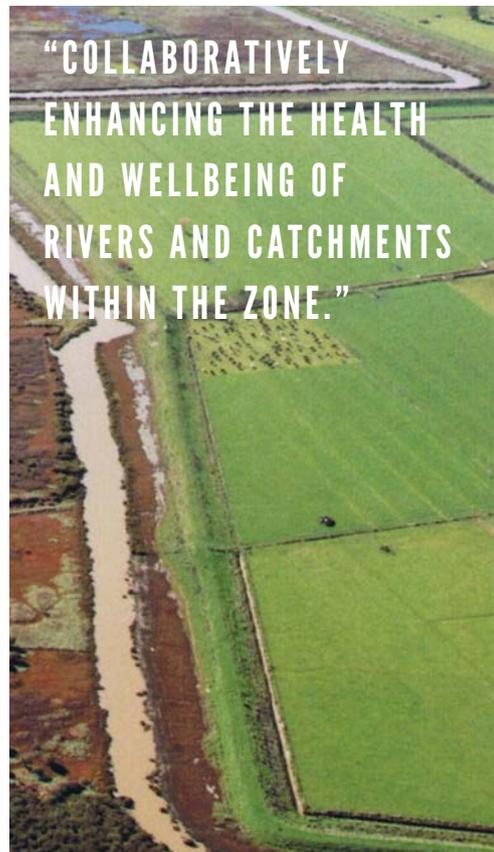


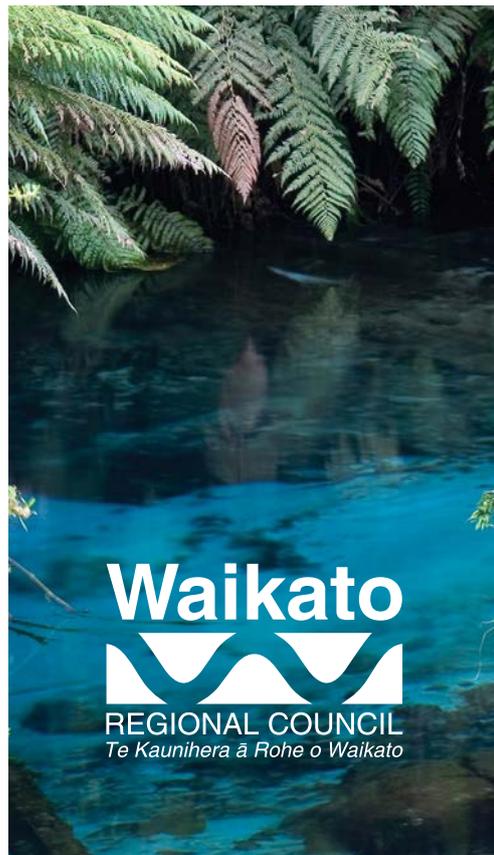


# WAIHOU PIAKO ZONE PLAN

TE MAHERE Ā-ROHE O  
WAIHOU PIAKO



“COLLABORATIVELY  
ENHANCING THE HEALTH  
AND WELLBEING OF  
RIVERS AND CATCHMENTS  
WITHIN THE ZONE.”



**Waikato**



REGIONAL COUNCIL  
*Te Kaunihera ā Rohe o Waikato*

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# EXECUTIVE SUMMARY

## HE KŌRERO WHAKARĀPOPOTO

### WELL MANAGED CATCHMENTS THAT ENHANCE ECONOMIC AND ENVIRONMENTAL SUSTAINABILITY, RECOGNISE COMMUNITY AND CULTURAL ASPIRATIONS, WHILE MITIGATING NATURAL RISKS.

#### - WAIHOU PIAKO ZONE VISION

The Waihou Piako Zone Plan (“the zone plan”) provides the broad direction for the implementation of Waikato Regional Council’s (“the council”) Integrated Catchment Management Directorate (ICM) activities within the Waihou Piako zone (“the zone”).

The council undertakes a range of activities to protect the region’s water, soil, air, geothermal areas and coasts, and its mission is to work with others to build a Waikato region that has a healthy environment, a strong economy and vibrant communities.

The council’s work, functions and priorities are guided by statutory and non-statutory requirements and decisions made by councillor representatives. These decisions are then implemented through five directorates: Community and Services, Finance, Integrated Catchment Management, Resource Use and Science and Strategy.

The ICM directorate is primarily focused on delivery of catchment management, river system management, flood control programmes and asset management activities. These activities are undertaken alongside supporting activities which are delivered regionally and include hazard management and community safety activities, biodiversity and natural heritage operations, biosecurity operations and land management advisory services.

The zone plan is guided by the Waikato Regional Council’s Strategic Direction 2016-19. It also assists the implementation of operational programmes identified in the council’s key statutory documents including the Waikato Regional Policy Statement and the Waikato Regional Plan.

The zone plan includes the following interrelated 30 year goals to guide the implementation of ICM activities within the zone:

1. *To protect and enhance water quality and productive soil capacity of catchments within the zone.*
2. *To manage and maintain appropriate flood protection to rural land and urban areas within the zone.*
3. *To promote and enhance indigenous biodiversity in zone catchments in a demonstrable and measurable way.*
4. *To work with mana whenua and the community to strengthen collaborations and partnerships.*

The 30 year goals have been developed in response to the following key matters identified for the zone as part of the development of this plan:

- managing climate change and natural hazards risks
- water quality and quantity management
- greater promotion of sustainable land management and implementation of catchment management activities
- protection and enhancement of the Firth of Thames
- promotion of indigenous biodiversity enhancement and providing effective pest management.
- Supporting community partnerships and the implementation of future co-management arrangements with iwi.

The zone plan includes a high level programme of implementation actions, grouped in focus areas that respond directly to the goals identified. These actions will inform the preparation of a more detailed annual works programme for the zone that is to be monitored through the Waihou Piako Catchment Committee. All actions included in this plan are either directly funded through the Waihou Piako zone or funded as part of wider council activities. Many of the actions rely on involvement (and funding) from other stakeholders.

The implementation of the zone plan, and its effectiveness, will be monitored and reported on an annual basis to the community through the Waihou Piako Catchment Committee. Further reviews will be considered on a three yearly basis to ensure the plan is reviewed in conjunction with the long term plan (LTP) process and that progress is being made towards the goals identified.





# 1 INTRODUCTION

## HE KUPU WHAKATAKI

### 1.1 PURPOSE

The Waihou Piako Zone Plan provides the broad direction for the implementation of activities within the Waihou Piako zone by the Waikato Regional Council's Integrated Catchment Management Directorate (ICM).

The zone plan includes:

- an overall vision for the zone
- 30 year goals for the zone
- implementation actions for the next 10 year period to meet the goals identified
- processes (and measures) for monitoring and reviewing the plan.

The implementation actions proposed within the plan give effect to aspects of the Waikato Regional Policy Statement and the Waikato Regional Council Strategic Direction 2016-2019 and also assists with the implementation of council's non-regulatory responsibilities under a variety of other statutes.

The Waihou Piako zone contains a range of distinctive environments of significant natural, economic, social and cultural value. An ongoing challenge for the council over the life of this plan will be to target limited resources into areas of greatest priority.

Making progress towards the zone goals will also rely on ongoing and successful collaboration with a range of stakeholders and this is a key focus area for implementation. Greater integration across a range of council business areas, and effective advocacy, will also be important in delivering the actions within the plan.

**WELL MANAGED CATCHMENTS THAT ENHANCE ECONOMIC AND ENVIRONMENTAL SUSTAINABILITY, RECOGNISE COMMUNITY AND CULTURAL ASPIRATIONS, WHILE MITIGATING NATURAL RISKS.**

- WAIHOU PIAKO ZONE VISION

## 1.2 STRATEGIC FIT

The zone plan supports the wider council mandate of protecting the region's water, soil, air, geothermal areas and coasts. ICM is one of five directorates in council that work together to achieve a range of outcomes for communities within the zone. The directorates are:

- 1.** Community and Services – leads, enables and helps deliver community partnerships, customer services, education programmes, organisational excellence and internal support functions.
- 2.** Finance – responsible for council's financial management, regional public transport responsibilities and our corporate buildings, facilities and property and corporate planning (including the annual and long term plans).
- 3.** Integrated Catchment Management – focuses on catchment management (including land management, biosecurity and biodiversity), river and flood management and natural hazard management.
- 4.** Resource Use – responsible for consenting and compliance and navigation safety functions.
- 5.** Science and Strategy – gathers, analyses, interprets and translates information on the Waikato's natural resources, community and economy in order to achieve positive regional outcomes. Also includes consistent delivery of high quality policy advice.

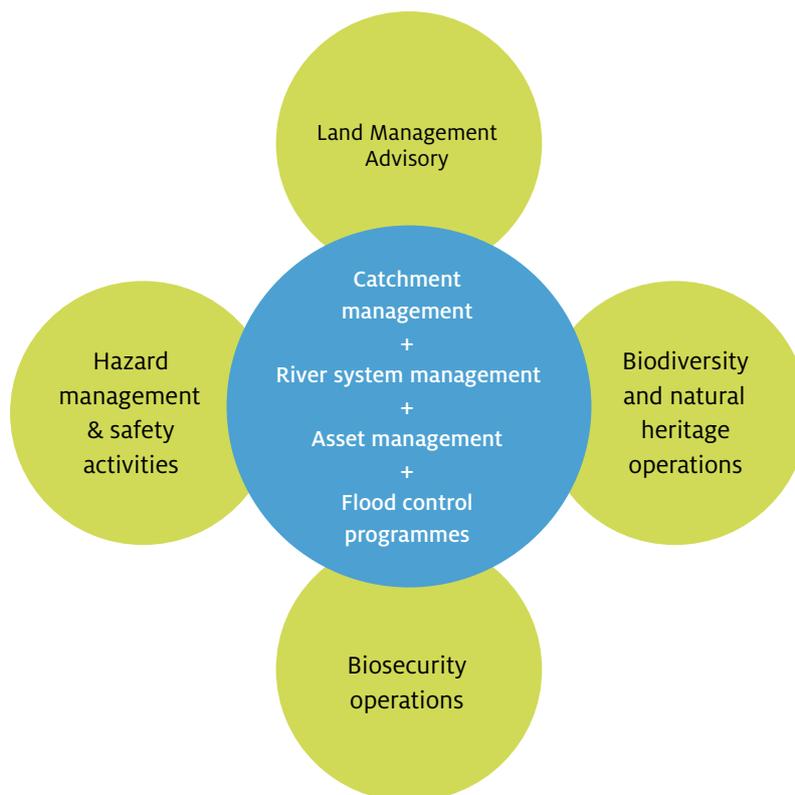
The ICM directorate is focused on the delivery of a range of activities in the areas of catchment management, flood control and protection, biodiversity, biosecurity, sustainable land management and hazard/emergency management. ICM functions provide services that achieve multiple and significant benefits for the regional community. ICM manages the provision of its services on a regional basis and through geographic areas known as catchment zones. There are eight zones in the region, each with its own zone manager responsible for oversight of operational budgets, relationships, planning and priorities to deliver on agreed community level of services.

## 1.3 SCOPE

The Waihou Piako Zone Plan is one of eight zone plans. Each plan gives a strategic framework for the delivery of ICM activities within the zone.

