Waikato Regional Council Technical Report 2014/33

Waipā catchment plan

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Waikato
REGIONAL COUNCIL
Te Kaunihera ā Rohe o Waikato

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Developed in collaboration with the Waipā Zone Liaison Subcommittee and representatives of Waikato-Tainui Te Kauhanganui Incorporated, Maniapoto Maori Trust Board, Raukawa Charitable Trust, Ngati Mahanga and Ngati Koroki Kahukura.

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Purpose
The Waipā Catchment Plan (WCP) is intended to guide Waikato Regional Council (WRC), Waipā river iwi, communities and other stakeholders in the implementation of integrated catchment management activities within the Waipā River catchment and includes:

- 20-year goals for the catchment
- Strategies to achieve the goals
- Implementation actions for the strategies, focusing on priority catchments for action
- The WRC funding strategy for implementation activities.

The WCP contributes to the implementation of Te Ture Whaimana o te Awa o Waikato (The Vision and Strategy for the Waikato River) and Waikato Regional Council's Strategic Direction and the objectives, policies and methods of the WRC's key statutory documents including the Proposed Regional Policy Statement (RPS) and the Waikato Regional Plan (WRP). The WCP will complement any future changes to the WRP, including Healthy Rivers Plan Change 1.

The WCP provides a roadmap for the protection and restoration of the health and well being of the Waipā River and in turn the Waikato River below Ngaruawahia. This will be achieved by WRC working with iwi authorities, including Maniapoto Maori Trust Board, Waikato-Raupatu River Trust and Raukawa Charitable Trust and other key stakeholders, such as the Waikato River Authority, Territorial Authorities, Department of Conservation, DairyNZ, Beef + Lamb New Zealand, Federated Farmers, forestry sector, landowners and the wider community.

Catchment description
The Waipā Catchment covers 306,569ha and is dominated by the Waipā River channel and associated tributaries. The Waipā River is the single largest tributary of the Waikato River. The Waipā River starts at the Pekepeke wetland adjacent to the Rangitoto Range in the southern King Country, southeast of Te Kuiti. From there it flows through land which was once native bush, wetlands and peat bogs, but is now mostly farmland and steep hill country. The Waipā River flows northwards through rolling lowland areas to the towns of Otorohanga, Pirongia and Whatawhata, before meeting the Waikato River at its confluence in Ngaruawahia, 115km from its headwaters in Pekepeke.

Visions
The WCP is contributing towards the achievement of the vision statements by Waikato-Tainui, the Waikato River Authority, Raukawa and to the overarching purpose from Nga Wai o Maniapoto (Waipā River) Act 2012 and WRC's vision from the Waipā Zone Management Plan (WZMP).

Key matters
The key matters for the Waipā catchment include:

- Erosion / sedimentation
- Land use change / intensification
- Declining water quality
- Loss of indigenous biodiversity
- Flood management
- People and communities.

20-year goals
The WCP lists seven 20-year goals which reflect the aspirations in the current WZMP (as determined by the Waipā Liaison subcommittee in the development of that Plan), the goals identified at partner's workshops, the Waikato Regional Council Regional Policy Statement (which gives effect to Te Ture Whaimana o te Awa o Waikato (the Vision and Strategy for the Waikato River) and the WRC Land and Water 10 year strategic objectives. The goals are as follows:

- Land use in the Waipā Catchment matches capability, and soils are stable and productive, with erosion and associated sedimentation reduced in priority areas in a way that gives effect to Te Ture Whaimana o te Awa o Waikato (The Vision and Strategy for the Waikato River).
- Water is a swimmable quality throughout the catchment and visibly clearer at the confluence with the Waikato River at Ngaruawahia.
- Ecological health is measured, maintained and enhanced throughout the catchment and comprehensive ecological networks are established.
- People, property and services (infrastructure) are protected from floods, through scheme and river management and enhanced natural retention capability in the catchment.
- Co-management partners and stakeholders are working collaboratively towards the sustainable use and health of the Waipā catchment's land and water, and to give effect to Te Ture Whaimana o te Awa o Waikato (the Vision and Strategy for the Waikato River).
- Catchment management acknowledges tangata whenua and the wider community's economic, environmental and social aspirations and historical, cultural, spiritual and customary connections with the river and its catchment.
- People and communities are active in the restoration of the Waipā catchment as a place to work, live and play.

