting of erosion prone land.
- Protection of indigenous vegetation in upper catchment areas.
- Installation of structures to control sediment and water runoff.
- Condition and monitoring programmes.

Catchment new works may involve the design, supervision and completion of soil conservation, erosion control and other catchment management measures. Assets associated with these programmes are usually under the ownership of individual property owners. However, Waikato Regional Council often has a role in their management due to the presence of registered agreements or covenants. All works on private land are subject to negotiation and agreement with the property owner.

Where existing catchment schemes are in place, programmes to maintain and manage these schemes are agreed with the owners. Community feedback indicates high value being placed on ensuring the existing protection measures are maintained to ensure that the benefits they provide continue into the future.

4.1.4 River management

This involves the achievement of:

- Sustainable, stable and healthy rivers
- Integrated catchment management
- Management of flood waters
- Enhancement of the environmental values of river systems

- Liaison and integration with other Waikato Regional Council activities and programmes.

Typical river management works include:

- Controlling bank erosion (by planting and fencing off river banks, construction of rock or other bank revetment works or construction of groynes)
- Removing blockages and obstructions
- River training works (ensuring the flow paths of rivers are stable and optimum channel widths are maintained)
- Gravel and sand management.

4.1.5 Flood protection

This involves:

- Management of flood risks and hazards associated with rivers.
- Specific protection works as agreed with communities.

Waikato Regional Council is responsible for the maintenance of a number of major flood schemes throughout the Waikato region. .

Typical flood protection works in the Coromandel zone include:

- Stopbanks and floodwalls
- Channel protection works
- Property purchase and retirement
- House raising.



Flooding at Te Puru following weather bomb in 2002

4.1.6 Animal pest management

High animal pest numbers in the upper catchment lead to the destruction of forest and vegetation, increasing catchment erosion and instability and increasing runoff. Reducing the possum numbers will allow the forest vegetation to recover and increase its ability to help absorb and slow down water that runs off hillsides and down valleys after rain. Feral goats are targeted because they eat forest undergrowth and regenerating plants, affecting the stability of slopes and soils and increasing the effects of erosion. A further benefit of possum and goat control is increased biodiversity, such as habitat and bird life.

4.1.7 Works and services in the coastal marine area (CMA)

This activity provides for the delivery of public works and services in the coastal marine area and includes the development of harbour and catchment plans. This is a relatively new activity within the Peninsula Project and works may include estuarine wetland protection and enhancement, erosion protection and mangrove management. The works contribute to improve environmental, recreational and community safety values, and enable an integrated response to catchment issues.

Figure 5 provides an overview of river and catchment works within the Coromandel zone.

Figure 5 Coromandel zone river and catchment works



4.2 Whole of catchment management

4.2.1 Overview

In recent years, there has been increasing recognition of the range of issues which need to be connected in order to improve river and catchment management, including:

- Catchment processes are strongly interlinked.
- Catchment activities impact upon other activities and values, whether these are cultural, economic, recreational or environmental.
- Traditional approaches to river and catchment management did not always recognise the inter-relatedness of the environment's components, and problems may be created by managing resources in isolation from other uses.
- Catchments as a whole provide a useful and functional unit for managing natural resources in a holistic way.
- The transition from the traditional approach to the integrated, whole of catchment approach can often be challenging due to diverse and incompatible interests, activities and demands upon resources.

Waikato Regional Council has developed some key principles for whole of catchment management and identified the range of issues that need to be considered as a part of successful whole of catchment management. These principles and issues are outlined within the overview document "*Overview of River and Catchment Services – Waikato region*".

4.2.2 What this means for the Coromandel zone

The Peninsula Project was initiated in 2004 on the basis of a whole of catchment management approach. Particular emphasis has been given to considering issues from the "mountains to the sea" and developing responses that reflect their inter-connectedness.

The need for this integrated approach was recognised early and embedded into the project via the establishment of a partnership approach between Waikato Regional Council, Thames Coromandel District Council, the Department of Conservation and the Hauraki Maori Trust Board. In addition to relationships between agencies there has been a focus on working with communities to ensure local ownership and involvement.

4.2.3 Biodiversity and Biosecurity

Introduction

Biosecurity and biodiversity are two key activities undertaken by the Council. Managing pests and protecting natural biodiversity values have strong connections to the 'whole of catchment' management. For example, by removing pampas grass (which is exotic and shallow rooted) and planting native species (with deeper root systems) river bank stability can be greatly enhanced. Similar effects with goat and possum control are possible. Goats can devastate new seedlings/plantings, while possums create canopy damage in native forests. By controlling both species at key places trees can remain healthy, with foliage intact, leading to less sedimentation and erosion in upper catchment areas.

Biosecurity in the Waikato region has four components:

- Managing public health threats
- Managing production threats
- Managing environmental (biodiversity and catchment) threats
- Managing potential pest threats.

The objective of the programme is to minimise the adverse effects associated with pests and increase pest management understanding through regionally co-ordinated responses. The goals are set out in the Operative Waikato Regional Pest Management Strategy (RPMS) developed under the Biosecurity Act 1993. Activities carried out to achieve these goals include:

- enforcement of pest plant control rules
- monitoring control work and property inspections
- surveillance for potential pest plants
- releasing biological control agents
- facilitating and undertaking direct control of high threat pests
- providing practical advice for controlling plant pests

- promoting education and awareness, and
- coordinating community initiatives.

Development of pest control rules, leverage of funding mechanisms and the ability to access land to carry out control work comes from powers available under the Biosecurity Act.

Biodiversity management seeks to identify and work to protect and enhance significant indigenous habitats and vegetation (e.g. wetlands, geothermal, terrestrial forest remnants, dune lands and limestone areas). The Resource Management Act (section 6(c)) requires regional and district councils, as a matter of national importance, to recognise and provide for the protection of these significant natural areas (SNA's).

For many landowners having an SNA will serve mainly to confirm the ecological value of their property. Over time rate relief or restoration assistance from the councils may be offered. SNA identification helps the Councils with policy planning and operations. It will help guide the regional council where it should target resources – from building drainage structures to doing pest control. Knowing where SNA's are and the threats to them will assist in the whole of catchment management approach.



View of the Coromandel Ranges

Summary of Biosecurity/Biodiversity work carried out in the Coromandel Zone

Biosecurity

- Peninsula Project – partner with DOC in carrying out joint possum/goat control on land between Thames and Coromandel towns, west of the dividing range, split into 3 management areas (strong connection with RCS group objectives in these areas)
- Dedicated animal pest contractor providing control advisory services for the Peninsula, SNA co-ordination (for projects below) and assisting pest plant officer
- Provision of funding for small scale pest control work, via a contestable fund, eg New Chums Beach, Papa Aroha, Tuateawa (approx. 20 on the Peninsula)
- Funding support for larger SNA areas identified through 2000 SNA type report – Whenuakite Kiwi care Group, Mahakirau Forest Estate, Moehau Environment Group
- Individual pest plant species control (the goal is eventual eradication):
  - evergreen buckthorn
  - boneseed
  - coastal paspalum
  - cathedral bells
  - nassella tussock
  - biological control release programme.
- Compliance monitoring (RPMS rules):
  - privet (subject to valid complaints received)
  - moth plant
  - climbing asparagus
  - wild ginger
  - woolly nightshade (including direct control of outlier sites)
  - ragwort/nodding thistles/gorse
  - general road verge compliance
  - state highways and local roads.

Biodiversity/SNA work

- Completed SNA in 2011
- TCDC currently preparing district plan and consulting with around 5000 landowners re: SNAs on their properties
- Ten beachcare groups in coastal dune SNAs
- Some harbourcare groups supported by WRC include Whangapoua and Whangamata Harbourcare Groups
- Other work carried out by RCS (catchment works)

4.3 Key stakeholders

The key external stakeholders with an interest in river and catchment management activities in the Coromandel zone are as follows:

4.3.1 Catchment liaison subcommittee

The first liaison subcommittee (the Lower Waikato Waipa Liaison Subcommittee) was set up in 1999 to provide linkages between the community and WRC's river and catchment management work programmes. As a part of Project Watershed, subcommittees were set up for the five Waikato catchment zones – Taupo, Upper Waikato, Waipa, Central Waikato and Lower Waikato. The Coromandel Liaison Subcommittee was formed along similar lines in late 2004, and held its first meeting in May 2005.

The primary purposes of the catchment liaison subcommittees are:

- To provide advice to WRC on river and catchment related activities in particular.
- To provide input and feedback in relation to WRC programmes and activities.
- To assist with the exchange of information between WRC and the community.

Waikato Regional Council has an adopted Terms of Reference in place for all subcommittees. Appointments are made on a three yearly cycle following the Council's triennial elections. Subcommittee membership includes WRC constituent councillors, district councillors, and representatives from iwi, Department of Conservation, forestry, community groups and property owners.

4.3.2 Central Government agencies

There is a need to ensure that delivery of zone related works is consistent with central government legislation and policy. Central Government also plays a direct role in activities that both influence and are influenced by river and catchment management. Changes in Government policy such as climate change should be incorporated into the decision making process to ensure future proofing of flood protection schemes and related programmes.

The Coromandel Zone programme works closely with the Department of Conservation, the Ministry of Civil Defence Emergency Management and other Government departments as outlined below.

Department of Conservation

The Department of Conservation (DOC) administers conservation land such as parks, reserves and stewardship land on behalf of the Crown. Public conservation land is typically managed by DOC for a mix of biodiversity, historic and recreational values. The relationship with DOC is of key importance within the zone, since DOC manages around 30 percent of the total land area on the Coromandel Peninsula.

Management activities on conservation land include the control of weeds and animal pests, and fencing and planting. As part of its responsibility to manage for the benefit and enjoyment of the public, DOC develops recreational and educational opportunities and maintains access to public conservation land. Threatened species recovery work is often focused on conservation land because these areas have a greater level of protection and ongoing security for these species is therefore more assured. Other activities managed by DOC include threatened species, alien and invasive species, and permits, concessions and advocacy.

DOC is the key partner in the Peninsula Project in terms of possum and goat control. WRC and DOC, through a multi-agency project team, have carried out animal pest control on Crown and private land between the Kauaeranga Valley and Coromandel town since 2004. The project was established as a part of the mitigation response to the Thames Coast Weather Bomb and flooding in 2002. This highly successful work has now entered a maintenance phase and the agencies will continue to ensure that pest numbers are kept at low levels to ensure ongoing vegetation recovery and catchment stabilisation.

Aside from DOC'S management responsibilities and roles within the Coromandel Zone, staff sit on the Coromandel Liaison Subcommittee and are part of the decision making process within the zone. This enables synergies and alignment between both WRC and DOC in regard to respective responsibilities in

sustaining the environment within the zone, particularly the management of the lakes and wetlands.

Ministry of Civil Defence Emergency Management

The Ministry of Civil Defence and Emergency Management (MCDEM) has a lead role in making New Zealand and its communities resilient to hazards and disasters. The overarching strategy for achieving resilience to hazards and disasters is through a risk management approach to the four "Rs" of:

- Reduction
- Readiness
- Response
- Recovery.

The role of MCDEM is to:

- Provide strategic policy advice on New Zealand's capability to manage and be resilient to the social and economic costs of disasters
- Ensure the establishment of structures to provide the capability to manage and respond to disasters in New Zealand
- Provide support to sector stakeholders in their delivery of civil defence emergency management
- Ensure a co-ordinated approach, at both national and community level to planning for reduction, readiness, response, and recovery;
- Manage central government response and recovery functions for large scale events that are beyond the capacity of local authorities.

The vision for MCDEM is a "Resilient New Zealand: communities understanding and managing their hazards."

MCDEM has played an active role in the Peninsula Project since the response to the Weather Bomb event in 2002. Following the response to the event, MCDEM has supported the "Business Case to Central Government" for recovery assistance. Waikato Regional Council reports on Peninsula Project progress to MCDEM on an annual basis.

New Zealand Transport Agency

The role of the New Zealand Transport Agency (NZTA) is to help New Zealanders travel reliably and safely, and to grow the country's economy by investing in moving people and freight. NZTA:

- Plans and delivers national transport networks
- Supports the development of local networks
- Works to make public transport and freight networks more effective
- Improves road safety.

WRC works closely with NZTA in a partnership role on projects such as the Te Puru bridge replacement, on future infrastructure works where resource consents are required, and to ensure that roading works do not impede or impact on the performance of local flood protection schemes

As part of an agreement, WRC manages bank stabilisation works adjacent to highways and charges NZTA for the cost to maintain those works on an annual basis.

Ministry for the Environment

The Ministry is the Government's principal adviser on the environment in New Zealand and on international matters that affect the environment.

As the Ministry for the Environment is not involved in day-to-day environmental management, MfE focuses on providing:

- Environmental management systems, including laws, regulations and national environmental standards
- National direction through national policy statements and strategies
- Guidance and training on best practice
- Information about the health of the environment.

The outcomes MFE are working towards are that:

- New Zealand's air, water, land and built communities are healthy.

- New Zealand is able to capitalise on its natural environmental advantages.
- New Zealand's natural resources are managed effectively and New Zealanders use resources sustainably.
- Risks to people, the economy and the environment from pollution, contamination and other environmental hazards are minimised.

Ministry of Fisheries

The primary role of the Ministry of Fisheries (MFish) is to ensure that fisheries resources are used in a sustainable way while maintaining aquatic ecosystem health. This is achieved through education, research and enforcement. Managing fisheries resources includes managing activities related to (i) customary, recreational or commercial purposes including land-based aquaculture; (ii) special permits; and (iii) aquatic transfers.

The Fisheries Act 1996 provides the framework for managing aquatic life which includes any species of plant or animal life that inhabits water in any stage of its life history. The purpose of the Act is to provide for the utilisation of fisheries resources while ensuring sustainability. MFish does not directly manage sports fish, whitebait or unwanted organisms.



4.3.3 Community

There are around 23,000 ratepayers in the Coromandel zone. Waikato Regional Council works closely with the community, providing opportunity for involvement in local decision making processes.

The information gathered from local communities assists WRC in developing a range of planning and decision making tools and in ensuring the community is engaged in decision making. The catchment liaison subcommittee has an important role in this process.

Agency/community partnerships are key to the way in which Waikato Regional Council engages with communities, being important mechanisms for information sharing, funding support and achievement of outcomes on the ground.

4.3.4 Forestry

Around 12 percent of the Peninsula is in production forestry. While there are a number of forests on private land the largest involve Crown land leased to Ernslaw One and Matariki Forests. It is anticipated that these Crown lease lands will be transferred to Hauraki Iwi upon conclusion of the Hauraki Treaty Settlement process. Currently, a forestry representative sits on the Coromandel Liaison Subcommittee.

4.3.5 Tangata whenua

As set out elsewhere in this document, the relationship between tangata whenua and WRC is an important one, and is expected to develop and change as part of co-management and Treaty Settlement processes. When the Peninsula Project was established, WRC and the project partners made a commitment to work with tangata whenua of Hauraki to ensure the mauri of the Peninsula is sustained. The Hauraki Maori Trust Board has played a key role as a partner in the project and providing linkages to iwi on the Peninsula. Particular guidance has been taken in the management of the Peninsula Project from the document ‘Report to Environment Waikato on the Peninsula Project’, prepared by the Hauraki Maori Trust Board in 2003.

WRC will continue to work with local Iwi to ensure the traditional role of iwi and hapu as kaitiaki is respected and reflected in the implementation of work programmes.
Section 5 of this plan provides further information about WRC’s relationships with Iwi on the Coromandel Peninsula. The current negotiations between the Crown and the Hauraki Collective with respect to Treaty Settlement may have an impact on some WRC processes within the Zone. WRC is currently working with the Office of Treaty

Settlements and Iwi in this regard and further information on the Treaty Settlement is outlined within section 5.3.

4.3.6 Territorial authorities

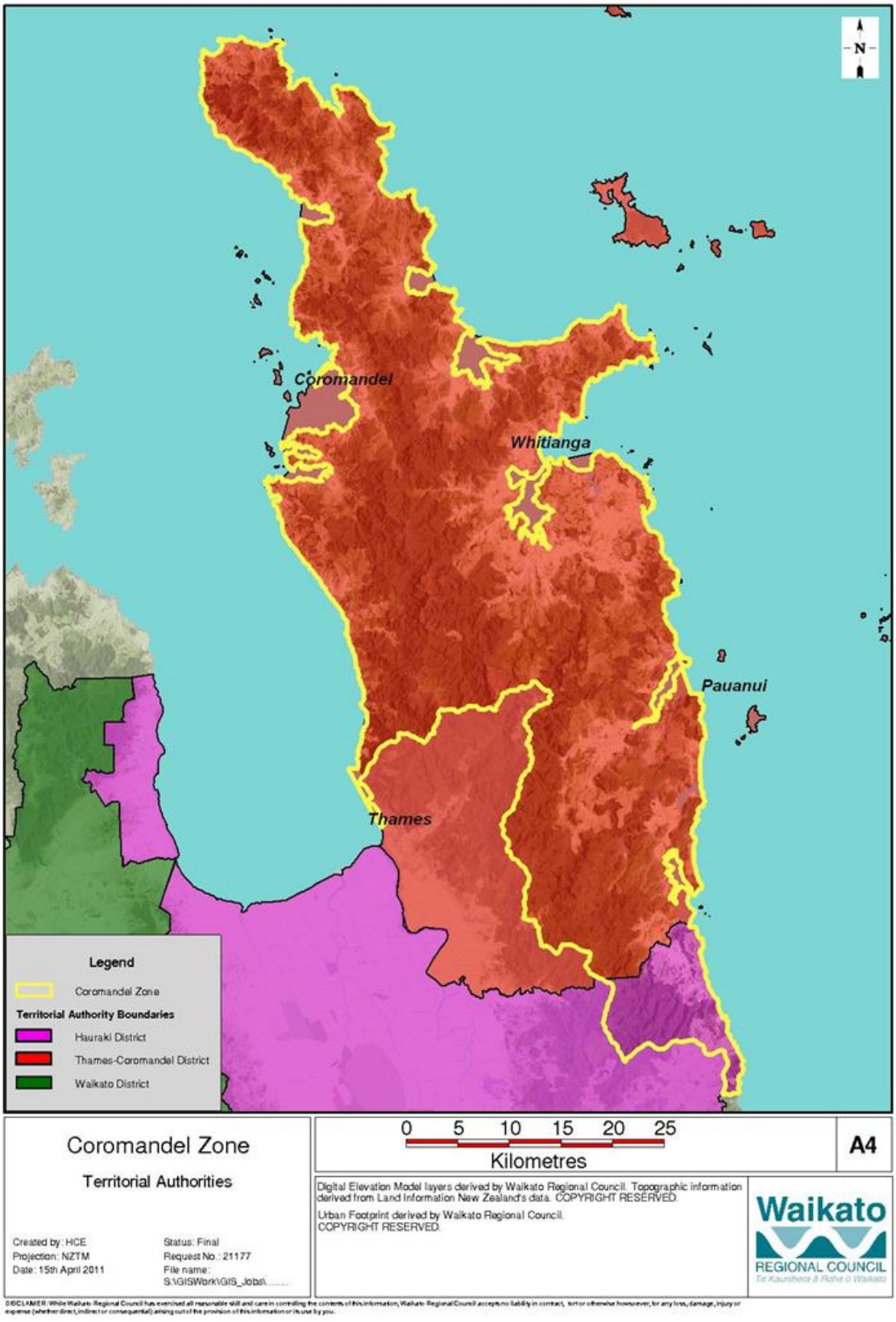
Territorial authorities with boundaries in the Coromandel Zone are Thames Coromandel District Council and the Hauraki District Council.

Staff work with the district councils in relation to the following:

- Obtaining district council resource consents where required, to maintain local flood protection works.
- Through service level agreements, maintaining and managing networks associated with local flood protection schemes.
- Mitigating flood risk and planning.
- Representation on catchment liaison subcommittee.
- WRC may be an affected party in terms of resource consents.
- Input to local district planning processes.
- Community boards in relation to local issues and initiatives.
- On joint projects e.g. Coromandel Blueprint and local area blueprints.

The relationship of the Coromandel Zone to Territorial Authority boundaries is shown in Figure 6.

Figure 6 Relationship of Coromandel zone to territorial authorities



4.4 Issues and trends of significance to the zone

A number of regionally significant issues and trends have been identified for river and catchment management activities[16] including:

- Natural hazards
- Water quality
- Soil erosion and sedimentation
- Biodiversity
- Pest management
- Climate change
- Growth
- Treaty of Waitangi settlements
- Land use change
- Potential local government restructuring.

Table 3 provides a summary of the key issues considered relevant to the Coromandel zone, the implications of these issues for river and catchment management and responses that may be appropriate.



Mataora Bay, Waihi

[16] Refer to "Overview of River and Catchment Services – Waikato region" document.

Table 3 Coromandel zone trends and issues

Issue	Description of issue	Implications	Potential response
Climate change (CC)	Sea level rise Increased rainfall Drought Economic effects.	Higher water tables Scheme design/Levels of Service Flooding Reduced ability to pay.	CC forecasts included in scheme design Monitoring Liaison with national agencies.
Growth	Auckland growth influence Regional growth Urban development.	Increased community expectations Pressures upon scheme assets resulting from encroachment/development Pressures on local stormwater disposal, water supply, coastal environment, recreational use of river margins etc.	Active involvement in the Blueprint Project and in development of Local Area Blueprints Liaison, networking and relationship building Information sharing and raising awareness.
Treaty settlements	Clarity and understanding needed as to future directions and implications arising from settlements.	Need to manage expectations Technical and expert capacity Understanding roles and responsibilities Operational relationships Partnering strategies developed Settlements may impact upon WRC's role and responsibilities.	Liaison with iwi authorities and implementation of co-management arrangements. Alignment of strategies may be required to fit tribal rather catchment boundaries Relationships developed and maintained.
Land use change	Change of land use, intensification of use.	Increased run off, flooding Sedimentation and erosion Decline in water quality.	Sustainable land management practices promoted Relationship building with large landholders such as Hauraki Iwi.
Local government re-organisation	Possible future re-organisation of local government.	Changes to governance, management and/or funding arrangements.	Monitoring of potential changes and assessment of possible implications for river and catchment management.
Transportation networks	Ongoing development.	Potential impacts upon river and catchment management and asset management.	Liaison with local authority planning staff and NZTA.
Natural hazards	Flooding Tsunami Earthquakes.	Flooding risks. Overtopping stopbanks, greater than 1-in- 100 year event. Stability of flood protection structures and other assets. Safety of people.	Management of flood risks. Raise community awareness as to emergency procedures and response.
Water quality	Decline in water quality.	Impacts on land use opportunities, recreational use, cultural values	Promotion of 'whole of catchment' management. Partnerships/liaison with other organisations and agencies.
Soil erosion/sedimentation	Erosion in upper catchments, stream bank erosion and sedimentation of waterways and	Scheme efficiency reduced.	Promotion of soil conservation programmes and

Issue	Description of issue	Implications	Potential response
	harbours Runoff from exotic forested areas in high rainfall events.	Loss of natural resource and reduced land use options. Increased mangrove growth in harbours and estuaries causing recreation, navigation and ecological issues.	sustainable land use practices.
Biodiversity	Ecological effects resulting from development and scheme operation – including those within specific catchments, riparian margins, wetlands and estuaries.	Loss of habitat and other ecological opportunities. Loss of cultural values. Loss of recreational opportunity.	Recognition of the biodiversity and ecological component of river and catchment and wetland protection programmes. Appropriate mitigation measures applied.
Community awareness	Potential decline over time in the level of understanding by the community of the presence, value and benefits of scheme protection.	Potential loss of engagement with community. Potential decline in support for river and catchment programmes. Potential objections to the payment of rates.	Community education, promotion and engagement. Regular community targeted information / publicity.
Community expectations	Increasing community demands as to services to be provided	Increased funding requirements. Pressures upon existing assets and scheme management.	Community engagement processes in place. Full evaluation and consideration of financial and management implications of increased (or changed) levels of service.
Sites of significance	Need for identification and protection of local sites of significance.	Potential loss of sites through work programmes. Failure to protect and enhance known sites.	Liaison and partnerships with other agencies and iwi.
Pest management	Threat to scheme plantings from possums and goats. Erosion and vegetation loss causing instability of upper catchments and increased runoff in smaller rainfall events. Use of 1080 as a method of possum control is controversial on the Coromandel Peninsula and has caused significant debate (e.g. the Coromandel Colville Community Board resolved in March 2011 to reaffirm its opposition to the use of 1080 in that ward). Plant pests such as willows, woolly nightshade and saltwater paspalum can undermine river and catchment works exacerbating erosion and flooding.	Damage to catchments, scheme plantings, and erosion of river and stream banks. Community concern over use of 1080 causing increased cost and potential loss of secondary benefit of improved biodiversity.	Ongoing or increased possum and goat control measures. Improved liaison and consultation with communities around the use of 1080, along with the use of alternative methods. Outline the preference of many in the community for alternatives to 1080. Liaison and partnerships with other groups e.g. QEII. Encourage and support new and existing community schemes.

4.5 Legislative and policy requirements

Waikato Regional Council has responsibilities for river and catchment management under various statutes the most important of which are:

- Local Government Act 2002
- Local Government (Rating) Act 2002
- Resource Management Act 1991 (RMA)
- Resource Management (Energy and Climate Change) Amendment Act 2004
- Soil Conservation and Rivers Control Act 1941
- Civil Defence Emergency Management Act 2002.

An overview of the requirements under each Act is given within the overview document "*River and Catchment Management in the Waikato region*".

There are three key requirements for asset management planning under the Local Government Act 2002, being:

1. Compliance with Schedule 10 requirements
2. Compliance with the Office of the Auditor General criteria for assessing the level of asset management
3. LGA 2002 Significance Policy.

Details of these requirements are outlined below.

4.5.1 Compliance with LGA 2002 Schedule 10 requirements

The Local Government Act 2002 (LGA 2002) has prescribed that levels of service must in future be developed from a community perspective. This is a fundamental change in the traditional approach.

Historically, levels of service have been expressed in a technical way that describes what Council has expected from its internal or external service providers (e.g. contractors). These need to be presented to the community in a clear, informed way as 'customer levels of service', and consultation used to obtain the 'community perspective'.

Specifically the LGA 2002 requirements for planning; decision-making, consultation and accountability which is inclusive of WRC's LoS and asset management planning;

- The LGA 2002 requires local authorities to consult their communities about funding and financial policies. It also requires consultation on the types and levels of services councils propose and how they will be paid for, and requires councils to explain to their communities the relationship between costs and levels of service provision.
- When a local authority undertakes public consultation, it must do so in accordance with the principles of consultation set out in Part 6, section 82. In brief, these principles require councils to –
    - provide easy-to-understand summaries of proposals and plans
    - identify who will be affected by decisions and encourage them to make their views known to the council - councils also must give reasons for their decisions
    - find out what all the practical options are for dealing with issues and carefully assess them.

Council's service delivery activities must meet the requirements of Schedule 10 of the Local Government Act 2002 Appendix 1a sets out a list of the Schedule 10 requirements, including significant negative effects, and includes references to the section in this document where these requirements are addressed.

4.5.2 Office of the Auditor General criteria for asset management

The office of the Auditor General (OAG) has established a set of criteria for assessing conformity to "Core" and "Advanced" levels of asset management (NAMS, 2006). The "Core" AM planning criteria is recognised as a minimum standard for compliance with activity provisions in the Local Government Act 2002. The advanced criteria describe OAG expectations for the management of complex and high value infrastructure with high associated risks.

The assessed compliance of the provisions in this plan with the OAG "Core" and "Advanced" criteria is set out in Appendix 1b. Council currently achieves "Core" requirements plus a significant part of the "Advanced" criteria. Appendix 3 also sets out the steps needed to address the current gaps between existing practice and "Advanced" management planning. With adhering to the OAG criteria the ZMP takes a wider catchment view than the AMP, in doing so Asset Management is embedded in the newly formed ZMP document. Where gaps between the current and desired plan exists these gaps will be identified and addressed as the ZMP moves from an intermediate to an advanced level plan.

4.5.3 LGA 2002 Significance Policy

Section 90 of the Local Government Act 2002 requires each Council to adopt a policy on significance, which:

- Sets out that Council's general approach to determining the significance of proposals and decisions in relation to issues, assets or other matters.
- Sets out any thresholds, criteria, or procedures that are to be used by the Council in assessing the extent to which issues, proposals, decisions or other matters are significant.
- Lists the assets considered by the local authority to be strategic assets.

Section 97 of the Local Government Act 2002 requires that the significance policy shall identify all of the assets the Council considers to be strategic, as defined in Section 5 of the Local Government Act 2002.

Waikato Regional Council has determined the River and Catchment Services assets to be strategic in nature.

Any decision to transfer ownership or control of a strategic asset or a decision to construct, replace or abandon a strategic asset cannot be made unless it has first been included in the LTP (and in a statement of proposal relating to the LTP).

All such actions relating to a strategic asset are automatically significant and must meet the requirements relating to significant decisions with the LGA, specifically Part 6, section 90.

4.5.4 Statutory documents

Waikato Regional Council must fulfil its statutory requirements under the following statutory documents:

Long Term Plan (LTP)

The LTP 2009-2019 sets out a number of priorities for the region of direct relevance to river and catchment management. These priorities are:

- Financial stability
- Sustainable agriculture
- Climate change
- Co-management of the Waikato River.

The LTP sets out four Groups of Activities. River and catchment services fall within the 'Safe and Resilient Communities' group which includes the sub activities of 'Catchment Management', 'Resilient Development' and 'Community Safety'. Community outcomes identified in relation to these services include:

- Land management practices that protect and sustain soil and land.
- Encourage planning and practices that protect and sustain productive resources.
- Hazards identified and managed.

Regional Policy Statement (RPS)

The RPS sets the direction for the Council in terms of promoting sustainable development and managing the regions natural resources. It provides an overview of the resource management issues in the region with policies and methods to achieve integrated management.

In terms of river and catchment services, the key polices of the operative RPS are:

- Reducing the effects of accelerated erosion and avoiding these effects where possible.
- Avoiding the discharge of contaminants onto land that may adversely affect the condition of the soil.
- Protecting productive soils through moisture management.

- Reduction in the adverse effects of river and lake bed instability on a catchment basis.
- Managing extractions, structures, water level fluctuations and surface water activities.
- Improvement of water quality through riparian management.
- Protecting significant flow regimes and modifying flow regimes where necessary.
- Protecting the mauri of water by minimising contaminants.

Waikato Regional Plan (WRP)

The Waikato Regional Plan contains policies and rules that enable the Council to meet its resource management objectives. The regional plan must be in accordance with the RPS and therefore contains similar policies.

The plan contains modules covering Matters of Significance to Maori, Water, River and Lake Beds, Land and Soil, Air, and Geothermal Resources. Those of particular relevance to river and catchment management are Water, River and Lake Beds and Land and Soil. Matters of Significance to Maori are also important.

The objectives identified in the relevant chapters of the WRP that have implications for river and catchment management include those relating to preserving the natural character of lakes, rivers and their margins, controlling the damming or diverting of water, erecting and maintaining structures in water bodies, disturbing the beds of lakes and rivers and managing erosion.

The rules within the WRP can also assist in the effective delivery of river and catchment services. These works and services need to be aligned with regional policy in order to apply rules to reduce soil erosion and avoid discharges of contaminants to watercourses. The rules may also permit activities that help to provide flood protection services and manage emergencies.