Figure 1 illustrates the overall scope of the activities undertaken within the zone. The activities that are the primary focus of the zone plan are shown in blue, alongside the supporting activities which are delivered regionally (green). The Waihou Piako Catchment Committee holds budgetary power or considerable influence in determining

the work programme for primary focus areas of the zone plan. Regarding supporting activities, the role of the catchment committee is to provide local feedback to inform the regional programme with the intention of raising the effectiveness of the programme.



**FIGURE 1** - Waihou Piako Zone Plan – areas of scope

The implementation of the zone plan will be monitored by the Waihou Piako Catchment Committee, and therefore the primary focus of the plan is on activities that are funded directly through the central zone. In addition to physical works, this may include environmental monitoring in order to assess the outcomes achieved and monitoring the compliance of resource consents held within the zone.

In relation to the implementation of this plan, the council is one of many organisations working to improve catchment health within the zone. Iwi, district councils, government departments, industry, community groups and individual landowners are all active in implementing initiatives to improve catchment health. The intention of the zone plan is to complement and support the work of these other

agencies and individuals, and align programmes where opportunities arise.

Other works the council is carrying out that are out of scope for this zone plan, include:

- implementing and monitoring compliance with council's rules under the current Waikato Regional Plan, including those resource consents that are held to undertake work within the scope of this plan
- monitoring and investigations of the state of the environment
- developing and implementing new resource management policies and rules to address environmental issues
- specific activities related to harbour management.





# WAIHOU PIAKO ZONE DESCRIPTION

## NGĀ KŌRERO MŌ TE ROHE O WAIHOU PIAKO

### 2.1 ZONE OVERVIEW

The Waihou Piako zone includes the catchments of the Miranda Coast up as far as Kaiaua, Waitakaruru River, Piako River, Waihou River, Kauaeranga River, Tararu Stream and the Thames streams. It includes all of the land that drains into the Firth of Thames from Kaiaua in the west, to Tararu in the east, the major portion of which is the Hauraki Plains and Thames Valley catchments.

The Waihou Piako zone covers an area of approximately 3,734km<sup>2</sup>, and is dominated by the Waihou and Piako river systems and the associated flood schemes. The zone encompasses six district councils within its boundary: Matamata-Piako, Hauraki, Thames Coromandel, South Waikato, Waikato and Waipa. With a rating base of approximately 28,500, there are a number of smaller service towns and communities, including Tīrau, Putaruru, Matamata, Morrinsville, Te Aroha, Paeroa, Waihi, Ngātea and Thames.

Prior to the arrival of Europeans, the zone was largely forested with the majority of the Hauraki Plains comprising of wetlands and semi swamp forest dominated by kahikatea, rimu, mataī, pukatea, swamp maire, tawa, pōkākā and cabbage tree (Kessels et al., 2010). There are still forests on the surrounding hills, but on the plains the Kopuatai

Peat Dome and the smaller Torehape Peat Dome are the only significant remnants of the natural systems, comprised mainly of herbaceous vegetation, mostly the dominant peat-forming restiad species. For a zone that was predominantly native bush and wetlands, today it comprises 68 per cent pasture, 6 per cent production forestry and 24 per cent native vegetation, including scrub and wetlands. The remaining 2 per cent is mainly built-up areas and open water.

The clearance of land and development of vast flood schemes is one of the main contributing factors that has led to the predominance of agricultural and horticultural industries in the zone's 68 per cent pastoral land. Such modifications to the natural landscape and land use has altered the natural flow of waterways in the zone, especially in high rainfall events.



FIGURE 2 – Map of the Waihou Piako zone

## 2.2 KEY FEATURES

The Waihou Piako zone contains a range of unique natural habitats, landscapes, ecosystems and infrastructure, all with various social, cultural and economic values. A summary of these key features is provided below as context for the key matters identified in Section 4 of this plan. It is noted that the below summary is not exhaustive, rather it provides a “snapshot” of the complex operating environment of the zone.

### FLOOD SCHEMES

The first drainage and flood protection of the Hauraki Plains occurred in the early 1900s. These original works opened up large areas of the catchment for settlement and farming, and following large floods in 1954 and 1960 led to the formal implementation of the Piako River Scheme and the Waihou Valley Scheme. Construction of the Piako flood

scheme occurred in the 1960s to 1970s and includes 166km of stopbanks, 257km of river, natural streams and channels, 59 floodgates and 32 pump stations. The Waihou Valley Scheme developed during the 1980s and 1990s consists of 177km of stopbanks, 729km of river, natural streams and artificial channels, 75 floodgates and 20 pump stations (refer Figure 3).



FIGURE 3 – Piako River Scheme and Waihou Valley Scheme infrastructure

## WAIHOU RIVER, PIAKO RIVER AND ASSOCIATED TRIBUTARIES

The Waihou River catchment covers a total area of approximately 2144km<sup>2</sup>, including its major tributary the Ohinemuri and part of the Thames Coast up to the township of Tararu. The Ohinemuri flows through the Karangahake Gorge, an area of high recreational use for walkers and cyclists.

The Piako River is the dominant river system in the Matamata-Piako district with a total catchment of approximately 1590km<sup>2</sup>. Its two main stems, the Waitoa River and Waitakaruru, converge upstream of the Kōpuatai Peat Dome. At the confluence, the upstream catchment sizes of the Waitoa and Waitakaruru are near identical.

The water quality of the Piako River and its main tributary, the Waitoa River, is in generally poor condition, with oxygen depletion and murky characteristics, particularly from high levels of nitrogen and phosphorus. The Waihou River has higher water quality than the Piako, which is mainly due to the underlying geology of the Mamaku Plateau and the presence of numerous springs (e.g. the Blue Springs) in the upper reaches. However, the river becomes progressively degraded in its lower reaches due to sediment and nutrients, and is heavily modified due to the Waihou Valley Scheme. The Waihou River's main tributary, the Ohinemuri, has fairly good water quality overall. The Kauaeranga River contains the highest quality of water entering the Firth of Thames, with its water being oxygenated and clear, and containing low concentrations of contaminants, notably nitrogen and phosphorus (Vant, 2016).

### KOPUATAI PEAT DOME

The Kōpuatai Peat Dome is a freshwater wetland, identified as a RAMSAR site of international significance. Covering an area of 10,201ha, it is the largest freshwater wetland in New Zealand. Surrounded by mineralised swampland and associated lagoons, the area provides important habitats for threatened birds, plants and invertebrates and spawning sites for threatened fish. The mineralised swamps of the peat domes play an important role in flood control and protection as they provide storage for floodwater from the Piako River.

### THE FIRTH OF THAMES AND THE HAURAKI GULF

The Waihou Piako zone encompasses the Firth of Thames, located within the southern end of the Hauraki Gulf. Both the Waihou and Piako rivers drain into the Hauraki Gulf, alongside smaller natural waterways and numerous canals from the extensive drainage networks located in the Hauraki Plains. The Firth of Thames is framed by the Hunua Ranges to the west and the Coromandel Ranges to the east.

The Firth of Thames foreshore is also a RAMSAR wetland of international significance. The Firth includes shallow estuarine water and mudflats, shell banks, grass flats, mangrove forest, saltmarsh and limited freshwater swamp margins. The Firth of Thames is one of the most important coastal stretches in New Zealand, with 74 flora and fauna species recorded, many rare and uncommon. The intertidal zone is a vitally important feeding and staging area for migratory birds, especially wading birds like the bar-tailed godwit (*Limosa lapponica*). The shell banks at Miranda are an example of a chenier plain, a unique landform globally, and are composed principally of fossilised cockle shells (Department of Conservation, n.d.). These shell banks, as well as grass flats, are used as high tide roosts by many birds.

### INDIGENOUS BIODIVERSITY

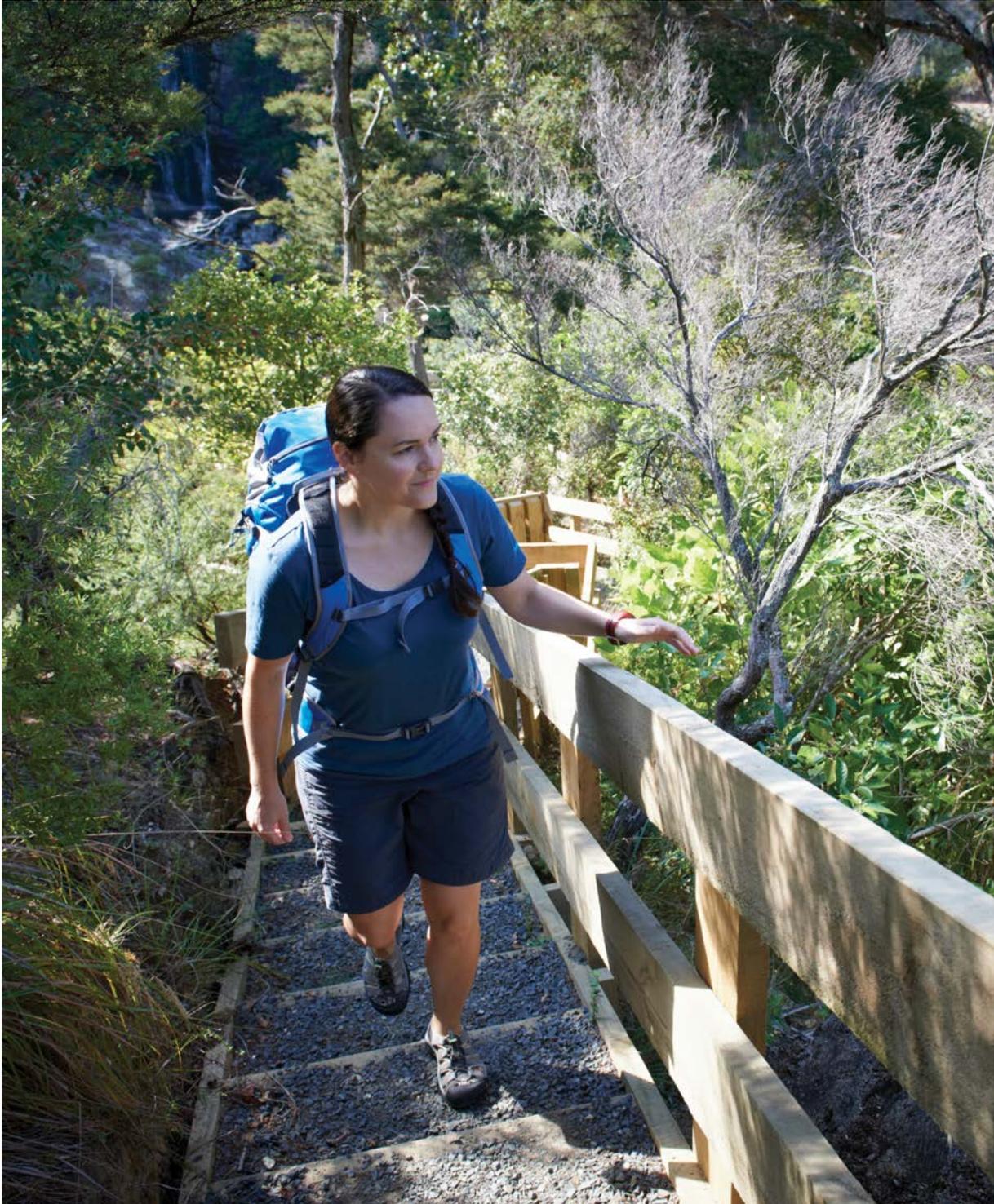
Areas such as the Kōpuatai Peat Dome and the Firth of Thames provide ecologically significant habitats for a range of indigenous flora and fauna. The Kōpuatai Peat Dome is the largest freshwater wetland in New Zealand, and is the main habitat for the threatened giant wire rush (*Sporodanthus ferrugineus*), which in turn is the only known host species for a recently discovered moth species, 'Fred the Thread' (*Houdinia flexilissima*). Native vegetation found in wetland ecosystems in the zone include other threatened species, such as bog clubmoss (*Lycopodiella serpentina*) and ecologically important remnants of kahikatea (*Dacrydium dacrydioides*) forests. Native fish, including threatened species black mudfish (*Neochanna diversus*) and longfin eel (*Anguilla dieffenbachia*), are found in the area. Other species present include shortfin eels (*Anguilla australis*) and a range of galaxias. The wetlands provide habitats for threatened and uncommon birds including North Island fernbird (*Megalurus punctatus*), spotless (*Porzana tabuensis plumbea*) and marsh crake (*Porzana pusilla affinis*) and Australasian bittern (*Botaurus poiciloptilus*). Southern Right whales (*Eubalaena australis*) and Bryde's whales (*Balaenoptera brydei*) have been seen in the bay of the Hauraki Gulf to calf and rest.