Strategies and actions
The WCP details the strategies and associated actions proposed to achieve the 20 year goals. Each action is accompanied by a statement of who may be responsible for achieving it and an indication of when it will be commenced and completed. The strategies and actions are designed to work together to achieve multiple goals and are focussed on the near to medium term.

The WCP identifies priority areas for soil conservation, river management works, riparian enhancement, biodiversity and for nutrient load reduction.

Soil conservation
In identified priority 1 soil conservation areas (Moakurarua and Kaniwhaniwha subcatchments) WRC will prepare comprehensive property / farm plans and commence implementation with at least five landowners per catchment. If successful these property / farm plans will be promoted to other landowners in these priority catchments. In priority 2 subcatchments existing Project Watershed funding will be available upon request and subject to funding availability. New riparian enhancement programmes will be implemented along high priority waterways. WRC will continue to maintain existing soil conservation and river management works and to provide advice to landowners throughout the catchment.

Maintaining / improving water quality
In areas identified as priority nutrient areas WRC will support DairyNZ to develop and implement sustainable milk plans for nutrient management. WRC will work with industry

and communities to prepare landowners for change as a result of Healthy Rivers Plan Change 1 to the WRP. WRC will work with landowners, co-management partner and key stakeholders in identified shallow lakes catchments to reduce nutrient loads and in the development of comprehensive property / farm plans where landowners are willing.

Protecting / restoring indigenous biodiversity
In areas identified as priority shallow lakes, wetlands and under-represented ecosystems WRC is seeking to work with co-management partners, landowners, key stakeholders and community to protect and restore these sites. This includes preparing and implementing biodiversity protection and restoration plans.

Flood management
WRC will continue to maintain current flood protection schemes, provide hazard management advice/information and flood warning services to ensure that current levels of service are maintained or modified as required. Flood management strategies include identifying and retaining upper catchment wetlands and supplementing them with man-made control mechanisms if required.

Co-management partners
WRC is seeking that co-management of the Waipā catchment occurs consistent with Te Ture Whaimana o te Awa o Waikato (The Vision and Strategy for the Waikato River) and that all co-management partners and key stakeholders are working on an agreed plan of action. WRC will work with iwi and tangata whenua to support the identification of their cultural, social, economic and environmental aspirations for the catchment. WRC will acknowledge and provide for Multiple Maori Owned Land Block trustees objectives as part of overall iwi aspirations within the catchment. An annual meeting will be held with co-management partners and catchment stakeholders to consider priorities, and identify common areas of interest and areas for potential collaboration.

People and communities
WRC is encouraging all communities in the catchment to be involved in the restoration of the Waipā River and its catchment. This includes developing a strong internet presence, education programmes and identifying specific existing and new community projects to support and enable some “quick wins”, and to engage and support tangata whenua in achieving their aspirations for the catchment.

Waikato Regional Council funding strategy
The WCP provides for funding incentives across the catchment according to the level of priority in the plan. Priority works may be jointly funded and undertaken by co-management partners, external providers, other stakeholders and landowners. Funding for implementation of the WCP is dependent on the approval of additional resources through the WRC Long Term Plan 2015-25 and through provision of funding outside of WRC.

Monitoring / reporting
WRC and iwi authorities will collect and share appropriate information to inform co-management partners and stakeholders on the outputs and outcomes of implementation of the Waipā Catchment Plan. The results of monitoring will be regularly reported to enable stakeholders to be up to date with the condition of water quality, soils and biodiversity in priority catchments and sites in the catchment.

1 Introduction

1.1 Purpose

The Waipā Catchment Plan (WCP) is intended to guide Waikato Regional Council, Waipā river iwi, communities and other stakeholders in the implementation of integrated catchment management activities within the Waipā River catchment and includes:

- The 20-year goals for the catchment
- Strategies to achieve the goals
- Implementation actions for the strategies, focusing on priority catchments for action
- The funding strategy for implementation activities.

The WCP contributes to the implementation of Te Ture Whaimana o te Awa o Waikato (The Vision and Strategy for the Waikato River) and Waikato Regional Council's (WRC's) Strategic Directions and the objectives, policies and methods of the WRC's key statutory documents including the Proposed Regional Policy Statement (RPS) and the Waikato Regional Plan (WRP). The WCP will complement any future changes to the WRP including Healthy Rivers Plan Change 1.