District plans

Waikato Regional Council must also comply with any relevant rules in district plans for each local authority when delivering their services. Applications may be required for resource consents for structures, earthworks or other activities.

4.5.5 Bylaws

Waikato Regional Council has the power to make bylaws under Section 145 of the Local Government Act. Bylaws are rules or regulations made by the Council to protect the public from nuisance, protect, promote and maintain public health and safety and to minimise the potential for offensive behaviour in public places. The majority of river and catchment services are governed by legislation, as set out in the previous section. However, the Navigation Safety bylaw and relevant District bylaws have implications for these services.

Bylaws protect river and catchment management assets by restricting people from damaging structures or accidentally or deliberately blocking drainage channels, indirectly assisting Waikato Regional Council in the efficient delivery of river and catchment services.

4.5.6 Consents

An important requirement of the Resource Management Act 1991 is the duty upon Waikato Regional Council as a service provider to avoid, remedy and mitigate the adverse effects of its activities on the environment. This duty applies to all works and services, including river and catchment activities. In order to fulfil these obligations, Waikato Regional Council obtains resource consents for certain works and services activities as required under regional and district plans.

A Table showing the resource consents that are currently held by WRC in relation to river and catchment management activities in the Coromandel Zone is shown in Appendix 1c. Resource consents stipulate a number of conditions, particularly those relating to monitoring and often the consent holder is required to report on compliance with those conditions.

4.5.7 Standards and guidelines

In addition to the legislative requirements, there are also a number of standards and guidelines that impact on how river and catchment services are delivered in the zone. Some of these standards are already used as part of the existing service delivery, while others provide a benchmark for future service delivery in the Council. These standards and guidelines are set out in Appendix 1d.

4.6 Business processes

4.6.1 Business systems

Conquest II – business functionality

WRC uses the Conquest II Asset Management System as the primary asset management information tool. Conquest is a hierarchical system that holds information on all assets and their components. Data held includes asset attributes, age, condition, values, estimated remaining life and expiry dates etc. Categorisation of assets into types is also hierarchical and fully customisable, including attribute fields.

Both the quality and quantity of information has improved significantly since the first Asset Management Plan was adopted in 1997. Generally, the inventory of assets contains good quality data and all assets are identified.

The weakest area of information currently is historic maintenance costs. While gross maintenance costs are recorded, the degree of breakdown for different activities and different types of assets is insufficient to allow accurate identification of historic activity/asset unit costs at this stage.

WRC currently uses the following business systems for the management of the Coromandel Zone. Appendix 2a identifies the cornerstone applications by product and business function.

WRC has developed its IT infrastructure around a number of key products that provide a platform for all IT applications. Table 4 below sets out the IT applications used by WRC.

The quality of management of a zone and improvement of asset management practices/plans is dependent on the accuracy of the underlying data used and the resulting assumptions.

Data quality

Table 4 Information quality of WRC applications

Data	Information source	Data quality
Asset attributes (size capacity, age etc)	Conquest II	Good
Asset location	Conquest II/GIS	Excellent
Condition data and history	Conquest II	Excellent
Performance data and history	Conquest II	Good
Asset valuation information (ORC, ODRC, depreciation etc)	Conquest II*	Excellent
Historic maintenance activities	Manual records	Fair-Good
Historic maintenance costs	Financials	Fair

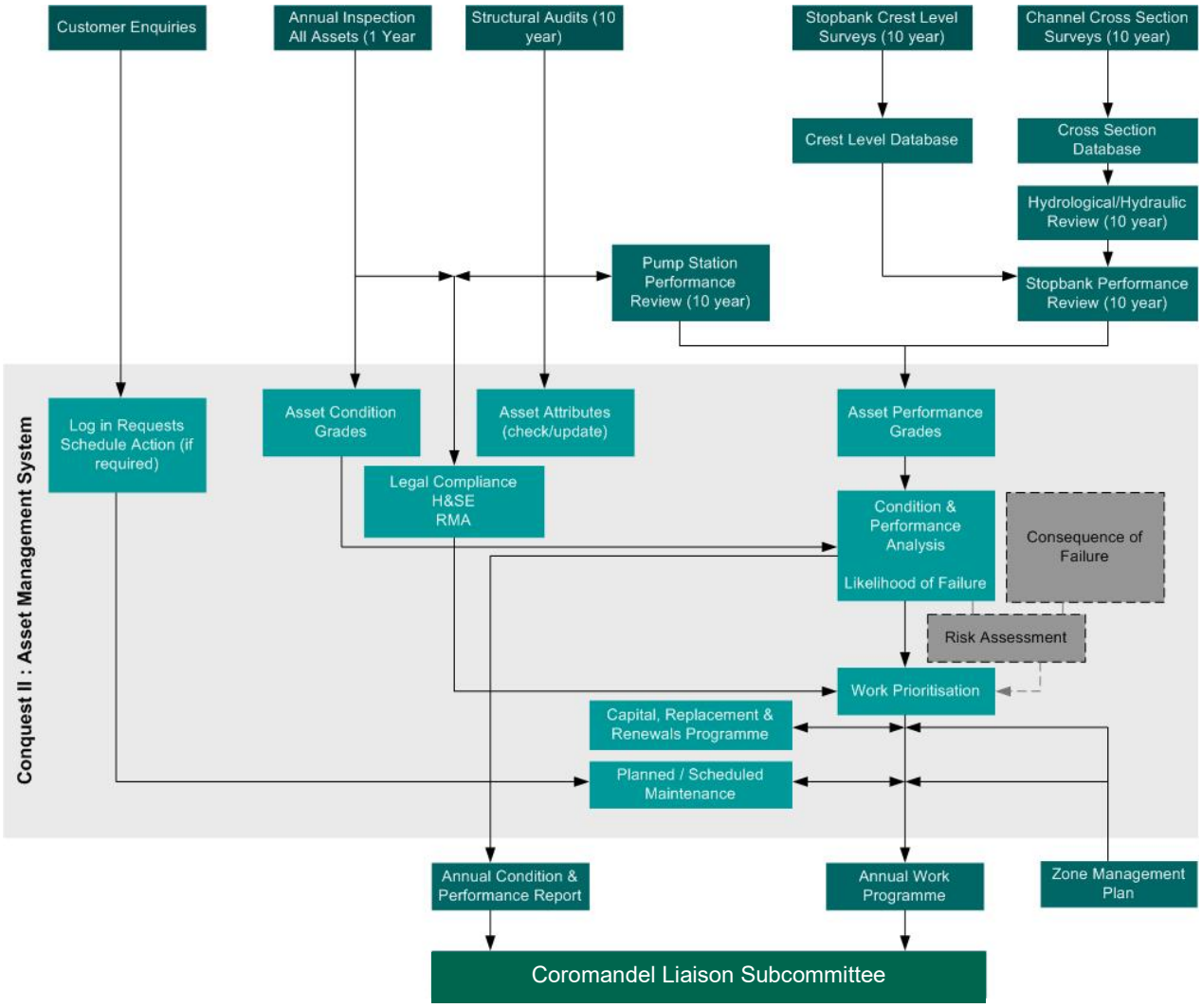
4.6.2 Asset hierarchy

WRC uses the Conquest II Asset Management System which is a hierarchical system that holds information on all assets and their components. Data held includes asset attributes, age, condition, values, estimated remaining life and expiry dates etc. Categorisation of assets into types is also hierarchical and fully customisable, with customisable attribute fields. The asset type hierarchy developed by WRC for flood protection assets is shown in Appendix 2b.

Zone and asset data and knowledge processes

The business functions currently and potentially supported by the Conquest II system are set out in Figure 7. It should be noted that the information flows and processes within Figure 7 are generic to the management of all zones, and not all of these processes apply to activities within the Coromandel Zone.

Figure 7 Basic information flows and processes



4.6.3 Asset life cycle and maintenance

Maintenance plans have been developed for each of the zones operated by WRC. These plans outline the maintenance activities that are required to ensure the agreed levels of service for each scheme are met and to meet the requirements for typical river flows.

Due to the nature of these assets and their main purpose during periods of high flow or flooding, additional works may be required.

Lifecycle activity summary

A breakdown of all the major lifecycle management activities is shown in Table 5.

Table 5 Coromandel zone lifecycle management activities

Category	Activity	Description	Frequency
System monitoring	Condition assessment	Inspection of all catchment, river system and assets, and assessment of the its overall condition and maintenance needs	1 year
	Cross section surveys	Survey of main river channel cross sections where flood protection works are in place	10 years
	System hydrological/hydraulic Performance Review	Technical review of the river system and associated stopbanks ability to convey the design floods to the levels of service	10 years

Category	Activity	Description	Frequency
	Crest level surveys	Survey of the actual stopbanks crest levels and assessment of settlement and deterioration:	10 years
River and stream maintenance	Blockage and debris removal	Removal of debris and blockages in rivers and streams	As required
	Erosion control	Planting and layering of erosion protection vegetation along eroded sections of rivers and streams	As required
	Weed control	Spraying of pest plants along river and stream channels	Annual
Structures maintenance	Stopbanks and timber floodwalls		
	General maintenance	Minor repairs and upkeep	As required
	Renewal	Reconstruction and topping of banks due to settlement and other major damages	15 -30 years
	Consents compliance works	Environmental monitoring, surveys, catchment works and reporting on system performance as required by consents conditions	1 year
Other assets such as spillways	Overview	Inspection of structures and identification of maintenance needs	1 year
	Routine maintenance	Minor maintenance works to ensure operational readiness	As required
	Replacement	Replacement and reconstruction for settlement and asset deterioration	30-60 years
Flood management	Flood response	Undertake continuous system monitoring during all flood and extreme weather events	Ongoing
	Urgent maintenance	Undertake works to control seepage and reduce risk of asset failures Undertake urgent maintenance works in response to failures during significant flood events	As required
	System review	Following floods, compile information, review asset performance and update the maintenance works programmes	As required
Risk management	Insurance	Council is a member of the Local Authorities Protection Plan (LAPP) insurance. All valued assets are insured above a minimum excess, for events exceeding 100 yr (1% AEP).	1 year
	Disaster recovery fund	Council maintains a disaster fund to support system and assets maintenance in events exceeding 20-year (5% AEP).	1 year

Maintenance plans

Maintenance plans have been developed for the zone; these plans outline the maintenance activities that are required to ensure the agreed service levels are met. Table 6 summarises these plans.

Table 6 Maintenance plans

Assets	Actions	Frequency	Average annual cost[17]
Embankments	Condition survey	Yearly	
	Crest level survey	5 - 10 yrs	
	General maintenance	10 yrs	
River channels	Condition survey	Yearly	

[17] Note that costs were unavailable at the time of writing, but have been flagged for addition as part of the improvement plan in Section 10.

Assets	Actions	Frequency	Average annual cost[17]
	Cross-section survey	10 yrs	
	General maintenance	Ongoing	
Catchment services	Catchment management	Ongoing	
	Catchment maintenance	" "	
	Catchment new works	" "	
Scheme management	General management and planning	Ongoing	
	Customer services	" "	
	Liaison subcommittee reporting	" "	
	Catchment Services Committee reporting	" "	
	Data maintenance	" "	
	Condition and performance reports	" "	
	Investigations and design	" "	
	ZMP reviews	" "	
	Asset valuations	" "	
	AM development	" "	
	Others (accommodation, communications & electronic documentation)	" "	
	Rates collection	" "	

4.6.4 Business continuity

To achieve sound business continuance planning, WRC is in the process of developing a Business Services Continuity Plan. This will provide a tool to effectively react and respond to a crisis in a manner that ensures that its activities, provision of services and staff well-being are not unduly affected.

This plan will be prepared to ensure the viability of WRC in the event of an emergency or other event that significantly affects council's ability to deliver effective services to stakeholders.

The key areas to be covered by the continuity plan include emergency management response for:

- Information Services including Customer Services and Records
- Databases and internet
- GIS
- Human resources
- Property & procurement
- Governance services
- IT operations.

4.6.5 Zone plan review and monitoring

To ensure WRC's zone plan remains useful and relevant the following on-going process of monitoring and review will be undertaken to ensure flexibility and responsiveness to strategic and operational needs. A process for monitoring the implementation of the plan and the achievement of planned improvements is also required as follows:

- Formal adoption of the plan by subcommittee and Council.
- Complete an Improvement Plan annually.
- Review and formally adopt levels of service to comply with community outcomes.
- Revise plan three yearly prior to ten year Long Term Plan to incorporate and document changes to works programmes, outcome of service level reviews and new knowledge resulting from the zone plan improvement programme.
- Quality assurance audits of asset related information to ensure the integrity and cost effectiveness of data collected.

- Peer review and audits to assess the effectiveness with which this plan meets corporate objectives. Periodic audits to assess the adequacy of asset management processes, systems and data and external audits will be undertaken to measure asset management performance against 'best practice'.

Table 7 outlines the procedures and timetables adopted to achieve these objectives and community outcomes.

Table 7 ZMP and AMP monitoring and review procedures

Process	Time	Action	Responsibility
Coromandel ZMP preparation	2011/ 2012	ZMP development	Division manager
		Adoption by liaison subcommittee (LSC)	Coromandel LSC
		Adoption by Council	Council
Zone programme planning and review	Annually	EOY confirmation that planned improvements achieved.	Zone Manager
Zone management plan review	Annually	Annual revision and update	Review author
	3 yearly	Explicit sign off on Improvement Plan targets	
		Review Improvement Plan	
Asset management team	Annually	Conquest II data quality assurance programme	Asset management programme manager
		Data collection programme	
		Implement process improvements	
		Condition and performance monitoring and data entry	
		EOY reporting on data completeness and accuracy	
		Conquest II process improvements	Asset Management Programme Manager
		Process improvement implementation strategy.	

4.6.6 Future demand

Demand forecast

The current levels of service are assessed as generally appropriate, and largely meet the current needs of the beneficiaries of the zone services. There is however demand for upgrading the level of service in some areas and providing new works in other areas. These will be managed in accordance with the demand management plan for the zone, and in consultation with key stakeholders and the zone liaison subcommittee.

The key demand drivers which could potentially place additional demands on the Coromandel zone are:

- Environmental factors
- Community expectations and perception of risk
- Legislation
- Increased awareness.

The changes in demand are expected to impact on asset utilisation and on the way assets are managed. This includes more frequent maintenance, refurbishment/renewal and upgrades of the scheme assets, as beneficiaries are expected to have less tolerance to damage from floods.

Environmental factors

Environmental factors which could impact on the levels of service include:

- Catchment land use change and changes in flood runoff patterns
- Climate change, increased heavy rainfall and rising sea levels.
- Economic effects of climate change (carbon management etc)
- Wetland and stream restoration

- Biodiversity
- Natural hazard events.
- Community expectations and perceptions of risk

Pressures can be expected to develop from a wide range of stakeholders with varying interests. In the longer term it is expected that the demands for services are likely to increase as use of protected land intensifies

- Changing economic returns from land driving demand for changes in land use and changes in levels of service.
- Increasing demand from the community and environmental stakeholders for environmental mitigation.
- Increased demand to maintain or increase access to wetlands, rivers and lakes.
- Community perceptions of the risks associated with climate change and other environmental risks will be a key determinant of the degree of future proofing adopted to deal with these contingencies.
- Increased community expectations driving a holistic approach to catchment management.

Legislation

Changes in legislation can have significant impacts on levels of service and the costs associated with these. In recent years the Resource Management Act, the Health and Safety in Employment Act and the Local Government Act have enhanced levels of service, but have also added significant additional compliance costs.

It is not possible to envisage what additional legislative changes may occur over the life of this plan, but it is likely that the bar will continue to be raised.

Increased awareness

There is now increased awareness of the river and catchment management issues within the zone due to the Weather Bomb in 2002, and subsequent development of the Peninsula Project in 2004. This increase in public profile for river and catchment services has resulted in higher expectations from the community of the level of service, and it is expected that this trend will continue.

Changes in technology

Future changes in technology are expected to lower the costs of service delivery and to enable improvements in monitoring and decision-making processes. These changes may include the following:

- Increased efficiency and reduced costs of earthmoving machinery resulting in reduced costs for capital, renewal, and maintenance activities. Increased fuel costs may however to some extent offset these cost reductions.
- Use of computerised data loggers/ and or telemetry for collecting monitoring information.
- Remote sensing of land and/or water related data. For example the use of LIDAR to obtain detailed ground level information.
- Improved use of computer modelling for hydraulic assessments and flood forecasting.
- Greater coverage of rainfall gauges and improved flow information as measurement technology becomes cheaper.
- Improved understanding of the effects of climate change and the Southern Oscillation that affects La Niña and El Niño climate patterns.
- Electronic equipment and telemetry for pump stations and floodgate monitoring allowing improved responsiveness to equipment malfunctions, and improved procedures for identifying and prioritising maintenance.

Advances in technology may therefore increase the reliability of assets, improve responsiveness to malfunctions and increase the cost effectiveness of maintenance and scheme management.

Demand management plan

The objective of demand management planning is to modify customer demand for services so as to maximise the use of existing assets and to avoid or defer the need for new assets or services. Community demand for catchment services is largely driven by economic and environmental considerations and changes in internal and external factors as follows:

- As the intensity of land use and economic returns from protected land increases, the tolerance for flooding reduces, and there is therefore a demand for increased services. Increased returns from the land also provide a means for funding increased services.
- Environmental considerations and the resource management act place constraints on the ability to develop new services (ie develop unprotected land) and to increase the level of service for existing protected land.
- Internal factors - there may be internal change (such as increased catchment works near harbours) which results in demand for increased levels of service.
- External factors which may drive demand include changes in weather patterns (eg climate change), and changes in land use throughout the catchment which may result in increased runoff and flooding.

Non-asset solutions can include insurance and change of land use. It is considered that the most effective way of managing future demand for both new services and increased levels of service is via a multi faceted approach as set out in Table 8 .

Table 8 Demand management instruments

Component	Tool	Description
Legislation and regulation	Resource Management Act 1991	Land use planning. Discourage/prevent development of flood and erosion prone areas. Control types of development within existing protected areas. Discourage/prevent environmentally unsustainable development
Financial and economic	Funding policy	Costs of the works and services are borne by the beneficiaries in proportion to the degree of benefit received. Directly benefiting landowners required to fund 75% of the capital cost of new or upgrade works Require new works to be economically and technically sustainable
Education	Liaison subcommittee Customer service	Educate community in order to manage expectations for new or upgrade works. Encourage less intense land uses in some areas

4.6.7 Flood management

Waikato Regional Council has responsibilities for flood management across the region. River and catchment management has strong links with flood management in the Coromandel Zone due to the climate and physical nature of the zone. WRC is responsible for two interrelated flood management functions as outlined below.

Maintenance of the flood warning and telemetry system

The flood warning and telemetry system continuously monitors river levels and rainfall at over 50 automated recording sites throughout the region. Information from the system is used to warn landowners and communities about floods, collect data to improve the accuracy of flood prediction, co-ordinate flood response, and maintain flood protection works.

The nature of the Coromandel Peninsula is one of many short, steep catchments prone to very high rainfall. This means that the widespread use of automated rainfall and flood recording sites is of limited value, due to the speed with which flooding occurs.[18] However, two rainfall gauges at Castle Rock and the Pinnacles provide a good indication of rainfall across the zone. The use of tools such as the Metservice weather radar is very important in the Coromandel Zone, and this

[18] There is often inadequate time to detect floods, transmit the information and issue warnings via the telemetry system.

tool is frequently used in flood prediction and management.

Flood response

During flood events, WRC staff undertake a series of activities in response to the event. These include monitoring of flood levels, forecasting river flows and levels and providing information to the general public and key stakeholders. To do this WRC provides regular updates of river levels, flow and rainfall measurements on the WRC website.

On the ground, staff undertake inspections of flood protection structures and river channels throughout the event. Performance of the assets is recorded, and actions to reduce risks of failure are carried out – which may include sand bagging low spots in stopbanks, and ensuring that minor debris and obstructions are removed from the river channels.



Stream works at Manaia

Reports on flood protections works and river channel performance, remedial actions and response to inquiries are documented. Key stakeholders are kept informed of all the operations and risks at all times - from the early stages of the floods onwards. The Emergency Management Officer then acts according to a set of procedures as defined within WRC's Flood Warning Procedures Manual. This includes providing warnings to district councils, land owners and key recipients' by telemetry radio links and supported by media releases to the public.

4.6.8 Emergency management

Civil Defence Emergency Management

WRC and Territorial Authorities have responsibilities for planning and response to emergencies as members of the Waikato Civil Defence Emergency Management (CDEM) Group. WRC plays a coordinating role by managing the CDEM Group Emergency Management Office and Group Emergency Coordination Centre. In the event of a large, ongoing flood event, WRC has CDEM coordination responsibilities as well as flood management responsibilities

Lifelines utilities

Lifelines include services such as water, power, telecommunication and transportation networks. Plans need to be put in place to ensure damaged lifelines are restored quickly following unexpected emergency or natural hazard events.

Lifelines are the essential 'utility' services, which support the life of the community. These services include water, wastewater, stormwater, power, gas, telecommunications and transportation networks.

Flood protection and river management measures help to avoid damage to roads and closure that may isolate certain areas. They also help to avoid damage to other essential services such as power, gas and telecommunications supply that can be affected by flooding.

5 Relationships with iwi

5.1 Overview

WRC acknowledges the special position of tangata whenua within the region, and recognises the need to work with Iwi/hapu in river and catchment management. WRC has undertaken and continues to undertake a number of processes aimed at recognising the role of tangata whenua in river and catchment management within the region.

A summary of how WRC works with tangata whenua in river and catchment management across the region is provided within the overview document "*Overview of River and Catchment Services – Waikato region*".



Planting day on the Manaia River

5.2 Hauraki iwi

The Hauraki region stretches from the Mahurangi Peninsula in the north to Ngā Kurī-a-Whārei, a sunken reef near Katikati, Tauranga. It includes the Tāmaki isthmus, Te Hapū-a-Kohe, the Piako, Ōhinemuri and Wairoa districts, the Coromandel Peninsula and Whangamatā. While dominated by the Marutūahu confederation tribes, many other tribes live in the region including Te Patukirikiri, Ngāti Hako, Ngāti Huarere, Ngāti Hei, Ngāi Tai, Ngāti Pūkenga and Ngāti Rāhiri.

The Marutūahu Confederation
Ngāti Rongoū, Ngāti Tamaterā, Ngāti Whānaunga, Ngāti Maru and Ngāti Pāoa make up the Marutūahu confederation. Its people are descended from Marutūahu, who came from Kāwhia on the west coast of the North Island.

The children of the two sisters Marutūahu married are the ancestors of the tribes who eventually conquered the whole Hauraki region. Marutūahu's second son, Tamaterā, gave his name to the dominant tribe, Ngāti Tamaterā. His eldest son, Tamatepō, was the ancestor of the Ngāti Rongoū people. Because Tamatepō was overshadowed by Tamaterā, his descendants did not achieve prominence until the time of his grandson, Rongomai. Whānaunga, Marutūahu's third son, was the ancestor of Ngāti Whānaunga. Marutūahu's eldest son from his second marriage was Te Ngako. Te Ngako married his half-brother Tamaterā's daughter. After further intermarriage between the families of Te Ngako and Tamaterā, the ancestor Rautao was born, and the tribe of Ngāti Maru emerged. Ngāti Pāoa took their name from the Waikato ancestor Pāoa, who married a granddaughter of Tamaterā.

Te Patukirikiri
The people of Te Patukirikiri are named after their victory from a famous battle where the only weapons they had on hand were rocks and stones (kirikiri). Their ancestral leader, Kapetaua, originally belonged to the Wai-o-hua tribe of the Tāmaki isthmus.

Ngāti Hako

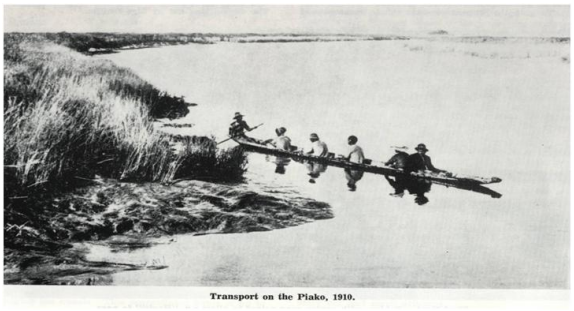
> *"Ko Hako te toi tu o Hauraki…Te toi whenua, te toi noho mai ki tenei pito o te tara o te ika*
> *i mua i te hekenga o nga waka ki Aotearoa"*

It is acknowledged that ancient lines of genealogy for Ngati Hako are traced through the decent from Te tini a Toi, Toi te Huatahi, and Turehu. Ngati Hako recites that its tupuna Hako arrived here on a Tohora (whale). Ngati Hako continues to maintain a special relationship with Tohora.

For Ngati Hako the waterways of Waihou, Ohinemuri and Piako are significant taonga.

These taonga provided a vast water network that sustained our Marae, cultivations, and papakainga. The waterways are a source of spiritual life for Ngati Hako iwi and hapu. The waterways provided access to a wealth of resources for trading and sustenance. They also provided a network of water trails that allowed for freedom of movement by our people across the wetlands to both the eastern and western mountain ranges of the plains these water ways provided the highway of movement in and out of Hauraki. For Ngati Hako the waterways insured that we were able to practice our traditional customs and maintain a balance of

Rangatiratanga. Ngati Hako today maintain four marae along the water ways of Waihou, Piako and Ohinemuri along side of numerous papakainga.



Transport on the Piako, 1910.

Ngāti Huarere
The Te Arawa canoe landed at various points around the Coromandel Peninsula, and left both people and place names. Ngāti Huarere took their name from Huarere, grandson of Tamatekapua, the captain of Te Arawa. Tamatekapua was buried on Moehau Mountain, which is known as Te Moengahau-o-Tamatekapua (the windy sleeping place of Tametekapua).

Ngāti Hei
Ngāti Hei trace their descent from the Te Arawa canoe, and from Hei, the uncle of Tamatekapua. They survived conflicts with the Marutūahu people and Ngāpuhi, and are now located around Whitianga-o-Kupe (Whitianga Harbour).

Ngāi Tai
The Ngāi Tai people of Hauraki are related to Ngāi Tai in the Bay of Plenty through three sisters, Te Raukohekohe, Motu-i-tawhiti and Te Kaweinga, who all married men from Hauraki. Both Ngāi Tai tribes trace their lines back to the Tainui canoe.

Ngāti Pūkenga
Ngāti Pūkenga origins can be traced to the Mataatua canoe. They moved north from Tauranga to the Coromandel Peninsula in the 19th century.

Ngāti Rāhiri
The ancestor Rāhiri arrived at Whakatāne on the Mataatua canoe and then accompanied it on its journey north. He later returned to Whakatāne via Hauraki. Members of his party decided to stay in Hauraki and took the name Ngāti Rāhiri.

5.3 Whaia te Mahere Taiao a Hauraki – Hauraki Iwi Environmental Plan

The preparation of this document was lead by the Hauraki Maori Trust Board, and completed in 2004. The objectives of this plan were to identify resource, geographic and process based issues of concern to Hauraki Whanui and a means for addressing those issues. The plan outlines the key environmental issues for Hauraki Iwi and the goals sought, many of which align with the river, harbour and catchment work programmes managed by WRC.

The following has been taken from the Executive Summary of the Hauraki Iwi Environmental Plan and provides a summary of the resource and geographic based issues identified through its development:

Domain	Issues
Papatūanuku	Loss of wetlands, peat lands, coastal dune lands, riparian lands, productive capacity, contaminants onto land, erosion & sedimentation, growth & settlement, waste and extractive industries.
Ranginui	Air pollution, ozone depletion and climate change.
Tāne Mahuta	Loss of forest ecosystems native plants and animals. Animal and plant pests.
Tangaroa Rerenga Wai Māori	Loss of river & stream habitats, water pollution, water use and loss of fisheries.
Tangaroa Rerenga Wai Tai	Coastal pollution, habitat loss, shell fish depletion, impacts of ballast water, loss of productive capacity, coastal fisheries, whales, dolphins and seals, coastal management.
Rongomatāne	Wāhi tapu loss, loss of heritage sites, features, places & landscapes, current heritage management systems, accessibility to wāhi tapu

	and heritage sites and customary use, loss of traditional knowledge & practice and intellectual property rights and genetic engineering.

5.4 The Hauraki settlement

The Crown and Hauraki Iwi are currently in the process of negotiation towards settling shared historical Treaty claims in the Hauraki/Coromandel region. In 2009, Sir Douglas Graham presented the parameters of a Crown offer to claimant groups in Kapara, Tāmaki Makaurau and Coromandel-Hauraki.

Subsequently, the Hauraki Collective was formed and began meeting in April 2010. The iwi involved in the Hauraki Collective are Ngāti Hako, Ngāti Paoa, Ngāti Tamaterā, Ngāti Tara-Tokanui, Ngāti Porou ki Hauraki, Ngāti Whanaunga, Ngāti Hei, Ngāti Maru, Ngāti Pukenga, Te Patukirikiri, Ngāi Tai ki Tāmaki and Ngā Rahiri Tumutumu.

The "Hauraki Collective Framework Agreement" was signed by the Crown and the 12 iwi of the Hauraki Collective in October 2010. The agreement covers 12 Hauraki iwi, and outlines the process for ongoing negotiations towards settlement of shared claims, including possible elements of a settlement. The Framework Agreement is the Collective's first major negotiation milestone.

The Framework Agreement sets out:

- Offers to the Hauraki Collective of specific items of financial and commercial redress;
- A process by which the Crown and Hauraki Collective will negotiate further redress following the signing of this Framework Agreement; and
- The general scope, objectives and procedures for formal negotiations between the Crown and the Hauraki Collective.

The Agreement includes offers of redress including the right to purchase the Crown's interests in a number of forests and a right of first refusal over core Crown properties. The Agreement also acknowledges the cultural importance of Tikapa Moana (the Hauraki Gulf), Te Tai Tamahine (east coast of the Coromandel Peninsula), Te Aroha and Moehau maunga and the Waihou and Piako rivers.

The Framework Agreement will form the basis of negotiations towards an Agreement in Principle or similar documents.

5.5 Our relationship with Hauraki iwi

Waikato Regional Council has a range of formal and informal relationships with Hauraki Iwi. A selection of these is identified below:

- Memorandum of Understanding with the Hauraki Maori Trust Board (signed in July 200019)
- Waikato Regional Council and the Hauraki Maori Trust Board are partners in the Peninsula Project (established in 2004)
- Two members of the Hauraki Maori Trust Board sit on the Coromandel Liaison Subcommittee
- Memorandum of Agreement with Ngati Maru for River Maintenance works on the Thames Coast
- Representation on the Technical Working Group for the Hauraki Treaty Settlement
- Representation on the Technical Working Group for the Coromandel Blueprint project
- Joint projects at Manaia, Wharekaho and Tairua.

Disclaimer
To date only the Raukawa Charitable Trust and Te Kupenga o Ngati Hako have formally provided their tribal information to this report. All other information has been gleaned from the Te Ara, New Zealand Encyclopaedia website. A written request has been forwarded to the other Iwi Authorities within the catchment to seek their participation and once this has been received it will be updated accordingly.

[19] http://www.ew.govt.nz/PageFiles/9886/governance4.pdf

6 Coromandel zone assets

6.1 Introduction

The Coromandel Zone has numerous short rivers and catchments. This means that the services provided are a combination of both asset-related (such as flood protection) and non-asset related (such as harbour management and soil conservation).