### KAIMAI RANGE

The Kaimai Range forms the dominant eastern skyline of the Hauraki Plains along a fault line that thrusts it up above the plains and separates the Waikato from the Bay of Plenty. The highest point on the range is Mt Te Aroha at 952m. Only two roads pass over the range: State Highway 2 through the Karangahake gorge at the northern end and State Highway 29 from Tauranga to Hamilton. At its southern end, the range meets the volcanic Mamaku Plateau formed from various volcanic events. The ranges are primarily native forest and the plateau has patches of remnant forests interspersed with pasture.

**CULTURAL HERITAGE**

The Hauraki Plains and surrounding environment are an important cultural landscape for Hauraki iwi. Iwi with interests in the zone include Raukawa, Ngāti Hauā, Ngāti Hinerangi, Te Ure o Uenukukōpako, Tauranga Moana, and Hauraki Collective iwi (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 Ngāti Rahiri Tumutumu).



# LEGISLATION AND POLICY FRAMEWORK

## TE TURE ME TE KAUPAPA HERE

This section outlines the legislative and policy (both statutory and non-statutory) framework that has informed the goals, focus areas and implementation actions set out in this plan for the Waihou Piako zone.

Figure 4 provides an overall summary of the key legislative and policy framework for the zone plan, along with the key areas where the zone plan informs council plans and policies.

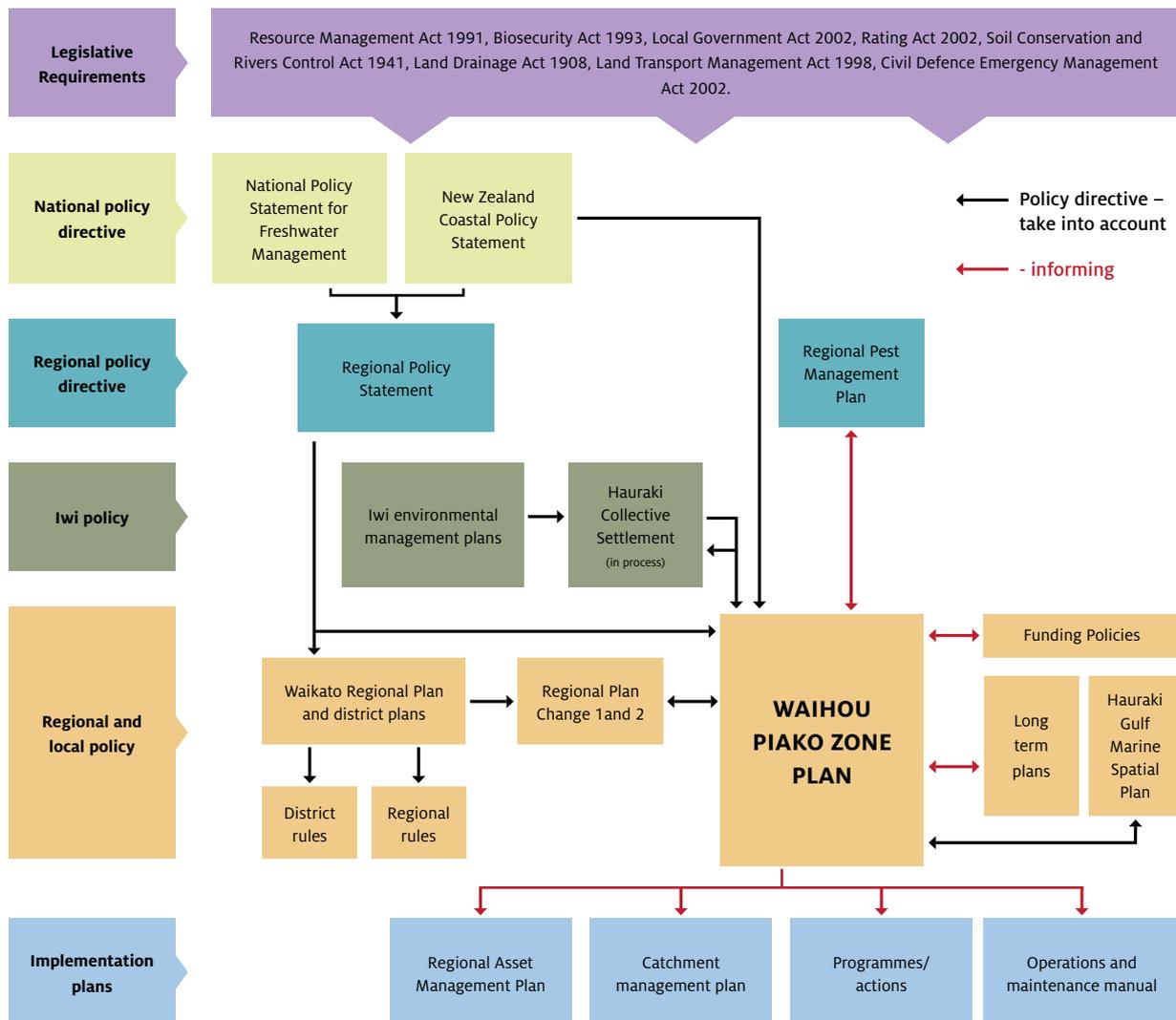


FIGURE 4 - Key linkages between the zone plan and other key legislation and policy requirements

## 3.1 LEGISLATIONS AND STATUTORY PLANS

The key statutory documents of most relevance to the activities set out within this zone plan are summarised below. It is noted that this plan also assists the implementation of a number of Waikato Regional Council's non-regulatory responsibilities under the Resource Management Act 1991, Soil Conservation and River Controls Act 1941, Local Government Act 2002 and other Acts.

### WAIKATO REGIONAL POLICY STATEMENT (2016)

The Regional Policy Statement (RPS) has objectives for managing fresh water (3.14), riparian area and wetlands (3.16), ecological integrity and indigenous biodiversity (3.19), natural hazards (3.24) and values of soils (3.25). It also has new policies regarding managing coastal marine areas (Chapter 7), fresh water bodies (Chapter 8), indigenous biodiversity (Chapter 11), natural hazards (Chapter 13) and soils (Chapter 14). These objectives and policies are relevant to the implementation actions set out within this plan.

### WAIKATO REGIONAL PLAN (2007) AND REGIONAL COASTAL PLAN (2014)

The Waikato Regional Plan (WRP) applies across the whole of the Waikato region (except for the "Coastal Marine Area"), and provides the regulatory framework for resource management. The WRP implements the RPS, relevant National Direction, and Treaty settlement legislation. The Waikato Regional Coastal Plan (WRCP) contains policies and methods to manage the allocation and use of coastal resources in the "Coastal Marine Area" (the sea area below mean high water spring tide out to the 12 mile regional limit). The WRCP implements the RPS, the New Zealand Coastal Policy Statement and other relevant legislation (e.g. parts of the Marine and Coastal Area Act).

A full review of the WRCP and WRP is currently being planned by council. Ultimately the two plans will be combined and replaced by one: the Waikato Resource Management Plan. Notification of the first phase of the plan review (most of the current coastal plan and priority topics for the regional plan) is expected in 2019/20, with adoption of the revised plan programmed for 2025.

### REGIONAL PLAN CHANGE 1 (WAIKATO WAI PĀ HEALTHY RIVERS)

The council has notified and is in the process of implementing proposed Waikato Regional Plan Change 1 – Waikato and Waipā River Catchments (Healthy Rivers: Plan for Change/Wai Ora: He Rautaki Whakapaipai). Plan Change

1 seeks to achieve reduction, over time, of sediment, microbial pathogens and nitrogen and phosphorus entering water bodies (including groundwater) in the Waikato and Waipā River catchments.

Although this plan change process does not include the Waihou Piako zone (being outside the Waikato/Waipā River catchments), it will inform wider council direction around initiatives to improve water quality within the region. The development of Regional Plan Change 2 (Hauraki/Coromandel Healthy Rivers) in the next few years will directly affect the zone. This review will address the issue of water quality in the Hauraki Plains and Coromandel Peninsula, with possibility of a broader scope.

### REGIONAL PEST MANAGEMENT PLAN (2014)

The Waikato Regional Pest Management Plan (RPMP) sets out the strategic and statutory framework for managing plant and animal pests in the Waikato region. Objectives and the management approach for specific plant and animal pests that are present within the zone are contained in the plan. It is noted that the RPMP review is planned to commence in late 2017 starting with the release of a discussion document in early 2018. The actions in the zone plan can inform this process.

### NATIONAL DIRECTION

Central government, through the Ministry for the Environment, has a programme of National Direction work that seeks to provide overall direction and consistency around management of natural resources. This involves either development, or review, of national environment standards, national policy statements and national regulation.

Key national directions that will affect catchment management in this zone (and all zones) include the National Policy Statement for Freshwater Management (2011), national regulation around stock access to water and swimmability standards, the Proposed National Environmental Standard for Plantation Forestry (2017), and the New Zealand Coastal Policy Statement (2010).

This zone plan would need to be amended to give effect to any National Direction which requires implementation through catchment management.

## HAURAKI TREATY SETTLEMENT

In 2009, the Hauraki Collective was formed for the purpose of receiving redress in the Hauraki region where iwi have shared interests. The Pare Hauraki Collective recognises the cultural importance of the Tīkapa Moana (The Hauraki Gulf), Te Tai Tamāhine (east coast of the Coromandel Peninsula), Te Aroha, Moehau Maunga and the Waihou and Piako rivers. A Collective Redress Deed was initialled on 22 December 2016 by the Crown and iwi of Hauraki, signalling the end of negotiations. The initialled deed of settlement is subject

to a vote (ratification) by members of the iwi. If the deed is ratified, the deed will be signed by the Crown and the iwi. The Crown will then introduce legislation to Parliament to give effect to the settlement.