The WCP provides a roadmap for the protection and restoration of the health and well-being of the Waipā River and in turn the Waikato River below Ngaruawahia. This will be achieved by WRC working with iwi authorities, including Maniapoto Maori Trust Board (Maniapoto), Waikato-Raupatu River Trust and Raukawa Charitable Trust and other key stakeholders, such as the Waikato River Authority, territorial authorities, Department of Conservation, DairyNZ, Beef + Lamb New Zealand, Federated Farmers, forestry sector, landowners and the wider community.

1.2 Catchment description

The Waipā Catchment covers 306,569 ha and is dominated by the Waipā River channel and associated tributaries (see Figure 1). The Waipā River is the single largest tributary of the Waikato River.

The Waipā River starts at the Pekepeke wetland adjacent to the Rangitoto Range in the southern King Country, southeast of Te Kuiti. From there it flows through land which was once native bush, wetlands and peat bogs, but is now mostly farmland and steep hill country. The Waipā River flows northwards through rolling lowland areas to the towns and villages of Otorohanga, Pirongia and Whatawhata, before meeting the Waikato River at its confluence in Ngaruawahia, 115km from its headwaters in Pekepeke.

The underlying geology of the Waipā catchment is similar to many regions of New Zealand, being built upon a basement of greywacke rocks, which form many of the hills. Much of the land within the catchment has been covered by limestone and sandstone, forming bluffs and a karst landscape. The predominant geology of the area is overlain by volcanic material including tephra, which accounts for 65 per cent of the catchment, while alluvial and unconsolidated sediments make up a further 18 per cent. Sedimentary rock, including, greywacke or argillite, sandstone, mudstone and limestone comprise 11 per cent, and ignimbrites including Taupo pumice most of the remaining six per cent.

Allophanic soils (those from tephra and dominated by allophane minerals that are greasy, porous and have high natural fertility) are the most common soils in the Waipā catchment. Gley (poorly drained soils); recent soils and organic soils occupy the alluvial

flats and floodplains throughout the catchment. Podzols (leached soil) are present at altitude in the southeast under higher rainfall, often where Taupo pumice mantles the topography.

In terms of vegetative cover, 78 per cent of the catchment area is in pasture, 21 per cent is native vegetation, scrub and other land uses, and one per cent is production forestry.

The Waipā catchment contains 4,825km of mapped stream and river channels, or around 11% of the total length of waterways within the region. Almost three-quarters of this stream length consists of small first and second order channels, draining primarily pastoral land dominated by dairy, beef and sheep farming. Erosion-prone soils and areas of instability deliver high loads of sediment to some tributary streams and the main channel of the Waipā River.

The Waikato region's shallow lakes are the largest remaining collection of their type in New Zealand. The Waipā zone contains 14 peat lakes, the largest of which are Lake Ngaroto and Lake Rotokauri. The peat lakes within the zone are valued for their unique genetic diversity, scientific interest and recreational opportunities. They are also valued for their cultural and spiritual values. Peat lakes are a valuable habitat for many unique animals and plants, but are under threat due to drainage, nutrients and plant and animal pests. WRC plays an active peat lakes management role by working with landowners and other stakeholders to address these issues.

Invertebrate monitoring indicates that the habitat quality of streams in the Waipā catchment is below average regionally, while ecological health is around the regional average. Habitat quality and ecological health in streams ranges from poor to excellent across the zone, depending in part upon the upstream land use and activities next to the stream.

The Waipā River once flowed through a catchment containing a diverse range of indigenous ecosystems including streams, rivers, lakes, wetlands, karst, forest and shrublands. These ecosystems provide critical habitats for indigenous fauna, flora and micro organisms. They also provide a range of fundamental ecological functions, such as acting as buffer zones for other ecosystems in the region, reducing erosion and downstream sedimentation, nutrient storage and recycling, and break down and absorption of pollutants.

The human population of the Waipā catchment is estimated to be 67,000. Population density is highest in the north, and particularly within the Waipā District in the area around Te Awamutu, and in the Waikato District to the north and west of Hamilton City. Population density is lowest in the south-west part of the catchment, to the west of Otorohanga and Te Kuiti townships.