While not significant in regional terms, the Coromandel Zone has a number of services based around infrastructural assets that provide flood and erosion protection to for communities.

Managing and maintaining these assets is a key component of river and catchment services. This section presents the lifecycle management plan for zone assets and includes:

- A description of the assets in physical and financial terms
- Key issues with asset management in the zone
- Operations, maintenance, and renewal and development strategies.

The asset categories of relevance to the Coromandel Zone are

- Embankments
- In-river structures
- Channels
- Soil conservation/Clean Streams.

In general the scheme assets[20] comprise:

- 695m of stopbanks
- 806m of timber flood walls
- 514m of timber flood walls with earth bulking
- 678m of riprap.

In addition to the above scheme assets, river and catchment management works and services are undertaken on:

- Approximately 313km of natural river and stream channels
- Approximately 700 ha of soil conservation and Clean Streams catchment works on private land.

[20] Those that are owned, managed, valued and depreciated by Waikato Regional Council

6.2 Work category definitions

Expenditure on infrastructure assets can be categorised into key areas, which are:

Operations and maintenance

Operations and Maintenance expenditure is that required for the day-to-day operation of the zone whilst maintaining the current levels of service.

Renewals

Renewal expenditure includes rehabilitation and replacement of assets. The objective is to restore an asset to its original level of service - as measured by for example, capacity or another required condition. Renewals expenditure forecasts cover the cost of asset renewal through its whole lifecycle through to disposal of the asset.

New capital works

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

The following figure illustrates the components of lifecycle management categories



Looking west across the Firth of Thames

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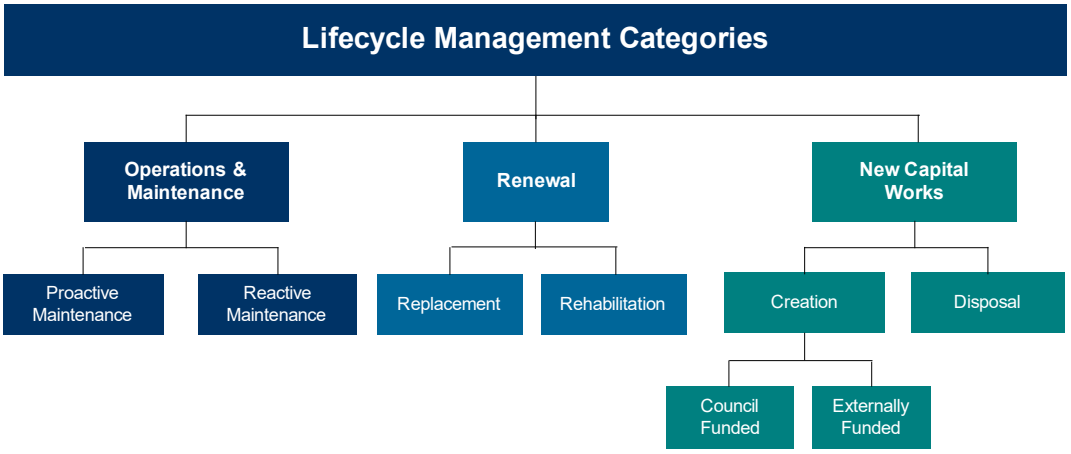
Figure 8 Lifecycle management categories



6.3 Overview of assets

6.3.1 Asset summary

All the assets associated with river and catchment services in the Coromandel Zone can be grouped under two service type categories:

1. River management and flood protection
2. Catchment management.

The following tables provide a summary of the asset types and categories, and an overview of the asset inventory within the Coromandel zone.

Table 9 Asset categories and types

Service type	Asset category	Asset type
River management and flood protection	Embankments	Stopbanks
		Timber flood wall
		Timber flood wall (with earth bulking)
	In-river structures	Riprap
	Channels	Rivers and streams
Catchment management	Soil conservation/Clean Streams	Fencing
		Planting/retirement

The valued assets within the Coromandel Zone have a total replacement value of $676,448, depreciated replacement cost of $708,214 and an annual depreciation of $14,068 as of 1 July 2011.

Table 10 Coromandel zone - asset inventory

Service type	Asset type	Qty	Unit	Optimised replacement value (ORC)	Optimised depreciated replacement value (ODRC)	Annual depreciation (AD)
River management and flood protection	Stopbanks	695	m	152,979	152,979	675

	Timber floodwall	806	m	41,040	36,115	1,640
	Timber floodwall with earth bulking	514	m	-21	-	-
	Riprap	678	m	482,429	519,120	11,752
	Rivers and stream channels	313	km	0	0	0
Catchment management	Soil conservation22	N/A	N/A	0	0	0
Total				676,448	708,214	14,068

[21] "-" indicates missing information
[22] Refer to Table 4 for a full list of catchment management works

Note that the valuation figures above do not reflect the full value of the assets listed. The reasons for this are discussed in Section 6.3.6 "Asset valuation".

6.3.2 Asset description and key issues

Embankments

Stopbanks, timber floodwalls and timber floodwalls with earth bulking are the only type of embankments that are classified as assets within the zone.

Stopbanks are compacted earth embankments built alongside rivers to provide protection to the bordering land from flooding. Timber walls with or without earth bulking are embankments that have the same function as stopbanks. They are used primarily in urban areas, where there is limited space for construction of full- size stopbanks.

Key issues

- Over time, settlement of stopbanks, which requires topping-up to maintain standards
- Ensuring that stopbanks and timber floodwalls are maintained to provide existing levels of service, in light of silting and/or aggradation of river beds, climate change and increased rainfall intensity.
- River and stream erosion of the "toe" (bottom) of embankments – particularly timber floodwalls
- In some areas, land ownership and access issues.

Embankments are the most significant river and catchment infrastructural assets within the zone. Asset condition is monitored by visual inspections, physical surveys and scheme reviews.

In river structures

The only structures that exist within the river channels in the zone are riprap.

Riprap (also known as rock armour) is rock or other material used in river and streambeds, to protect banks or structures from erosion. Riprap works by absorbing river energy, and is often placed at high velocity areas within river and streams – such as on the outside of river bends. Riprap is commonly used to protect other structures in the zone – particularly timber floodwalls, as these are often located close to the riverbed.

Key issues

- Damage from high river flows – normally undermining of the toe

Channels

Within the Coromandel zone, channels include the beds of natural rivers and streams. The condition of the waterway channels is generally monitored by visual inspections and physical surveys.

Key issues

- Excessive weed growth.
- Gravel or silt build-up depleting channel flood capacity
- Bank erosion.
- Channel blockages [fallen trees etc]
- Environmental issues such as sedimentation and pollution from non-point source activities.
- Pest and weed control e.g. invasive exotic species.
- Regular maintenance is required to ensure design capacity is maintained.

Natural channels are not valued as assets in financial terms for the purposes of asset management planning.

Soil conservation

The Coromandel zone is different to other zones across the region in that it has no Council-owned soil conservation assets, and no historical land improvement agreements.

Soil conservation includes work to protect and stabilise land in a catchment, promoting best land management practices that further enhance the protection of waterways, wetlands and bush fragments, maintaining catchments to provide high quality water resources for downstream users and reducing the effects of land-related hazards such as subsidence and erosion.

In the Coromandel zone, animal pest management is also a major component of soil conservation.

Council contributes funding towards a number of catchment management assets that contribute to soil conservation through the catchment management activity. In the Coromandel zone, these assets are all in either Crown or private ownership. Council maintains formal agreements with private landowners for the maintenance of soil conservation assets.

Table 11 provides a summary of these assets for the Coromandel zone.

Key issues

- Landowner change.
- Property subdivision.
- Changing land use.

Soil conservation areas are not valued as assets in financial terms for the purposes of asset management planning.

Table 11 Soil conservation/catchment works and Clean Streams summary – Coromandel zone

Compartment type	No. of compart-ments	Area (ha)	Fence length (m)	Stream-bank retired (m)	Average fence age (yrs)	Area planted (ha)	Average planting age (yrs)
Soil conservation/catchment works							
Indigenous retirement	39	238	24,651	22,702	4	24	3
Riparian retirement	76	169	48,235	44,867	3	18	3
Space planting	14	6	220		1	0	1
Stream bank erosion Control plantings	2	4	130	260	6	4	4
Wetland	24	13	5,888	4,328	4	11	4
Sub-total	**155**	**429**	**79,124**	**72,157**		**57**	
Clean Streams							
Indigenous Retirement	4	13	2,257	1,320	5	2	3
Riparian retirement	75	218	1,225		6	47	5
Stream bank erosion Control plantings	1	0	82,949	61,757	6		6
Wetland	14	35	6,566	5,031	5	22	4
Sub-total	**94**	**267**	**92,997**	**68,108**		**71**	
Total	**249**	**696**	**172,122**	**140,265**		**128**	

6.3.3 Data confidence and reliability

The following table provides the confidence framework from the National Asset Management Group's International Infrastructure Management Manual (NAMS IIMM) used to determine the confidence in the asset data used in this ZMP.

Table 12 Data confidence and reliability

Confidence grade	General meaning
Highly reliable	Data based on sound records, procedure, investigations and analysis, documented properly and recognised as the best method of assessment.
Reliable	Data based on sound records, procedures, investigations and analysis, documented properly but has minor shortcomings, for example the data is old, some documentation is missing, and reliance is placed on unconfirmed reports or some extrapolation.
Uncertain	Data based on sound records, procedures, investigations and analysis which is incomplete or unsupported, or extrapolated from a limited sample for which grade highly reliable or reliable data is available.
Very uncertain	Data based on unconfirmed verbal reports and/or cursory inspection and analysis.

The following table reflects the confidence in the asset data for the assets within the Coromandel zone.

Table 13 Overall confidence data –accuracy

Asset group	Highly reliable	Reliable	Uncertain	Very uncertain
Embankments			□✓	
Structures			□✓	
In river structures			□✓	
Channels			□✓	
Soil conservation/Clean streams			□✓	

Condition of the waterways is generally monitored by visual inspections and physical surveys.

Currently Council does not have sufficient information to accurately detail the completeness and reliability in the asset data for the Coromandel zone. The completion of Tables 14 and 15 below will occur as a specified task within the zone Improvement Plan.

Table 14 provides an indication of the overall data completeness for the Coromandel zone, and Table 15 provides a summary of condition and performance data reliability. Condition of the waterways is generally monitored by visual inspections and physical surveys.

Currently Council does not have sufficient information to accurately detail the completeness and reliability in the asset data for the Coromandel zone. The completion of Tables 14 and 15 below will occur as a specified task within the zone Improvement Plan.

Table 14 Overall data completeness

Asset group	60%	70%	80%	90%	100%
Embankments					
Structures					
In river structures					
Channels					
Soil conservation/ Clean streams					

Table 15 Condition & performance for critical and non critical assets

Asset type	Highly reliable	Reliable	Uncertain	Very uncertain
Embankments				
Structures				
In river structures				
Channels				
Soil conservation/Clean streams				

Condition and performance information has not been assessed for confidence or completeness.

6.3.4 Asset condition

Council has an asset register for all assets that contains:

- A definition of all assets including description and location
- Physical dimensions and capacity
- Age and replacement costs
- An assessment of asset condition.

The development and continued use of condition assessment data will allow preparation of verifiable predictive decay curves for particular asset types and hence permit informed prediction of remaining life.

Condition assessment & results
The condition assessment model in Table 16 should be the basis of assessing the condition of WRC's assets in the Coromandel zone.

Table 16 Typical condition rating model

Grade	Condition	Description of condition
1	Very good	Sound physical condition. Asset likely to perform adequately without major work for 25 years or more.
2	Good	Acceptable physical condition; minimal short-term failure risk but potential for deterioration in long-term (15 years plus). Minor work required
3	Fair	Significant deterioration evident; failure likely within the next 5 years but further deterioration likely and major replacement likely within next 15 years, Minor components or isolated sections of the asset need replacement or repair now but asset still functions safely at adequate level of service.
4	Poor	Failure likely in short-term. Likely need to replace most or all of assets within 5 years. No immediate risk to health or safety but works required within 3 years ensuring asset remains safe. Substantial work required in short-term, asset barely serviceable
5	Very poor	Failed or failure imminent. Immediate need to replace most or all of asset. Health and safety hazards exist which present a possible risk to public safety or asset cannot be serviced/operated without risk to personnel. Major work or replacement required urgently

6.3.5 Risk summary

Risk management is a key component of lifecycle management strategies. The primary risks to assets within the Coromandel zone are:

- Natural hazard events and the resulting impacts on zone assets

- Riverbank and hillslope erosion
- Sand and gravel management
- Stop bank/floodwall failure
- Animal pests
- Harbour sedimentation.

These risks have been identified as remaining high after treatment measures have been applied, and form the core components of the Risk Action Plan.

The details of all the risks to assets within the zone and risk management strategies are outlined within Section 8 and Appendix 4.

6.3.6 Asset valuation (2011)

The asset valuation summary is outlined in Table 17[23].

Table 17 Coromandel asset valuation - summary ($)

	Optimised replacement cost (ORC)	Optimised depreciated replacement cost (ODRC)	Annual depreciation costs
Embankments	194,019 (29%)	189,094 (27%)	2,316 (16%)
In-river structures	482,429 (71%)	519,120 (73%)	11,752 (84%)
Channels	0 (0%)	0 (0%)	0 (0%)
Council owned soil conservation assets	0 (0%)	0 (0%)	0 (0%)
Totals	**676,448**	**708,214**	**14,068**

Table 18 shows the asset valuation details by asset type.

Table 18 Coromandel asset valuation details by asset type ($)

Asset type	Optimised replacement cost (ORC)	Optimised depreciated replacement cost (ODRC)	Annual depreciation costs
Embankments			
Stopbanks	152,979	152,979	675
Timber floodwalls	41,040	36,115	1,640
Timber floodwalls with earth bulking	-	-	-
In-river structures			
Riprap	482,429	519,120	11,752
Channels	**0**	**0**	**0**
Soil conservation	**0**	**0**	**0**
Total	**676,448**	**708,214**	**14,068**

[23] Note the limitations of this information, as explained beneath Table 9.

Limitations of Valuation Information
It is important to note that the valuation information within Tables 17 and 18 is incomplete. The reason for this is that the valuation figures do not accurately reflect the total number of assets within the zone. This is due to the following reasons:

- Valuations are based on the number of assets contained within the Conquest asset management system, and this data is incomplete (due to the lag time between completion of assets and data entry into the Conquest system)
- New assets have been completed since the latest valuations were completed. Therefore, the total number of assets reported is greater than the number of assets valued.

Table 19 shows the variance between the total number of assets and the current valuation information.

Table 19 Variance between total number of assets and valuation information

Service type	Asset type	Total length	Length valued	Length not valued
River management and flood protection	Stopbanks	695m	360m	335m
	Timber floodwall	806m	40m	766m
	Timber floodwall with earth bulking	514m	0m	514m
	Riprap	678m	618m	60m

Table 19 indicates that the majority of assets within the Coromandel Zone do not have a current valuation. A little over half of the stopbanks have been valued, whereas very few of the timber floodwalls have been. This is due to the fact that the majority of the timber wall assets have been constructed over the past year, and were completed after the last valuation date.

By contrast, almost all of the riprap assets have been valued. The exception to this in a 60m section at Pohue Stream, which has neither an ORC or ODRC value.

Resolution of these issues and completion of the valuation information has been identified as a high priority improvement action within the Zone Improvement Plan (refer to Section 10).

The soil conservation assets within the zone are not valued in the same manner as embankments and in-river structures, as they are under private land ownership.

Refer to section 9.7 Asset Valuation for the asset valuation methodology.

6.3.7 Asset age

Table 20 below shows a comparison between the average age of the asset groups and the remaining useful life (RUL) for the Coromandel Zone asset groups. Table 20 indicates that the assets within the zone are young – they have all been constructed within the past 5-6 years, and have significant remaining lives. There is a need to improve the asset information within Conquest in order to improve the understanding of asset age within the zone, and this has been noted in the valuation section above.

Table 20 Asset age – base life, average age and remaining useful life

Asset category	Asset type	Base life (yrs)	Average age (yrs)	Remaining useful life (yrs)
Embankments	Stopbanks	100	5.5	94.5
	Timber floodwalls	25	4	21
	Timber floodwalls with earth bulking	25	-	-
In-river structures	Riprap	30	5.5	24.5

6.3.8 Condition assessment and results

The following table shows the average condition grade for the asset groups in the Coromandel Zone. There is very limited information for average condition grades, and this is related to the Conquest data issues noted previously.

Table 21 Zone asset average condition grades

Asset category	Asset type	Average condition
Embankments	Stopbanks	1
	Timber floodwalls	1
	Timber floodwalls with earth bulking	1
In-river structures	Riprap	2

6.3.9 Asset capacity and reliability

Capacity
The following table outlines the different design capacities (where applicable) of the River and Catchment Services assets within the Coromandel zone.

Table 22 Asset capacity

Asset group	Coromandel zone
Embankments	Maintained to the design crest level (flood protect + freeboard) Allowable settlement of 50% of the freeboard before reconstruction is required
Structures	Maintained to capacity as designed
In river structures	Maintained to ensure they are functioning as designed
Channels	Maintained in order to achieve objectives
Soil conservation	Maintained in order to achieve objectives

Reliability (performance)
In the River and Catchment Service, a small asset failure (namely in the stopbanks or erosion protection asset groups) can lead to inundation of a large area of the flood plain or substantial erosion, resulting in disproportionate damage when compared to the initial failure.

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

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

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

Performance of stopbanks
The performance of an earth structure (stopbank and detention dam) is technically assessed on the basis of the crest level compared to the design crest level and the probability of failure of the structure. Probability of failure is based on the likelihood of failure of a stopbank in an earthquake event, which might occur in 250 years. This figure combines the structural details (geometry, type of soil or construction material, location and condition) and modes of failure.

The highest grade found from the above two criteria is used as the performance measure for a particular asset.

Crest levels of the stopbanks are surveyed every five to ten years, depending on the foundation material. Within the Coromandel Zone, the ten yearly cycle is used, since all the stopbanks are on clay foundations.

7 Levels of service

7.1 Overview

"Levels of service" refers to measurable quantities or attributes in relation to an activity. When combined with performance measures and targets, levels of service represent the value the community receives for river and catchment management activities in return for their money.

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

Defined levels of service can then be used to:

- Inform customers of the proposed levels of service
- Develop AM strategies to deliver levels of service
- Measure performance against defined levels of service
- Identify the costs and benefits of services offered
- Enable customers to assess core values such as accessibility, quality, safety, and sustainability.

In this context, levels of service define the quality of delivery for a particular activity or service against which service performance can be measured.

7.2 Linking levels of service to community outcomes

Council outcomes
As a result of the 2010 amendment to the LGA 2002, a new definition of community outcomes is now in place. The amendment shifted the previous focus upon 'multi agency community visioning' to a focus upon the specific aims of the respective local authority.

The community outcomes definition under the LGA 2002 Amendment Act 2010 is:

> 'the outcomes that a local authority aims to achieve in order to promote the social, economic, environmental and cultural well being of its district or region, in the present and for the future.'

However, the community outcomes developed in consultation with the regional community through the Choosing Futures Waikato (2005) process continue to be relevant in providing guidance in developing the aims of WRC. The outcomes identified through Choosing Futures Waikato were:

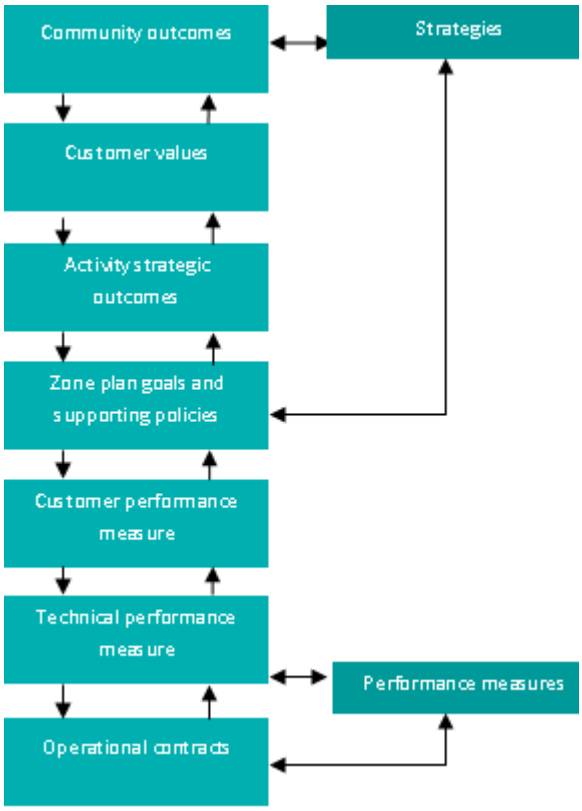
- **Sustainable environment** - the Waikato region values and protects its diverse, interconnected natural environments.
- **Quality of life** - the Waikato region is a great place to live, providing the services and opportunities we need to live well.
- **Sustainable economy** - the Waikato region balances a thriving economy with looking after its people, places and environment.
- **Culture and identity** - the Waikato region identifies with and values its land, air, rivers and waterways, mountains, flora and fauna, and its people
- **Participation and equity** - the Waikato region builds strong informed communities and has a culture that encourages people and communities to play their part.

The outcomes sought by WRC within the definition of the LGA 2002 Amendment Act 2010 are:

- Community partnerships
- Environmental quality
- Regional economy
- Safe and resilient communities.

WRC's River and Catchment Services (RCS) contributes to all of these outcomes. The way in which the community outcomes link to levels of service is shown in the table below.

Figure 9 Levels of service linkages



7.3 Levels of service delivery process

WRC has a number of key service providers for the delivery of the River and Catchment Services, they are:

- Internal staff
- External contractors (e.g. earthworks, electrical)
- Internal sections (e.g. information and technology services)
- Various consultants
- Government and other agencies (e.g. DOC, NIWA, Fish and Game).

7.4 Levels of service development process

WRC's levels of service are reviewed on a three yearly cycle as part of LTP development. As zone plans are progressively developed, the levels of service contained in these plans will be reflected in the LTP. This is expected to apply from the 2012-22 LTP onwards.

7.5 Who are our customers?

7.5.1 Customer groups and their needs and wants

Zone services provide benefits to a wide range of customers at varying levels. The following table shows the breakdown of customer groups and their interests in zone services.



Information day for Peninsula project and pest control

Table 23 Customer values

Category	Group	Specific needs/wants
Urban	Householders	No interior flooding of homes, basements and garages. Note we can't deliver this in some areas
		Infrequent flooding of sections ditto
		Access maintained ditto
		No flood risks identified in LIMS ditto
	Potential buyers	No flood risks identified in LIMS
	Users of rivers and streams	A clean and healthy environment
		Access to, use and enjoyment of natural rivers, streams and wetlands
	Road users	No road flooding which limits access to homes or businesses ditto
Rural	Farmers	No significant loss of production or damage due to flooding ditto
		Access maintained ditto
		Productive capacity of farmland is maintained by reducing soil erosion
		Soil and contaminant runoff to waterways from pasture is minimised.
	Property owners most affected by flooding	Recognition of problems
		Consultation about solutions
		Economic justification for proposals
	Recognised community groups	Consultation
		Commitment to achieving agreed outcomes
Businesses	Commercial users (shops/offices)	Reasonable and equitable charges
		No flooding of premises ditto
		Access maintained
	Industrial users	Reasonable and equitable charges
		No impact from flooding ditto
		Maximum use of site or premises
Key stakeholders	Liaison subcommittee	Community engagement
		Responsiveness
	Special ratepayers	Community engagement
		Responsiveness
		Reasonable and equitable charges
	Other authorities	Appropriate risk management
	Central Govt	Minimum impact on state highway network from flooding
	LTNZ	Cooperation in mutually beneficial projects
	DOC	Water quality in streams and rivers maintained and enhanced
	Environmental groups	Minimum impact on the environment
		Water quality in streams and rivers maintained and enhanced
		Consultation about activities with environmental impact
	Tangata whenua	Recognition of co-management status and involvement in decision-making
		Consultation regarding cultural and environmental issues and impacts

7.5.2 Consultation

Maintaining an understanding of changing customer expectations is an ongoing process and is carried out through formal and informal consultation with customers. To achieve the former, Council decided to

establish permanent liaison subcommittees within each of the eight zones within the region where river and catchment management services are provided.

The Coromandel Liaison Subcommittee was formed in 2004, and included representatives from the zone community, including representatives from the four Peninsula Project partners – WRC, Thames Coromandel District Council, the Department of Conservation and the Hauraki Maori Trust Board. This sub-committee meets three times per year with the objective of reviewing the maintenance and capital works programmes and providing an overview of the management of service delivery. The zone subcommittee reports to, and makes recommendations to Council's Catchment Services Committee. Additionally, all customers have access to the annual plan and LTP process, where they can lodge submissions on the scheme works programmes or raise issues of concern.

Informal customer liaison is also undertaken by operations field staff, working closely with landowners in regard to specific works and maintenance issues.

7.6 Establishing core values

The New Zealand Asset Management Support (NAMS) "*Developing Levels of Service and Performance Measures*" Manual describes Customer (Core) Values for Council activities. It is important for the customers and the Council to consider which of these are most important as the priorities flow into the final required levels of service.

Core Values provide the cornerstone to the development of levels of service from both a customer and technical point of view. The core values are:

- Affordability
- Quality
- Community engagement
- Safety
- Sustainability (Whole of community benefits)
- Reliability/responsiveness.

7.7 Linking customer values to community outcomes

The matrix shown in the following table has been developed to demonstrate how the customer values link to the community outcomes.

Table 24 Linkage of community outcomes & customer values

WRC Community outcome	Customer value				
	Affordability & quality	**Safety**	**Sustain ability**	**Community engagement**	**Reliability/ responsiveness**
Environmental quality	✓		✓		✓
Safe and resilient communities	✓	✓	✓	✓	
Regional economy	✓		✓		✓
Community partnerships		✓		✓	

7.8 Activity levels of service outcomes

As part of this zone management plan, further work has been undertaken to develop Activity levels of service outcomes for the RCS activity. These are described in the table below and are aligned with the customer values.

The core values considered to be important for the RCS in activities are as follows:

Table 25 RCS customer values (NAMS) and activity levels of service outcomes

Customer value	Activity levels of service outcomes
Affordability quality	• Costs for services are distributed equitably • Services provided perform to agreed levels and standards • Statutory requirements and legal obligations are met
Safety	• People and property are safe from hazards associated with flooding and erosion
Sustainability (whole community benefits)	• The net outcome of provision of RCS services is an enhancement of the environment • Services are managed for the social, cultural, economic and environmental well being of current and future generations
Community engagement	• Decision-making processes are transparent and easily understood • Work with stakeholders to achieve mutual objectives • We will work in partnership with all relevant iwi to sustain the mauri of the Peninsula, and particularly in regard to the implementation of Treaty settlements and co-management arrangements
Reliability/ responsiveness	• Response to requests, complaints and events is timely, and appropriate solutions are provided

7.9 Levels of service

The levels of service provided for the Coromandel zone were initially established when the Peninsula Project was established in 2004. The current service levels were confirmed through an extensive consultation process initially undertaken in 2003/04, and subsequently updated by the LTP processes in 2006 and 2009. The next review of service levels is scheduled to be completed in 2012, during development of the 2012/22 LTP.

The existing and proposed levels of service for the zone are outlined in the following tables. These align with the community outcomes detailed in the LTP, the vision and goals for the Coromandel zone outlined within section 3, and the customer values and activity strategic outcomes in Table 25.

Each level of service statement is accompanied by one or more performance measures. The proposed levels of service and the accompanying performance measures are largely derived from a more formal definition of existing practice. This will provide enhanced ability for measuring performance and thus increase both the accountability and transparency of service delivery. Performance of zone assets against the agreed levels of service will form part of the annual reporting annual and/or LTP reporting process.

7.10 Levels of service, performance measures and reporting

Identifying and linking customer and technical levels of service

It is critical that from community outcomes right down to operational contracts, that the linkages are made clear.

The following tables are based on the NAMS "*Developing Levels of Service and Performance Measures*" Manual. They have been developed to be presented for further community consultation. They group all the levels of service measures under six main service levels, namely:

- Flood protection levels of service
- River management levels of service
- Environmental enhancement levels of service
- Community engagement levels of service
- Reliability and responsiveness levels of service
- Affordability levels of service.

Each table provides the following:

- Definition of the level of service
- Linkage to community outcomes
- The customer value the service level aims to provide
- Customer measure (with targets if applicable)
- Technical measure (with targets if applicable)
- Description of how the service level will be achieved
- Description of how achievement of the service level will be measured.



Planting day

Table 26 Flood protection levels of service

Level of service	**River and flood protection schemes provide the standard of flood protection agreed with communities.**				
Links to community outcomes	Community partnerships ✓	Environmental quality	Regional economy ✓	Safe & resilient communities ✓	
Customer values	The core customer values this service aims to provide are **affordability**, **quality** and **safety.**				
Customer measure	Flood protection for people, property and essential services is maintained over time; people and property are safe from flooding and erosion hazards.[24]				
Technical measures	Stopbanks are maintained to the design standard and above design flood heights, and operate to design levels during flood events.				
Targets	Current performance	Year 1 target 2012/13	Year 2 target 2013/14	Year 3 target 2014/15	Years 4-10 target 2015-2022
The percentage of stopbanks maintained to the design standard and above flood heights[25]	100%	100%	100%	100%	To be reviewed under next LTP
How we will achieve this level of service	We will achieve these service levels by: • Maintaining stopbanks to the design heights, achieving performance grade 3 or better. • Responding to flood events by alerting communities prior to events, continuously monitoring river systems, undertaking emergency remedial works and reviewing system performance and maintenance requirements following flood events. • Undertaking ongoing visual inspections of flood protection structures, reporting formally on an annual basis and following up on maintenance and repair requirements following flood events. • Reporting annually to the subcommittee and Catchment Services Committee on flood protection performance measures. • Undertaking flood protection works within consent conditions. • Making the likelihood and consequences of greater-than-design flood events clear to communities and providing advice for communities on managing these risks (residual flood risks). • Conducting all flood protection work in accordance with Council health and safety policies.				
How we will measure if target is achieved	The following procedures will measure whether performance targets are achieved: • Crest level surveys once every 5 years until 10 years, then every 10 years thereafter. • Annual performance and condition inspections. • Yearly performance measures reports to subcommittee and Catchment Services Committee. • Undertake 10 yearly capacity audit for Te Puru Stream • Assessing ongoing changes to catchments, and undertaking design flood level reviews once every 5 years as required. • Annual health & safety audits.				