Other relevant treaty settlement legislation within the zone includes:

- Raukawa Claims Settlement Act 2014
- Ngāti Tuwharetoa Raukawa and Te Arawa River Iwi Waikato River Act 2010
- Central North Island Forests Land Collective Settlement Act 2008
- Ngāti Hauā Claims Settlement Act 2014
- Māori Fisheries Act 2004.

## 3.2 KEY NON-STATUTORY POLICIES AND PLANS

### WAIKATO REGIONAL COUNCIL STRATEGIC DIRECTION 2016-2019

Waikato Regional Council’s strategic direction guides work and sets priorities for the council’s work up to 2019. It also reflects community desires and needs, and identifies key factors that will determine whether the council is successful in achieving its strategic direction.

Priorities under the council’s strategic direction are:

- support communities to take action on agreed outcomes
- forge and strengthen partnerships to achieve positive outcomes for the region

- positively influence future land use choices to ensure long term sustainability
- manage freshwater more effectively to maximise regional benefit
- increase communities’ understanding of risks and resilience to change
- enhance the value of the region’s coasts and marine area
- shape the development of the region so it supports our quality of life.

The zone plan will assist the council in delivering its strategic direction. The key connections from the zone plan to the strategic direction are summarised in Table 1 below.

			REGIONAL PRIORITIES						
			COMMUNITIES	PARTNERSHIPS	LAND	FRESH WATER	RISKS AND RESILIENCE	COASTAL AND MARINE	REGIONAL DEVELOPMENT
<b>ZONE PLAN GOALS</b>	<b>1</b>	To protect and enhance water quality and productive soil capacity of the catchments within the zone.		✓	✓	✓		✓	
	<b>2</b>	To manage and maintain appropriate flood protection to rural land and urban areas within the zone.	✓		✓	✓	✓	✓	✓
	<b>3</b>	Promote and enhance indigenous biodiversity in the zone catchments in a demonstrable and measurable way.			✓	✓		✓	
	<b>4</b>	Work with mana whenua and the community to strengthen collaborations and partnerships.	✓	✓	✓	✓			✓

TABLE 1 – Waihou Piako Zone Plan connections with council regional priorities.

✓ PRIMARY CONTRIBUTION  
 ✓ SECONDARY CONTRIBUTION

## SEA CHANGE – TAI TIMU PARI (HAURAKI GULF MARINE SPATIAL PLAN)

The Hauraki Gulf Marine Spatial Plan (2017) recognises the significant natural environment and national importance of the Hauraki Gulf Marine Park. This non-statutory plan is a collaborative effort between mana whenua, local and central government agencies, local communities and interest groups. It includes principles, proposals and initiatives to manage and protect the marine park. The geographical area covered by the Hauraki Gulf Marine Spatial Plan aligns with the Hauraki Gulf Marine Park (established under legislation), and covers the catchments feeding into the coastal marine area. The Hauraki Gulf Spatial Plan includes 16 “key themes” that feed into a number of recommended actions, some of which directly relate to the catchment management of this zone. Some of these actions will be implemented through this zone plan and the associated programme of works.

## WAIKATO FRESHWATER STRATEGY (2017)

The Waikato Freshwater Strategy identifies a programme of action to achieve the best use of fresh water through time via better allocation systems using new methods based on better information. It recognises that freshwater management is a complex problem that has not been addressed in an integrated manner. The current state of the region’s fresh water is the result of ad hoc management in response to disparate directions from central government and a preference for economic development that competes with an incomplete understanding of site specific environmental limits.

## ADDRESSING NEW ZEALAND’S BIODIVERSITY CHALLENGE (WILLIS, 2017)

The ‘Willis Report’ is a regional council led report on the future of biodiversity management in New Zealand. The report has a focus on the role and work of regional councils in biodiversity management. It establishes that biodiversity maintenance is a core function of regional councils, but acknowledges that biodiversity nevertheless continues to decline. The report’s recommendations for halting the continued decline in biodiversity comprises:

- the need for strong leadership and clarity of roles and responsibilities
- the need for positive action, building on our existing active plant and animal pest management
- the need for agreement on where we should focus our efforts at national, regional and local level
- the need to understand what success looks like, and how to measure it
- the importance of a plan and delivering joined-up action across all players
- the need for modern, fit-for-purpose frameworks, including legislation, to help to achieve our goals.

## 3.3 IWI MANAGEMENT PLANS

### WHAIA TE MAHERE TAIAO A HAURAKI AND NGĀTI POROU KI HAURAKI

Whaia te Mahere Taiao a Hauraki (Hauraki Iwi Environmental Plan) and Ngāti Porou Ki Hauraki (Marine and Coastal Plan) are two iwi management plans relative to the Waihou Piako zone. Whaia te Mahere Taiao a Hauraki is a strategy in place to sustain mauri of the natural environment and cultural heritage of the Hauraki rohe over the next 50 years. Ngāti Porou Ki Hauraki is a plan designed to protect the customary rights and assert the custodial obligations of Ngāti Porou ki Hauraki, regarding the marine and coastal area.

Other relevant iwi and hapū planning documents:

- Raukawa Fisheries Plan 2012
- Raukawa Environmental Management Plan 2015.

Ngāti Haua iwi are also in the process of developing an iwi management plan.



# KEY MATTERS FOR THE ZONE

## NGĀ KAUPAPA MATUA | TE ROHE

The following section sets out the key matters for the zone that have informed the development of the goals and implementation actions within the plan. Key matters have been identified through the process of developing this zone plan and take account of the policy context outlined in Section 3 alongside wider social, economic, environmental and cultural considerations within the zone.

### 4.1 MANAGING CLIMATE CHANGE AND NATURAL HAZARD RISKS

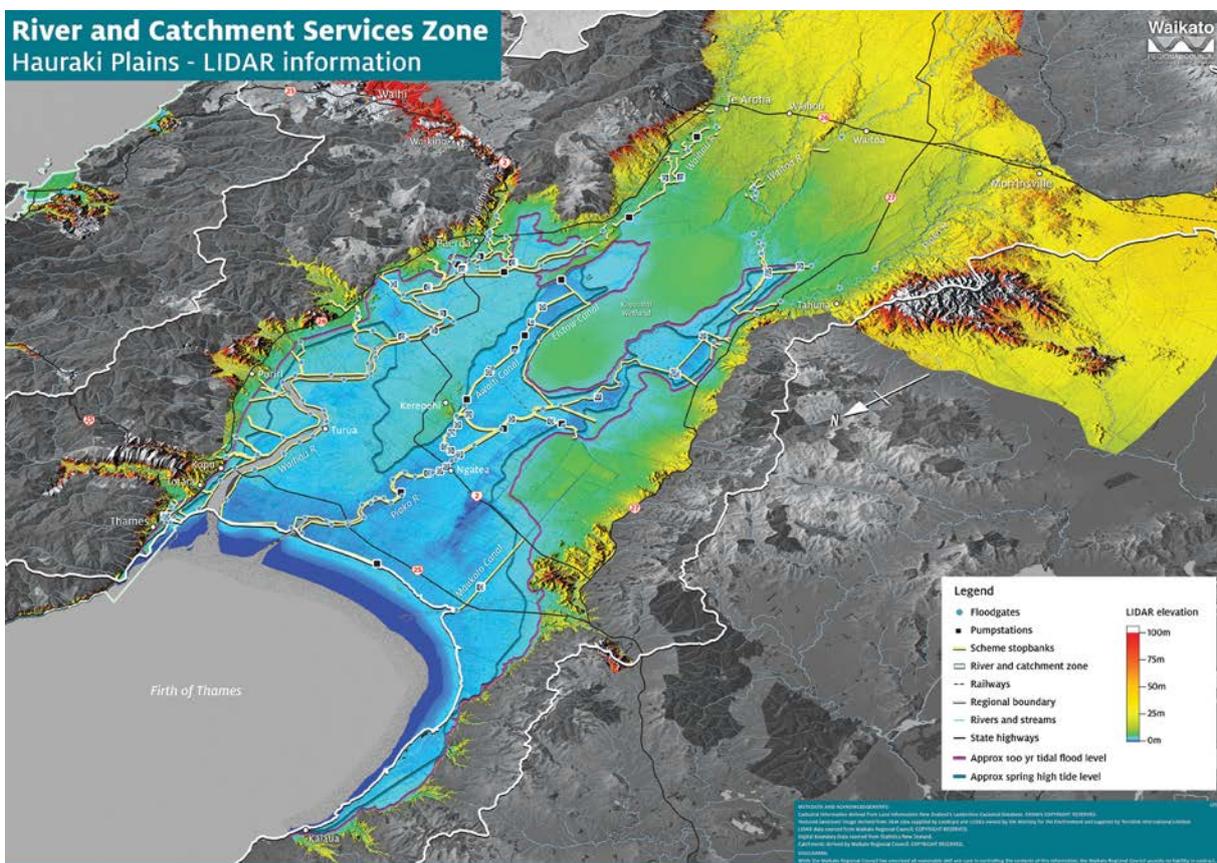


FIGURE 5 - LIDAR information illustrating land elevation in the zone

Climate change poses significant risk to the zone as it is likely to result in continued sea level rise and increased frequency and ferocity of high rainfall events. These changes are likely to cause increased flooding and storm surges, and exacerbate stream and cliff erosion/instability.

The zone's low lying coastal areas (Figure 5) are highly susceptible to inundation from tides, storms and projected sea level rise. Areas in the Hauraki Plains below sea level are classified as connected inundation areas, meaning they are areas where water could directly inundate from the sea if sea levels rise. Waikato Regional Council provides an inundation tool which outlines areas that may be subject to inundation.

The zone is subject to high intensity rainfall that can fall over a localised area causing flash flooding, land instability, stream bank/gully/slope erosion and debris flow. Large floods in 1907 and 1924 caused the Waihou River to leave its channel and flow across country, merging with the floodwaters of the Piako and Waitoa rivers. Since these events, vast flood protection works along the Waihou and Piako rivers, the tributaries and the Firth of Thames foreshore together protect the lower Thames Valley and Hauraki Plains. The council operates a Regional Flood Response Management Plan during high rainfall events, used recently during the 2017 Piako and Waitoa flood event.

At present, knowledge of other coastal processes and associated hazards of the Waihou Piako zone is limited. However, it is believed the Hauraki district, in particular, is prone to natural hazards. Local knowledge, detailed investigations, river flood engineering, hazard studies and regional hazard risk analysis has outlined the following existing or potential threats to the Hauraki area and its communities (Munro, 2007):

- river and stream flooding
- coastal erosion and flooding
- severe storms
- earthquakes
- tsunamis
- volcanic eruption
- debris flow.

Council has risk mitigation plans that aim to minimise the effect of natural hazards on the Waikato economy and community. Community awareness of the above hazards will allow the zone to be prepared and resilient if such an event was to occur.