The economy within the Waipā catchment is dominated by agriculture, which is the single largest employment sector in the catchment. Within the agricultural sector, dairy farming is the largest income earner, followed by drystock. In Otorohanga District for example, it is estimated that up to 70 per cent of the economic activity is closely associated with the agricultural sector.

Other sectors that have a significant contribution to the economy within the Waipā catchment are retail and wholesale, manufacturing and tourism.

There have been significant changes in land use within the catchment since 1840. Pre-European vegetation cover was dominated almost entirely by native forest (both virgin and forest modified by fire), scrub and tussock. There were also significant wetland

areas in the northern part of the zone – to the west and south of Hamilton (Rukuhia), to the north-east of Te Awamutu (Moanatuatua) and in the Te Kawa area.

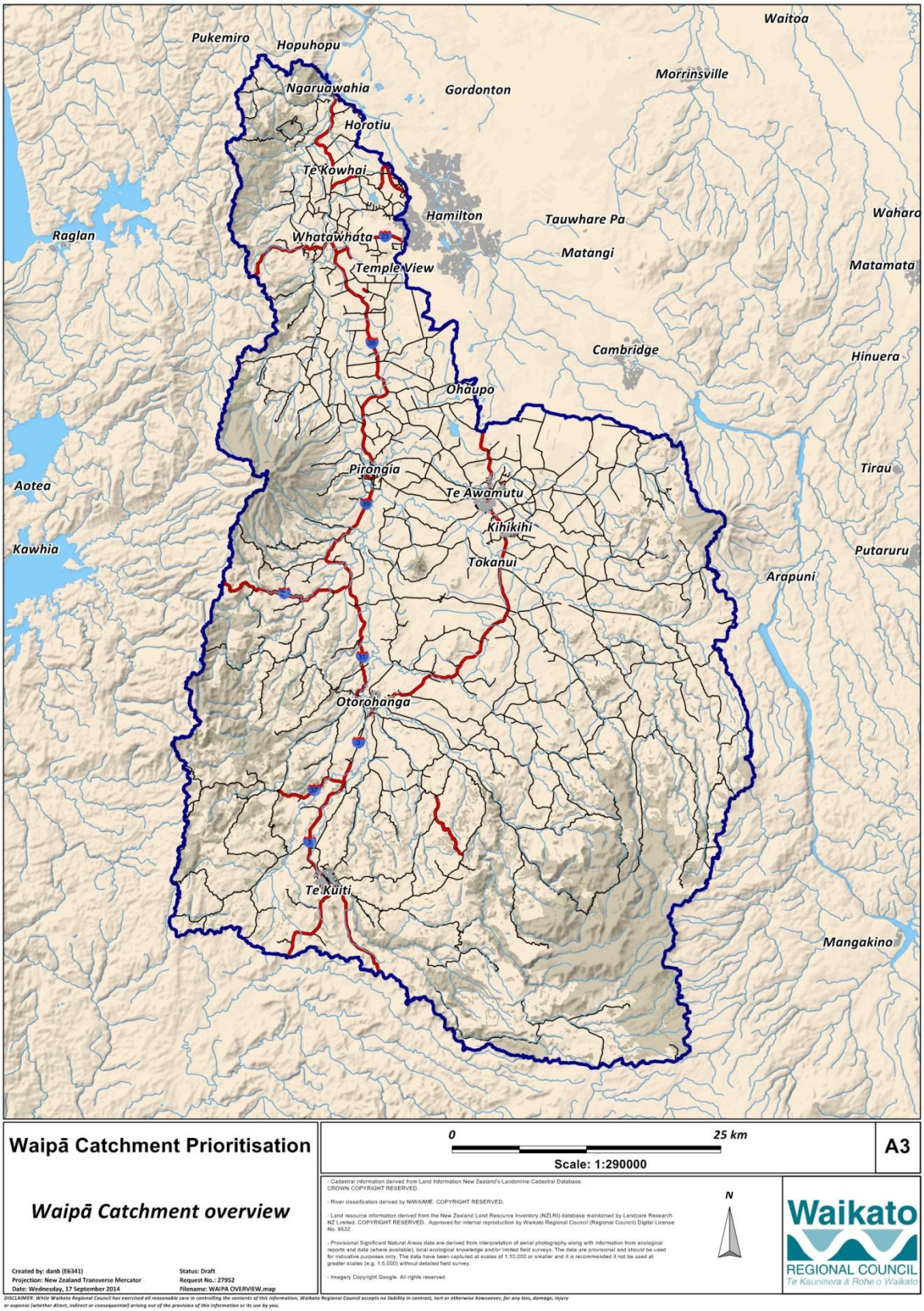


Figure 1 The Waipā River catchment

Since 1840, almost all of the native vegetation in the low-lying valleys has been converted to pasture and put into agricultural use – primarily to support dairy production. This includes almost all of the significant wetland areas, which have been drained, leaving behind only remnant pockets of wetlands and shallow peat lakes. The lower reaches of the main tributaries of the Waipā River, through the pastureland, are characterised by relatively low gradient, sinuous and sluggish channels that have been significantly changed in some areas through historic works. Those works typically included clearing, enlarging and shortening the channels through diversions to improve channel efficiency and reduce flooding and damage to the pastureland. Much of the steeper hill country has also been converted to pasture to support drystock farming.

Recent land figures indicate a trend towards bringing steeper land into dairy production, dairy support, and intensification of stocking rates on existing dairy farms. Urban land-use has increased over time – particularly around Te Awamutu, and there is an on-going trend towards a greater number of rural lifestyle properties in the northern part of the zone.

The iwi that have affiliations to the Waipā River are Waikato-Tainui, Maniapoto, and Raukawa.

In relation to the Waipā catchment boundaries and specifically the Waikato-Tainui Raupatu Claims (Waikato River) Settlement Act 2010, the upper extent of the Waikato-Tainui rohe lies along a line around the junction of the Waipā and Puniu Rivers and to the West and South-east of Te Awamutu. Ngati Mahanga is a hapu within this rohe and provides support to WRC activities in their rohe and represents Waikato Tainui on the Waipā Zone Liaison Subcommittee.