[24] Applies to areas where flood protection services are provided; currently Coromandel, Waiomu and Te Puru.
[25] Refer to zone maps which identify protection schemes and specified design levels

Table 27 River management levels of service

Level of service	**Management of identified priority rivers and streams to achieve a balance between maintaining channel capacity, channel stability and environmental values.**[26]				
Links to community outcomes	Community partnerships ✓	Environmental quality ✓	Regional economy ✓	Safe & resilient communities ✓	
Customer values	The core customer values this service aims to provide are **affordability**, **quality**, **sustainability** and **safety.**				
Customer measure	River and stream channels are maintained to be stable and obstruction free, and to conduct water and sediment flow during flood events. People and property are safe from flooding and erosion hazards; and adverse environmental effects are minimised.				
Technical measures	River and stream channels maintained to specific channel design capacities (where community maintenance schemes are in place) on an ongoing basis.				
Targets	Current performance	Year 1 target 2012/13	Year 2 target 2013/14	Year 3 target 2014/15	Years 4-10 target 2015-2022
Percentage of time that river and stream channels are maintained to design standards	80%	80%?	80%	80%	To be reviewed under next LTP
How we will achieve this level of service	We will achieve these service levels by: • Regularly monitoring river and stream channels to identify blockages and erosion issues and responding to enquiries. • Completing maintenance work – clearing debris, maintaining channels free of obstructions or significant blockages and, addressing river and stream bank erosion on a prioritised basis where practicable. • Undertaking new work such as erosion protection and stock exclusion. • Recognising and allowing for catchment changes over time – such as vegetation cover and rainfall frequency and intensity. • Managing pest plants where they may impact upon capacity and flow on a prioritised basis. • Continually seeking opportunities for environmental enhancement of river and stream environments. • Completing all river management works within required consent conditions. • Undertaking river management works in accordance with the WRC Environmental Guidelines. • Introducing regional channel capacity guidelines. • By conducting all river management work in accordance with Council health and safety policies.				
How we will measure if target is achieved	The following procedures will measure whether performance targets are achieved: • Annual performance and condition inspections are undertaken where community maintenance schemes are in place. • River and stream inspections are undertaken on an ongoing basis, and follow-up is completed in response to reports of damage and/or customer enquiries. • Catchment conditions surveys are conducted in priority catchments. • Community river management issues and requests are resolved where practicable. • Annual health & safety audits.				

[26] Priority streams and catchments have been identified within Section 3.2.3.

Table 28 Environmental enhancement levels of service

Levels of service	**To provide land and catchment management services to enhance water quality, biodiversity and promote the sustainable use of land and soil.** **To complete new riparian, coastal and land protection measures within the zone according to the established priorities and within budget estimates.** **To prepare plans and undertake works to ensure the sustainable management of harbour catchments.**				
Links to community Outcomes	Community partnerships ✓	Environmental quality ✓	Regional economy	Safe & resilient communities ✓	
Customer value	The core customer values this service aims to provide are sustainability, community engagement and safety.				
Customer measure	Catchments are improving in terms of stability, sediment reduction, water quality and biodiversity.				
Targets	Current performance	Year 1 target 2012/13	Year 2 target 2013/14	Year 3 target 2014/15	Years 4-10 target 2015-2022
New Environmental Protection Agreements per annum	22	23	23	23	23
Work commenced in priority catchments	70%	80%	80%	80%	80%
Thames Coast residual trap catch after control undertaken	<5%	<5%	<5%	<5%	<5%
Reported complaints of adverse environmental effects	<10 per year	<8 per year	<8 per year	<5 per year	<5 per year
Maintain catchment schemes in effective condition to the standards set out within this plan	77%	80%	85%	90%	90%
Technical measure	Best practice guidelines are followed in service provision. Environmental enhancement opportunities are identified and actioned. Environmental enhancement is promoted. Partnerships with other stakeholders and agencies are established to undertake collaborative projects. Flood protection and river management works are undertaken within consent conditions.				
How we will achieve this level of service	We will achieve these service levels by: • Conducting environmental surveys in targeted catchments and identifying priority actions prior to and during implementation to measure progress. • Conducting monitoring in priority areas. • Managing pest animals and plants where they may impact upon capacity and flow, soil erosion or biodiversity on a prioritised basis. • Maintaining riparian margins by planting and stock exclusion. • Maintaining stable river and stream channels, which decreases siltation from erosion. • Maintaining existing river and catchment works and services to specified standards that are agreed with communities. • Agreeing priorities in consultation with the Coromandel liaison				

	subcommittee. • Completing Harbour and Catchment management plans for each of the key Coromandel Peninsula harbours and catchments. • Continue implementation of Harbour and Catchment management plans as agreed with communities and subject to availability of funding. • Compliance with the Resource Management Act 1991 and Regional Policy Statement. • Promotion of services offered and achievements. • Working in partnership with other stakeholders and agencies. • Planning and implementing annual work programmes as set out within the Annual Plan.
How we will measure if target is achieved	The following procedures will measure whether performance targets are achieved: • Complaints reporting. • Environmental reporting to Council – such as sedimentation, water quality, pest management, biodiversity, lengths of streams in riparian planting. • Annual performance reporting to the Coromandel liaison subcommittee and Council. • Auditing of environmental performance.

Table 29 Community engagement levels of service

Levels of service	**Work with all stakeholders to achieve mutual objectives** **Work in partnership with all relevant Iwi to sustain the Mauri of the Peninsula; co-management arrangements are incorporated within river and catchment management decision-making** **Decision-making processes are transparent and easily understood**			
Links to community outcomes	Community partnerships ✓	Environmental quality ✓	Regional economy	Safe & resilient communities ✓
Customer values	The core customer values this service aims to provide are community engagement, sustainability and safety.			
Customer measures	Opportunity to provide input to and work alongside Council objectives through a process that is clear and easily understood. Awareness of the need for river and catchment management and the benefits it provides.			
Technical measures	Key stakeholders and the wider community are engaged by various means. Submissions on the Annual Plan and Long Term Plan are analysed, and written feedback is provided to submitters.			
How we will achieve this level of service	We will achieve these service levels by: • Regular contact and liaison with community groups and landowners • Producing one newsletter per year or when needed to targeted communities or stakeholders. • Publishing information on the website and keeping the website up-to-date. • Recording consultation, including public meetings and submissions, and those who attended. • Publishing decisions annually. • Subcommittee reporting 3 times per year. • Subcommittee and other stakeholder meetings as required. • Ensuring Co-management requirements are fully agreed and implemented. • Engaging with Iwi in decision-making. • Regular reviews of community engagement levels of service.			
How we will measure if target is achieved	The following procedures will measure whether performance targets are achieved: • Levels of community awareness of river and catchment management issues and outcomes through responses to newsletters, attendance and feedback at community meetings and feedback from the Coromandel Liaison Subcommittee, regular informal feedback from stakeholders and community members. • Zone management plan, Long Term Plan and Annual Plan review process.			

Table 30 Reliability and responsiveness levels of service

Levels of service	**Response to events, requests and complaints is timely, and appropriate solutions are provided. Services are provided and performed to agreed levels and standards.**				
Links to community outcomes	Community partnerships ✓	Environmental quality	Regional economy	Safe and resilient communities ✓	
Customer values	The core customer values this service aims to provide are reliability / responsiveness and safety.				
Customer measure	Effective response to flood and severe weather events where practicable, and enquiries and complaints dealt with promptly.				
Targets	Current performance	Year 1 target 2012/13	Year 2 target 2013/14	Year 3 target 2014/15	Years 4-10 target 2015-2022
Percentage of river instability enquiries responded to within three days, and appropriate actions taken on a prioritised basis	New measure	95%	95%	95%	95%
Maintain ongoing operational flood readiness and response capability	100%	100%	100%	100%	100%
Technical measures	Response to flood events in accordance with operational best-practice and RCS standards/procedures. Enquiries and complaints are dealt with in accordance with Council's Customer Service Charter.				
How we will achieve this level of service	We will achieve these service levels by: • Receiving weather watches and warnings • Alerting and mobilising operations staff as required • Maintaining an ongoing readiness to respond to flood events • Mobilising responses to flood events where practicable • Complying with Customer Service Charter[27] • Liaison with key emergency management agencies in the lead-up to and response to significant flood events.				
How we will measure if target is achieved	The following procedures will measure whether performance targets are achieved by: • Ensuring that pre-event arrangements are developed and maintained – including staff training • Taking a risk-based to flood response • Reporting on flood response actions following flood events • Maintaining records of customer enquiries and complaints				

[27] See http://www.waikatoregion.govt.nz/Council/About-us/Contact-us/Customer-service-charter/

Table 31 Affordability levels of service

Levels of service	**Costs for services are distributed equitably** **Services are managed for the benefit of current and future generations**			
Links to community outcomes	Community partnerships ✓	Environmental quality	Regional economy ✓	Safe and resilient communities ✓
Customer value	The core customer value this service aims to provide is affordability.			
Customer measure	Customers are satisfied that charges for rivers and catchment management services are fair and equitable, and deliver the required level of service.			
Technical measure	All projects achieve a positive cost benefit ratio.			
How we will achieve this level of service	We will achieve these service levels by: • Assessment of benefits associated with river and catchment services in the zone undertaken on a 20 year cycle. • Developing a rolling programme to review zone and local protection areas (benefit received). • Ensuring intergenerational equity by accounting for loss of service potential when it occurs (depreciation). • Allocating costs according to the funding policy. • Reviewing zone funding policy in relation to benefit allocation.			
How we will measure if target is achieved	The following procedures will measure whether performance targets are achieved: • Contract records and documentation. • Zone funding policy. • Annual reporting of customer submissions to Council. • Auditing of depreciation. • Maintaining competitive and fair full-cost pricing of zone maintenance and works, compliant with the Council Contracts Manual.			

7.11 Future levels of service improvement

Council is progressively working through a "levels of service development and community agreement" process as outlined and flow-charted earlier in this section. Below are the key tasks and timeline for development of levels of service.

Currently identified improvements relating to levels of service include:

- Identify, review, develop, define river, flood and catchment performance levels.
- Introduce regional channel capacity guidelines.
- Identify Best Management Practice Document for compliance with Resource Management Act 1991, Regional Plan and the Environmental Guidelines.
- Continued development of process to ensure full compliance including reporting, ISO accreditation.
- Develop formal procedure to assess, prioritise and implement capitalising on significant opportunities to work with other agencies or community groups on projects that align with zone outcomes.
- Develop optimised renewals and replacements decision making prioritisation process.
- Adopt from 2012/2013.



Whangamata town

8 Risk management

8.1 Overview

Waikato Regional Council river and catchment services risk management planning will provide the basis for future risk analysis and improvement planning.
This section covers the risk management implemented by WRC and how this applies to current and future river and catchment services activities. In addition, an overview of risk management is provided along with suggested improvements to current practices.

The objective of risk management is to identify the specific business risks, together with any possible risks associated with the ownership and management of the river and catchment services assets and provision of services. This can be used to determine the direct and indirect costs associated with these risks, and form a priority-based action plan to address them.

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

WRC has highlighted a number of priority risk areas across the activity including:

- Natural hazard events and the resulting impacts on zone assets
- Riverbank and hillslope erosion
- Sand and gravel management
- Stop bank/floodwall failure
- Animal pests
- Harbour sedimentation.

These and other risks are discussed in further detail in the Risk Register (Appendix 4) and the Risk Action Plan contained in this section.

Level of risk

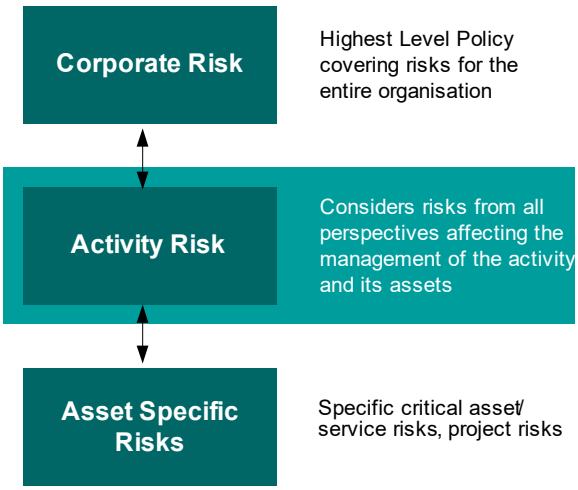
The purpose of the risk plan is to identify the risks associated with river and catchment services activities and assets. This requires approaching the risks from many perspectives - financial, operational and public health and safety.

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

The next step beyond this risk analysis is to develop more detailed risk plans where the

criticality of specific assets is assessed and an action plan developed as appropriate. Figure 10 shows the levels of risk.

Figure 10 Levels of risk



8.2 Current situation

Corporate policy
WRC is currently in the process of developing a corporate risk policy and a Risk and Assurance team, which has an overview of all risk exposures within the organisation including corporate, financial, customer and assets. Infrastructure Services staff contribute regularly to the work of this group. Each risk identified in this plan is entered into the corporate risk register.

8.3 Risk management process

The following sections expand upon the risk management process as identified in Figure 10. The risk assessment process has been generally based upon the Australian New Zealand Risk Management Standard 4360:2004 to establish a Risk Matrix as shown in Table 34.

While it is noted that AS/NZS 4360:2004 has recently been superseded by ISO 31000, the process and outputs undertaken under AS/NZS 4360 align fully with ISO 31000. This matrix provides a tool to quantify a risk by identifying the likelihood of the risk occurring and the outcomes, or consequences should the risk occur. The first step in the process is to identify all possible risks.

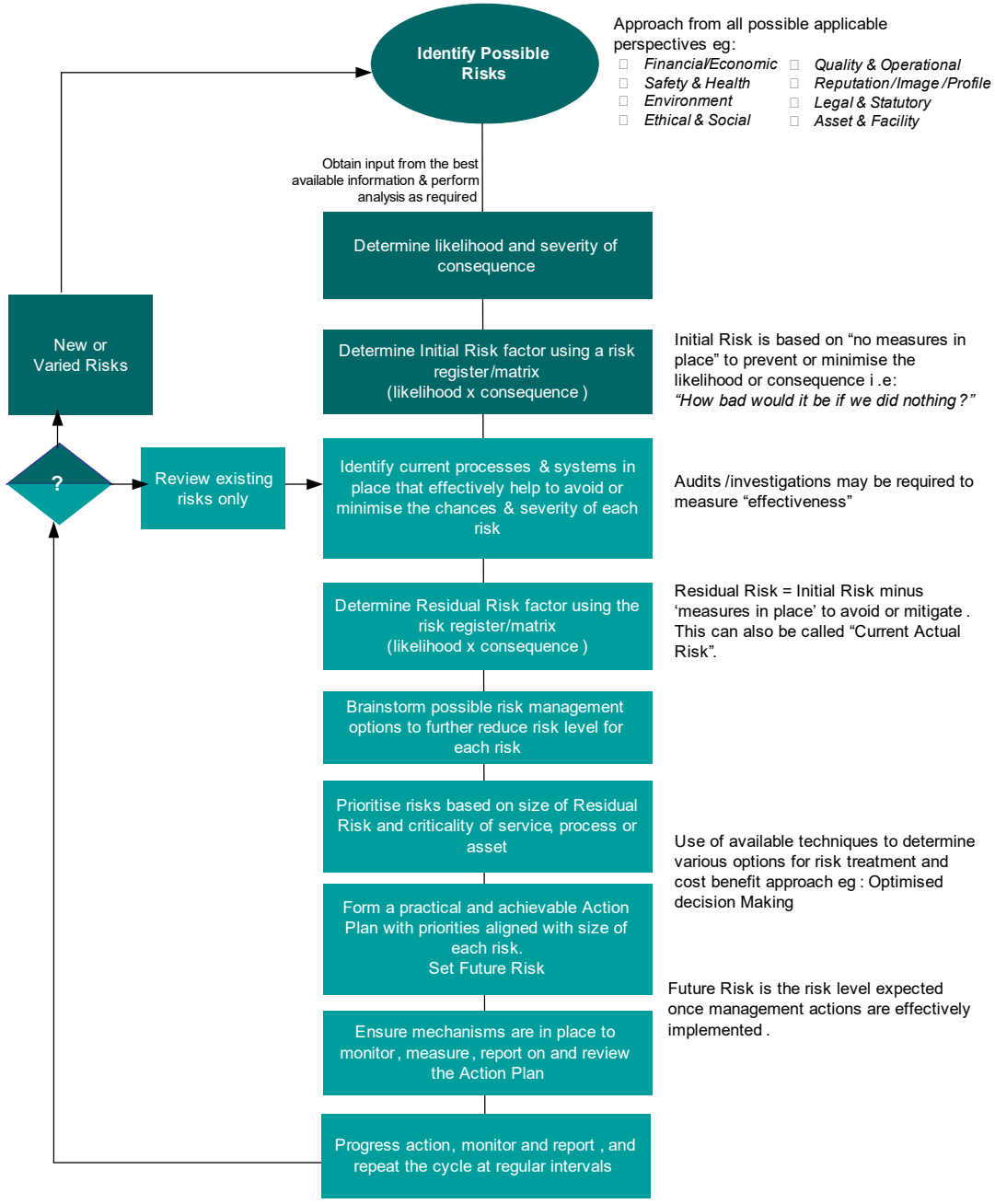
Identify possible activity risks
All possible risks affecting the River and Catchment Services activity need to be identified. Risks can include financial, environmental, social, operational and health and safety considerations. Once identified, risks are entered into the risk register (see Appendix 4). The register is used to record and summarise each risk and to outline current mitigation measures and potential future management options.

Potential consequences of risk are wide-ranging in relation to activities. Those relevant to the river and catchment services activity are:

Financial	Operational
Economic	Reputation / image
Health and safety	Environment
Legal	Ethical / social

Figure 11 and text details the key elements of the risk management process undertaken.

Figure 11 Risk management process



Determine likelihood and consequence for initial risk factor

The following tables demonstrate the scales used to determine the likelihood and consequence levels, which are input into the risk calculation to consider the effect of a risk event.

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

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

Table 32 Risk probability ratings table

Likelihood	Descriptor	Probability
Rare	May occur only in exceptional circumstances e.g. once in 10 years	1
Unlikely	Could occur only very occasionally e.g. 2-3 out of every 10 years	2
Moderate	Might occur from time to time e.g. 5 out of every 10 years	3
Likely	Will probably occur often e.g. 7 out of every 10 years	4
Almost certain	Is expected to occur in almost all circumstances e.g. 9 out of every 10 years	5

The consequence descriptors in the following table indicate the level of possible consequences for a risk.

Table 33 Risk consequence ratings table for WRC

Factor	Catastrophic	Major	Moderate	Minor	Insignificant
Score	**5**	**4**	**3**	**2**	**1**
Financial	Loss of $10 million or greater	Loss between $250,000 and $10 million	Loss between $100,000 and $250,000	Loss between $20,000 to $100,000	Loss less than $20,000
Public and staff	Loss of life or Permanent staff turnover exceeds 30% p.a.	Injury with 3+ months time-off or Permanent staff turnover 20% to 30% p.a.	Injury with 2 weeks to 3 months time-off or Permanent staff turnover 15% to 20% p.a.	Injury with less than 2 weeks time-off or Permanent staff turnover 10% to 15% p.a.	Nil or Permanent staff turnover 0% to 10% p.a.
Legal	Litigation / Significant prosecution	Minor Litigation	Enforcement Notice	Non compliance	Minor issues with non compliance
Political	Nation-wide one week adverse political comment	Nation-wide several days adverse political comment	Regional several days adverse political comment	Local 1 week adverse political comment	Local one day adverse political comment
Image	Significant stakeholder disruption with financial implications and/or nationwide negative media coverage for up to 2 weeks	Stakeholder disruption/ frustration and/or nationwide negative media coverage for a few days	Some stakeholder disruption/ frustration and/or regional negative media coverage for up to 1 week	Minor stakeholder disruption/ frustration and/or regional negative media coverage for 1-2 days	No stakeholder disruption/ frustration and no negative regional media coverage
Operational	Serious loss of operational capability for over 4 weeks and serious disruption to service levels	Serious loss of operational capability for over 2 weeks and major disruption to service levels	Serious loss of operational capability for over 1 week and disruption to service levels	Loss of operational capability in some areas and some disruption to service levels	No loss of operational capability or negative disruption to service levels

After the likelihood and consequence factors have been determined, the level of risk is calculated by multiplying the Likelihood of Occurrence (Table 32) and Consequence Rating (Table 33) together. Risk = the likelihood of an event occurring X the consequence of such an event.

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

Table 34 Risk assessment matrix

	Consequence				
Likelihood	**Insignificant (1)**	**Minor (2)**	**Moderate (3)**	**Major (4)**	**Catastrophic (5)**
Rare (1)	I	I	L	L	M
Unlikely (2)	I	L	M	M	M
Moderate (3)	L	M	M	H	H
Likely (4)	L	M	H	H	E
Almost certain (5)	M	M	H	E	E

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

Table 35 Comparative levels of risk

I	Insignificant risk	Examine where un-needed action can be reduced
L	Low risk	Managed by routine procedures
M	Medium risk	Management responsibility must be specified and risk controls reviewed through AMP
H	High risk	Senior management attention to manage risk
E	Extreme risk	Immediate action required to reduce risk

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

Identify current systems and processes, and their effectiveness

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

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

Excellent	Fulfils requirements thoroughly, very robust and positive measurable effects
Very good	Fulfils requirements, robust and measurable, room for improvement
Good	Barely fulfils requirements, effects hard to measure (or haven't been audited or measured), improvement required
Inade-quate	Not fulfilling requirements, little measurement or effect on overall risk
Unsatis-factory	Totally ineffective in avoiding or mitigating associated risk events

Determine residual risk

The residual risk is the actual risk that exists considering the effective measures implemented. The measures in place reduce either, or both, the consequence and the likelihood of a risk occurrence. The

revised factors are input into the same risk matrix to obtain the Residual Risk Factor.

Prioritise residual risks and formulate action plan for risk management

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

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

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

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

Monitor, measure, report, review plan and actions

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

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

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

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

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

- Contribution to Council's LTP community outcomes
- Contribution to Council's business objectives.
- Level of project commitment (contractual and legal issues).

The resulting action plan for risk treatment needs to be practical and achievable such that the necessary resources and time frames are realistically met. The actions also need to be able to be monitored and measured. Table 36 provides more detail with regard to future actions/tasks required for future stages of risk management, which include the ranking outlined above.

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

8.4 Risk register

The risk registers provided in the following tables for the current and future river and catchment services activities of Waikato Regional Council have been developed in consultation with key staff.

The risk register is outlined within Appendix 4.

8.5 Risk action plan

Table 36 is compiled from the Risk Register and highlights the most significant residual risks faced by river and catchment services within the Coromandel Zone. Criteria for inclusion within the Risk Action Plan is that the risks listed are all rated high in terms of residual risk.

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

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

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

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

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

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

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

The actions listed will be reported, monitored and reviewed regularly by the asset manager.

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

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



Onemana Beach, Coromandel

Table 36 Coromandel zone management risk action plan – River and Catchment Services

Risk no.	Risk descriptor	Nature of risk	Initial risk	Residual risk	Management options available	Risk owner (name and title)	Risk appetite *Accept = Current Practice, P1 = Urgent, P2 = Routine*	Pinpoint management actions	Monitoring / reporting	Time frame	Costs / resources	Future risk
5.10	**Natural Hazards and resulting impact on zone assets** **Caused By:** Extreme weather event Earthquakes Tsunamis Volcanic eruptions Land instability Coastal storm surge **Consequences:** Potential injury, sickness or loss of life Damage to Council-controlled/ owned land e.g. Slips, loss of land Liability / Claims against Council Loss of amenity value Negative Council image (perceived as Councils problem) Increased costs e.g. clean up Adverse environmental effects Damage to private / neighbouring property Financial cost through damage to assets.	Financial Operational Economic Reputation / Image Health and Safety Environment Legal	E	H	Public education / Communication plan strategy Continue, improve, monitor current process Improve understanding of hazard events	Divisional Manager CDEM Asset Manager	Accept					H
6.3	**Riverbank and Hillslope Erosion** **Caused by:** Natural events / soil types and qualities Instability	Financial Operational Reputation / Image Legal	E	H	Edge Protection, vegetation, structural, rip rap, gabion walls Buffer zones, fenced Financial Grants for	Divisional Manager, CM Zone Manager	Accept	Environmental Protection Agreements with landowners Development of Harbour and Catchment	Catchment Condition Surveys Peninsula Project environmental monitoring	Ongoing		M

	Land use Vegetation clearance **Consequences:** Increased flooding Loss of land Loss of biodiversity Reduced water quality Increased risk of breach and/or course change Increased sedimentation to waterways and harbours Threat to property and infrastructure Increased risk to existing assets	Environmental			riparian protection Renewal / upgrade programmes Maintenance regime Regular inspections Sediment Management Plan Riverbank trial protection works Trial native planting Willow protection research group contribution Environmental code of practice			Management Plans	programme			
6.4	**Sand and Gravel Management** **Caused by:** Accumulation of Sand and Gravel Upstream land use practice Erosion / degradation Hydro-dams Natural processes **Consequences:** Loss of capacity Adverse impact on Service levels River instability	Financial Operational Environmental	E	H	Develop a stand alone river management plan Current practices Examine relevance of financial contributions Sediment management plans (currently in development)	Zone Manager Programme Manager, TS	Accept					M

7.1	**Stop bank/flood wall Failure** **Caused by:** Settlement Deterioration, weakness Undermined foundations Erosion Adjacent disturbance (i.e. building road, digging a drain, etc.) Poor construction Overtopping **Consequences:** Ineffective flood control Flooding Legal claims	Financial Operational Reputation / Image Health and Safety	E	H	Regular condition reviews Visual inspections, physical surveys Scheme reviews, hydraulic capacity modelling Use of internal / external specialists e.g. geotechnical where appropriate Renewal / upgrade programmes Maintenance regime Floodway and drainage bylaws Failure Response Processes Linkages between RPS and District Plan policies to drive lowering and/or restricting increase in the level of residual risk over time. Advocate limiting and/or control increased development behind stop banks Increased awareness and education Improved failure response procedures (i.e. warning systems, etc.)	Programme Manager, TS Zone Manger	Accept					H
8.3	**Animal pests** **Caused by:** Proliferation of possums and goats Possible loss of DOC	Financial Operational Reputation / Image	H	H	More monitoring and research programmes Improved control programmes and	Group Manager, BS&NH Zone Manager	P2					H

	pest control funding **Consequences:** Loss of vegetation Increased debris Blockage of Channels Increased sedimentation of waterways Erosion Water quality degradation Increased costs and resource requirements Adverse effects on levels of service	Environmental			methods (environmentally and socially acceptable methods)							
8.4	**Harbour sedimentation** **Caused By:** Historic land use activities in upper catchments e.g. mining, logging (including Kauri logging) Current land use practices e.g. farming, forestry **Consequences:** Infilling of harbours and estuaries with sediment Loss of biodiversity Reduced water quality Mangrove expansion Navigation and safety risks	Financial Operational Economic Reputation / Image Health and Safety Environment	E	H	Harbour and Catchment Management Plans Environmental Protection Agreements/Catchment works Dredging Vegetation management Public education / Communication plan strategy	Divisional Manager, CM Zone Manager	Accept	Develop Harbour and Catchment Manager Plans for the key harbours on the Peninsula Gain resource consent applications for appropriate management actions agreed with communities e.g. dredging, mangrove removal Undertake harbour and catchment protection works to reduce erosion, improve biodiversity and restore harbour systems.	Implementation plan Coromandel Liaison Subcommittee	2015?		H

9 Financial management

9.1 Overview

9.1.1 Introduction

In order to undertake a sustainable, long-term approach to the management of infrastructure assets within the catchment zones it is essential to prepare long-term financial forecasts. This allows a long term view of how assets will be managed, the associated costs and when additional funding may be required to meet expected service levels. These financial forecasts are a culmination of the previously discussed aspects of the zone plan such as:

- Community engagement and consultation.
- Levels of service.
- Demand management.
- Lifecycle management.
- Condition assessments.
- Asset lives.
- Asset valuation.

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

Office of the Auditor General (OAG) criteria requires that asset management planning should translate the physical aspects of planned maintenance, renewal and new work into financial terms for at least the ensuing 10 years and in a manner that is fair, consistent and transparent.

The forecasts should include sufficient information to enable the decline in service potential (depreciation) of an asset to be measured. (Guidance on depreciation is included in the NZ Valuation and Depreciation Guidelines).

Planning should translate the physical aspects of planned operational, maintenance, renewal and new works into financial terms;

- Generally over the timeframe in which the asset must deliver services.
- In more specific terms, over the period for which the organisation has a strategic plan.
- The assumptions underpinning financial forecasts should be disclosed in the organisations strategic plans and the asset management plans.
- The compilation of financial forecasts should be consistent, reliable and provable.

The confidence in the underlying data upon which the financial forecasts are based is discussed in section 6.3.3.

9.2 Expenditure

All costs incurred through the ownership of infrastructural assets and that directly relate to the running of those assets fall into two categories - capital/renewal expenditure or maintenance expenditure. Under the generally accepted accounting practice (GAAP) the following definitions need to be applied to the treatment of costs against infrastructure assets.

9.2.1 Operations and maintenance expenditure

Expenditure - “Costs which are repairs and maintenance should be expensed.”

Maintenance costs are generally subdivided into 3 groups; these are described in the following table.

Table 37 Maintenance types

Maintenance type	General meaning
Routine	Day to day maintenance which is required on an ongoing basis and is budgeted for
Planned (proactive)	Non day-to-day maintenance which is identified in advance and is incorporated into a maintenance budget for a certain time period
Reactive	Maintenance that is unexpected and necessary to attend to immediately to continue operation of the service

All maintenance costs are written off in the year of expenditure.

9.2.2 Replacement/ renewal expenditure

“Costs which restore and sustain the intended service potential of the network is renewal expenditure and should be capitalised.” An example of this work is the

topping up of stopbanks to return them to the design standard.

Renewal expenditure is treated in the same way as capital expenditure. For accounting purposes, any work performed on an asset that has previously been classified as renewal costs will be subject to these guidelines and now be classified as capital expenditure.

9.2.3 Capital (new works) expenditure

"Costs which add to the service potential of the network as a whole". These expenses should be capitalised and depreciated.

For new capital works, the scheme contributes 25% of the total capital works costs, while the direct and indirect beneficiaries contribute the remaining 75% of the cost.

9.2.4 Zone management assumptions

The financial summary presented within this plan is based on the draft 2012/22 Long Term Plan (at December 2011). As a part of the 2012/22 LTP, a review of the key financial management principles to be applied to the zone has been completed, including:

- Definition of a zone reserving policy.
- Capital funding mechanisms.
- Insurance framework for zone assets.

This zone plan has been prepared subject to the following limitations and assumptions:

- The plan is based on currently available information and data.
- Effects of climate change are considered based on the Ministry for the Environment Guidelines.
- Financial forecasts are limited to 10 years.
- Financial estimates are to be updated following adoption of the 2012/22 LTP.
- Land use within the protected compartments will remain the same.
- Existing levels of service are to be maintained.
- Consultation with the community has been ongoing since the adoption of the peninsula project in 2004. Targeted consultation in the development of this plan has been focused on input from community representatives associated with the catchment liaison subcommittee.
- There will be minimal change in applicable standards and technologies over the life of the plan.
- This plan has not considered future budget constraints.
- This plan has not considered changes to the Resource Management Act and the influence this will have in this activity area.
- The plan has not made any specific provision for management and governance changes that may result from any future co-management arrangements.

9.3 Summary financial forecast

The Coromandel zone services are provided on an annualised maintenance cost basis. While there are activities on specific types of assets that are not carried out each year, the work is spread as evenly as possible across each year.

The following table and Figure 12 below provide summary of the 10 Year financial forecast for Coromandel zone.