## 4.2 FRESH WATER QUALITY AND QUANTITY MANAGEMENT

The Waihou River and the Piako River are the two river catchments that dominate the Waihou Piako zone, and they flow directly into the Firth of Thames. Prior to human settlement, the natural floodplain of the Waihou Piako area contained many wetlands and swamp areas. Since the introduction of flood protection schemes and vast modification of the natural landscape, communities have been able to prosper through the likes of agricultural development. Drainage of land and conversion into intensive pastoral farming on peat soils has proved consequential to water quality, resulting in high nutrient loads (nitrogen and phosphorus) and loss of stream bank gradient by peat subsidence. Since such developments, rates of erosion and sedimentation infill have also increased.

Studies over the past two decades have shown that water quality in both the Waihou and Piako rivers is negatively impacted by nutrient run off (nitrogen and phosphorus) and sedimentation (Vant, 2011). While water quality in the zone has degraded from its pre-clearance state, recent trends over the past 10 years have shown that water quality is generally stable and losses from the land to the rivers is collectively decreasing (Vant, 2016). Improvements have likely resulted from improved treatment of the wastewaters that are

discharged to the rivers (Vant 2016). In some cases, these have offset the effects of more intensive farming and nutrient concentrations in the zone. This illustrates that while water quality improvements are variable at different upstream and downstream locations in the zone, overall levels balance out to produce a generally stable state (Vant, 2016).

Existing work programmes for flood management, sustainable land management, soil erosion and catchment management can help improve water quality throughout the zone. However, landowner liaison and co-management is vital as many of these schemes are managed and maintained to service levels agreed to by landowners. Strong buy-in by communities and stakeholders is required to produce more tangible outcomes.

Over recent years, demands for water have increased, and this demand is likely to continue to increase into the future. Competing water uses can result in water shortages and conflicts, and can place significant pressure on river catchments, lakes and wetlands. Therefore, efficient use of water is important to increase water availability to a range of interests.

Developing catchment management plans, excluding stock from priority waterways, coastal marine areas, lakes and wetlands, and supporting appropriate sustainable land

management practices will all help to meet the goals of the zone plan and relevant statutory requirements, while restoring and enhancing the mauri of waterways.

## 4.3 GREATER PROMOTION OF SUSTAINABLE LAND MANAGEMENT AND IMPLEMENTATION OF CATCHMENT MANAGEMENT ACTIVITIES

Erosion prone soils and unstable areas deliver high sediment loads to the Waihou and Piako rivers and their tributaries. Susceptibility to soil erosion is a result of complex interactions between soil type, climate, vegetation cover, terrain characteristics and land management practices. Land use changes such as farming, introduction of pests, forestry, road construction and urban development can lead to accelerated erosion. Unfortunately, once erosion has occurred, it is difficult to return soil productivity to its former state.

Stream bank erosion contributes sediment to waterways across the zone. Erosion protection around waterways can help prevent sedimentation – planting, fencing and erosion protections schemes are present throughout the zone on scheme land. The zone’s harbours and estuaries in the upper catchments near Thames are also particularly vulnerable to high sediment input.

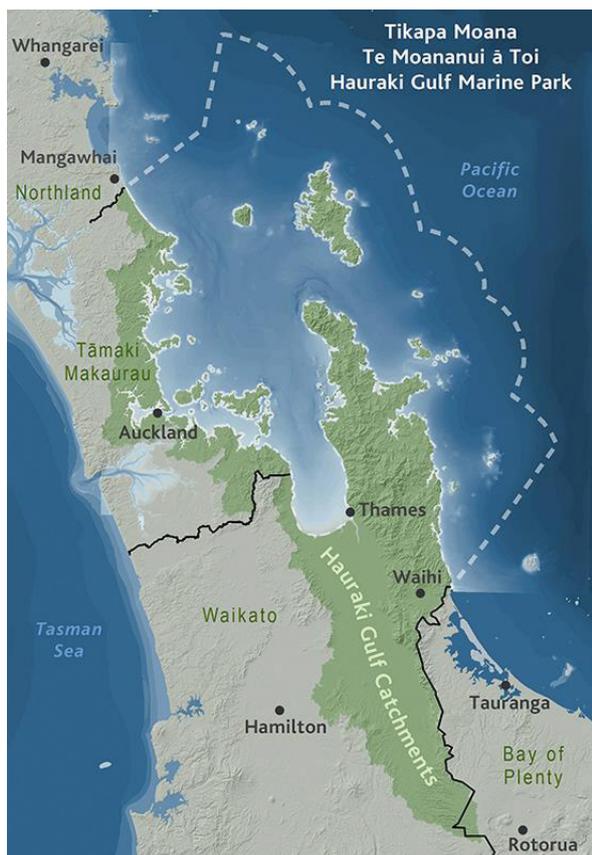
As outlined earlier (Section 4.2) land use change and agricultural intensification can contribute to erosion and sedimentation. Hill country is also prone to shallow slips and sheet erosion, particularly where heavy livestock are grazed on steep land – this can cause slumping, earthflow and gully erosion. This is more common in the steep upper catchments of the zone. Some land practices can also adversely affect soil health, versatility and productivity by compaction and reducing fertility.

Climate change is also expected to result in more frequent rainfall events, further exacerbating erosion and sedimentation. Flooding throughout the zone can also leave soils saturated, effecting their productivity.

## 4.4 PROTECTION AND ENHANCEMENT OF THE FIRTH OF THAMES

The Firth of Thames contains distinct marine habitats that thrive on clean environments and water. The Firth of Thames is situated at the southern end of the Hauraki Gulf and accordingly is included in the Hauraki Gulf Marine Park area (Figure 5). The Hauraki Gulf Marine Park is managed through

the Hauraki Gulf Marine Park Act 2000, alongside Sea Change – The Hauraki Gulf Marine Spatial Plan (2017). As a result, the Firth of Thames is subject to issues and initiatives outlined in Sea Change (2017), such as fish stocks, aquaculture, indigenous biodiversity, habitat restoration and sedimentation.



**FIGURE 5A** - Hauraki Gulf Marine Park area

Threats to the ecological values of the Firth of Thames include dairy farm run off, historic mussel dredging and sedimentation (Ryer, Bentley, Saunders & De Luca, 2016).

Water quality is one of the greatest concerns affecting the health of in the Hauraki Gulf Marine Park. The most common causes of marine water quality degradation trace back to contaminants washed from the land into the coastal area through fresh water run off. Contaminants in fresh water run off include sediment, nutrients, heavy metals and microbial pathogens (Sea Change, 2017).

Both the Waihou and Piako rivers (alongside smaller waterways, canals and drainage networks) drain into the Firth of Thames, contributing to nutrient and sediment input entering the Firth. The various drainage networks located in the Hauraki Plains have flows sourced from the intensively farmed plains, peat bogs and occasional point source inputs such as municipal wastewater treatments and industrial facilities. Despite this, studies showed that water quality in the Fifth of Thames was generally good, with



**FIGURE 5B** - Tikapa Moana, Te Moananui-a-Toi (cultural perspective)

water containing moderate concentrations of nitrogen and phosphorus, with low to moderate concentrations of algal chlorophyll. The overall quality of the Firth was better than coastal waters elsewhere (e.g. Manukau Harbour) which contain much higher levels of nutrients (Vant, 2013).

Poor water quality can impact on virtually all uses and values associated with the Firth of Thames (and wider Hauraki Gulf Marine Park). Harbour and catchment management plans (through prioritisation of catchments), sediment management (e.g. sediment load limits, increasing sediment traps in waterways, addressing sediment in the coastal marine area, review of forestry impacts on sedimentation), waterway management and protecting highly erodible soils are outlined in Sea Change (2017) as initiatives to improve marine water quality.

Further research, as part of Sea Change (2017), will increase understanding of the complex issues present in Hauraki Gulf Marine Areas and the impacts that works within the zone have on coastal environments.

## 4.5 PROMOTION OF INDIGENOUS BIODIVERSITY ENHANCEMENT AND PROVIDING EFFECTIVE PEST MANAGEMENT

Prior to the arrival of Europeans, the zone was largely forested, with much of the Hauraki Plains comprising of wetlands and swamp forest dominated by kahikatea, rimu, matai, pukatea, swamp maire, tawa, pōkākā and cabbage tree (Kessels et al, 2010). Residual natural ecosystems are currently prioritised at locations such as the Kaimai/Mamaku Ranges, Kopuatai Peat Dome and natural state streams. These remnant wetlands and other ecosystems support a wide range of species, some of them nationally threatened plants. Remaining indigenous ecosystems in the Waihou Piako zone need to be protected from further reduction and degradation.

Throughout the zone there is a range of animal and plant pests threatening indigenous flora and fauna. The effects and severity of impact of each of these pests vary depending on the location of the site and the values that require protection. Protected flora and fauna can be threatened by invasive species, for example, the edges of the Kopuatai Peat Dome have been invaded by willow and various dicot herbs.

Factors such as habitat fragmentation, mammalian pests and land use have contributed to species extinction and indigenous biodiversity degradation. In addition, climate change is expected to increase the impact of these pressures. Some of the issues associated with modifications to the natural environment include:

- sea level rise and change affecting the extent and availability of internationally significant wading bird feeding and roosting habitat
- coastal inundation resulting in salination around the peat domes, including Kopuatai Peat Dome
- deoxygenation of streams caused by increased frequency and intensity of storm events

- reduction, fragmentation and isolation of indigenous ecosystems and habitats
- loss of corridors or connections linking indigenous ecosystems and habitats
- loss or disruption to migratory pathways in water, land or air
- the difficulty of restoring indigenous forest and other ecosystems once they have been lost
- effects of changes to water flows, levels and quantity on ecosystems
- an increased threat from animal and plant pests
- loss of cultural values, amenity values and recreational opportunities.

Biodiversity management seeks to identify and work to protect and enhance significant indigenous ecosystems, flora and fauna. Protection includes fencing to keep stock out, planting to stabilise steep slopes and shade streams, and pest control to remove exotic animals and plants that consume and compete with native species.

The RPS has also signalled a move towards a strategic, proactive and coordinated indigenous biodiversity management approach with landowners, mana whenua and other agencies. In addition, the council has embarked on a comprehensive information gathering project to complete a biodiversity inventory and to improve internal coordination of the biodiversity programme across the council. This approach has also been signalled in the recent 'Willis Report' which recommends five strategic "shifts" to make a more effective contribution to halting biodiversity decline (Willis, 2014).

## 4.6 SUPPORTING COMMUNITY PARTNERSHIPS AND THE IMPLEMENTATION OF FUTURE CO-MANAGEMENT ARRANGEMENTS WITH IWI

With a rating base of approximately 28,500 properties and encompassing six district councils, available funding cannot always match desired community outcomes for works in the zone.

Communities are reliant on the healthy functioning of the natural and physical resources of the Waihou Piako zone for their social, economic, cultural and environmental wellbeing. In order to achieve desired community outcomes, the council works with other councils, community groups, businesses, individual landowners, central government, iwi/hapū and non-governmental organisations. The council also partners (and co-funds) with various groups to undertake community projects. Examples of these partnerships include Department of Conservation, local territorial authorities (TLAs) and Beachcare.