Maniapoto occupies the southern region of the territory of the Tainui tribes. The Maniapoto rohe covers the northern sector of what is commonly known as Te Rohe Potae or Te Nehenehenui. This rohe is the largest of iwi represented within the Waipā and hold manawhaka haere of Pekepeke springs, the headwaters of the Waipā.

The Raukawa rohe within the Waipā catchment includes the Wharepūhunga and Korakonui Blocks which largely cover the area to the east of Te Awamutu towards Maungatautari, and along the eastern side of the catchment to Waipapa and down to Maraeroa in the South. There are also four Raukawa marae within the Wharepūhunga block – Aotearoa, Rawhitiroa/Owairaka, Parāwera and Whakamarama.

2 Background

The WCP contributes to the implementation of Te Ture Whaimana o te Awa o Waikato (The Vision and Strategy for the Waikato River) and builds on the approaches developed in the 2012 Waipā Zone Management Plan (WZMP) (Waikato Regional Council, 2012c) and the RPS and WRP.

The primary purpose of the WZMP was to provide a tool for the implementation of all WRC river and catchment management activities within the Waipā Zone, and included the provision of detail on the long-term management of assets. The Zone Plan set the platform for the development of the WCP.

The WCP has been developed by WRC, the Waipā Zone Liaison Subcommittee and river iwi in response to several key drivers. These include the new co-management framework and the desire to have a whole of catchment plan that reflected the aspirations of river iwi and stakeholders; declining water quality in the catchment, loss of soils from productive land and the impact of Waipā sediment on the lower Waikato River. In addition the WCP supports the recommendations of a review of Waikato Regional Council's sustainable land management programmes that highlighted opportunities to improve prioritisation of catchment works and focus on the ground works in the areas where demonstrable outcomes are most likely.

The WCP implements the non-regulatory provisions of the RPS and WRP. It is designed to complement the WRP by stating in detail how relevant methods are to be implemented to achieve the objectives of the RPS and WRP.

2.1 Legislative and planning framework

The WCP is a tool for implementing WRC's responsibilities under the Resource Management Act 1991 (RMA), Soil Conservation and River Controls Act 1941, Local Government Act 2002 and the Civil Defence and Emergency Management Act 2002. The WCP assists the council in giving effect to the Te Ture Whaimana o te Awa o Waikato (The Vision and Strategy for the Waikato River), and implementing provisions of the Proposed Waikato Regional Policy Statement and the Waikato Regional Plan (WRP).

The WCP is also a tool for implementing the two Waikato River Acts 2010 and the Waipā River legislation 2012[1].