Historical maintenance costs from 2006/07 – 2009/11 indicates a steady trend at approximately $1 million, and planned maintenance cost for 2012/13 onwards remains at a similar level - $1.1 million annually.[28]

Historical capital expenditure indicates an increasing trend during the period 2006/07 – 2010/11, with the development of flood protection schemes for Thames Coast communities. Capital expenditure, planned for Coromandel zone in 2012/13 is $122,000, being the start of new capital works at Grahams Creek, Tairua.

Total revenue for 2012/13 is $1.45 million, and with 100% of this sourced by general rates and targeted rates.

The reserve balance for Coromandel catchment remains negative until 2016/17.

[28] The 2010/11 year-end maintenance result is due to historical capital costs of $913,564 being transferred from Capital to Operating expenditure.

Table 38 10 year financial forecast (draft 2012/22 LTP, March 2012)

	Historical figures					Budget figures										
	2006/07	**2007/08**	**2008/09**	**2009/10**	**2010/11**	**2011/12**	**2012/13**	**2013/14**	**2014/15**	**2015/16**	**2016/17**	**2017/18**	**2018/19**	**2019/20**	**2020/21**	**2021/22**
		Actual	Actual	Actual	Actual	AP	LTP	LTP	LTP	LTP	LTP	LTP	LTP	LTP	LTP	LTP
Maintenance																
Catchment oversight	141,538	137,091	127,474	154,352	1,104,997	156,442	192,561	191,474	190,286	199,917	199,705	197,507	198,294	196,383	195,207	196,598
Information, advice & monitoring	92,751	69,700	56,711	80,043	105,274	111,304	75,566	91,121	91,157	91,573	91,135	89,371	90,146	88,909	88,536	89,447
Catchment maintenance	1,464	9,717	14,083	13,975	16,379	17,235	12,014	14,327	14,412	14,534	14,543	14,567	14,622	14,369	14,345	14,430
Catchment new works	159,850	187,209	296,476	382,897	478,786	256,524	269,517	309,687	309,979	310,968	311,651	310,826	312,471	309,037	308,485	309,967
Pest Control	357,850	33,021	22,516	39,086	17,012	28,024	19,427	20,105	20,070	20,216	20,235	20,051	20,273	19,960	19,904	20,093
River management	233,577	209,370	238,323	204,817	162,086	213,875	291,667	275,447	258,140	276,103	288,989	287,863	289,124	287,086	286,670	288,033
River improvement	10,316	50,262	53,802	45,409	88,881	57,679	57,151	58,155	58,195	58,371	58,507	58,222	58,526	58,046	57,957	58,269
Flood protection	111,681	155,733	146,549	187,271	211,468	172,676	190,934	194,186	190,431	190,929	194,633	193,899	194,731	193,703	193,337	194,287
Total maintenance	**1,109,027**	**852,103**	**955,934**	**1,107,849**	**2,184,883**	**1,013,759**	**1,108,837**	**1,154,502**	**1,132,670**	**1,162,611**	**1,179,398**	**1,172,306**	**1,178,187**	**1,167,493**	**1,164,441**	**1,171,124**
Depreciation [1]	15	15	873	873	6,733	873	37,602	37,602	40,040	48,107	37,868	37,687	37,602	37,602	37,602	37,602
Interest expense on reserve balance [2]	14,706	0	0	0	0	110,000	8,000	(3,291)	(1,489)	(3,587)	(14,580)	(12,464)	(10,230)	(7,874)	(5,389)	(2,767)
Total Operating Expenditure	**1,123,747**	**852,118**	**956,807**	**1,108,722**	**2,191,616**	**1,124,632**	**1,154,439**	**1,188,813**	**1,171,221**	**1,207,131**	**1,202,686**	**1,197,529**	**1,205,559**	**1,197,221**	**1,196,654**	**1,205,959**
Capital																
New Works	1,053,870	546,807	528,515	315,009	454,364	716,875	0	122,243	525,955	13,531	4,307	0	0	0	0	0
Renewals																
Total capital	**1,053,870**	**546,807**	**528,515**	**315,009**	**454,364**	**716,875**	**0**	**122,243**	**525,955**	**13,531**	**4,307**	**0**	**0**	**0**	**0**	**0**

	Historical figures					Budget figures										
	2006/07	**2007/08**	**2008/09**	**2009/10**	**2010/11**	**2011/12**	**2012/13**	**2013/14**	**2014/15**	**2015/16**	**2016/17**	**2017/18**	**2018/19**	**2019/20**	**2020/21**	**2021/22**
Funded by																
General rate	210,187	232,212	345,428	317,807	358,308	339,311	268,136	282,415	278,510	286,836	288,547	286,704	288,191	285,545	284,827	286,568
Targeted rate	1,058,298	871,526	1,300,603	1,184,620	1,184,342	1,113,350	1,230,979	1,250,347	1,234,275	1,260,978	1,250,621	1,231,974	1,223,456	1,202,087	1,186,661	1,178,805
Government Grants	86,075	95,585	51,596	0	0	0	0	0	0	0	0	0	0	0	0	0
Fees and Charges	138,074	128,699	285,835	207,113	228,640	0	0	0	0	0	0	0	0	0	0	0
Interest income on reserve balance [2]	0	4,355	13,950	59,061	37,526	0	0	0	0	0	2,000	15,000	28,000	41,000	54,000	67,000
Total revenue	**1,492,635**	**1,332,377**	**1,997,411**	**1,768,601**	**1,808,817**	**1,452,661**	**1,499,115**	**1,532,762**	**1,512,785**	**1,547,814**	**1,541,168**	**1,533,678**	**1,539,647**	**1,528,632**	**1,525,488**	**1,532,373**
Operating reserve balance																
Opening balance	1,506,558	1,772,994	2,076,929	2,910,991	3,469,227	2,955,691	3,114,382	3,136,381	3,156,673	3,175,162	3,191,750	3,206,330	3,218,795	3,229,025	3,236,899	3,242,288
Plus revenue	1,392,635	1,332,377	1,997,411	1,768,601	1,808,817	1,452,661	1,499,115	1,532,762	1,512,785	1,547,814	1,541,168	1,533,678	1,539,647	1,528,632	1,525,488	1,532,373
Less capital rate revenue transferred to capital reserve	(37,841)	(78,275)	(86,306)	(58,152)	(82,931)	(128,010)	(233,834)	(233,834)	(233,834)	(233,834)	(233,834)	(233,834)	(233,834)	(233,834)	(233,834)	(233,834)
Less Operating expenditure	(1,123,747)	(852,118)	(956,807)	(1,108,722)	(2,191,616)	(1,124,632)	(1,154,439)	(1,188,813)	(1,171,221)	(1,207,131)	(1,202,686)	(1,197,529)	(1,205,559)	(1,197,221)	(1,196,654)	(1,205,959)
Transfer to disaster reserve [3]	(32,233)	(35,244)	(39,222)	(44,363)	(44,109)	(41,328)	(35,293)	(36,273)	(35,691)	(36,711)	(36,518)	(36,300)	(36,474)	(36,153)	(36,061)	(36,262)
Transfer to zone establishment loan							(53,550)	(53,550)	(53,550)	(53,550)	(53,550)	(53,550)	(53,550)	(53,550)	(53,550)	(53,550)
General rate contribution to harbour planning	100,000															
Plus depreciation	15	15	873	873	6,733	873	37,602	37,602	40,040	48,107	37,868	37,687	37,602	37,602	37,602	37,602

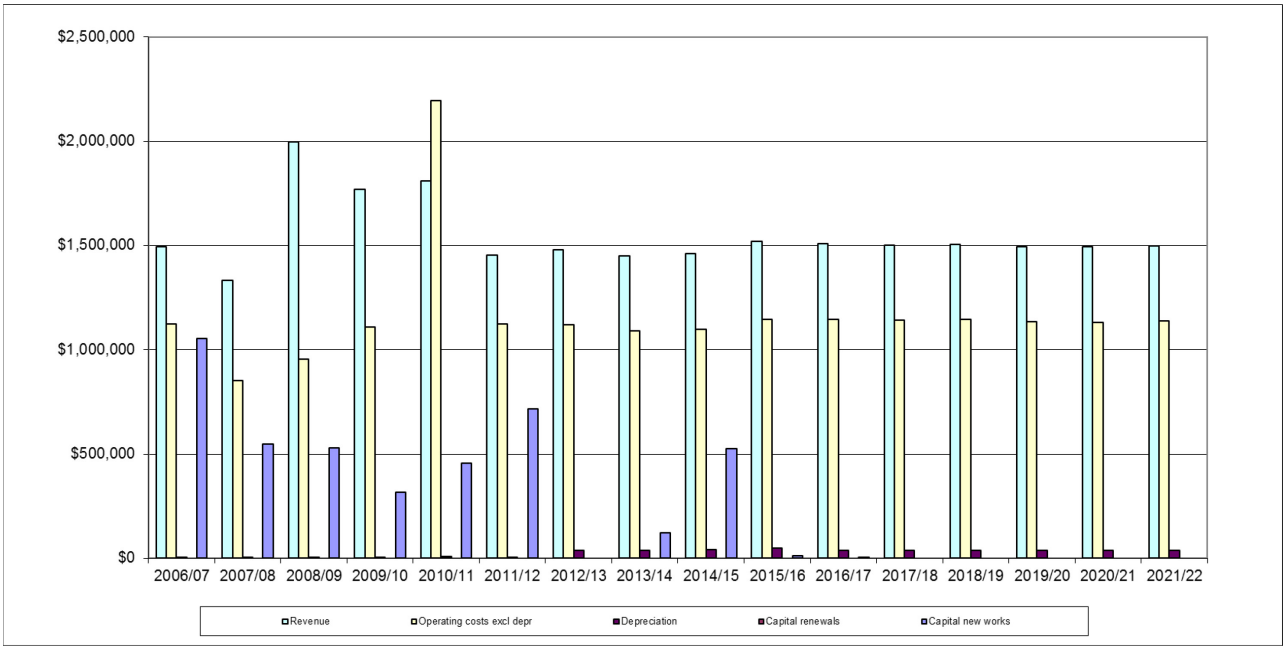
	Historical figures					Budget figures										
	2006/07	**2007/08**	**2008/09**	**2009/10**	**2010/11**	**2011/12**	**2012/13**	**2013/14**	**2014/15**	**2015/16**	**2016/17**	**2017/18**	**2018/19**	**2019/20**	**2020/21**	**2021/22**
added back																
Less budgeted depreciation funding transferred to capital reserve	(32,392)	(62,821)	(81,887)	0	(10,430)	(873)	(37,602)	(37,602)	(40,040)	(48,107)	(37,868)	(37,687)	(37,602)	(37,602)	(37,602)	(37,602)
Closing balance / (deficit)	**1,772,994**	**2,076,929**	**2,910,991**	**3,469,227**	**2,955,691**	**3,114,382**	**3,136,381**	**3,156,673**	**3,175,162**	**3,191,750**	**3,206,330**	**3,218,795**	**3,229,025**	**3,236,899**	**3,242,288**	**3,245,056**
Zone establishment loan																
Opening balance	(484,366)	(484,366)	(484,366)	(484,366)	(484,366)	(484,366)	(484,366)	(452,816)	(419,557)	(384,496)	(347,533)	(308,563)	(267,477)	(224,157)	(178,481)	(130,320)
Zone establishment loan repayment							53,550	53,550	53,550	53,550	53,550	53,550	53,550	53,550	53,550	53,550
Less interest charged							(22,000)	(20,291)	(18,489)	(16,587)	(14,580)	(12,464)	(10,230)	(7,874)	(5,389)	(2,767)
Closing balance / (deficit)	**(484,366)**	**(484,366)**	**(484,366)**	**(484,366)**	**(484,366)**	**(484,366)**	**(452,816)**	**(419,557)**	**(384,496)**	**(347,533)**	**(308,563)**	**(267,477)**	**(224,157)**	**(178,481)**	**(130,320)**	**(79,537)**
Capital reserve balance																
Opening balance	(804,481)	(1,788,118)	(2,193,829)	(2,554,151)	(2,811,008)	(3,172,011)	(3,760,002)	(3,488,566)	(3,339,373)	(3,591,453)	(3,323,043)	(3,055,648)	(2,784,127)	(2,512,691)	(2,241,255)	(1,969,819)
Plus revenue	37,841	78,275	86,306	58,152	82,931	128,010	233,834	233,834	233,834	233,834	233,834	233,834	233,834	233,834	233,834	233,834
Less Capital expenditure	(1,053,870)	(546,807)	(528,515)	(315,009)	(454,364)	(716,875)	0	(122,243)	(525,955)	(13,531)	(4,307)	0	0	0	0	0
Plus budgeted depreciation funded	32,392	62,821	81,887	0	10,430	873	37,602	37,602	40,040	48,107	37,868	37,687	37,602	37,602	37,602	37,602
Closing balance / (deficit)	**(1,788,118)**	**(2,193,829)**	**(2,554,151)**	**(2,811,008)**	**(3,172,011)**	**(3,760,002)**	**(3,488,566)**	**(3,339,373)**	**(3,591,453)**	**(3,323,043)**	**(3,055,648)**	**(2,784,127)**	**(2,512,691)**	**(2,241,255)**	**(1,969,819)**	**(1,698,383)**
Total zone reserve balance																
Opening balance	217,711	(499,490)	(601,266)	(127,526)	173,853	(700,685)	(1,129,986)	(805,001)	(602,257)	(800,787)	(478,826)	(157,881)	167,191	492,177	817,163	1,142,149
Plus revenue	1,492,635	1,332,377	1,997,411	1,768,601	1,808,817	1,452,661	1,499,115	1,532,762	1,512,785	1,547,814	1,541,168	1,533,678	1,539,647	1,528,632	1,525,488	1,532,373
Less Operating	(1,123,747)	(852,118)	(956,807)	(1,108,722)	(2,191,616)	(1,124,632)	(1,176,439)	(1,209,104)	(1,189,710)	(1,223,718)	(1,217,266)	(1,209,993)	(1,215,789)	(1,205,095)	(1,202,043)	(1,208,726)

	Historical figures					Budget figures										
	2006/07	**2007/08**	**2008/09**	**2009/10**	**2010/11**	**2011/12**	**2012/13**	**2013/14**	**2014/15**	**2015/16**	**2016/17**	**2017/18**	**2018/19**	**2019/20**	**2020/21**	**2021/22**
expenditure																
Less Capital expenditure	(1,053,870)	(546,807)	(528,515)	(315,009)	(454,364)	(716,875)	0	(122,243)	(525,955)	(13,531)	(4,307)	0	0	0	0	0
Transfer to disaster reserve [3]	(32,233)	(35,244)	(39,222)	(44,363)	(44,109)	(41,328)	(35,293)	(36,273)	(35,691)	(36,711)	(36,518)	(36,300)	(36,474)	(36,153)	(36,061)	(36,262)
Plus depreciation added back	15	15	873	873	6,733	873	37,602	37,602	40,040	48,107	37,868	37,687	37,602	37,602	37,602	37,602
Closing balance / (deficit)	**(499,490)**	**(601,266)**	**(127,526)**	**173,853**	**(700,685)**	**(1,129,986)**	**(805,001)**	**(602,257)**	**(800,787)**	**(478,826)**	**(157,881)**	**167,191**	**492,177**	**817,163**	**1,142,149**	**1,467,136**

Notes:
1. Depreciation costs do not include the impact of revaluations. The impact on depreciation of new works has not been included as they are considered to be minor.
2. The Coromandel Zone has a negative balance in the early years resulting in interest expense and a positive balance in the later years resulting in interest income.
3. Funding is put aside each year from the zone into a regional disaster recovery fund.

Refer to Section 9.9.6 for further detail on the Zone Reserving Policy.

Figure 12 Financial forecast – Coromandel zone



9.4 Operations and maintenance planning

9.4.1 Introduction

The maintenance strategies cover the policies that will determine how the RCS activities will be operated and maintained on a day-to-day basis to consistently achieve the optimum use of the asset. The work categories are defined as follows:

9.4.2 Routine (general) maintenance

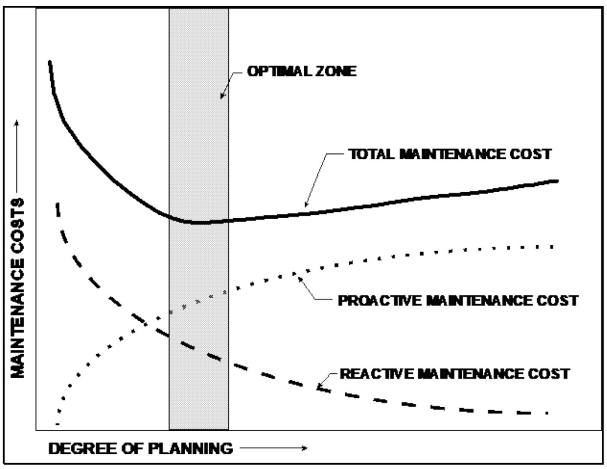
Routine maintenance is the regular ongoing day-to-day work that is necessary to keep assets operating, including instances where portions of the asset fail and need immediate repair to make the asset operational again. This work falls into two broad categories as follows:

Planned (proactive) - Proactive inspection and maintenance works planned to prevent asset failure.

Reactive - Reactive action to correct asset malfunctions and failures on an as required basis.

A key element of asset management planning is determining the most cost-effective blend of planned and unplanned maintenance as illustrated in the following figure.

Figure 13 Balancing proactive & reactive maintenance



The short-term maintenance strategy is intended to maintain the current levels of service standards. The long-term maintenance strategy will be modified to reflect the following factors:

- **Risk of failure** -The risk associated with failure of critical assets.
- **Levels of service** - Changes in the current or agreed level of service.
- **Economic efficiency** - Asset condition assessment.
- **Extend the life of the asset component** - Asset improvements and development programme.
- **Legislative compliance** – e.g. requirements of LGA 2002.

9.4.3 Operations and maintenance programme

The annual maintenance programme includes provision for:

- The standard monitoring and maintenance works necessary to ensure that the assets are operational at all times. Such works include monitoring inspections, audits and surveys, removal of blockages from channels and weed spraying.
- Planned maintenance works are undertaken on a cyclic basis, or through the annual condition survey, crest level surveys, cross section surveys and structures audit reports. Prioritisation is based on the risks of failure.
- Unplanned maintenance is urgent maintenance work identified during routine inspections, or through customer feedback. These are investigated and assessed, and if the risks of failure warrant it, then works are added to the current annual maintenance programme. Maintenance activities and frequencies are summarised in the table below.

The process of maintaining assets is described further in Section 6.

Table 39 Maintenance activity and frequency

Activity	Maintenance	Estimated frequency
River channel works and assets		
Condition assessment	Inspection and assessment of river channel conditions and reporting	Annually
Reliability inspections	Regular inspection for changes especially after floods	Biannually
Surveys	Cross section survey	Biannually and following flood events
Vegetative management	Clearance, spraying, removal of vegetation where causing erosion or obstruction	Annually
Rock work	Repositioning or replacement of rock work	As required
Gravel management	Survey to assess management requirements. Agreement reached with owners	As required
Stopbanks/flood walls		
Condition assessment	Survey to assess management requirements.	Annually
Crest level survey	Survey of stopbanks /floodwall crest levels	10 Yearly
Renewal works	Topping up of stopbanks and raising floodwalls when settlement occurs	10-25 Yearly

9.5 Capital and renewal planning

9.5.1 Renewal works

Renewal expenditure is work that restores an existing asset to its original level of service – either capacity or the required condition. These broadly fit into the following work categories as follows:

Rehabilitation: involves the repair of an existing asset, or asset component. Rehabilitation doesn't provide for a planned increase in the operating capacity or design loading. It is intended to enable the asset to continue to be operated to meet the current levels of service.

Replacement: does not provide for a planned increase to the operating capacity or design loading. Some minor increase in capacity may result from the process of replacement, but a substantial improvement is needed before asset development is considered to have occurred.

9.5.2 Renewal strategy

Renewal strategies provide for the progressive replacement or rehabilitation of

individual assets that have reached the end of their useful life. This is managed at a rate that maintains the standard and value of the assets as a whole. This programme must be maintained at adequate levels to maintain current levels of service and the overall quality of infrastructure assets.

The general renewal strategy is to rehabilitate or replace assets when justified by:-

Asset performance

Assets are renewed where they fail to meet the required level of service. The monitoring of asset reliability, capacity and efficiency during planned maintenance inspections and operational activity identifies non-performing assets. Indicators of non-performing assets include:

- Structural failure
- Ineffective and/or uneconomic operation
- Unsafe conditions for the public.

Economics

From an economic perspective, an asset may be considered no longer economic to continue repairing when the annual cost of repairs exceeds the annualised cost of its renewal. An economic consideration is the co-ordination of renewal works with other planned works such as road reconstruction. Council actively researches the effectiveness of new technology, which may reduce the direct and social costs of repair works.

Risk

The risk of failure and associated environmental, public health, financial or social impact justifies proactive action (e.g. probable extent of flooding damage, health and safety risk). Where such assets are identified (critical assets), proactive inspection is undertaken to determine asset condition at a frequency appropriate to the risk and rate of asset decay.

9.5.3 Life cycle

The current lifecycle expectations (projected asset lives) for the river and catchment assets within the Coromandel Zone are shown within the following table.

Table 40 Projected asset lives

	Item	(Years)
Embankments	Stopbanks	
	Clay foundation	100
	Flood walls	
	Timber	25
	Timber with earth bulking	25
In-river structures	Erosion control structures	
	Riprap	50

9.5.4 Replacement (renewal) works summary

While many of the smaller replacement (renewal) items are undertaken within maintenance, all major works are programmed as replacement items and are managed in a similar way to new capital works.

No renewals or replacements are anticipated within the Coromandel zone in the next 10 years. This is largely due to the small number of assets within the zone, and the fact that the assets are relatively new, with long remaining useful lives. Despite this, renewals or replacements will be required in the event of storm and/or flood damage.

In the future, WRC will consider the financial and customer risks of having sufficient funds to deal with renewal demands, consideration of detailed assessments, implementing proactive renewals and recognising the increasing maintenance and operational requirements within the Coromandel zone.

9.5.5 New works

New works are the creation of new assets or works, which upgrade or improve an existing asset beyond its existing capacity or performance in response to changes in usage or customer expectations. Council recognises that asset development and asset renewal can occur simultaneously.

Asset renewal is maintaining the condition of the assets and current service levels.

Asset development is providing service improvements, measured by asset performance.

9.5.6 Development planning categories

New works fall into four separate categories as shown in Table 41 below.

9.5.7 Selection criteria

Council carries out a prioritisation process of all necessary renewal or development works. The priority list is used to assign funds when preparing the financial plans. It is important that the process be regularly reviewed and that the cost estimates are reviewed at detailed design stage and/or purchase.

9.5.8 Creation/acquisition/ augmentation plan, and capital works

While the zone levels of service are currently assessed as appropriate and meet the needs of the stakeholders of the works, there is demand for providing new works in some areas. These issues are being managed in accordance with the demand management plan for the zone in consultation with key stakeholders and the zone liaison subcommittee

Table 41 Development planning categories

Category	Detail
Growth	Any asset development (council funded or externally funded) that is required as a result of growth
Level of service	Any asset development that is required as a result of an increase in levels of service.
Legislative	Any asset developed to meet legislative requirements
Vested	Any assets vested (gifted) with Council. As required by schedule 10 of the LGA 2002, with respect to Council funded development work, this plan also identifies and differentiates requirements of additional asset capacity in terms of increased demand (e.g. growth) or increase in service provision levels and standards.

Table 42 contains information on planned new capital works within the zone.

Table 42 New capital works

Location	Grahams Creek, Tairua
Description of works	Construct a shallow stopbank along the lower right bank of the stream and along the Manaia Road foreshore Divert a proportion of Graham's Stream away from the backyards of properties on Ocean Beach Road
Budget	
2012/13	$122,000
2013/14	$526,000
2014/15:	$ 14,000
2015/16:	$ 4,000
2016/17 onwards	$ 0

9.6 Disposals

As part of the life cycle management of assets it is vital to consider the costs of asset disposal in the long-term financial forecasts for an asset. The cost of asset disposal is expected to be incorporated within the capital cost of new works, or asset renewals.

Disposal is the retirement or sale of assets whether surplus or superseded by new or improved systems. Assets may become surplus to requirements for any of the following reasons:

- Under utilisation
- Obsolescence
- Provision exceeds required level of service
- Assets replaced before its predicted economic life
- Uneconomic to upgrade or operate
- Policy changes
- Service provided by other means (e.g. private sector involvement)
- Potential risk of ownership (financial, environmental, legal, social,).

The formal process for disposal of zone assets is as follows:

- Asset identified as obsolete due to change in technology, change in site conditions, change in community demand, or failure of the asset to provide the service.
- Disposal options considered and a cost /benefit analysis carried out. The most cost-effective option to dispose of the asset will be undertaken:
  - input sought from liaison subcommittee as appropriate
  - Council approval sought according to Delegations Manual

- disposal is undertaken including obtaining any consent for disposal works.

Gains and losses on disposals are determined by comparing the proceeds with the carrying amount of the asset. Gains and losses on disposals are included in the statement of financial performance. When revalued assets are sold, the amounts included in asset revaluation reserves in respect of those assets are transferred to retained earnings.

Currently, there are no plans to dispose of any surplus scheme assets; however planned replacement of some components will be undertaken as per the replacement/renewal plan. Salvage values of replaced assets are unlikely to be significant, and are therefore (conservatively) not included in financial forecasts

At this time Council has no plans to dispose of any of its river and catchment services assets.

9.7 Asset valuation

9.7.1 Introduction

Council values its assets in accordance with the procedures and methods set out in the New Zealand Infrastructure Asset Valuation and Depreciation Guidelines Edition 2 and New Zealand Equivalent to International Accounting Standard 16; Property, Plant and Equipment (NZ IAS 16) and the NZ local authority asset management practice (NZ Flood Protection Asset Valuation and Depreciation Guidelines.

An asset valuation is to be used for asset management (calculating long-term asset renewal projections), identifying loss of service potential (depreciation) and for financial reporting purposes.

Revaluations are undertaken every three years on the basis of Depreciated Replacement Cost (DRC). The initial valuation was done as at 1 July 2008.

An asset valuation is undertaken on behalf of the Council every three years. Key outputs from the report are:

- Optimised Replacement Cost (ORC)
- Optimised Depreciated Replacement Cost (ODRC)
- Assessment of Remaining Economic Life (REL)

While all the Council-owned assets are fully maintained and depreciated, changes to the valuations are expected due to the recent timing of construction and timing of data entry into the asset management system in relation to the 2011 valuation (refer to explanation in section 6.3.6).

9.7.2 Accounting standard

The New Zealand International Accounting Standard 16 (NZIAS16) “Accounting for Property, Plants and Equipment” is adhered to as this applies to relevant infrastructure assets considered in the scope of Council valuations for the general purpose of financial reports.

9.7.3 Industry guidelines

Infrastructure assets should be valued in accordance with the rules and methodology as prescribed in the New Zealand Infrastructure Asset Valuation & Depreciation Guidelines Manual Edition 1.0 April 2001 (NZIAV) and in reference to earlier versions of these rules.

In addition the NAMS New Zealand Infrastructure Asset and Depreciation Guidelines, Edition 2.0. 2006 (NZIAVDG) and NZ Flood Protection Asset Valuation and Deprecation Guidelines are used regularly throughout local government and nationally as industry guidelines.

9.7.4 Valuation methodology

Council’s latest revaluation of all infrastructural assets was undertaken in 2010 (AECOM NZ Ltd, 2010). The valuation process was performed in accordance with generally accepted accounting standards (NZ IAS 16) and with the NZ Flood Protection Asset Valuation and Depreciation Guidelines (NAMS, 2006b).

An internal review of the 2010 valuation was undertaken in June 2011, and it is Councils intention to conduct internal peer reviews of all future independent valuations.

Replacement values are generally calculated from a number of sources including:

- Recent contracts
- Consultant database
- Previous valuations adjusted using Capital Goods Index

- Rawlinsons
- Contractors, manufactures and suppliers.

The unit rates used include the actual purchase and construction costs as well as establishment. These rates have been increased to account for professional fees such as planning, investigation and design. A detailed list of typical unit rates and valuation assumptions is available within the 2011 valuation report.[29]

The replacement value for the stopbanks was based on an equivalent component cost and included earthworks, topsoiling, fencing, royalties to landowners, design and construction supervision and administration.

From the asset optimised replacement value (ORC), the optimised depreciated replacement cost (ODRC) is obtained as follows.

$$ODRC = \frac{Remaining\ Life\ (Years)}{Economic\ Life\ (Years)} * Replacement\ Value$$

9.7.5 Base life assessments

Historical records of top up frequencies from other zones were used for the assessment of the stopbank base life. The frequency of the need to top up the crest level of a stopbank depends on the foundation material. For clay, the stopbank settles at a slower rate and requires less frequent top up. Therefore the base life of stopbanks is a function of stopbank height and the rate of settlement. All stopbanks within the Coromandel zone have a clay foundation.

9.7.6 Remaining life

In all instances with the exception of drains, planting and vegetation the remaining life of the asset has been calculated from the condition rating.

9.7.7 Valuation overview

The valued assets of the zone, comprising the flood protection works, have a total replacement value of $676,448, a current book value of $708,214 and an annual depreciation of $14,068 as of 1 July 2010[30]. The soil conservation assets within the zone are not valued because they are formally owned by the respective property owners. Council does however have ongoing obligations for monitoring and managing these works under the terms of the agreements with landowners. Because of these commitments, the assets have been included under this plan. The breakdown of assets is shown in Table 10.

9.8 Funding strategy

The funding for river and catchment works, and flood protection works in the Coromandel zone is set out in the 2009/12 LTP Section 3 'The Finances'. The zone management programme provides both asset and non-asset related river and catchment services. The main services and costs are non-asset management related.

A catchment wide funding system provides the mechanism for funding all river and catchment works and services within the zone.

The costs of Council services are funded through a combination of income sources including:

- Participating landowners.
- Ratepayers.
- Internal borrowing.
- Rental income from council owned buildings.
- Investment income.

Under the 2009/19 LTP, the cost of Council's entire work programmes (for all activities) is projected to increase from $95.633 million in 2009/10 to $138.907 million (including inflation) in 2018/19. Rate revenue will fund 67-71 per cent of this expenditure. This amount varies as a result of the forecast revenue from passenger transport fares. At the time of writing, the 2012/22 LTP is in development, and will update and replace the 2009/19 LTP.

Over the period of the 2009/19 LTP, projected rate increases to existing ratepayers are between 2.2 per cent and 4.3 per cent after allowing for inflation.

The council's investment fund, like others of its kind, has been affected by the financial crisis that impacted world markets over the past three years.

[29] AECOM NZ Ltd (May 2011): "Valuation report Valuation of Waikato Regional Council Infrastructural Assets at 31 December 2010. AECOM, Hamilton.

[30] Refer to Section 6.3.6 for a discussion on the issues with the current valuation figures.

In response to this, the council has amended its investment strategy by increasing the asset allocation of fixed interest investments compared to equities to help ensure a reliable income from the fund is available to offset rates requirements.

For the first three years of this plan, Council is only budgeting on a return from the fixed interest investments that council will hold. During this period Council expect the value of their equity holdings will start to recover some of the valuation losses of the last two years, however the timing of this is uncertain. A direct impact of this is that some programmes previously funded by income from the investment fund, such as Clean Streams, will be funded through rates. The budgeted income from the investment fund is treated as an offset to general rate and does not directly fund any work programme. This plan sees use of internal borrowing programmes in relation to river and catchment management zones. The cost of establishing the scheme works programmes was initially advanced from general council funds.