Key iwi within the Waihou Piako zone include: Hauraki Collective iwi (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 Ngāti Rahiri Tumutumu), Raukawa, Ngāti Haua, Ngāti Hinerangi, Te Ure o Uenuku-Kopako, and Tauranga Moana. Council has prioritised working in partnership with iwi to implement Treaty settlement requirements and co-management agreements.

Co-management opportunities in the Waihou Piako zone are strengthened by a variety of engaged groups, existing forums and relationships that can be utilised, alongside vast local knowledge and the diversity of views throughout the community. The zone also holds importance to tangata whenua, including spiritual significance of the Waihou and Piako River systems, mahinga kai, wāhi tapu sites and urupā.

It is important that the council continues to engage and partner with community sectors to identify opportunities to work collaboratively together, avoid duplication and add significant value where priorities are aligned. This collaborative approach is a challenge but will assist in focusing resources into priority areas, where the biggest gains can be achieved. Continuing proactive iwi, hapū and marae engagement, both within formal agreements and more informally, will be important to building enduring community partnerships and ensuring the goals of this zone plan are met.



# PLAN IMPLEMENTATION

## TE WHAKATINANATANGA O TE MAHERE

### 5.1 ZONE GOALS

#### **GOAL 1: TO PROTECT AND ENHANCE WATER QUALITY AND PRODUCTIVE SOIL CAPACITY OF CATCHMENTS WITHIN THE ZONE.**

Over the past 200 years, intensified land use and increased demand for water in catchments has adversely impacted on water resources in the Waihou Piako zone. Nutrient loss from the land to water is generally decreasing but continued improvements on the land are likely required to further improve water quality. The challenge is to protect existing water quality within the zone. There is an opportunity to work with the community, stakeholders and iwi to research and further develop methods to reduce impacts of land use on fresh water.

#### **GOAL 2: TO MANAGE AND MAINTAIN APPROPRIATE FLOOD PROTECTION TO RURAL LAND AND URBAN AREAS WITHIN THE ZONE.**

A significant area of the Waihou Piako zone is low lying, with some areas being up to 2m below sea level. If sea level rise occurs as predicted, there is an increased risk of flood infrastructure failure and potential for widespread inundation which may impact on fresh water wetland systems and peat domes. It is a challenge to financially maintain these flood assets when an increased level of service is required to cater for the effects of climate changes. There is an opportunity to improve risk management associated with climate change by ensuring that infrastructure planning takes account of climate change risks and that the community remains knowledgeable about the impacts of climate change and natural hazards.

#### **GOAL 3: PROMOTE AND ENHANCE INDIGENOUS BIODIVERSITY IN ZONE CATCHMENTS IN A DEMONSTRABLE AND MEASURABLE WAY.**

Extensive land use change in the zone has seen a change from predominant native forests to vast areas of pasture land. The challenge is protecting remaining indigenous ecosystems from further reduction and degradation, and from impacts of climate change. There is an opportunity to better define priorities for restoration and strategically coordinate funding and implementation of indigenous biodiversity enhancement work within the zone.

#### **GOAL 4: WORK WITH MANA WHENUA AND THE COMMUNITY TO STRENGTHEN COLLABORATIONS AND PARTNERSHIPS.**

There is an increasing expectation from the community and iwi to deliver collaborative solutions to shared catchment management problems. Scarce resourcing, funding and capacity is problematic to achieving desired community outcomes. Continuing to strengthen community/stakeholder partnerships and supporting iwi co-management practices are key opportunities to deliver more effective catchment management outcomes for the zone. There is also an opportunity to further explore co-funding of projects in partnership with other organisations.

## 5.2 IMPLEMENTATION ACTIONS

This section describes how the council intends to achieve its goals for the zone at an operational level. The nine focus areas identified provide a basis for monitoring this plan, and the accompanying actions detail proposed implementation activities over a 10 year time frame.

The focus areas and actions may respond to one or more of the zone plan goals and this reflects the interrelated nature of implementation activities undertaken by the council within the zone. For example, focus areas designed to address erosion will also assist the council in achieving the goals of maintaining and improving water quality and protecting indigenous biodiversity. The relationship between the key focus areas and zone goals is summarised in Table 2.

FOCUS AREA		GOAL 1 Water quality & soil capacity	GOAL 2 Flood protection	GOAL 3 Indigenous biodiversity enhancement	GOAL 4 Community partnerships
1	Prioritise areas for action	✓	✓	✓	✓
2	Fund new works with a focus on priority areas	✓	✓	✓	✓
3	Maintain the integrity of existing flood protection scheme		✓		✓
4	Maintain the integrity of existing catchment and river assets/works	✓		✓	
5	Protecting and enhancing places of value			✓	✓
6	Work with iwi to achieve the greatest value	✓	✓	✓	✓
7	Collaborate with community groups and stakeholders to achieve the greatest value	✓	✓	✓	✓
8	Provide an information and facilitation service for landowners	✓	✓	✓	✓
9	Preparing for change	✓		✓	✓

**TABLE 2** - Relationship between each focus area and the zone goals.

Some implementation actions are ongoing, while others will have more effort directed to them in either the short or long term. The implementation of some actions is dependent on funding from the zone and internal and/or external sources; and collaboration with agencies external to the council. Indicative lead agencies have been noted against each implementation action and this is subject to ongoing review. The timing of implementation is also subject to ongoing review and change as actions are completed and dependencies are understood.

It is noted that the implementation actions described in this plan that are directly funded through the Waihou Piako zone are at 2017/18 levels and subject to review.

## FOCUS AREA 1 – PRIORITISE AREAS FOR ACTION

Prioritise specific areas within the zone for focused attention based on the potential benefits for environmental health, the gains in building social capital, and alignment with zone and organisational goals. Prioritisation will focus on targeting limited resources in areas under the most pressure and where the greatest benefits can be achieved.

IMPLEMENTATION ACTIONS	WHO/TIMING
<p><b>Develop a consistent and comprehensive catchment management plan</b></p> <p>Develop a catchment management plan (CMP) for the Waihou Piako that takes account of existing plans, including Sea Change, and sets out a proactive, prioritised and integrated ‘whole of catchment’ approach to managing land and water. The CMP will include actions to:</p> <ul style="list-style-type: none"> <li>• improve water quality</li> <li>• conserve soil</li> <li>• restore and protect important indigenous biodiversity habitats</li> <li>• meet iwi aspirations for the catchments</li> <li>• incorporate the relationship with the flood protection schemes</li> <li>• manage rivers</li> <li>• collaborate with other management agencies such as DOC, district councils, iwi, etc.</li> <li>• engage with landowners in identified priority areas to verify the findings and encourage and support the collective efforts of landowners to address issues.</li> </ul>	<p>WRC (Completed by June 2019)</p>

## FOCUS AREA 2 – FUND NEW WORKS WITH A FOCUS ON PRIORITY AREAS

Continue to fund new works (at current levels) that incentivise landowners to invest in soil conservation activities that provide protection beyond statutory or minimum requirements, and enhance the special values that characterise the Waihou Piako such as wetlands, rivers and shallow lakes features. Over time the funding of new works will be focused on the priority areas identified as part of the CMP (focus area 1).

IMPLEMENTATION ACTIONS	WHO/ WHEN
<p><b>Develop funding criteria</b></p>	<ul style="list-style-type: none"> <li>Develop criteria (similar to that developed for the Waipa catchment) to guide decision making for new works funding, making specific provision for matters identified in the RPS.</li> <li>Review the criteria to reflect specific catchment needs arising from the long term prioritisation exercise.</li> <li>Undertake regular reviews of the criteria and change as required to reflect new or emerging priorities.</li> </ul>
<p><b>Encourage uptake of new works</b></p>	<p>As part of a specific project focusing on priority areas:</p> <ul style="list-style-type: none"> <li>Engage and inform landowners of the assistance available for new works.</li> <li>Advise on the funding process and ongoing landowner responsibilities.</li> <li>Provide advice and assist with preparing applications for funding from other sources to complement new works projects.</li> </ul> <p>Undertake a specific project focusing on priority areas to:</p> <ul style="list-style-type: none"> <li>reflect goals of developing landowner, iwi and community focused sub-catchment management plans and support via funding and advice</li> <li>advise on the funding process and ongoing landowner responsibilities.</li> </ul> <p>Outside of priority areas respond to landowner requests for:</p> <ul style="list-style-type: none"> <li>information and, if appropriate, funding for new works</li> <li>assistance with preparing applications for funding to complement new works projects.</li> </ul> <p>Where landowners are willing, facilitate opportunities to bring people together (e.g. farm field days) to:</p> <ul style="list-style-type: none"> <li>build knowledge and capability</li> <li>coordinate discussion groups on enhancing catchment health</li> <li>encourage neighbourliness and thinking beyond property boundaries.</li> </ul> <p>Target funding of new works into priority areas identified under focus area 1 so that:</p> <ul style="list-style-type: none"> <li>by 2019, 80 per cent of funding is spent in priority areas.</li> </ul>
<p><b>Support development of new strategies and policies that ensure best practice</b></p>	<ul style="list-style-type: none"> <li>Promote with landowners the implementation of best management practices – involving further development and review of current practices.</li> <li>Support ICM's development of a policy on maintenance of catchment management schemes.</li> </ul>

### FOCUS AREA 3 – MAINTAIN THE INTEGRITY OF EXISTING FLOOD PROTECTION SCHEMES

Together, flood protection along the Waihou, Piako, Ohinemuri, Waitoa and Kauaeranga Rivers, their tributaries and the Firth of Thames foreshore provide protection from flooding for the lower Thames Valley and Hauraki Plains. It is important that scheme is maintained to agreed levels of service.

IMPLEMENTATION ACTIONS		WHO/ WHEN
<b>Maintenance works</b>	<ul style="list-style-type: none"> <li>Maintain design standards of current assets and ensure appropriate budget is available to continue the renewals programme.</li> <li>Maintain (or improve where required) land access to assets on both scheme land (e.g. Hauraki trail) and private land.</li> <li>Annual performance and condition inspections are undertaken where community maintenance schemes are in place.</li> </ul>	<p>WRC (Ongoing)</p>
<b>Reduce the risk of localised flooding</b>	<p>Reduce risks of localised flooding in priority catchments through the removal of vegetation congestion and blockages. Works include:</p> <ul style="list-style-type: none"> <li>annual inspections of the rivers and streams and responding to enquiries</li> <li>removal of isolated whole trees, stumps or limbs that have fallen into the channel, or are likely to and could create an obstruction to flow or exacerbate erosion</li> <li>assisting with fencing of eroding portions of channels, at a distance in accordance with best practice</li> <li>planting and maintaining vegetation to help prevent erosion, using indigenous vegetation where appropriate</li> <li>minor erosion control work to maintain channels in their present locality and to reduce the sediment input caused by streambank erosion</li> <li>spraying vegetation.</li> </ul>	<p>WRC (Ongoing)</p>
<b>Consider ecological enhancement and potential effects of climate change</b>	<ul style="list-style-type: none"> <li>Ensure future proofing around climate change, including adjusting level of service to consider climate change, reducing peat loss and reviewing flood scheme to consider what is appropriate for longer term requirements.</li> <li>Support the implementation of the Waikato Regional Council climate change guidance policies.</li> <li>Incorporate consideration of ecological enhancement and better environmental outcomes when planning new works and projects. This includes incorporating new technologies such as fish friendly pumps or different infrastructures in order to achieve these outcomes.</li> <li>Explore other options to reduce the impact of climate change, for example purchasing flood prone land to retire and build wetlands.</li> </ul>	<p>WRC (Ongoing)</p>
<b>Explore opportunities and supporting policy</b>	<ul style="list-style-type: none"> <li>Prevent development and intensification on flood plains, especially on scheme land. This can be achieved through monitoring urban development processes.</li> <li>Support the development of the Regional Asset Management Plan (RAMP) and Regional Infrastructure Strategy.</li> <li>Work alongside and support initiatives of the Regional Drainage Plan and the Franklin Waikato Drainage advisory committee.</li> </ul>	<p>WRC and TLAs (Ongoing)</p>

#### FOCUS AREA 4 – MAINTAIN THE INTEGRITY OF EXISTING CATCHMENT AND RIVER WORKS

Existing catchment management works have made a difference to erosion, subsequent downstream sedimentation and protection of productive land. It is important that the existing works are retained in good working order and that they are regularly assessed to determine whether the intended benefits are being achieved.