Te Ture Whaimana o te Awa o Waikato (The Vision and Strategy for the Waikato River) is part of all three Acts and is the primary direction-setting document for the Waikato River and its catchments (including the Waipā River).

Te Ture Whaimana o te Awa o Waikato (The Vision and Strategy for the Waikato River) is deemed in its entirety into the Waikato Regional Policy Statement and regional and district plans must give effect to it. Importantly, if there is any inconsistent provision in any RMA planning document, including any national policy statement, Te Ture Whaimana o te Awa o Waikato (The Vision and Strategy for the Waikato River) prevails.

The proposed RPS has new objectives for managing the mauri and health of fresh water (3.13), ecological integrity and indigenous biodiversity (3.18), natural hazards (3.23), values of soils (3.24) and new policies regarding managing fresh water bodies (Chapter

[1] Waikato-Tainui Raupatu Claims (Waikato River) Settlement Act 2010; Ngāti Tūwharetoa, Raukawa and Te Arawa River Iwi Waikato River Act 2010 and Ngā Wai o Maniapoto (Waipā River) Act 2012.

8), indigenous biodiversity (Chapter 11), natural hazards (Chapter 13) and soils (Chapter 14).

The provisions of the proposed RPS are under appeal to the Environment Court at the time of writing this plan however Chapter 11 (indigenous biodiversity) is now beyond challenge.

In particular the WCP is implementing the non-statutory provisions of Chapter 5.1 Accelerated Erosion of the WRP, including Objective 5.1.2, Section 5.1.3 Policies 1, 2 and 3 and Section 5.1.4.

WRC has launched the Healthy Rivers Waiora project to develop changes to the Regional Plan to help restore and protect the health of the Waikato and Waipā rivers, which are key to a vibrant regional economy. The plan change will help achieve a reduction in sediment, bacteria and nutrients (nitrogen and phosphorus) entering water bodies (including groundwater) in the Waikato (and Waipā) River catchments. Any limits and rules in that plan change will take effect from the date it is publicly notified[2].

The WCP will assist landowners to achieve the targets set by the Healthy Rivers: Wai Ora project by encouraging / promoting sustainable land uses, proposing focusing funding in the areas of greatest potential gain and assisting landowner with the development of property / farm plans. The WCP also identifies the priority sub-catchments where WRC will focus effort and expenditure in terms of promoting sustainable land management and in planning and undertaking catchment works e.g. soil conservation works, river management, protection and enhancement of wetlands etc.

A full review of the WRP is scheduled to commence in late 2015. This review will enable WRC to include any changes to the WRP necessary to implement the strategies and actions of the WCP.

2.2 Co-governance and co-management

The Waikato River Authority (WRA) is the co-governance entity established under the Waikato-Tainui Raupatu Claims (Waikato River) Settlement Act 2010, and the Ngāti Tūwharetoa, Raukawa and Te Arawa River Iwi Waikato River Act 2010. The WRA co-governance entity and Te Ture Whaimana o te Awa o Waikato (The Vision and Strategy for the Waikato River) extended to the upper catchment of the Waipā River as a result of the Ngā Wai o Maniapoto (Waipā River) Act 2012.

The management of natural and physical resources in the Waipā catchment must give effect to Te Ture Whaimana o te Awa o Waikato (The Vision and Strategy for the Waikato River).

The co-management legislation and agreements between the Crown, Waikato-Tainui, Raukawa and Maniapoto reflects a partnership commitment to co-manage the Waikato River. The overarching purpose of co-management is to restore and protect the health and wellbeing of the Waikato River for future generations.

For Waikato-Tainui, Raukawa and Maniapoto, the river has its own life force, spiritual authority, protective power and prestige. Waikato-Tainui, Raukawa and Maniapoto have customary authority within their rohe to exercise control and management of the river in accordance with their values, ethics and norms. The focus of the co-management is on

[2] Refer to RMA s 86B(3)

the health and wellbeing of the Waikato River, which aligns with WRC's responsibilities to protect and sustainably manage the region's natural resources.

The WRA provides the highest level of shared governance and management of the Waikato and Waipā Rivers. Therefore co-governance and co-management requires working together to build robust relationships and includes:

- The highest level of good faith engagement
- Participation in decision making at all levels
- Consensus decision making as a general rule
- A range of management agencies, bodies and authorities working at a number of different levels
- Processes for granting, transferring, varying and renewing consents, licences, permits and other authorisations for all activities that may impact on the health and wellbeing of the river
- Development, amendment and implementation of strategies, policy, legislation and regulations that may impact on the health and wellbeing of the river.