Specific debt repayment plans are in place with each affected catchment zone, funded from targeted rates, to ensure that this debt is repaid over an agreed time period (generally 10 years from the start of the programme). Funds generated from the internal debt repayment will be added into the council's investment fund.

Council's infrastructural capital expenditure programme of $52.356 million over the 10 years of the 2009/19 LTP is funded by way of depreciation and capital rates. Internal borrowing is utilised to provide the initial capital financing. Capital rate revenue is then applied to the payment of interest and principle. These funding tools have been selected to ensure that the costs of these long term capital projects are spread over time to take account of intergenerational equity considerations. Operational capital expenditure is funded through depreciation.

The council is participating along with a number of other councils in a jointly developed computer software system. Council's contribution to that project will be funded from internal borrowings and be repaid over five years.

9.8.1 Financial statements and projections

Financial projections for the zone are made over a ten year horizon commencing from the 2012/13 financial year. While this long term forecast is necessarily uncertain, more detailed projections are made for the immediate 3 year period (yearly projections until 2014/15). The projections made here are consistent with those in Councils draft 2012/22 LTP (dated December 2011).

An Annual Plan is prepared every year. This is developed within the LTP framework that is reviewed every three years. Both of these planning mechanisms are conducted within the legal requirements of the Local Government Act and after consultation with the wider community.

The Annual Plan ensures financial resources are available for the projects laid out for the coming period. The expenditure estimates are designed to include as detailed an estimate as possible with regards to future expenditure requirements for maintenance and depreciation. These costs are both fully expensed in the income statement for the period concerned.

Depreciation, a non-cash transaction, is transferred to a Depreciation Reserve which in turn is used to fund Fixed Asset replacements.

9.9 Policies

9.9.1 Policy introduction

Council has four policies that provide guidelines and procedures for dealing with treasury management activities; the determination of the significance of an issue, proposal, decision or other matter; how to perform in partnerships between council and the private sector and the treatment of infrastructural assets. An overview of these four policies is provided below.

An overview of the Zone Reserving Policy is also provided. This policy is in development as a part of the 2012/22 LTP.

9.9.2 Treasury risk management policy

The purpose of the Treasury Risk Management Policy is to outline approved policies and procedures in respect of all treasury activity to be undertaken by Council. The formalisation of such policies

and procedures will enable treasury risks within Council to be prudently managed.

The objective of the Treasury Risk Management Policy is to control and manage costs and investment returns that can influence operational budgets and public equity. Specifically, all borrowing, investments and incidental financial arrangements (such as use of interest rate hedging financial instruments) will meet requirements of the Local Government Act 2002 and incorporate the Liability Management Policy and Investment Policy.

9.9.3 Policy on significance

'Significant' is defined within the Local Government Act 2002 as:

*"**Significant**, in relation to any issue, proposal, decision, or other matter, means that the issue, proposal, decision, or other matter has a high degree of significance."*

Section 90 of the Local Government Act 2002 ('the Act') requires all council to have a policy on significance which sets out:

- The council's general approach to determining the significance of proposals and decisions in relation to issues, proposals, decisions or other matters.
- Any thresholds, criteria or procedures that are to be used by the council in assessing the extent to which issues, proposals, decisions or other matters are significant.
- The assets considered by the council to be strategic assets.
- The significance of a decision helps to determine how rigorously the act's decision making requirements will be followed.

9.9.4 Partnership and private sector policy

Pursuant to Section 102(4) (e) of the Local Government Act 2002 (LGA 2002), the Waikato Regional Council, ('the council'), must adopt a policy in respect of the commitment of council resources to partnerships between council and the private sector ('public private sector partnerships'). This policy must be established in accordance with Section 107 of the LGA 2002.

The purpose of this policy is to ensure that when the council enters into partnerships of a business nature with the private sector that it acts prudently to ensure the council's interests are protected and the desired outcomes are consistent with the council's strategic objectives. These partnerships can be quite diverse in nature and for this reason this policy is broadly based.

Council may consider partnership arrangements with the private sector for the provision of infrastructure and services, where such a partnership is likely to deliver better value for money based on cost, time and financial arrangements than traditional delivery methods.

The council will consider partnerships with the private sector where:

- The partnership will contribute to the achievement of community outcomes in the council's LTP.
- It will promote the social, economic, environmental or cultural wellbeing of the region in the present and in the future.
- It is a prudent, efficient and effective use of the council's resources.
- A need has been defined in measurable output terms.
- Outcomes for the community, measured on cost, quality and timeliness exceed any other provision.
- The project is structured to optimise risk allocation in order to generate the incentives for cost effective, high quality services.
- There is an identifiable market of bidders prepared to compete for the opportunity to undertake the project.
- There is scope for the private sector to demonstrate particular skills and/or innovative capacity.
- The project size justifies the transaction and ongoing management costs.
- The financial management of assets in the Coromandel zone must be consistent with these policies. The significance of RCS assets has been assessed in Part I and the financing of activities has been discussed earlier in this section. No RCS

activities are currently carried out in partnership with the public sector though the policy demonstrates how this can be achieved.

9.9.5 Infrastructure assets – accounting policies / guidelines

The treatment of infrastructure assets is outlined in the Council document Infrastructure Assets:

- Accounting policies / guidelines. The document is reviewed every year as part of the year end financial report preparation.
- The scheme will be valued in accordance with the procedures and methods set out in the New Zealand Infrastructure Asset Management Manual. The Scheme will be revalued every three years and this will be based on the Optimised Depreciation Replacement Cost method.
- The Optimised Replacement Cost model considers technology changes, over-design, redundancy and system configuration to identify a benchmark alternative asset that efficiently replicates the current asset, while providing the same level of service. ODRC equals this replacement cost, after deducting an allowance for wear/consumption to reflect the remaining economic cost.

Currently the financial/accounting system is run within the Finance Group of Council. Manual linkages exist between the Conquest Asset Management system and the financial management system. This is currently being automated.

9.9.6 Zone reserving policy

Council operates cash reserves in relation to each management zone. Currently, this reserve is represented by a single balance, which is included in reporting to the relevant subcommittees.

Work has been undertaken to break the current cash reserve balances down into a series of component parts as a part of the 2012/22 LTP development. This will enable to better tracking and management of zone funding, and better alignment of decisions to the drivers of reserve movements and balances. This work will result in the development of a zone reserving policy. Fundamental aspects of the policy will apply to all zones, however some elements will need to be zone-specific.

From the 2012/13 financial year onwards, it is proposed that the zone reserves are reported with the following components:

Operating reserve
This reserve should reflect the difference between the actual and budgeted maintenance programme for each zone. Where these two are well-aligned, the balance in this reserve should be close to zero. Funds held in this reserve should reflect work programmes that have either been deferred, not completed, completed for less cost than budgeted, or that have attracted additional revenue. It is proposed that a zone-specific reserve limit (upper and lower) would be defined to guide the management of the reserve balance.

Capital expenditure reserve
This reserve should track the way in which capital works are funded. Funding should match the period over which the benefit arising from that expenditure is expected to accrue - capital expenditure should be matched by long-term funding. The policy will consider two categories of capital works, being renewals and new capital works. As a consequence of the way that capital expenditure is funded, it is expected that the capital expenditure portion of the zone reserve will reflect a deficit in the long-term. This should be viewed in a positive way, as it recognises the long-term nature of this expenditure.

Disaster recovery reserve
The need to review the overall insurance framework in relation to council's infrastructural assets has arisen as a result of the Christchurch earthquakes and the resulting impact on council's current insurance provider, Local Authority Protection Programme (LAPP). From 1 July 2011, LAPP premiums have increased four-fold, and the deductible has increased to approximately $2.0 million. Currently, disaster recovery provisions are addressed in a number of ways. In addition to these explicit insurance provisions, an allowance for event response and recovery is provided for in zone budgets each year. Work is in progress to define limits for each level of reserving, and guidelines for the point at which funding can be accessed from the regional disaster recovery reserve

Zone establishment loan

The establishment costs for the Coromandel Zone have been recognised against the zone reserves as an opening deficit in the reserve. The status of the repayment of these establishment costs will be reported separately from other reserving drivers.

9.10 Risk to significant forecasting assumptions

There are risks and uncertainties associated with future cost forecasts because it is not always possible to accurately predict the level of reactive maintenance required. Reactive maintenance is subject to a range of influences including the weather and river flows etc. Major disaster (floods and earthquake) risks are however provided for through self reserving and membership of the LAPP mutual disaster damage fund (refer to Appendix 5).



10 Improvement plan

10.1 Improvement process overview

Council is adopting a strategic management approach to improvement planning, continually developing Zone management plans (ZMPs), and implementing improvement processes and practices. The improvement plan is integral to this approach, quantifying current business practice and measuring progress toward an identified future position.

The purpose of an improvement plan is to identify and develop implementation of ZMP processes. This includes:

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

The development of this ZMP is based on existing levels of service, the best available current information and the knowledge of Council staff. It is intended that the development of this plan is part of an ongoing process and that the document will be reviewed and updated regularly. This review process involves using improved knowledge of customer expectations (community consultation) and information from Asset Management Systems and databases. This will enable Council to optimise decision-making, review outputs, develop strategies, improve risk management and extend the planning horizon. This section describes:

- The specific improvements proposed over the next three years.
- The procedures proposed to be implemented within the organisation for monitoring and review.

10.2 Improvement plan

The improvement plan has eight improvement areas that collectively cover all of the improvement actions required:

1. Monitoring and review
2. Lifecycle management strategies
3. Partners and stakeholders
4. Asset information
5. Levels of service
6. Risk management
7. Financial management
8. Improvement planning.

The eight improvement areas cover improvement actions required to meet the OAG criteria for asset management, and pick up recommendations from the October 2010 Audit New Zealand review of the draft Lower Waikato Zone Plan. The improvement areas also cover any actions identified within the text of this plan that are not otherwise captured.

The following table is based on the draft Coromandel zone improvement plan, which is currently in development, and shows a brief schedule of improvement actions for the next three years. Further detail on the improvement actions is provided within Appendix 6.

Appendix 6 also includes a summary of current practice and desired future practice across the eight improvement areas.

It is noted that completion and approval of an improvement plan is one of the highest priority actions within the following table.

It is also noted that many of the improvement actions relate to areas that are common across river and catchment management zones – such as asset information. Where cross-zone actions are identified, these will be combined with the improvement actions of other zones.

Table 43 Summary of improvement actions 2012/13 – 2014/15

Timing	Improvement area	Action	Responsible	Rationale
11/12 FY on-going	Asset Info.	Improve asset data completeness, condition and performance	**Asset Mgr.** Zone Mgr.	OAG core*
12/13 FY (by Sept 12)	Mon/review; Lifecycle. mgmt.; Risk mgmt.; Fin mgmt.	Scope priority actions and dependencies – confirm detailed actions required for four improvement areas identified, and dependencies upon each other	**Zone Mgr.** Asset Mgr. Fin Mgr. Div. Mgr.	Improvement Plan to be realistic & achievable
12/13 FY	Mon./review	Develop and implement monitoring and reporting programme	**Zone Mgr.**	OAG core ANZ rec**
12/13 FY	Risk mgmt.	Identification and risk management strategies for critical assets	**Zone Mgr.**	Helps to define priorities
12/13 FY	Fin. Mgmt.	Define gaps and develop plan to address	**Zone Mgr.** Fin Mgr.	OAG core
12/13 FY	Improvement planning	Fully develop improvement plan and seek endorsement from senior management and Council	**Zone Mgr.**	OAG core
12/13 FY on-going	Mon./review	Complete annual ZP revisions	**Zone Mgr.**	OAG core
12/13 FY	Levels of service	Develop measurement and reporting arrangements	**Zone Mgr.**	OAG advanced
13/14 FY	Partners & stakeholders	Develop and implement communications strategy	**Zone Mgr.**	-
13/14 FY	Lifecycle mgmt.	Develop optimised decision-making process	**Zone Mgr.**	OAG core ANZ rec
13/14 FY	Fin. mgmt.	Implement financial improvement plan	**Zone Mgr.** Fin Mgr.	OAG core
13/14 FY	Improvement planning	Implement improvement plan	**Zone Mgr.**	OAG core
13/14 FY	Lifecycle mgmt.	Develop demand strategy/plan	**Zone Mgr.** Div. Mgr.	OAG core ANZ rec
13/14 FY/ on-going	Risk mgmt.	Develop and implement risk management plan	**Zone Mgr.**	ANZ rec
14/15 FY	Mon./review	Three-yearly review	**Zone Mgr.**	OAG core ANZ rec
14/15 FY	Asset info.	Develop confidence measures for expenditure forecasts	**Zone Mgr.**	OAG core
14/15 FY	Lifecycle mgmt..	Implement demand strategy/plan	**Zone Mgr.** Div. Mgr.	OAG core ANZ rec

* Action will help achieve Office of the Auditor General (OAG) Core criteria
** Action helps to address Audit New Zealand (ANZ) October 2010 high priority recommendations

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Glossary of terms

Annual Plan (AP)	The Annual Plan provides a statement of the direction of Council and ensures consistency and coordination in both making policies and decisions concerning the use of Council resources. It is a reference document for monitoring and measuring performance for the community as well as the Council itself.
Aggradation	The accumulation of sediment in rivers and waterways due to sediment supply exceeding the waterways ability to transport sediment.
Asset Management (AM)	The combination of management, financial, economic, engineering and other practices applied to physical assets with the objective of providing the required level of service in the most cost effective manner.
Asset Management System (AMS)	A system (usually computerised) for collecting, analysing and reporting data on the utilisation, performance, lifecycle management and funding of existing assets.
Asset register	A record of asset information considered worthy of separate identification including inventory, historical, financial, condition, construction, technical and financial information about each.
Asset renewal	Major work, which restores an existing asset to its original capacity or the required condition (stopbank top-up etc)
Auditor General	The Auditor General of the New Zealand Audit Office.
Benefit cost ratio (BCR)	A ratio which compares the benefits accruing to customers and the wider community from constructing a project with at projects costs.
Capital expenditure (CAPEX)	Expenditure used to create new assets or to increase the capacity of existing assets beyond their original design capacity or service potential. CAPEX increases the value of an asset.
Climate change	A long term significant change in the average weather.
Community outcomes	Outcomes developed with the community, which outline the community's vision.
Components	Specific parts of an asset having independent physical or functional identity and having specific attributes such as different life expectancy, maintenance regimes, risk or criticality.
Condition monitoring	Continuous or periodic inspection, assessment, measurement and interpretation of resulting data, to indicate the condition of a specific component so as to determine the need for some preventative or remedial action
Condition rating survey	Survey carried out to assess the condition of assets.
Critical assets	Assets for which the financial, business or service level consequences of failure are sufficiently severe to justify proactive inspection and rehabilitation. Critical assets have a lower threshold for action than non critical assets.
Current replacement cost	The cost of replacing the service potential of an existing asset, by reference to some measure of capacity, with an appropriate modern equivalent asset.
Deferred maintenance	The shortfall in rehabilitation work required to maintain the service potential of an asset.
Depreciated replacement cost (DRC)	The replacement cost of an asset spread over the expected lifetime of the asset.
Depreciation	The wearing out, consumption or other loss of value of an asset whether

	arising from use, passing of time or obsolescence through technological and market changes. It is accounted for the by historical cost (or re-valued amount) of the asset less its residual value over its useful life.
Disposal	Activities necessary to dispose of decommissioned assets.
Edge protection	Rockwork or planting to help maintain the integrity of stop banks or other flood defences structures.
Emergency work	The restoration work required to restore an asset damaged by a sudden and unexpected event (eg storm event) to its previous condition.
Geographic Information System (GIS)	Software which provides a means of spatially viewing, searching, manipulating, and analysing an electronic database.
Life cycle management	A process of managing an asset from initial construction through to disposal.
Long Term Plan (LTP)	Council's 10-year programme setting out the community outcomes sought, key activities, levels of service, performance measures and funding.
Net Present Value (NPV)	The value of an asset to the organisation, derived from the continued use and subsequent disposal in present monetary values. It is the new amount of discounted total cash inflows arising from the continued use and subsequent disposal of the asset after deducting the value of the discounted total cast outflows.
Non-structural measures	Flood mitigation measures to separate the community from floodwaters.
Optimised renewal decision making (ODM)	An optimisation process for considering and prioritising all options to rectify performance failures of assets. The process encompasses NPV analysis and risk assessment.
Reach	A defined section of a river, used for management purposes
Remaining useful life (RUL)	Remaining Useful Life of an asset or asset component. (Generally Useful or Effective life less age).
Stakeholder	A person or organisation who has a legitimate interest in an activity e.g. community, Iwi, etc.
Stopbank	An embankment adjacent to a river or watercourse, which retains floodwaters from flowing onto a floodplain.
Structural measures	Structures or physical works constructed to keep floodwaters away from existing development e.g. stopbanks.
Sustainability	The process of meeting the needs of the present community without compromising the ability of future generations to meet their own needs.

Acronyms

AEE	Assessment of environmental effects
AM	Asset management
AMIS	Asset management information system
AMP	Asset management plan
AP	Annual Plan
ARI	Average recurrence interval
AS/NZS	Australia and New Zealand Standards
BAP	Best appropriate practice
BRE	Business risk exposure
CDEM	Civil Defence Emergency Management
CE	Chief Executive
CPB	Coromandel Peninsula Blueprint
DOC	Department of Conservation
DRC	Depreciated Replacement Cost
WRC	Waikato Regional Council
GHD	Gutteridge Haskins and Davey
GIS	Geographic Information System
GRC	Gross replacement cost
H&S	Health and safety
IIMM	International Infrastructure Management Manual
IMP	Iwi Management Plan
IPCC	Intergovernmental Panel on Climate Change
IT	Information technology
KPI	Key performance indicator
LCM	Life cycle management
LGA 2002	Local Government Act 2002
LIA	Land Improvement Agreement
LoS	Levels of Service
LTP	Long Term Plan
MFE	Ministry for the Environment
MFish	Ministry of Fisheries
NAMS	National Asset Management Steering (Group)
NIWA	National Institute of Water and Atmospheric Research
NPV	Net present value
NZIAS16	New Zealand International Accounting Standard
NZTA	New Zealand Transport Agency
OAG	Office of the Auditor General
ODM	Optimised decision making
ORC	Optimised replacement cost
ODRC	Optimised depreciated replacement cost
ORDM	Optimised renewal decision making
O&M	Operations and maintenance
QA	Quality assurance
RCS	River & Catchment Services Group
RIG	Resource Information Group
RMA	Resource Management Act 1991
RPS	Regional Policy Statement
RUG	Resource Use Group
RUL	Remaining useful life
SLA	Service Level Agreements
SNZ HB	Standards New Zealand Handbook (Risk)
WRP	Waikato Regional Plan
ZMP	Zone Management Plan

Appendices

Appendix 1 Legislative & policy requirements

Appendix 1a LGA 2002 Schedule 10 requirements

LGA 2002 Schedule 10 requirement	LGA 2002 references	Section covered
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)	Overview document Sec 3.3.2.2
Outline any significant negative effects that any activity within the group of activities may have on social, economic, environmental or cultural well-being of the local community	LGA 2002 Schedule 10 – 2 (1) (c)	Zone plan Appendix 1a
Identify the assets or groups of assets required by the group of activities and identify, in relation to those assets or groups of assets,---	LGA 2002 Schedule 10 – 2 (1) (d)	Zone plan section 6
How the local authority will assess and manage the asset management implications of changes to demand for, or consumption of, relevant services;	LGA 2002 Schedule 10 – 2 (1) (d) (i) (A)	Zone plan sections 6 & 7
How the local authority will assess and manage the asset management implications of changes to service provision levels and standards	LGA 2002 Schedule 10 – 2 (1) (d) (i) (B)	Zone plan sections 7 - 9
What additional asset capacity is estimated to be required in respect of changes to each of the matters described in subparagraph (i):	LGA 2002 Schedule 10 – 2 (1) (d) (ii)	Zone plan section 9
What additional asset capacity is estimated to be required in respect of changes to each of the matters described in subparagraph (i):	LGA 2002 Schedule 10 – 2 (1) (d) (ii)	Zone plan section 9
How the provision of additional asset capacity will be undertaken:	LGA 2002 Schedule 10 – 2 (1) (d) (iii)	Zone plan section 9
The estimated costs of the provision of additional asset capacity identified under subparagraph (ii), and the division of those costs between each of the matters in respect of which additional capacity is required:	LGA 2002 Schedule 10 – 2 (1) (d) (iv)	Zone plan section 9
How the costs of the provision of additional asset capacity will be met:	LGA 2002 Schedule 10 – 2 (1) (d) (v)	Zone plan section 9
How the maintenance, renewal, and replacement of assets will be undertaken:	LGA 2002 Schedule 10 – 2 (1) (d) (vi)	Zone plan section 9
How the costs of maintenance, renewal, and replacement of assets will be met:	LGA 2002 Schedule 10 – 2 (1) (d) (vii)	Zone plan section 9
A statement of the intended levels of service provision for the group of activities, including the performance of targets and other measures by which actual levels of service provision may meaningfully be assessed: and (i) in detail in relation to each of the first three (1-3) financial years covered by the plan; and (ii) in outline in relation to each of the subsequent financial years covered by the plan (4-10).	LGA 2002 Schedule 10 – 2 (2) (a) and 2 (1) (e)	Zone plan section 7
The estimated expenses of achieving and maintaining the identified levels of service provision, including the estimated expenses associated with maintaining the service capacity and integrity of assets: and (i) in detail in relation to each of the first three (1-3) financial years covered by the plan; and (ii) in outline in relation to each of the subsequent financial years covered by the plan (4-10).	LGA 2002 Schedule 10 – 2 (2) (b) and 2 (1) (e)	Zone plan section 9

LGA 2002 Schedule 10 requirement	LGA 2002 references	Section covered
A statement of how the expenses are to be met; and (i) in detail in relation to each of the first three (1-3) financial years covered by the plan; and (ii) in outline in relation to each of the subsequent financial years covered by the plan (4-10)..	LGA 2002 Schedule 10 – 2 (2) (c) and 2 (1) (e)	Zone plan section 9
A statement of the estimated revenue levels, the other sources of funds, and the rationale for their selection in terms of section 101 (3). And (i) in detail in relation to each of the first three (1-3) financial years covered by the plan; and (ii) in outline in relation to each of the subsequent financial years covered by the plan (4-10).	LGA 2002 Schedule 10 – 2 (2) (d) and 2 (1) (e)	Zone plan section 9

Significant negative effects of this activity

Schedule 10 of the Local Government Act covers the information required to be included in the LTP. Part 2 (1) (c) states that a LTP must, in relation to each group of activities of the local authority:

> *(c) Outline any significant negative effects that any activity within the group of activities may have on the social, economic, environmental, or cultural well being of the local community*

This sub-section provides information in accordance with this legislative requirement. The purpose of identifying significant negative effects is to ensure that Council activities are conducted in accordance with the principles of sustainability. RCS activities have the potential to have negative effects on community well being. The possible negative effects are outlined in the table below.

Significant negative effect	Cultural	Social	Economic	Environmental	Mitigation of negative effects	Addressed in…
Some in-stream works may have minor negative effects on water quality and ecological values				✓	Compliance with consent conditions Compliance with Council's Engineering Code of Practice and Guidelines.	Zone plan section 4 Legislative and policy requirements and Appendices 1c and 1d
Increasing rates to fund works may create economic pressures for communities			✓		Consult with community on all costs and options for Levels of service through the LTP process	Overview document section 6 Consultation and engagement Zone Plan section 7 Levels of service
Aesthetic values may be impacted, for example losing river views because of stopbanks		✓			Consult with community on all costs and options for Levels of service through the LTP process	Overview document section 6 Consultation and engagement
Removal / relocation of properties in high hazard risk areas may effect individuals and communities		✓			Consult with community on all costs and options for Levels of service through the LTP process	Overview document section 6 Consultation and engagement
Previous identified sites containing taonga (artefacts) or	✓				Consult with iwi regarding sites of significance during the works planning process	Overview document section 6 Consultation and

Significant negative effect	Cultural	Social	Economic	Environmental	Mitigation of negative effects	Addressed in…
koiwi (bones) may be disturbed in the process of works						engagement Overview document section 7 Relationships with iwi Zone plan section4 4 Managing the zone and 5 Relationships with iwi
Inadequacy of existing assets to cope with large rainfall events causing flooding, which could result in social and economic hardship.		✓	✓	✓	Compliance with consent conditions Compliance with Council's Engineering Code of Practice and Guidelines.	Overview document section 5 Legislative and policy requirements Zone plan section 4 Managing the zone Zone plan section 8 Risks Zone plan Appendices 1c and 1d
Health and safety risks associated with the operation, maintenance, or construction of infrastructure		✓	✓		Ensure compliance with legislation and Health & Safety Management Plans. Maintain an Incidents Register.	Zone plan section 8 Risks
Potential impacts on customer satisfaction due to service failure /delays /responsiveness		✓	✓		Monitor and report on Levels of Service and in Service provider contracts. Seek to resolve customer complaints "close the loop"	Zone plan section 7 Levels of service Zone plan section 10 Improvement Plan
Access to waterways		✓	✓		Monitor requirements for access and liaise with the community as appropriate	Zone plan section 7 Levels of service
Disruption to wildlife				✓	Programme works to minimise wildlife disruption avoiding fish spawning and bird nesting seasons	Zone plan section 4 Managing the zone Zone plan Appendices 1c and 1d
Gravel and/or sand extraction			✓	✓	Cross-section monitoring process	Zone plan section 4 Managing the zone Zone plan Appendices 1c and 1d

The significant negative effects identified above can be managed and/or mitigated by effective risk management, options assessments, asset management and operational procedures.

Appendix 1b Office of the Auditor General Criteria for core and advanced asset management

Key AMP criteria	Key points for achieving "Core" criteria	Key points for achieving "Advanced" Criteria	Covered In ZMP section	In Development	Basic	Intermediate	Advanced	Comments
Levels of service	Asset Management (AM) Planning should define the level of service or performance required of the asset, linked to the strategic/community outcomes of the organisation. The significant services (for which service levels should be subject to consultation and agreement) should be stated.	Community outcomes linked to LoS and customer and technical performance measures	Section 7 Levels of service		✓			
		Evaluating LoS Options & Costs	Section 7 Levels of service	✓				
		For each of those significant services; Undertaking consultation with the community and other relevant stakeholders, using consultation processes which meet industry recognised standards.	Section 4 managing the zone			✓		
		Adoption by the Council or governing body of the levels of service and standards after consultation has taken place.	Section 7 Levels of service		✓			Customer charter yet to be prepared
		Public communications of the levels of service and standards in a 'Customer Charter' or equivalent public document.	Section 7 Levels of service	✓				
		Regular monitoring and public reporting of the organisations adherence to agreed levels of services and standards.	Section 4 managing the zone		✓			
		Ensuring the AM plans of each significant service reflect and are based on the agreed levels of service, including technical performance targets and measures which underpin the customer-agreed levels of service and standards.	Section 7 Levels of service		✓			

Key AMP criteria	Key points for achieving "Core" criteria	Key points for achieving "Advanced" Criteria	Covered In ZMP section	In Development	Basic	Intermediate	Advanced	Comments
Description of assets	An adequate description of the asset, both physically and in financial terms, with the ability to aggregate and disaggregate information. State the remaining useful lives of assets. A financial description of the assets that is linked to the physical description and meets the requirements of: Financial Reporting Standards Valuation Standards augmented by the NZ Depreciation and Valuation Guidelines A financial description of the assets that is linked to the physical description and meets the requirements of NZIAS 16. Augmented by the NZ Depreciation and Valuation Guidelines	A reliable physical inventory of assets at both an individual asset level and at a network level. This would include: Physical attributes such as location, material, age etc. Systematic monitoring and analysis of physical condition. Systematic measurement of asset performance (including utilisation / capacity).	Section 6 Zone assets		✓			
Financial forecasts / recognise depreciation (Loss of service potential)	AM Planning should translate the physical aspects of planned maintenance, renewal and new work into financial terms for at least the ensuing 10 years and in a manner that is fair, consistent and transparent. The forecasts should include sufficient information to enable decline in service potential (depreciation) of an asset to be measured. Guidance on	AM Planning should translate the physical aspects of planned operational, maintenance, renewal and new works into financial terms. Generally over the timeframe in which the asset network must deliver services. In more specific terms, over the period for which the organisation has a strategic plan. The assumptions underpinning financial forecasts should be disclosed	Section 9 Financial management		✓			

Key AMP criteria	Key points for achieving "Core" criteria	Key points for achieving "Advanced" Criteria	Covered In ZMP section	In Development	Basic	Intermediate	Advanced	Comments
	depreciation is included in the NZ Valuation and Depreciation Guidelines.	in the organisations strategic plans and AM plans. The compilation of financial forecasts should be consistent, reliable and provable.						
Planning assumptions & confidence levels	AM planning should: List all assumptions and provisos under which the plan and financial forecasts are prepared. Indicate the degree of confidence of the reliability of data underpinning the AM Plan, particularly: Data on asset condition Data on asset performance Accuracy of asset inventory Demand/growth forecasts On the basis of the preceding assumptions and confidence of underlying data, provide a level of precision or confidence on the expenditure forecasts for the asset network	As for 'core' plus: List all the assumptions and provisos in the AM Plans, and note key assumptions regarding AM Planning in the organisations strategic plans. Have degrees of confidence on the reliability of data as follows: Inventory data Grade 1 (critical assets) Grade 2 (non critical assets)	Section 6 Zone assets Section 6 Zone assets	✓	✓			Further work needed
		Condition data Grade 1 or 2 (critical assets) Grade 1, 2 or 3 (non critical assets) Performance data Grade 1 or 2 (critical assets) Grade 1, 2 or 3 (non critical assets)						
Outline improvement programmes	AM Planning should state what needs to be done to improve AM processes and techniques Improvement programmes should outline: The weak areas and how these will be addressed The timeframe over which the improvements will occur and	As for 'core' plus: Improvement programmes should outline key performance indicators (KPIs) for monitoring AM improvement. The improvement plan should comment generally on achievements against the previous plan, and formally report against KPIs. As for 'core' AM Plan criteria.	Section 10 Improvement plan	✓				

Key AMP criteria	Key points for achieving "Core" criteria	Key points for achieving "Advanced" Criteria	Covered In ZMP section	In Development	Basic	Intermediate	Advanced	Comments
	The resources (human and financial) needed							
Planning by qualified persons	AM Planning must be undertaken by a suitably qualified person. A suitable qualification would be a Level 6 (Tactical) or Level 7 (Strategic) National Diploma in Asset Management or equivalent skill level.	As for 'core' AM Plan criteria.	Section 6 Zone assets Section 10 Improvement plan	✓	✓			
	If plans are prepared by persons not suitably qualified, the plans should be independently assessed by a qualified person.	As for 'core' AM Plan criteria.						
	The planning process should be peer reviewed.	As for 'core' AM Plan criteria.						
Commitment	The Asset AM Plan must be approved and adopted by the governing body, Board or Council. This includes approval of the improvement element of the plan.	As for 'core' AM Plan criteria.	Section 4.6.5 ZMP Review and Monitoring		✓			
	AM Plans must be seen as the key planning tool for infrastructure assets and/or significant physical assets which provide the inputs for Council's strategic plans (LTP).	As for 'core' plus: The organisation must demonstrate that AM plan requirements are being implemented through operational plans and formally report discrepancies						
Updating	AM plans must be regularly updated to reflect the most current future plans for the assets (it is expected that 'core' AM planning will be significantly revised in the light of action under improvement programme. In the	AM Planning is seen as a constantly evolving process, with underpinning AM systems constantly providing better information. It is expected that formal asset management plans and overarching asset management strategies will be	Section 4.6.5 ZMP Review and Monitoring		✓			