IMPLEMENTATION ACTIONS		WHO/ WHEN
<b>Accurate property information</b>	Maintain existing works through: <ul style="list-style-type: none"> <li>keeping accurate, up to date property files and asset records</li> <li>inspecting programme assets and following up on any maintenance landowners are required to carry out</li> <li>ensuring landowners are aware of and meet their capabilities under existing agreements.</li> </ul>	<b>WRC (ONGOING)</b>
<b>Inspections and maintenance</b>	Regularly inspect scheme assets and works through: <ul style="list-style-type: none"> <li>follow-up of any maintenance landowners are required to carry out</li> <li>ensuring landowners are aware of and meet their responsibilities under existing agreements</li> <li>making landowners aware that Waikato Regional Council will take action if the obligations in agreements are not being met.</li> </ul>	<b>WRC (ONGOING)</b>
<b>Renewals</b>	At renewal: <ul style="list-style-type: none"> <li>review agreements with landowners to ensure the assets are contributing to achieving the current purpose of the scheme</li> <li>negotiate variations to agreements where required.</li> </ul>	<b>WRC (ONGOING)</b>

## FOCUS AREA 5 – PROTECTING AND ENHANCING PLACES OF VALUE

The Waihou Piako zone contains a range of unique natural features and places of special cultural, economic and social significance. A key focus for the zone activities will be on protecting and enhancing these places of value.

IMPLEMENTATION ACTIONS		WHO/ WHEN
<p><b>Indigenous biodiversity enhancements</b></p>	<p>Enhancing indigenous biodiversity is critical for the zone and meets objectives set under the RPS. The following actions are proposed to enhance indigenous biodiversity in the zone:</p> <ul style="list-style-type: none"> <li>• Develop an implementation plan for biodiversity for the Waihou Piako zone using the Willis report as a guide.</li> <li>• Acknowledge the importance of ecologically significant sites in the zone, such as the internationally recognised RAMSAR sites.</li> <li>• Review and promote best management practices for restoration planting.</li> <li>• Scope the potential for biodiversity enhancement initiatives on scheme land and promote complementary land use practices such as wetlands/ pond inundation for flood management.</li> <li>• Monitor success of current biodiversity projects and programmes and incorporate knowledge to improve outcomes.</li> <li>• Develop and implement restoration/enhancement plans for priority areas outlined in the CMP.</li> <li>• Retain/replace fish habitats when clearing river blockages.</li> <li>• Investigate opportunities to purchase flood prone land to retire and build wetlands (criteria for identifying suitable land for retirement will be included in zones CMP).</li> </ul>	<p>WRC, stakeholders (Ongoing)</p>

<p><b>Animal and Plant pest control</b></p>	<p>The following activities are proposed for animal and plant pest control:</p> <ul style="list-style-type: none"> <li>• Ensure landowners comply with rules set in the RPMP.</li> <li>• Increase pest control of Waikato Regional Council lease land and scheme land.</li> <li>• Support DOC to manage pest plants on DOC managed land.</li> <li>• Investigate opportunities with ICS and Department of Conservation for collaborative biodiversity/biosecurity programme for the Waihou Piako.</li> <li>• Develop a monitoring process that links pest management benefits to flood protection and river management initiatives.</li> <li>• Support collaboration with the Kaimai Mamaku forum.</li> <li>• Develop a monitoring process that links pest management benefits to flood protection and river management initiatives.</li> </ul> <p>Key animal pest actions include:</p> <ul style="list-style-type: none"> <li>• supporting collaborative opportunities through Predator Free 2050</li> <li>• continuing to manage possums in priority possum control areas (PPCAs) where control is needed to: <ul style="list-style-type: none"> <li>– protect and enhance indigenous biodiversity (including improving the stability of the catchments)</li> <li>– enhance farm production</li> <li>– maintain the gains of previous or existing possum control.</li> </ul> </li> <li>• undertaking a koi carp study to see if they can be eradicated from the Hikutaia Cut.</li> </ul> <p>Key plant pest actions include:</p> <ul style="list-style-type: none"> <li>• undertaking direct control projects for high threat pest plant species that are set out in the Regional Pest Management Plan (RPMP)</li> <li>• undertaking active pest plant control (100 per cent compliant with RPMP) on Waikato Regional Council owned and managed land</li> <li>• supporting collaborative opportunities to enable On Farm Biosecurity and promote/implement biosecurity pathway management practices</li> <li>• increasing pest plant education of Waikato Regional Council staff</li> <li>• maintaining the gains made with alligator weed and yellow flag iris</li> <li>• surveillance of national interest pest plants.</li> </ul>	<p>WRC, stakeholders (Ongoing)</p> <p>WRC, stakeholders (Ongoing)</p> <p>WRC, stakeholders (Ongoing)</p>
<p><b>Build understanding/ education to enhance the zones coastal environment</b></p>	<p>The following action will ensure the zone's coastal environment is better understood and can be protected:</p> <ul style="list-style-type: none"> <li>• Support prioritised Sea Change (Hauraki Gulf Marine Spatial Plan) implementation actions in accordance with Waikato Regional Council Implementation Plan.</li> </ul> <p>The Beachcare programme addresses hazard mitigation through recovery post-erosion, in addition to enhancing natural character, amenity value and biodiversity value of restored sites. The following actions are proposed to support the Beachcare project:</p> <ul style="list-style-type: none"> <li>• On request or as part of a focus on priority biodiversity areas, engage and inform landowners of the assistance available through council's Beachcare programme.</li> <li>• Provide plants, material, pest control and guidance to groups that aim to restore a local coastal habitat, such as foredune, reardune or coastal forests.</li> </ul>	<p>WRC, stakeholders, community (Ongoing)</p>
<p><b>Better understanding of peat soils</b></p>	<p>Support the understanding of peat soil information (extent and depth) in the Waihou Piako zone. Actions include:</p> <ul style="list-style-type: none"> <li>• supporting research to better understand drivers and rates of peat loss</li> <li>• promoting strategies to reduce peat loss as knowledge improves</li> <li>• better understanding the consequences of peat loss on indigenous biodiversity, the public, and flood control schemes.</li> </ul>	<p>WRC (Ongoing)</p>

## FOCUS AREA 6 – WORK WITH IWI TO ACHIEVE THE GREATEST VALUE

Working alongside iwi and hapū in the zone will add significant value to catchment management activities undertaken within the zone.

IMPLEMENTATION ACTIONS		WHO/ WHEN
<p><b>Build enduring relationships with mana whenua</b></p>	<p>Key actions to ensure enduring and meaningful engagement with mana whenua will include:</p> <ul style="list-style-type: none"> <li>• continuing to foster relationships with iwi to develop trust and credibility</li> <li>• understanding mana whenua objectives and priorities, and aligning zone activities with these</li> <li>• identifying areas of common objectives and supporting associated initiatives, for example identifying and including archaeological sites in Waikato Regional Council GIS database</li> <li>• being responsive and adaptable to Treaty settlement outcomes, including the upcoming Hauraki Collective Treaty Settlement</li> <li>• increasing staff training, resourcing and introductions to iwi collaboration in the zone.</li> </ul>	<p>WRC, iwi (Ongoing)</p>

## FOCUS AREA 7 – COLLABORATE WITH COMMUNITY GROUPS AND STAKEHOLDERS TO ACHIEVE THE GREATEST VALUE

Liaise with agencies, iwi, industry bodies, landowners and community groups to coordinate work programmes and to ensure comprehensive coverage, avoid duplication and add value where there is alignment with the goals of this zone plan.

IMPLEMENTATION ACTIONS		WHO/ WHEN
<p><b>Forward planning</b></p>	<p>The council will develop, support and implement projects in partnership with other stakeholders and community groups that focus on priority areas, catchments or issues. Key actions will include:</p> <ul style="list-style-type: none"> <li>• developing and implementing a stakeholder management plan</li> <li>• developing and implementing a communications plan</li> <li>• co-hosting an annual meeting of zone stakeholders to consider priorities, identify common areas of interest and potential collaboration opportunities.</li> </ul> <p>Where common interests exist, the following actions are proposed:</p> <ul style="list-style-type: none"> <li>• Formally partner with other stakeholders to develop funding proposals and undertake joint projects, or</li> <li>• Support applications for external funding by, for example, endorsing applications, providing part funding or in kind contributions, and providing advice on the preparation of funding applications.</li> <li>• Actively facilitate or participate in workshops, forums and other networking opportunities that:               <ul style="list-style-type: none"> <li>– share information, knowledge and skills to address common interests</li> <li>– create opportunities to build capacity and capability.</li> </ul> </li> </ul>	<p>WRC, iwi, WPCC, stakeholders (Annually)</p> <p>WRC, iwi, stakeholders (Ongoing)</p>
<p><b>Share information, knowledge and skills</b></p>	<p>Actively facilitate or participate in workshops, forums and other networking opportunities that:</p> <ul style="list-style-type: none"> <li>• share information, knowledge and skills to address common interests</li> <li>• create opportunities to build capability and capacity.</li> </ul>	<p>WRC, Stakeholders (Ongoing)</p>
<p><b>Leverage existing relationships</b></p>	<p>It is important for council to continue strengthening existing relationships with other organisations to realise a range of community benefits. The Waihou Piako zone will achieve this by:</p> <ul style="list-style-type: none"> <li>• exploring further opportunities to leverage partnerships and co-funding initiatives</li> <li>• ensuring collaboration with Department of Conservation (DOC) for the enhancement and protection of the Kopuatai Peat Dome in relation to flood management</li> <li>• building a stronger relationship with territorial authorities, especially in regard to managing the impact of urban development</li> <li>• developing a Memorandum of Understanding (MoU) with DOC, territorial authorities around flood protection activities</li> <li>• promoting biodiversity through the Enviro Schools programme and working with local schools to enhance biodiversity through plantings (e.g. kahikatea stands, riparian planting).</li> </ul>	<p>WRC, stakeholders (Ongoing)</p>

## FOCUS AREA 8 – PROVIDE AN INFORMATION AND FACILITATION SERVICE FOR THE COMMUNITY

Link landowners to the full range of services provided by Waikato Regional Council, and with other organisations providing assistance.