The key requirements of co-management for WRC in the Waipā catchment are:

- To implement and deliver on the co-governance and co-management legislation jointly with the WRA. This partnership opportunity provides for shared decision making processes on river-related issues, and also for shared service arrangements aimed at reducing administration costs associated with restoring the health and wellbeing of the river
- The development and on-going operation of joint management agreements between WRC and Iwi
- Opportunities to apply for funds from the WRA Cleanup Trust to enhance work being undertaken by WRC
- The Vision and Strategy guiding policy direction for the Waikato River catchment (including the Waipā Catchment)
- Commissioners with experience and expertise in tikanga and/or Māori resource management to sit on consent hearings for Integrated Catchment Management works
- The development and operation of Waipā River integrated river management plans (to be developed in coming years). These plans will include a conservation component, a fisheries component, and a regional council component, with provision for further components to be added in future
- To work together to develop provisions relating to customary activities, cultural harvest of flora, regulations for the management of aquatic life, habitats, and natural resources managed under conservation legislation and customary fishing regulations and fishing bylaws for the greater Waikato River catchment (including the Waipā Zone).

WRC and Waikato-Tainui, Raukawa and Maniapoto will work together to co-manage the Waikato River and Upper Catchment of the Waipā River to give effect to Te Ture Whaimana o te Awa o Waikato (The Vision and Strategy for the Waikato River).

2.3 Strategic direction for the regional council

Waikato Regional Council confirmed its strategic direction and priorities for the current triennium on 27 February 2014, taking into account the recent Local Government Act 2002 amendments and other future change drivers. The Strategic Direction document (DM # 2988118) states:

- The future change drivers, internal and external

- Council's strategic direction, including, the vision, mission, interim council outcomes, priorities, values and critical success factors.

Council's Vision is:

Competing globally, caring locally.

Council's Mission is:

Working with others to build a Waikato region that has a healthy environment, a strong economy and vibrant communities.

Interim council outcomes

The WCP will assist the council to:

- manage the region's water resource to meet the communities' needs for today and the future
- protect and improve the quality of Waikato's natural environment
- encourage our communities to appreciate and take pride in the region's heritage, landforms, freshwater and marine environment
- protect our people, property and economy from hazards and pests
- encourage community partnerships for greater participation and investment in the region
- collaborate with others to achieve integrated land use and infrastructure planning.

Priorities 2013-2016

The WCP will operationalise the following relevant WRC priority initiatives:

(Priority initiatives not relevant to the WCP are not listed.)

Priorities	Priority initiatives
Land and water	Implement land and water components of the Regional Policy Statement through delivery of the Land and Water Strategy. Develop a Joint Implementation Plan integrating the strategies of key stakeholders and funding bodies implementing the Vision and Strategy on the Waikato and Waipā River. Progressively prepare and implement zone plans that are integrated across Council functions.
Regional development	Address regionally significant issues and opportunities, including through the development and implementation of the Waikato spatial plan, the Regional Economic Development Strategy and other Waikato Mayoral Forum work streams and UNISA projects. Take a green growth approach to WRC activities.
Iwi Maori co-governance	Continue to meet Treaty settlement requirements

Community partnerships	Work with others to achieve shared objectives, including by: • supporting community initiatives that align with council outcomes • Increasing delegation to zone committees. Develop and maintain agreements with organisations sharing our sense of purpose to help achieve our strategic direction. Make technical information available to the public in a user-friendly manner so our communities can be informed and engaged with regional issues.

2.4 Visions for Waipā catchment

This section presents the vision statements from the Waikato River Authority, the Waikato-Tainui Environmental Management Plan, the overarching purpose of the Ngati Tuwharetoa, Raukawa, and Te Arawa River Iwi Waikato River Act 2010, the overarching purpose from the Nga Wai o Maniapoto (Waipā River) Act 2012, and the vision of the Waipā Zone Management Plan (Waikato Regional Council, 2012c).

As well as WRC's strategic vision above the WCP is contributing towards the achievement of each of these vision statements and purposes.