Key AMP criteria	Key points for achieving "Core" criteria	Key points for achieving "Advanced" Criteria	Covered In ZMP section	In Development	Basic	Intermediate	Advanced	Comments
	first few years annual revisions of AM plans are likely).	formally revised every three years, with the timing of revisions linked to the organisation's strategic planning cycles.						
Risk management	Risk management to identify critical assets and associated risks and risk management strategies.	Management of assets must include recognition and application of the principles of integrated risk management. Specifically; Risk management should be consistent with AS/NZS4360, and industry good practice such as the NZ Local Government Handbook for risk management. Risk management for assets should be integrated with other corporate risk management processes. Asset risk management should encompass: Identification and risk management strategies for critical assets The link to maintenance and replacement strategies. Engineering lifelines based risk assessments and mitigation plans including reference to the organisations disaster recovery and business continuity plans	Section 8 Risk management		✓			
Lifecycle (Optimised) decision-Making	Identify gaps between current service capability and the required service capability to meet future demand and target service levels and reflect these gaps in an asset development programme.	The ability to predict robust and defensible options for asset treatments that can assist in achieving optimal costs over the life cycle of the asset or network including: Applying appropriate economic evaluation tools (or other organisation	Section 9 Financial management Section 4.6 Business processes	✓				

Key AMP criteria	Key points for achieving "Core" criteria	Key points for achieving "Advanced" Criteria	Covered In ZMP section	In Development	Basic	Intermediate	Advanced	Comments
	Evaluation and ranking based on suitable criteria of options for significant capital investment decisions.	endorsed prioritisation systems) in developing short term project lists. Using predictive modelling techniques to provide defensible long term financial forecasts.						
Managing growth	Demand forecasts for each network or facility for a 10 year period are based on latest growth forecasts. Demand management strategies and demand drivers are understood and documented	Demand forecasts include analysis of the different factors that comprise demand. The sensitivity of asset development (capital works) programmes to demand changes is understood.	Section 9 Financial management	✓				

Appendix 1cCoromandel zone consents

Consent No	Location	Description	Expiry date
120251	Wharekawa Harbour	Discharge herbicide into the Wharekawa Harbour for the purpose of controlling saltwater paspalum	30/11/2014
111724	Thames Coast	Place gravel and sediment from stream excavation onto the foreshore of the Thames Coast	13/04/2025
111727	Waiomu	Remove gravel, sand and debris from the Waiomu Stream in association with flood protection works	13/04/2025
111728	Thames Coast	Place gravel and sediment from stream excavations onto the foreshore of the Thames Coast	13/04/2025
111723	Pohue	Remove gravel, sand and debris from the Pohue Stream in association with flood protection works	13/04/2025
115824	Waiomu	Construct use and maintain two stopbanks on the right bank of Waiomu Stream and recontour its floodplain for flood protection and diversion purposes	28/02/2012
115344	Tapu	Construct, use and maintain an overflow spillway channel, a timber floodwall structure and a stopbank for the purpose of diverting floodwaters from the Tapu Stream away from a campground	31/03/2042
111726	Thames Coast	Place gravel and sediment from stream excavations onto the foreshore of the Thames Coast	13/04/2025
111729	Coromandel	Remove gravel, sediment and debris from the Whangarahi and Karaka Streams in association with flood protection works	30/04/2025
111732	Coromandel	Construct erosion control structures within the Whangarahi and Karaka Streams in association with flood protection works	30/04/2040
113911	Te Weiti Stream	Excavate and remove in-channel shingle and blockages in the Te Weiti Stream catchment below SHWY 25 (approx. total length 550m) for the purpose of maintaining channel capacity.	1/04/2021
111725	Tapu	Remove gravel, sand and debris from the Tapu River in association with flood protection works	13/04/2025
113912	Te Weiti Stream	Deposit excavated channel material on the banks of the Te Weiti Stream for the purposes of restoring and maintaining channel capacity.	1/04/2021
115823	Waiomu	Place earthworks overburden on the floodplain of the Waiomu Stream for ground elevation purposes	28/02/2012
115300	Te Puru	Carry out erosion protection works on the Te Puru Stream namely the installation of a 100m rock revetment wall and refurbishment of existing erosion protection works	21/12/2009
120250	Wharekawa Harbour	Removal of sapling mangroves from the foreshore of the Wharekawa Harbour	30/11/2019
111923	Coromandel	Construct a stopbank and divert water in times of flood to protect Elizabeth Park Retirement Village	28/01/2040
111731	Coromandel	Place gravel and sediment from stream excavations onto the foreshore of the Coromandel Harbour	30/04/2025
112954	Coromandel	To Disturb the bed and banks of the Mamaku Stream for hydraulic efficiency and erosion control purposes	31/07/2008
115822	Waiomu	Remove approximately 2,500 cubic metres of buildings and material from the floodplain and right bank of the Waiomu Stream in order to re-instate the natural floodplain	20/02/2012
101217	Thames Coast	Discharge sediment into the coastal marine area for beach renourishment purposes	31/07/2008
121684	Te Puru	Temporarily divest wastes, including associated	30/06/2045

Consent No	Location	Description	Expiry date
		vehicle use associated with erosion protection works in the coastal marine area of Te Puru stream	
121676	Te Puru	Erect, reconstruct, use and maintain, including associated vehicle use, up to 390 metres of erosion protection structures, and occupy associated space, in the coastal marine area of the Te Puru Stream	30/06/2045
121739	Te Puru	Temporarily divert water in association with reconstruction, maintenance and use of rip rap erosion control structures on the Te Puru Stream of SH25 Bridge	30/06/2045
109835	Te Puru	Undertake excavation works on the bed of the Te Puru Stream for stream maintenance purposes	28/02/2009
121731	Te Puru	Reconstruct ,maintain and use 250m of rip rap erosion control structures on the Te Puru stream upstream of SH25 Bridge	30/06/2045
113913	Te Weiti Stream	To excavate and deposit bed material, remove and deposit mangroves, and operate machinery in the Coastal Marine Area (CMA), all for the purpose of reinstating the outlet channel of the Te Weiti Stream in the CMA.	1/04/2021
120204	Colville	Construct and use erosion control structures in the beds and floodplains within Area 3 - Colville for erosion control purposes.	30/06/2030
120205	Colville	Undertake works within the beds and floodplains of waterways within Area 3 - Colville, including bed disturbance, excavation and associated diversion of water, for erosion control and flood mitigation purposes.	30/06/2030
120206	Colville	Undertake removal of vegetation from the beds and floodplains of waterways within Area 3 - Colville, for erosion control and flood mitigation purposes.	30/06/2030
114708	Whitianga	Undertake removal of vegetation from the bed and floodplain of waterways within Whitianga (Area 5) for erosion control purposes.	30/06/2027
114707	Whitianga	Undertake works within the bed and floodplain of waterways within Whitianga (Area 5) including bed disturbance, excavation and associated diversion of water, for erosion control purposes.	30/06/2027
114706	Whitianga	Construct erosion control structures in the bed of waterways within Whitianga (Area 5) for erosion control purposes.	30/06/2027
114711	Tairua	Undertake removal of vegetation from the bed and floodplain of waterways within Tairua (Area 6) for erosion control purposes.	30/06/2027
114710	Tairua	Undertake works within the bed and floodplain of waterways within Tairua (Area 6), including bed disturbance, excavation and associated diversion of water, for erosion control purposes.	30/06/2027
114709	Tairua	Construct erosion control structures in the bed of waterways within Tairua (Area 6) for erosion control purposes.	30/06/2027
114705	Whangamata	Undertake removal of vegetation from the bed and floodplain of waterways within Whangamata (Area 7) for erosion control purposes	30/06/2027
114704	Whangamata	Undertake works within the bed and floodplain of waterways within Whangamata (Area 7), including bed disturbance, excavation and associated diversion	30/06/2027

Consent No	Location	Description	Expiry date
		of water, for erosion control purposes.	
114703	Whangamata	Construct erosion control structures in the bed of waterways within Whangamata (Area 7) for erosion control purposes	30/06/2027

Appendix 1d Standards and guidelines

Standard or guideline	Description/use
International Infrastructure Management Manual (NAMS, 2006a)	General asset management
Waikato Regional Council: Stopbank Management Guidelines. (Waikato Regional Council, 1995)	Generic management of stopbanks
Waikato Regional Council: Floodgate Management Guidelines. (Waikato Regional Council, 1997a)	Generic management of floodgates
Waikato Regional Council: Pump Station Management Guidelines. (Waikato Regional Council, 1997b)	Generic management of pump stations
Waikato Regional Council: Environmental Guidelines. (Waikato Regional Council, 2003)	Guidelines for undertaking asset management activities to avoid/minimise environmental effects.
Waikato Regional Council: Infrastructure Assets Accounting Policies / Guidelines. (Waikato Regional Council, 2008a)	Policies/guidelines for accounting for infrastructure assets within Waikato Regional Council
Waikato Regional Council: Infrastructure Assets Disaster Damage and Risk Management Policy (Waikato Regional Council 2004)	Risk financing for disaster damage to schemes
NZS 3910, Conditions of Contract for Building and Civil Engineering Construction NZS 3915, Conditions of Contract for Building and Civil Engineering Construction (where no person is appointed to act as engineer to the contract)	Standard conditions of contract for construction/maintenance work
AU/NZS 4360. Australian/New Zealand Standard for Risk Management.	Risk management framework.
Vegetation Management and Instream Works (Waikato Regional Council, 2007)	Best practice guidelines
Waterway Crossings (Waikato Regional Council, 2006)	Best practice guidelines
Land Drainage (Waikato Regional Council, 2006)	Best practice guidelines
Oil Spill Contingency Guidelines (Waikato Regional Council, 2006)	Operational guidelines
Erosion and Sediment Control Guidelines for Soil Disturbing Activities (Waikato Regional Council, 2002)	Operational guidelines
Waikato Regional Council Freshwater Fish Calendar (Waikato Regional Council, 2007)	Operational guidelines
Consent Requirements for Vegetation Removal (Waikato Regional Council, 2006)	Operational guidelines
National Policy Statement for Flood Risk Management (proposed)	National standard
Managing Flood Risk – A process Standard, NZS9401: 2008	National standard
River Flood Risk Management Strategy 2009	Waikato Regional Council regional strategy

Appendix 2 Business process

Appendix 2a Business functionality supported by Conquest II

Product/module	Business function	Comment	WRC status
Conquest II Asset register	Records information about the nature (type, material, dimensions, quantity and age) of assets Records information about the location of assets. Records information about the design capacity of assets and the areas serviced by assets. Fully customisable type hierarchy and user defined attributes	Data not regularly updated unless errors are found.	Fully Implemented
Conquest II Valuation	Records ODRC, and ORC information. Estimated remaining lives and expected expiry date Depreciation tracking	Valuations updated every 3 years. Valuation history is retained.	Fully Implemented
Conquest II Inspections and performance	Records annual inspection and condition information. Performance grade	Condition information updated annually Inspection history is retained	Fully Implemented
Conquest II Requests	Customer requests recorded Actions can be loaded and programmed Provides audit trail of response times and actions.		Partially implemented
Conquest II Maintenance Management	Planned maintenance (standard actions/ actions) Unplanned maintenance ((standard actions/ actions) Standard procedures Works completion sign off Forward planning		Partially implemented
Conquest II Risk Management	Condition Performance Consequence of failure Probability of failure	Quantification of failure risk for prioritising maintenance works.	Not yet implemented

Appendix 2b Asset hierarchy

Level 1	Type code	Level 2	Type code	Level 3	Type code
Assets	04.02	Barge	04.02.20	Barge: steel	04.02.20.01
		Building	04.02.03	Building: aluminium clad	04.02.03.06
				Building: brick/timber framed	04.02.03.01
				Building: colour steel timber frame	04.02.03.05
				Building: concrete block	04.02.03.07
				Building: corrugated iron	04.02.03.03
				Building: kitset/concrete pad	04.02.03.02
		Channel	04.02.08	Channel: artificial	04.02.08.01
				Channel: natural	04.02.08.02
		Civil structure	04.02.07	Barrels	04.02.07.01
				Chambers	04.02.07.05
				Inlet/outlet structures	04.02.07.02
				Screens	04.02.07.03
				Stilling basin	04.02.07.06
				Sumps	04.02.07.04
		Crossing structure	04.02.18	Bridge	04.02.18.02
				Culverts	04.02.18.03
				Ford crossing	04.02.18.01
		Embankment	04.02.09	2008 valuation foundation asset	04.02.09.13
				Bunds	04.02.09.07
				Detention dam	04.02.09.02
				Floodwall	04.02.09.12
				Spillway	04.02.09.03
				Stopbank	04.02.09.04
		Erosion Control Structure	04.02.13	Debris dams	04.02.13.12
				Detention bunds	04.02.13.02
				Diversion banks	04.02.13.11
				Drop structures	04.02.13.03
				Flumes	04.02.13.10
				Gradient control structure	04.02.13.05
				Inlet channel protection works	04.02.13.14
				Outlet channel protection works	04.02.13.15
				Pipe drop structures	04.02.13.09
				Rip-rap	04.02.13.08
				Sediment dams	04.02.13.07
				Sinkholes	04.02.13.06
				Water supply	04.02.13.13
		Fence	04.02.05	Fence: conventional	04.02.05.01

Level 1	Type code	Level 2	Type code	Level 3	Type code
				Fence: deer	04.02.05.03
				Fence: electric	04.02.05.04
				Fence: sheep netting	04.02.05.02
		Floodgate	04.02.10	Floodgate: box	04.02.10.01
				Floodgate: conventional	04.02.10.02
				Floodgate: diaphragm	04.02.10.03
		Mechanical and electrical plant	04.02.06	Diesel generator	04.02.06.11
				Diesel storage tank and system	04.02.06.13
				Lifting gear	04.02.06.05
				Motors	04.02.06.07
				Pipework	04.02.06.03
				Power supplies	04.02.06.10
				Pumps	04.02.06.06
				Switchboard and controls	04.02.06.12
				Telemetry/scada	04.02.06.04
				Valves	04.02.06.08
		Plantings/vegetation	04.02.14	Exotic plantings	04.02.14.18
				Native plantings	04.02.14.19
		Pumpstation	04.02.11	Pumpstation: Archimedes	04.02.11.04
				Pumpstation: gravity outlet	04.02.11.01
				Pumpstation: siphon flood	04.02.11.05
				Pumpstation: through bank	04.02.11.03
		River and channel structure	04.02.12	Bank revetment	04.02.12.01
				Boat ramp	04.02.12.02
				Debris traps	04.02.12.06
				Fish pass	04.02.12.08
				Groynes	04.02.12.07
				Sediment ponds	04.02.12.03
				Training lines	04.02.12.05
				Weirs	04.02.12.04

Appendix 3 Capacity and performance of scheme defences [31]

Defence name	Protected area (ha)	Stopbanks				Rip-rap	
		Length (m)	Design standard (%AEP)	Design freeboard (m)	Average condition	Length (m)	Average condition
Coromandel						130	2
Stopbanks (Retirement village)		326	1	0.5	2		
Stopbanks (Karaka Stream)		90	1	0.5	1		
Timber flood walls (Karaka Stream)		322	1	0.5	1		
Te Puru						250	2
Stopbank		144	1	0.6	1		
Floodwalls		804	1	0.6	1		
Floodwall (section along SH)		~150	1 (future)[1]		1		
Spillway		~50	1	300	1		
Waiomu						238	2
Stopbank (spillway)		35	2		1		
Timber floodwall (spillway)		40	2		1		
Stopbank (Holiday Park)		100	1 (future)[1]		1		
Timber floodwall (Holiday Park)		20	1 (future)[1]		1		
Pohue	-	-	-	-	-	60	2

Notes:
[1] 1% AEP (future) flood level is the forecasted flood level that takes into account climate change predictions by the end of the century (using MfE guidance (2008))

[31] This table will be updated as part of the improvement plan

Appendix 4 Risk register

The risk registers provided in the following tables for the current and future River and Catchment Services activities of Waikato Regional Council and have been developed in consultation with key staff.

Appendix 4a General risks

Risk number	Risk descriptor	Risk type	Initial risk			Current practices/strategies		Residual risk			Risk owner (name and title)	Management options available
			Consequence	Likelihood	Factor	Description	Effectiveness	Consequence	Likelihood	Factor		
5.1	**Lack of staff resources** **Caused by:** Inability to attract key staff Inability to retain skilled staff Labour market Shortage of appropriately skilled staff Staff turnover Inadequate organisation structure / mix of skill levels **Consequences:** High cost of recruitment and training of new staff Increased staff stress Decreased productivity Limited skilled staff/ mainly unskilled staff appointed Decreased operational capacity Loss of knowledge Increased staff turnover Reduction in levels of service	Operational Financial Reputation / image Health and Safety	4	4	H	Dedicated HR staff, policies and guidelines Use of recruitment consultancies Monitor staff satisfaction, surveys Personal development plans Strategic planning (staff and organisation) Internal promotions/ career management Training & development processes Shared resourcing with other TLA's Secondment strategies with other organisations Study grants for staff Benchmarked salary levels / regular remuneration review Promoting positive work environment – social, team building Good office accommodation/layout Flexible working hours	Very Good	2	3	M	Group Manager	Continue current practice Succession planning Cadetships Development training Mentorship programmes Group business plan including resource planning Targeted recruiting
5.2	**Lack of Financial Resources** **Caused by:** Economic climate Political climate/cycle	Operational Financial Reputation / Image	3	4	H	Financial Planning (6 monthly review, monthly basis zone programme level) Prioritised schedule of work	Very Good	2	2	L	Group Manager	Continue current practice Continue to train staff on financial

Risk number	Risk descriptor	Risk type	Initial risk			Current practices/strategies		Residual risk			Risk owner (name and title)	Management options available
			Consequence	Likelihood	Factor	Description	Effectiveness	Consequence	Likelihood	Factor		
	Operational tempo Inadequate forward planning **Consequences:** Inability to deliver aspects of a programme of work Not meeting stakeholder expectations Political Level of Service	Health and Safety				Financial reserves Credit facilities Monitoring and reporting of economic climate						management Improve financial forecasting
5.3	**Inefficient use of resources** **Caused By**: Inadequate project, programme and portfolio management Lack of training or qualified staff Lack of project planning or systems Projects, programmes and activities inadequately scoped, budgeted, managed and documented, and reviewed Inadequate consultation Inefficient consent process due to stakeholder objections Unrealistic expectations Lack of resources Lack of ownership Inadequate systems and processes Inadequate business planning Lack of an overall strategy or plan **Consequences:** Time & cost blowouts Lack of quality outcomes	Financial Operational Reputation / Image	4	4	H	Project Management training for key staff Reporting / monitoring processes Use of trained external resource Have access to internal specialists Appropriate resources (e.g. software/information systems) Dedicated Project / Programme management staff/team Development and implementation of business and zone plans	Very Good	3	2	M	Divisional Manager Zone Manager CFO	Ensure ongoing adequate (quality) training for key staff Project Closure/Reviews improved Reporting / monitoring processes Improved Project Management (process and skills) Improved Financial Capability

Risk number	Risk descriptor	Risk type	Initial risk			Current practices/strategies		Residual risk			Risk owner (name and title)	Management options available
			Consequence	Likelihood	Factor	Description	Effectiveness	Consequence	Likelihood	Factor		
	Loss of image Impact on staff morale Over/under spending of budgets Failure to deliver on commitments e.g. LTP Deferring of projects											
5.4	**Loss of Knowledge (information)** **Caused by:** Inability to retain knowledge Insufficient systems in place to manage data/information, especially regarding asset performance and condition Loss of institutional knowledge IT failure and systems performance Inadequate transfer of knowledge (knowledge management) Lack of continuity (political process) **Consequences:** Operational loss Financial costs Loss of institutional knowledge Loss of image and credibility Reduced Levels of Service Poor planning Breakdown in stakeholder relationships Breakdown in political relationships	Financial Operational Reputation / Image Political	4	4	H	Small number of assets in zone Assets recently identified, confirmed, updated and re-valued Information systems and knowledge management improving rapidly Asset changes/updates – Information currently updated in conquest IT practices (backup, virus, security etc)	Good	2	2	L	Divisional Manager Group Manager	Improve processes to ensure that asset knowledge is transferred, stored and accessible and audited (externally), including maintenance information. Define mentors/coaches and successors Ongoing training for staff Improve asset data collection processes, data management skills and resources Ongoing review and improvement of systems Implement quality assurance programme for asset and zone information
5.5	**Failure to identify opportunities and developments – Best Practice**	Financial	3	3	M	Local government networking e.g. national	Very Good	2	2	L	Group Manager	Continue and develop current

Risk number	Risk descriptor	Risk type	Initial risk			Current practices/strategies		Residual risk			Risk owner (name and title)	Management options available
			Consequence	Likelihood	Factor	Description	Effectiveness	Consequence	Likelihood	Factor		
	and Technology advances **Caused by:** Lack of staff awareness and training Insufficient resources to implement Lack of networking Lack of personal development Lack of research Lack of process to capture/ manage opportunities **Consequences:** Missed opportunity to gain efficiencies, reduce costs and maintain service levels Lack of increased knowledge Increased costs Lost productivity	Operational Reputation / Image Political				forums, conferences Access experienced staff and contractors Staff development and training Use of external advice/resources Liaison with groups doing research Regular updates and attendance through NAMS Environment best practice development Exchange of information between regional council through working groups						practices Maintain awareness of current industry developments and research Liaison with groups doing research Monitoring international best practice and research Improving capability/process to evaluate and implement recognised opportunities Internally develop best practice
5.6	**Service Level Agreements not met or non-existent – between River and Catchment Services and other parties internal or external** **Caused by:** Lack of process Lack of monitoring of the SLA's Budget Political change Lack of expertise Lack of knowledge' Pressure of deadlines Lack of resource **Consequences:**	Financial Operational Political Reputation / Image	3	3	M	Current SLA's in place Regular meetings with other Councils and agencies Monitoring and Reporting	Very Good	3	1	L	Zone Manager	Maintain and develop relationships with stakeholders Review if additional SLA's are required Improved monitoring and management of Service Level Agreements Need to develop and implement internal SLA's between zone and RCS programmes Develop and

Risk number	Risk descriptor	Risk type	Initial risk			Current practices/strategies		Residual risk			Risk owner (name and title)	Management options available
			Consequence	Likelihood	Factor	Description	Effectiveness	Consequence	Likelihood	Factor		
	Affects timing and quality of delivery of services Costs for work done on behalf of others not recovered Legal consequences Non-delivery of service Community expectations not met Loss of reputation											implement an external SLA with key stakeholders as appropriate
5.7	**Inadequate Contract Management (Service/ Maintenance/ Capital)** **Caused by:** Inadequate documents Inadequate management of contractors Poor contractor selection/ monitoring Resourcing Competition Exit from industry Poor performance Economic environment Lack of funding Inadequate knowledge of skilled staff Lack of process e.g. contract templates Lack of corporate commitment to the formal processes Lack of skilled contractors **Consequences:** Poor Contractor performance Unnecessary or excessive costs	Financial Operational Economic Reputation / Image Health and Safety Environment Legal	4	5	E	Good contract management skills in place Contract conditions and specifications clear Financial and Performance reporting Corporate and zone objectives Limited procurement procedures / manual Developing H&S monitoring/ auditing Project management and contract documentation training Internal contract performance review Audit of contract processes Staff financial delegation process and tender assessment process Centralised filing management system for contracts Probity process	Very Good	3	2	M	Divisional Manager Zone Manager Asset Manager	Further improvements to existing contract processes and procedures Improve contract management skills Improve procurement procedures / manual Contract management monitoring system Develop and implement improved H&S monitoring/ auditing Improve template specifications and contracts Develop and implement formal contract close out process

Risk number	Risk descriptor	Risk type	Initial risk			Current practices/strategies		Residual risk			Risk owner (name and title)	Management options available
			Consequence	Likelihood	Factor	Description	Effectiveness	Consequence	Likelihood	Factor		
	Insufficient output or quality Loss of key contractors Negative Council Image and adverse media coverage Increased costs Legal liability Reduced Health and Safety Temporary loss of amenity Loss of operational capability Inefficient use of resources Injury to members of the public Loss of amenity value Loss of information (where contract terminated)											
5.8	**Inappropriate/inadequate Procurement** **Caused by:** Lack of adequate policy and processes Lack of competitors in the market place **Consequences:** Cost inefficiencies Failure to meet levels of service Continuity of supplier	Financial Operational Economic Reputation / Image Health and Safety Environment Legal	3	4	H	Procurement policy is in place Financial delegation levels in place Contract / Tender process including tenders board in place Probity process in place Financial Policy Annual audit	Very Good	3	2	M	Divisional Manager Zone Manager	Continue current practice Regular review Continue to develop and refine in line with best practice
5.9	**Inadequate Asset Management – not up to date, or insufficient quality of process and output.** **Caused by:** Lack of AM knowledge and practice Lack of staff knowledge and training	Financial Operational Economic Reputation / Image Health and	5	5	E	Asset Management processes and practices Asset Management System (Conquest II) GIS - Geo Media is linked to Conquest II	Good	3	2	M	Divisional Manager Asset Manager	Progressive development of zone management plans incorporating Asset management Continuing Staff

Risk number	Risk descriptor	Risk type	Initial risk			Current practices/strategies		Residual risk			Risk owner (name and title)	Management options available
			Consequence	Likelihood	Factor	Description	Effectiveness	Consequence	Likelihood	Factor		
	Lack of resources Poor maintenance Inadequate data collection Poor data quality/ accuracy and reporting Inadequate assessment and performance monitoring **Consequences:** Deterioration of assets Reduced level of service and loss of operational capacity Inadequate accuracy of asset and planning data for renewals/replacements and valuations Negative Council image Increased costs, Financial implications Under-utilisation of system Low confidence in accuracy of asset register Cross-functional access to data is limited Inadequate application and uptake of available tools/ information Insufficient information for informed decision making Serious injury / Loss of life Political risk Stakeholder expectations Communities/Towns expectations	Safety Environment Legal				Developing zone management plans Limited non-ring fenced resource for Asset Management Condition surveys and assessments, revaluations, structural audits (internal and external) Separation of the asset management programme (formerly part of technical services)						Development Reporting process for zone management performance measures Dedicated asset management staff Ongoing external audit and review (OAG) and process for post review action Establish Asset Management steering group
5.10	**Natural Hazards and resulting**	Financial	5	5	E	Reactive/Proactive approach	Very	4	4	H	Divisional	Public education /

Risk number	Risk descriptor	Risk type	Initial risk			Current practices/strategies		Residual risk			Risk owner (name and title)	Management options available
			Consequence	Likelihood	Factor	Description	Effectiveness	Consequence	Likelihood	Factor		
	impact on zone assets **Caused By:** Extreme weather event Earthquakes Tsunamis Volcanic eruptions Land instability Coastal storm surge **Consequences:** Potential injury, sickness or loss of life Damage to Council-controlled/ owned land e.g. Slips, loss of land Liability / Claims against Council Loss of amenity value Negative Council image (perceived as Councils problem) Increased costs e.g. clean up Adverse environmental effects Damage to private / neighbouring property Financial cost through damage to assets	Operational Economic Reputation / Image Health and Safety Environment Legal				to events Post event inspection/structural audit (as required) and renewals Engineering Code of Practice Communications strategy (flood warning system) Emergency/Hazard procedures manual Regional hazard mapping and identification Community feedback via EMO's Connections made with Civil Defence (Lifelines) Communications plan LAPP scheme Disaster recovery policy (WRC)	good				Manager CDEM Asset Manager	Communication plan strategy Continue, improve, monitor current process Improve understanding of hazard events
5.11	**Non-Compliance with Legislation and legal requirements** **Caused By:** Inability or failure to comply with statutory and regulatory requirements, lack of awareness Legislative changes increases statutory obligations to a level where they are unable to be met with	Financial Reputation / Image Health and Safety Environment Legal	5	2	M	Local government networking e.g. National forums, conferences Standard processes in place with templates Asset management plan/ steering group Legal advice requested as	Good	2	2	L	Group Manager	Ongoing training - key staff to keep updated on current legislation Regular communications to staff Continued review of Council procedures

Risk number	Risk descriptor	Risk type	Initial risk			Current practices/strategies		Residual risk			Risk owner (name and title)	Management options available
			Consequence	Likelihood	Factor	Description	Effectiveness	Consequence	Likelihood	Factor		
	existing resources Impending changes in policy or legislation not identified Inadequate training Inadequate staff performance **Consequences:** Compromised health, safety and protection Legal implications and resulting in increased costs and claims for Council Negative Council image/reputation Financial implications Political consequences Prosecution Injury/death					required Asset Management reporting Training/ education programme for staff incl seminars/ conferences/ legislative education RMA updates Inter-departmental communication Conformance with industry standards and practices						Communicating effects of legislative change to Council/ LTP process Improved communication of changes to legislation
5.12	**Ineffective Governance or inability of elected members to fulfil roles and responsibilities or disregard for community/staff views.** **Caused by:** Lack of communication with elected members Lack of understanding from elected members Poor planning and foresight Elections (Political cycles) Poor training of elected officials **Consequences:** Essential services under-resourced Decisions made on political grounds	Financial Operational Economic Reputation / Image Health and Safety Environment Legal	4	4	H	Councillors roles well defined and implemented Legislative requirements/ LTP process Procedures in place to ensure items presented to Council meet legislative requirements Clear, well prepared reports are presented to Council and Community boards to enable sound decision making Councillor induction/ handbook Councillor briefings / workshops CEO giving advice to	Very Good	2	2	L	CEO	Continue to manage process through CEO / workshops

Risk number	Risk descriptor	Risk type	Initial risk			Current practices/strategies		Residual risk			Risk owner (name and title)	Management options available
			Consequence	Likelihood	Factor	Description	Effectiveness	Consequence	Likelihood	Factor		
	ahead of defensible decision making Ineffective leadership and decision making A lack of continuity of direction Operational inefficiencies					Councillors						
5.13	**External economic influences** **Caused by:** Cost Escalations (e.g. due to oil price increases, economic failures). Uncontrollable movements in economy e.g. exchange rates, price of oil, steel and bitumen Fluctuation in land values Monetary and fiscal policy **Consequences:** Financial impact cost of services Inability to provide services, maintain service levels or achieve community outcomes	Financial Operational Economic	3	5	H	Local government networking Responding to national directives Monitoring world events and reacting	Good	2	5	M	Divisional Manager	Track national and global trends. Monitor key economic developments and liaise with central government Track innovations in sustainable practice
5.14	**Inability to utilise funding options – Both internal and external, including failure to acquire external subsidies and people not applying for funding on time or not identifying potential areas where funding is required.** **Caused by:** Lack of staff training Lack of awareness of funding sources Organisational or process deficiencies Lack of clearly defined levels of	Financial Operational Reputation / Image	4	5	E	Asset management process Prioritising projects/ LTP and Annual Plan process Experienced staff submitting external applications and reporting internally to Council. Working closely with regional groups Staff knowledge and awareness Established robust levels of service	Very Good	3	2	M	CFO Divisional Manager	Continued review of service levels Continue to utilise sustainable asset management practices Ongoing staff awareness of funding process, and changes