IMPLEMENTATION ACTIONS		WHO/ WHEN
<p><b>Work with landowners and land managers</b></p>	<p>Provide one-on-one advice and information in priority areas on sustainable land management practices/biodiversity protection, etc. This will include on:</p> <ul style="list-style-type: none"> <li>• the development of farm/property plans</li> <li>• appropriate land use, so that it does not exceed the property's Land Use Capability</li> <li>• setback distances between land use activities (agriculture and forestry) and waterways</li> <li>• stock exclusion from all water bodies</li> <li>• the management of plant and animal pests.</li> </ul>	<p>WRC (Ongoing)</p>
<p><b>Work with prominent industries in the zone</b></p>	<p>Extend Waikato Regional Council's ability to support landowners and facilitate change to meet RPS objectives by building capability within industries servicing the rural sector in the Waihou Piako. This will be done by:</p> <ul style="list-style-type: none"> <li>• facilitating the delivery of appropriate training programmes for rural professionals</li> <li>• developing extension programmes in collaboration with stakeholder organisations</li> <li>• undertaking joint research and extension projects where appropriate</li> <li>• developing and maintaining open, constructive relationships with staff working for key rural sector organisations.</li> </ul>	<p>WRC, industry stakeholders (Ongoing)</p>
<p><b>Communication and education</b></p>	<ul style="list-style-type: none"> <li>• Develop and implement strategies to inform and educate landowners and relevant industries about the characteristics of the zone and associated risks. In particular, there should be a focus on: <ul style="list-style-type: none"> <li>– communicating the risks associated with the disturbance of soil and the intensity of localised weather events</li> <li>– making practical, targeted information easily accessible (for example, the menus of practices to improve water quality and advice on the control of plant and animal pests relevant to the zone)</li> <li>– preparing for changes in regulations.</li> </ul> </li> <li>• Attend local events and other forums and utilise these opportunities to network with landowners, land managers and industry representatives.</li> <li>• Prepare case studies that illustrate the types of issues experienced in the zone to document and provide reference material for education purposes and future policy development – both district and regional.</li> <li>• Create opportunities for landowners to become educators who learn from each other's experiences – good and bad.</li> <li>• Identify champion farmers (modelling best practice) and facilitate mentoring.</li> </ul>	<p>WRC, stakeholders, community (Ongoing)</p>

<p><b>Ensure community resilience and education of floods</b></p>	<p>Improving community understanding of flooding risk and how the flood schemes work will make them more resilient. This also includes in the likelihood and consequences of the impacts of a greater than design flood event. Engage the communities on these matters and provide advice for managing these risks (residual flood risks). This could be achieved through schools, newspapers, signboards and advertising.</p> <ul style="list-style-type: none"> <li>• Educate the local community on level of service provided so that public expectations are correct.</li> <li>• Promote development of a website tool to provide updates during flood events.</li> <li>• Develop scheme inundation maps (via website) to educate the public on 10 year, 50 year, 100 year flood events and their predicated impacts.</li> <li>• Collaborate with territorial authorities to enhance district plan description of flood protection schemes, their benefits and limitations.</li> <li>• Develop a community forum to discuss options such as land retirement and transfer of assets from private owners and territorial authorities.</li> <li>• Acknowledge communities outside of flood schemes and promote wider monitoring networks.</li> </ul>	<p>WRC, community (Ongoing)</p>
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## FOCUS AREA 9 – PREPARING FOR CHANGE

Potential co-management arrangements, future regulatory policy, the implementation of Sea Change (Hauraki Gulf Marine Spatial Plan), the Hauraki Treaty Settlement and Plan Change 2 (Healthy Rivers: Haruaki/ Coromandel) are all likely to result in changes to the way zone is managed in the future. Waikato Regional Council is committed to supporting the community with the implementation of these changes.

A significant area of the Waihou Piako zone is low lying, with some areas being up to 2m below sea level. If sea level rise occurs as predicted, there is an increased risk of flood infrastructure failure and potential for widespread inundation which may impact on freshwater wetland systems and peat domes. The zone needs to prepare for potential changes as a result of climate change

IMPLEMENTATION ACTIONS		WHO/TIMING
<p><b>Build community awareness and support the implementation of Sea Change (the Hauraki Gulf Marine Spatial Plan)</b></p>	<ul style="list-style-type: none"> <li>• Release consistent information on Sea Change (the Hauraki Gulf Marine Spatial Plan).</li> <li>• Undertake actions, in collaboration with relevant agencies, to respond to the themes identified in Sea Change. These include:               <ul style="list-style-type: none"> <li>– restoring habitats</li> <li>– protected, enhanced and restored habitats</li> <li>– restored species diversity and abundance</li> <li>– biosecurity</li> <li>– restoring healthy functioning ecosystems</li> <li>– sediment and nutrient management</li> <li>– risks and threats to water quality.</li> </ul> </li> </ul>	<p>WRC, community (Ongoing)</p>
<p><b>Assist community in preparing for regulatory changes to reduce non-point discharges</b></p>	<p>Assist the community in preparing for water quality management changes through:</p> <ul style="list-style-type: none"> <li>• preparing and distributing user guides on policies and rules and ensure community remains informed of policy changes</li> <li>• working with agriculture industry stakeholder organisations to identify practical on-farm solutions to address non-point source contaminant discharges and supporting the development of Farm Environment Plans</li> <li>• providing extension programmes in collaboration with stakeholder organisations, as appropriate, to ensure farmers and rural professionals have good information available on effective and practical on-farm solutions</li> <li>• working with agriculture industry stakeholders to develop and implement support systems for landowners to ensure they are able to operate successfully within the required limits</li> <li>• supporting landowners to explore and confirm opportunities for multi property interventions to improve water quality</li> <li>• reviewing current council policy with respect to scheme maintenance in response to changes in land use and the minimum standards applied to specific land uses.</li> </ul>	<p>WRC (Ongoing)</p>
<p><b>Long term management of flood prone areas</b></p>	<p>Support the community to prepare for a more sustainable approach to the management of land that is likely to be impacted by climate change factors. Actions include:</p> <ul style="list-style-type: none"> <li>• ensuring the problems are clearly understood, including impacts on the wetlands and associated biodiversity</li> <li>• assessing options for the management of low lying land over the medium to long term, including working with key stakeholders on potential interventions</li> <li>• ensuring that costs and benefits of preferred interventions are well understood.</li> </ul>	<p>WRC (Ongoing)</p>

<p><b>Adapt and respond to outcomes of the Hauraki Treaty Settlement</b></p>	<p>Waikato Regional Council – which provides key catchment management services regionally – will:</p> <ul style="list-style-type: none"> <li>• play a part in the implementation arrangements once the settlements are enacted through legislation at an as yet to be determined time</li> <li>• work with Hauraki iwi to achieve an integrated and coordinated approach to the management of the Coromandel, Waihou and Piako catchment waterways</li> <li>• continue existing co-governance and co-management arrangements gained over the years.</li> </ul>	<p>WRC, iwi (Ongoing)</p>
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# FUNDING, MONITORING AND REVIEW

## TAHUA PŪTEA, AROTURUKI ME TE AROTAKENGA

### 6.1 FUNDING

The council collects rates (general and targeted) for flood protection, river management, soil conservation works, catchment management and new works based on areas of benefit and activities that contribute to the programmes being managed.

The actions identified in this zone plan and funded by the council will be implemented under the current levels of service agreed with the community. Work programmes and

funding levels will be subject to review throughout the life of the plan.

The council will also actively explore opportunities for co-funding of projects with partner agencies. The zone has already been successful in some recent funding applications, and opportunities for further funding will be explored and actioned as appropriate.

### 6.2 MONITORING AND REVIEW

The plan will be reviewed, as required or as mandated, in order to implement any statutory obligations (e.g. Treaty settlement legislation, National Direction). A full review is required every six years and a limited review three years after each full review.

Monitoring of the goals will be ongoing and will focus on the following key aspects:

- Environmental outcomes demonstrating the effectiveness or otherwise of this zone plan.

- Completion of actions to measure the degree of implementation of this zone plan.
- The outcomes of the information gathered in respect of Table 3 below.

The results of monitoring will be reported annually to the catchment committee and the Integrated Catchments Management Committee. A three-yearly summary will be used to inform the reviews of this zone plan.

		MEASURES
GOALS	<b>GOAL 1</b> <b>To protect and enhance water quality and productive soil capacity of the catchments within the zone.</b>	<ul style="list-style-type: none"> <li>• Agreed new catchment and river management works meet annual fund allocations.</li> <li>• Development of a framework for the Waihou Piako CMP.</li> <li>• Eighty per cent of zone funding is spent in priority areas by 2019.</li> <li>• Summary of data collected within the zone as part of Waikato Regional Council's regular monthly water quality monitoring.</li> <li>• Planned maintenance works are completed to meet LTP performance measures.</li> </ul>
	<b>GOAL 2</b> <b>To manage and maintain appropriate flood protection to rural land and urban areas within the flood zone.</b>	<ul style="list-style-type: none"> <li>• Agreed Waihou Valley Flood Scheme LOS is maintained.</li> <li>• Agreed Piako River Flood Scheme LOS is maintained.</li> </ul>
	<b>GOAL 3</b> <b>Promote and enhance indigenous biodiversity in zone catchments in a demonstrable and measurable way.</b>	<ul style="list-style-type: none"> <li>• Annual Waikato Regional Council funding allocations within the region for biodiversity projects.</li> <li>• Number and area of biosecurity projects undertaken within the zone.</li> <li>• Number and area of restoration projects initiated.</li> </ul>
	<b>GOAL 4</b> <b>Work with mana whenua and the community to strengthen collaborations and partnerships.</b>	<ul style="list-style-type: none"> <li>• Three to four catchment committee meetings held per annum.</li> <li>• A minimum of two council-wide meetings on Waihou Piako zone activities per annum.</li> <li>• Complete iwi engagement plan by June 2019.</li> <li>• Complete stakeholder engagement plan by June 2019.</li> </ul>

TABLE 3 - Measures of success

# GLOSSARY OF TERMS

## TE KUPUTAKA

<b>DOC</b>	Department of Conservation
<b>ICM</b>	Integrated Catchment Management
<b>LGA</b>	Local Government Act 2002
<b>LTP</b>	Long Term Plan
<b>PC1</b>	Plan Change 1
<b>PC2</b>	Plan Change 2
<b>PPCA</b>	Priority Possum Control Areas
<b>RMA</b>	Resource Management Act 1991
<b>RPMP</b>	Regional Pest Management Plan
<b>RPS</b>	Regional Policy Statement
<b>TLA</b>	Territorial Local Authorities
<b>WPCC</b>	Waihou Piako Catchment Committee
<b>WRC</b>	Waikato Regional Council
<b>WRP</b>	Waikato Regional Plan
<b>WRCP</b>	Waikato Regional Coastal Plan



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**HE TAIAO MAURIORA**

HEALTHY ENVIRONMENT

**HE ŌHANGA PAKARI**

STRONG ECONOMY

**HE HAPORI HIHIRI**

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