Risk number	Risk descriptor	Risk type	Initial risk			Current practices/strategies		Residual risk			Risk owner (name and title)	Management options available
			Consequence	Likelihood	Factor	Description	Effectiveness	Consequence	Likelihood	Factor		
	service Change in legislation **Consequences:** Funding not realised Loss of service levels Existing ratepayers fund growth					Forecast likely scenarios regarding effects of budget changes including deferments						
5.15	**Health and Safety** **Caused by:** Poorly designed, built or maintained assets Lack of staff training Lack of staff support and systems Lack of preparedness Lack of formal processes Vandalism Accidental damage **Consequences:** Injury to residents / visitors / staff Damage to property Legal claims Loss of reputation Increased costs	Financial Operational Reputation / Image Health and Safety Legal	5	3	H	Inspection, contract management, hazard identification Complaints Structure safety checks and audits Building code/standards / guidelines Specialised standards (e.g. Agrichemical) Condition assessments Programmes in place to identify areas, issues, risks that may impact on assets Fencing Signage ACC / Indemnity insurance Health and Safety Representative Corporate Auditing of Health and Safety Approved Contractor Health and Safety Plans Emergency response Training / Staff induction / manuals / Personal	Very Good	2	2	L	Group Manager H&S Coordinator Zone Manager	Continue current practice Improved systems and process (training, hazard id, etc)

Risk number	Risk descriptor	Risk type	Initial risk			Current practices/strategies		Residual risk			Risk owner (name and title)	Management options available
			Consequence	Likelihood	Factor	Description	Effectiveness	Consequence	Likelihood	Factor		
						Protective Equipment / Incident Register (HR) Contractor inductions						
5.16	**Ineffective strategic planning (internal WRC) Inability to plan for and provide for change** **Caused by:** Lack of integration between the different arms of Council pursuing objectives that are at odds with each other Lack of resources dedicated to planning Inability to forecast future trends and developments **Consequences:** Funding loss Loss of operational capability Decreased levels of service Negative Council image The councils strategic objectives, e.g. social, environmental & political not met Business Plan objectives not met Poor alignment of KPIs to objectives Failure to respond to change in demand in a timely manner Lack of optimised decision making Increased costs Inability to meet needs of community	Financial Operational Economic Reputation / Image Health and Safety Environment Legal	4	3	H	Communication with Corporate Planning. Consultation within organisation on long term planning LTP process Asset Management process and updating Liaison with Community via sub committees Political Liaison Organisational wide input to district plan review Liaison with key stakeholders Strategic planning documents Increased liaison with Policy group Consideration to National forecasts, policies, standards, etc.	Very Good	2	2	L	Group Manager, RCS Divisional Manager Group Manager, Policy	Zone Plan Strategic Alignment with other corporate planning processes Improvement plan process Continue current practices Increased planning resources Upskilling staff
5.17	**Inadequate business continuity planning**	Financial Operational	3	2	M	Manual work-around e.g. cell-phones, laptops	Very Good	2	2	L	Group Manager	Maintain/develop business continuity

Risk number	Risk descriptor	Risk type	Initial risk			Current practices/strategies		Residual risk			Risk owner (name and title)	Management options available
			Consequence	Likelihood	Factor	Description	Effectiveness	Consequence	Likelihood	Factor		
	Caused by: Infrastructure (communications, power, etc.) Essential Services (Transport, etc.) Fire Damage, Water Damage, etc. **Consequences:** Serious loss in public confidence Reduced public/ staff health and safety Damage to WRC infrastructure Damage to WRC property Loss of service Loss of information	Economic Reputation / Image Health and Safety				Back -up systems Managers have staff/ contractors/other contacts contact numbers Asset / Facility Management plans Communications Plan – e.g. contact numbers for staff and key contractors Insurances (PI, PL, H&S, etc)					RCS EMT	plans
5.18	**Inadequate Communications and PR Management - Poor communications with stakeholders (internal and external)** **Caused by:** Increasing stakeholder expectations for information provided (both quality & quantity) Poor resourcing Lack of commitment Inadequate stakeholder comms and engagement strategies **Consequences:** Inefficient use of resources Political dissatisfaction with level of service Lack of political support Negative Council image	Operational Reputation / Image Legal	4	4	H	Dedicated Communication team Improved electronic communications/ surveys/ displays Customer Service Call Centre & Charter Analysis of submissions on LTP and annual plan processes Management plans Community input/ Consultation/ Feedback from sub committees Meeting statutory requirements & guidelines Improved internal communication Iwi relations	Very Good	2	2	L	Group Manager, RCS Manager, Comms Zone Manager	More communication/PR involvement at earlier stage of projects/ major events (i.e. adoption of plans and strategies, funding policies, etc.) Early internal liaison and with stakeholders Include communications/ customer service component in project brief and debrief process Learning from experience/ capture learning's

Risk number	Risk descriptor	Risk type	Initial risk			Current practices/strategies		Residual risk			Risk owner (name and title)	Management options available
			Consequence	Likelihood	Factor	Description	Effectiveness	Consequence	Likelihood	Factor		
	Lack of buy-in Lack of community support and poor understanding					Improved customer relations Media updates Communications plans for projects Customer surveys						Celebrate success / making known, demonstrating achievements Record and measure customer response/ inquiry database monitor and analysis
5.19	**Co Management** **Caused by:** The pending Crown Treaty settlement with Hauraki Iwi incorporates a new co-management structure for the zone. **Consequences:** Potentially transfers powers for the management of some services within the zone. Details of settlement and its effects are still emerging	Financial Operational Reputation / Image Environment Legal	4	5	E	Seeking to be informed as to any developments on the treaty process Maintaining contacts with Hauraki Iwi as active participants in the settlement process. Actively seeking input in the development of the zone plan	Very Good	2	3	M	Deputy CEO Group Manager RCS	Continue current practice Develop practice as the details of the settlement become known
5.20	**Local Government Reform** **Caused by:** Restructure of local and regional government in the Waikato Region **Consequences** Transferral of responsibilities and powers Reconfiguration of boundaries which may impact upon work programmes, costs and funding Loss of institution knowledge relating to the zone	Financial Operational Reputation / Image Legal	4	4	H	Political liaison within and with adjacent councils Contact maintained with Central government	Good	3	3	M	CEO	Continue current practice

Risk number	Risk descriptor	Risk type	Initial risk			Current practices/strategies		Residual risk			Risk owner (name and title)	Management options available
			Consequence	Likelihood	Factor	Description	Effectiveness	Consequence	Likelihood	Factor		
	Loss of continuity, consistence Loss of momentum Change in political direct Change in community support											
5.21	**Climate change** **Caused by:** Changes to global climate **Consequences:** Sea level rise and more frequent and severe storms Requirement to replace assets earlier and / or more frequently Community expectation that service levels will be maintained Higher funding requirements Ability to pay Adverse environmental impact Higher risk of asset failure Reduced land use opportunities Disruption of community infrastructure'	Financial Operational Environment Health and Safety	3	3	M	Condition survey Annual structural inspections Monitor national climate forecasts (MFE) Review service levels and design standards Incorporating MFE information in service level reviews	Good	2	2	L	Divisional Manager Group Manager	Continue current practice Upgrade assets to off set climate change effects

Appendix 4b River management

Risk number	Risk descriptor	Risk type	Initial risk			Current practices/strategies		Residual risk			Risk owner (name and title)	Management options available
			Consequence	Likelihood	Factor	Description	Effectiveness	Consequence	Likelihood	Factor		
6.1	**Increased Adverse River Behaviour** **Caused by:** Climate change Land use change Sedimentation and erosion **Consequences:** Inability to effectively manage rivers Drainage schemes unsustainable Damage to property Damage to environment Health and safety incidents Increased costs to community Increased Flood Risks	Financial Operational Economic Health and Safety Environment	5	5	E	Flood protection measures River Management programmes Informing compliance with regulations, district plans, regional plans, etc. Flood monitoring and warning systems Education and emergency preparedness (output to Civil Defence) Sediment Management Plan Civil Defence Hydraulic modelling Inundation studies Flood manual – guideline to staff (warning levels etc.) Consideration of IPCC recommendations Monitor river conditions	Very Good	3	3	M	Divisional Manager Zone Manager Programme Manager, TS	Continue and monitor current practices Catchment monitoring and modelling (land use changes etc.) Consideration of options including possible retreat of at-risk dwellings and industry Consideration of Reduction in Standards/ Service Levels New capital works Increased awareness and education of river systems
6.2	**Rise in Sea Level and Storm Surges– (see similar Flood Management Risk)** **Caused by:** Climate change	Financial Operational Economic Health and Safety	3	3	M	Flood protection measures River Management programmes Informing compliance with regulations, district	Very Good	1	3	L	Divisional Manager Zone Manager Programme Manager,	Input into regional and district planning processes Increased awareness and education of coastal flood hazards

Risk number	Risk descriptor	Risk type	Initial risk			Current practices/strategies		Residual risk			Risk owner (name and title)	Management options available
			Consequence	Likelihood	Factor	Description	Effectiveness	Consequence	Likelihood	Factor		
	Consequences: Inability to effectively manage rivers Increased aggradation, degradation and morphological change Damage to property Damage to environment Health and safety incidents Increased costs to community Effects on Coastal settlements and services	Environment				plans, regional plans, etc. Flood monitoring and warning systems Education and emergency preparedness (output to Civil Defence) Sediment Management Plan Civil Defence Hydraulic modelling Inundation studies Flood manual – guideline to staff (warning levels etc.) Consideration of IPCC recommendations and inclusion of MFE recommendations in designs. Monitor river conditions and regularly review flood protection standards. Coastal planning and regulation					TS Programme Manager, NH	
6.3	**Riverbank Erosion** **Caused by:** Natural events / soil types and qualities Instability Land use	Financial Operational Reputation / Image Legal Environmental	4	5	E	Edge Protection, vegetation, structural, rip rap, gabion walls Buffer zones, fenced Financial Grants for riparian protection Renewal / upgrade	Excellent	3	4	H	Divisional Manager, CM Zone Manager	As per current practice

Risk number	Risk descriptor	Risk type	Initial risk			Current practices/strategies		Residual risk			Risk owner (name and title)	Management options available
			Consequence	Likelihood	Factor	Description	Effectiveness	Consequence	Likelihood	Factor		
	Consequences: Increased flooding Loss of land Increased risk of breach and/or course change Increased sedimentation Threat to property and infrastructure Increased risk to existing assets					programmes Maintenance regime Regular inspections Sediment Management Plan Riverbank trial protection works Trial native planting Willow protection research group contribution Environmental code of practice						
6.4	**Sand and Gravel Management** **Caused by:** Accumulation of Sand and Gravel Upstream land use practice Erosion / degradation Natural processes **Consequences:** Loss of capacity Adverse impact on Service levels River instability	Financial Operational Environmental	4	5	E	Management of Sand and Gravel extraction Monitoring programmes Resource Consent processes	Very Good	3	4	H	Zone Manager Programme Manager, TS	Develop a stand alone river management plan Current practices Examine relevance of financial contributions Sediment management plans (currently in development)

Appendix 4c Flood management

Risk number	Risk descriptor	Risk type	Initial risk			Current practices/strategies		Residual risk			Risk owner (name and title)	Management options available
			Consequence	Likelihood	Factor	Description	Effectiveness	Consequence	Likelihood	Factor		
7.1	**Stop bank/flood wall Failure** **Caused by:** Settlement Deterioration, weakness Undermined foundations Erosion Adjacent disturbance (i.e. building road, digging a drain, etc.) Poor construction Overtopping **Consequences:** Ineffective flood control Flooding Legal claims	Financial Operational Reputation / Image Health and Safety	5	4	E	Regular condition reviews Visual inspections, physical surveys Scheme reviews, hydraulic capacity modelling Use of internal / external specialists e.g. geotechnical where appropriate Renewal / upgrade programmes Maintenance regime Floodway and drainage bylaws Failure Response Processes Linkages between RPS and District Plan policies to drive lowering and/or restricting increase in the level of residual risk over time.	Very Good	4	3	H	Programme Manager, TS Zone Manger	As per current practice Advocate limiting and/or control increased development behind stop banks Increased awareness and education Improved failure response procedures (i.e. warning systems, etc.)

Risk number	Risk descriptor	Risk type	Initial risk			Current practices/strategies		Residual risk			Risk owner (name and title)	Management options available
			Consequence	Likelihood	Factor	Description	Effectiveness	Consequence	Likelihood	Factor		
7.2	**Conflicting Objectives/ Aspirations (External)** **Caused by:** Increasing environmental standards Treaty Settlements Environmental restoration projects **Consequences:** Difficulty in renewing resource consents Increased maintenance costs Services not sustainable	Financial Operational Economic Reputation / Image Environment Legal	4	5	E	Environmental Management Programme Stakeholder Engagement Plans Consultation Joint projects with Stakeholders Integrated planning Political input	Good	3	3	M	Group Manager, RCS Divisional Manger Zone Manager	Better understanding of process, inter-connections, and benefits Mutually beneficial projects (win-win) Facilitation and agreement, mutually agreed outcomes Negotiated solutions

Appendix 4d Catchment management

Risk Number	Risk descriptor	Risk type	Initial risk			Current practices/strategies		Residual risk			Risk owner (Name and title)	Management options available
			Consequence	Likelihood	Factor	Description	Effectiveness	Consequence	Likelihood	Factor		
8.1	**Regional Intensification and Development** **Caused by:** Increased need for Roading and Rail Developments and Improvements Need for utility and infrastructure network developments Increased expectations for a higher level of service **Consequences:** Higher risk of impacts on existing assets Conflicting objectives Need for balance of objectives	Financial Operational Economic Environment	4	4	H	Technical reviews of resource consent applications Submissions to District Plans Inter-regional planning and strategy development Liaison between TAs Liaison with Infrastructure networks owners Future Proof	Very Good	3	2	M	Group Manager, Policy Zone Manager	As per current practice
8.2	**Landowner failure to manage soil conservation** **Caused by:** Economic climate Lack of Interest Conflicting objectives Land use change **Consequences:** Deterioration of assets and levels of protection Soil erosion and land deterioration Non compliance with Land Improvement Agreements	Financial Operational Economic Reputation / Image Environment Legal	3	4	H	Property Inspections and Monitoring Liaison with landowners	Good	3	2	L	Divisional Manager - Catchment Management Zone Manager	More intensive inspection programme More regular land owner contact Greater application of enforcement Regulatory processes
8.3	**Animal pests**	Financial	4	4	H	Animal pest control	Good	3	4	H	Group	More Monitoring and

Risk Number	Risk descriptor	Risk type	Initial risk			Current practices/strategies		Residual risk			Risk owner (Name and title)	Management options available
			Consequence	Likelihood	Factor	Description	Effectiveness	Consequence	Likelihood	Factor		
	Caused by: Proliferation of catchment pests Possible loss of DOC pest control funding Ongoing issues with the use of 1080 poison **Consequences:** Blockage of Channels Poor Drainage Sediment disturbance Erosion Water quality degradation Increased costs and resource requirements Adverse effects on levels of service	Operational Reputation / Image Environmental				programmes Monitoring programmes					Manager, BS&NH Zone Manager	research programmes Improved control programmes and methods (environmentally acceptable methods)
8.4	**Harbour sedimentation** **Caused By:** Historic land use activities in upper catchments e.g. mining, logging (including Kauri logging) Current land use practices e.g. farming, forestry **Consequences:** Infilling of harbours and estuaries with sediment Loss of biodiversity Reduced water quality Mangrove expansion Navigation and safety risks	Financial Operational Economic Reputation / Image Health and Safety Environment	4	5	E	Develop Harbour and Catchment Manager Plans for the key harbours on the Peninsula Gain resource consent applications for appropriate management actions agreed with communities e.g. dredging, mangrove removal	Good	3	5	H	Divisional Manager, CM Zone Manager	Harbour and Catchment Management Plans Environmental Protection Agreements/Catchment works Dredging Vegetation management Public education / Communication plan strategy

Appendix 5 Risk to forecasting assumptions

Forecasting assumption	Risk	Likelihood of occurrence	Financial materiality	Reasons and financial effect of uncertainty
Projected price change factors Forecast financial information contained in this plan contains a provision for inflation. Council has used the price level change factors supplied by Business and Economic Research Ltd (BERL) in order to calculate the amount of inflation to include. Where expenditure is subject to inflation, the following cumulative rates have been applied. For 2009/10, the cost of inflation in relation to all costs except labour and passenger transport contracts has been absorbed into existing work programme budgets.	That actual price changes levels will vary significantly from the levels assumed.	Medium	Low (2009/10 – 2010/11) Medium (2011/12 – 2018/19)	Inflation is affected by external economic factors that are outside the control of council. Given the current economic climate, the actual inflation rates for both the short and long term are uncertain. While council believes it has taken a conservative approach by applying the rates supplied to the local government sector by BERL, it acknowledges that actual inflation rates may vary from these in any year of the plan.
Useful lives of significant assets The useful lives of council's significant assets are as disclosed in the notes to the accounts.	The actual life of an asset is shorter than that assumed. This may be the result of a significant weather event.	Low	Low	Council's most significant assets are its infrastructural assets comprising of flood protection works. The useful lives of these assets have been assessed by engineers and valuers.
Revaluation of non-current assets Provision has been made for a 3 yearly cycle of revaluations in relation to council's infrastructural assets. Estimates of changes in value have been based on the projected price change factors supplied by BERL.	That actual revaluation changes vary significantly from those forecast.	Low	Low	Council undertook revaluations of those property, plant and equipment assets that are subject to revaluation in June 2008. Council's accounting policies state that these assets should be re valued at least every 5 years, with an annual assessment of values carried out annually. Any change in value will impact the forecast financial statements through the funding of depreciation. No adjustment to the provision for depreciation has been made based on the value changes forecast. Because of the relatively long useful life of council's infrastructural assets which comprise the majority of its property, plant and equipment, this impact is

Forecasting assumption	Risk	Likelihood of occurrence	Financial materiality	Reasons and financial effect of uncertainty
				thought to be minimal.
Depreciation rates on planned asset acquisitions New capital expenditure will be depreciated in line with the depreciation rates set out in council's accounting policies.	That further review of the nature of capital expenditure may alter the depreciation expense incurred.	Low	Low	Significant capital works are based on detailed asset management plans which specify the nature and timing of capital works. Due to the long-term nature of these capital works, any impact on depreciation will be minimal.
Emission Trading Scheme Due to the high level of uncertainty, no provision has been made for the cost of the government's Emission Trading Scheme (ETS).	That the implementation of this scheme impacts on the costs of council undertaking its business.	Medium	Low	The council expects that there will be rising costs through the ETS but that these costs cannot yet be quantified or budgeted for. The council believes that these cost increases will not be significant and are not expected to be material.
Regional growth Increases in the number of properties will be at a lower level than experienced over the last 3 to 5 years. Council has estimated that there will be 2,000 new properties in the region each year.	That growth will not be sustained at the level anticipated.	Low	Low	This growth assumption has only been used to project likely future revenue for those rates set on a per property charge (such as Natural Heritage). Council has the ability to re-size these work programmes based on actual revenue levels achieved.
Forecast return on investments Council's investment fund will achieve an average return of 5% per annum. In years 1 to 3, council has assumed a return will come from the fixed interest portion of the fund only. From 2012/13 onwards, council has assumed that its equity investments will start to make a return, with the whole fund achieving a 5% return by 2014/15.	That actual returns achieved by the fund will be lower than this average return.	Low	Low	Following a review of the investment fund and treasury policy, council is moving to a more conservative asset allocation mix aimed at achieving a consistent return on the funds invested. If returns do not achieve the budgeted level, the level of work projected to be undertaken will be reviewed.
Expected interest rates on borrowing Council will utilise the funds held in its investment fund for the purposes of internal borrowing. The interest rate applied to funds internally borrowed is 5.9%. This rate is based on the weighted average return on investments, plus a 1%	That funds will not be available from the investment fund, resulting in council having to seek external borrowing at higher interest rates.	Low	Low	Internal borrowing from the investment fund is specifically provided for in council's treasury policy. Council's investment fund is valued at approximately $51.6 million (December 2008), which allows for significant borrowing levels to be met.

Forecasting assumption	Risk	Likelihood of occurrence	Financial materiality	Reasons and financial effect of uncertainty
borrowing margin. The interest rate applied to funds internally loaned is 4.9%. This rate is based on the weighted average return on investments.				
Council's share in associates Council includes a 33.3% equity share in the Lake Taupo Protection Trust in its financial statements. Because the timing and extent of activities undertaken by the trust are not determined by council, WRC has not projected any change in the value of this investment over the period of this plan.	That the value of council's equity shares in the Lake Taupo Protection Trust either increases or decreases significantly from the current level of investment.	Medium	Low	The Lake Taupo Protection Trust has been established with the aim of reducing the Nitrogen levels in the soil and water of the Lake Taupo Catchment. It proposes to achieve this through the purchase of land, implementation of methods to retire the nitrogen from the land, and subsequent land sale. The funding for this is provided by the three trust partners: Waikato Regional Council, Taupo District Council and the Crown. If in undertaking these actions the value of the land decreases, this will lead to the Trust writing down the value of its assets and showing a book loss – a share of which would be reflected through Waikato Regional Council's accounts. The financial consequence of this to council is low, as council's own financial plans are not influenced by the financial performance or position of the Trust and any book loss will not require further funding to the Trust from the partners. Trust agreements are in place that stipulates the contribution that council will make to the Trust.

Appendix 6 Improvement plan actions and current/future practice

Improvement plan actions

Improvement area/actions	Priority	Owner / responsibility	Timing	Resource time (hours)		Costs	Where addressed	Comments
				Internal	External			
Monitoring and review								
Review and develop Monitoring and Reporting programme	Very high	Div Mgr & Zone Mgrs	By Sept 12	10	20	$4K	RCS	Review and development involves: * developing project brief * reviewing text & intentions in Zone Plan * confirming what we will monitor and how * reporting cycle – Zone Mgrs, Project Control Group, Sub-committee, Catchment Services Committee, Audit NZ * links to Communications strategy
Conduct annual revision and update of Zone Plan, monitor improvements and yearly report on achievements	Very high	Zone Mgr	Starting 12/13 FY and ongoing there-after	10	25	$5K?	RCS	Important action required to meet OAG criteria, and to keep Zone Plans current and useful. Will also greatly decrease length and extent of Zone Plan reviews.
Three-yearly formal review of Zone Plans	High	Div & Zone Mgrs	14/15 FY and every three years there-after	20	50	$10K	RCS	Formal review leading into LTP process
Review, update and sign-off of improvement plans	High	" "	" "	10	10	$2.5K	RCS	Not a big task, because Improvement Plan is constantly monitored, updated and developed via continuous annual monitoring above
Lifecycle management strategies								
Develop and implement demand strategy/plan	Very high	Zone Mgr	13/14 develop. 14/15 impl.	15	25	$5K	RCS	Development involves: * development of project brief * clarification of what it covers, key drivers, renewals vs. new works * engagement of community/economy programme.

Improvement area/actions	Priority	Owner / responsibility	Timing	Resource time (hours)		Costs	Where addressed	Comments
				Internal	External			
Develop optimised decision-making process	Very high	Div Mgr.?	12/13	-	-	-	RCS	Will be completed by Lower Waikato and Waihou-Piako Zones first, hence limited development cost. Development involves project brief, scoping, clarifying what we do now, gaps analysis and establishing linkages to related work
Partners and stakeholders								
Develop and implement Communications Strategy	Very high	Div Mgr	12/13 for devel., 13/14 onwards for impl.	5	-	$1K	RCS	Communications have budget to support this during 12/13. Aim for agreed strategy by end of FY. Development will involve scoping, identifying audience (internal/external) and developing draft, review and sign-off
Improve community engagement and awareness	High	Zone Mgr, Comms Officer	12/13 onwards	50	100	$20K?	RCS/ Zone	Engagement and awareness improved via information provision, via regular media releases, promotion of achievements, three-yearly open days, website development and community newsletters
Improve relationships with Tangata Whenua by actively pursuing joint initiatives with mutually beneficial outcomes	High	Zone Mgr; TRW Mgr	" "	10	-	$1.5K	Zone	Links to communications strategy. Scoping of opportunities and agreement on actions needed
Identify opportunities to work with other stakeholders/agencies	Med	Zone Mgr	" "	10	-	$1.5K	Zone	Align with communications strategy. Includes both internal and external stakeholders
Asset information								
Improve asset data in terms of data completeness, asset condition and asset performance. Complete documentation of capital assets.	Very high	Asset Mgr	12/13-14-15	-	-	-	RCS	Actions in progress as part of on-going programme, costs borne as part of asset management programme
Develop measurement of confidence for expenditure forecasts	Med	Asset Mgr	14/15	-	-	-	RCS Fin.	Note – this addresses advanced OAG criteria

Improvement area/actions	Priority	Owner / responsibility	Timing	Resource time (hours)		Costs	Where addressed	Comments
				Internal	External			
Complete condition, performance and completeness tables	High	Asset Mgr	End of 14/15 FY	-	-	-	Zone	Update within Zone Plans to the extent possible from 12/13 onwards. Costs will be a part of the annual revision costs, per monitoring and review actions
Link asset ratings to risk assessment	Med	Zone Mgr	15/16 onwards	-	-	-	Zone	Dependent upon asset data reliability. Goal is for condition assessment and reliability data to drive risk management
Levels of service								
Develop measurement and reporting arrangements	High	Div Mgr	12/13	5	20	$3K	RCS	Will require scoping and PB prior to developing. Timing could be deferred, as the core OAG requirements are currently being met.
Risk management								
Risk Action Plan - review, update and complete Note – includes risk assessment criteria and framework	High	Zone Mgr	12/13	5	25	$4K	Zone	Audit NZ recommendation. Need to ensure plan is practical and achievable. Development needs to include: * review of current approach * confirmation/prioritisation of risks * drafting/completion of plan
Implement risk action plan	" "	" "	13/14 onwards	10	-	$1.5K	Zone	Oversight and project management role for implementing risk mitigation
Develop risk management monitoring and review process and implement.	Med	" "	13/14	-5	-	$1K	RCS	Audit NZ opportunity. Internal action within existing management budgets
Identification and risk management strategies for critical assets Implementation	Very high	" "	Dec 11-Mar 12 13/14 onwards	15	50	$8.5K	Zone	Important to establish understanding and awareness of risks associated with AEP and level of service. Need to gain an understanding of highest risks now. Implementation assumes two risk management strategies per year on an on-going basis

Improvement area/actions	Priority	Owner / responsibility	Timing	Resource time (hours)		Costs	Where addressed	Comments
				Internal	External			
Financial management								
Work toward achieving Core OAG criteria - define gaps between current practice and core requirements	Very high	Zone Mgr; Asset Mgr & Fin. Mgr	11/12 FY	-	-	-	RCS	Need to confirm if we are meeting core criteria first – this is unclear at present. Note that Lower Waikato/Waihou-Piako Zones will do this anyway, so costs should be part of routine management budgets.
Clarify tasks and timing and develop and implement plan to address meeting Core OAG requirements	" "	Zone Mgr, Fin Mgr	11/12 FY devel., 13/14 impl.	-	-	-	RCS	Simple plan of action and tasks required. See above comments regarding other zones work and costs.
Make updates to plan text in Sections 6 and 9 reflecting changes in the 2012/22 LTP:	High	Zone Mgr	12/13 FY	-	-	-	Zone	Aligned with 12/13 LTP ZP revision, and is already budgeted for under the monitoring and review actions. Includes update to Table 6.
Improvement planning								
Zone Improvement Plan: Review, update and complete; add resources, costs and timing; ensure draft plan is practical and achievable	Very High	Zone Mgr	By Jun 12	3	20	$3K	Zone; Group	Requirement of Audit NZ review and OAG Core criteria. Note that Lower Waikato and Waihou-Piako Zone Improvement Plan template will greatly assist development
Seek commitment to final improvement plan from senior management and Council	Very High	Zone Mgr	Sept 12	5	-	$1K	Zone; Group	See above comments
Implement and monitor improvement plan	High	Zone Mgr.	12/13 onwards	2	10	$2K	Zone	See above comments

Summary of current practice and desired future practice

Improvement area	Current practice	Desired future practice (1-3 years)
Monitoring and review	Currently not meeting the Core OAG requirements for 'Updating" monitoring and review programme identified within improvement plan actions, but no programme in place beyond outline tables.	• Monitoring and review programme developed and implemented. • Zone plans updated to reflect monitoring and review programme.
Lifecycle management strategies	Do not meet core OAG requirements for "Lifecycle (Optimised) decision-making" and "Managing growth". The plans contain key lifecycle strategies for asset acquisition, maintenance and condition and performance monitoring.	• Meet core OAG requirements. • Demand management is understood and planned. • Optimised decision-making processes are in place. • Lifecycle management strategies are updated within the zone plan text.
Partners and stakeholders	Community engagement, awareness and information: periodic media releases, limited information dissemination, Catchment liaison subcommittee engagement, EnviroCare. Customer enquiries: Customer enquiries not managed through a central call centre, calls/complaints/issues received by general staff member, operational staff o r potentially reception, KPIs to respond within particular timeframes.	• Coordinated and comprehensive engagement of stakeholders via a communication strategy. • Improvement to customer service made.
Asset information	Meet OAG core criteria for 'Description of assets", partially meet OAG core criteria for "Planning assumptions and confidence levels". Audit NZ review assessment for asset information is "good". Fundamental asset information processes are in place, and form a sound basis for development of zone plans.	• Improve asset data/information to meet OAG core criteria for "Planning assumptions and confidence levels". • Improve valuations information and expenditure forecast confidence. • Link asset ratings to risk assessment.
Levels of service	Development of levels of service has been undertaken within the Zone Management Plan. Technical levels of service are well established. Meets core OAG criteria for "Levels of service".	• Develop and confirm measuring and reporting arrangements. • Review and update levels of service and text within plans.
Risk management	A risk register and framework has been developed. Risk is based on NZ/AS 4360, which has been superseded by ISO 31000. Meets Core OAG criteria for "Risk management".	• Risk action plan is developed and implemented and accurately reflects key risks and management strategies. • Risks are monitored and reviewed and liked into the corporate risk management programme. • Risk management strategies are in place for critical assets.

Improvement area	Current practice	Desired future practice (1-3 years)
Financial management	Have not met the Core OAG criteria for "Financial forecasts/recognise depreciation (loss of service potential)". Have addressed most of the Audit NZ recommendations.	• Meet core OAG criteria within three years. • Update zone plans to reflect 2012/22 LTP.
Improvement planning	Developed draft improvement plan as part of zone plan. Have not met Core OAG criteria for "Outline improvement programmes". Have met Core OAG criteria for "Commitment". Unclear on whether the plan meets Core OAG criteria for "Planning by qualified persons".	Improvement plan: • Is completed and continually updated. • Captures all improvement actions and requirements. • Is realistic, achievable and identifies costs, timeframes and responsibilities. • Has buy-in of senior management and Council. • Zone plan is updated annually to reflect on-going changes in improvement plan.