Waikato-Tainui, Raukawa and the Waikato River Authority's, vision statement for the Waikato River (including the Waipā River) is:

"Tōku awa koiora me ōna pikonga he kura tangihia o te mātāmuri"
"The River of Life, each curve more beautiful than the last"

Our Vision is for a future where a healthy Waikato River sustains abundant life and prosperous communities who, in turn, are all responsible for restoring and protecting the health and wellbeing of the Waikato River, and all it embraces, for generations to come[3][4]*.*

The overarching purpose from the Nga Wai o Maniapoto (Waipā River) Act 2012 is:

"to restore and maintain the quality and integrity of the waters that flow into and form part of the Waipā River for present and future generations and the care and protection of the mana tuku iho o Waiwaia."[5]

The overarching purpose of the Ngati Tuwharetoa, Raukawa, and Te Arawa River Iwi Waikato River Act 2010 is:

"to restore and protect the health and wellbeing of the Waikato River for present and future generations."

The Waipā Zone Management Plan Vision is:

"To revitalise the waters of the Waipā River and its tributaries by 2050[6]*."*

[3] Waikato-Tainui Environmental Plan, page 85
[4] http://www.waikatoriver.org.nz/about-the-waikato-river-authority/purpose/
[5] Nga Wai o Maniapoto (Waipā River) Act 2012 s3(1).
[6] Waipā Zone Management Plan page 21

3 Key matters for the catchment

Key matters for the Waipā catchment include:

- Erosion / sedimentation
- Land use change / intensification
- Declining water quality
- Loss of indigenous biodiversity
- Flood management
- People and communities.

Each of these matters is described in more detail below:

3.1 Erosion / sedimentation

The Waipā catchment is dominated by the Waipā River channel and associated rivers, streams and lakes. The Waipā River is the single largest tributary to the Waikato River, and as such, the Waipā catchment is effectively part of the "upper catchment" of the Waikato River.

Erosion-prone soils and unstable areas deliver high loads of sediment (and phosphorus) to the Waipā River and some tributaries (and ultimately to the Waikato River). Land use change, intensification and climate change are expected to exacerbate erosion/sedimentation issues. Recent land use figures indicate a trend towards bringing steeper land into dairy production. The economics of dairying from global demand will continue to drive intensification on existing pastoral land and increased erosion from pasture development on steeper land is anticipated (Waikato Regional Council, 2012a).

The 1991 Tunawaea landslide in the south of the catchment is a specific erosion issue requiring long-term priority management (Waikato Regional Council, 2012a). The landslide occurred in the gorge in the lower reach of the Tunawaea Stream where a large greywacke block fell off bluffs on the true left bank of the river within the gorge and destabilised a historic slip of overlying ash. An estimated 500,000 cubic metres[7] of material dammed the Tunawaea Stream for approximately one year and subsequently failed in a small flood event when the "dam" was overtopped. The material washed downstream from the landslide has been moving down the Waipā river ever since. Where the Waipā Gorge widens to include a floodplain, the material from the Tunawaea landslide filled the Waipā River channel and caused the river to braid and meander across the valley floor. This then eroded a historic pumice terrace along the edges of the valley floor adding further sediment (estimated at 200,000 m^3) to the system. WRC has implemented a specific project to stabilise the material from the landslide in the upper Waipā Gorge and to provide a regular, stable channel along the valley floor to prevent erosion of the terraces and help the river move its bedload through the system effectively and with a minimum of damage to the channel.

The hills of the upper Waipā are especially prone to erosion due to the soft mudstone geology. Sixty seven per cent of the sediment load in the lower Waikato River comes from the Waipā River basin. Landslides and stream bank erosion are the dominant process of sediment generation in the Waipā, with these processes more dominant in pasture landscapes[8].

[7] Works Consultancy Services. 1991: Tunawaea Stream Landslide Dam, Preliminary Engineering Assessment Report No. 1734. Page 10.

[8] NIWA: 2010, page 63 Waikato River Independent Scoping Study.

Land use capability assessments for the Upper Waipā catchment show a total of 7841ha which can be classified as having severe erosion risk potential, of which around 10% has been treated with soil conservation measures. Assessments for the middle Waipā show a total of 8718 hectares which can be classified as having severe erosion risk potential, of which around 15% has been treated (Waikato Regional Council, 2011d).

Erosion (and sediment production) will occur naturally on all Land Use Capability (LUC) classes, under any vegetation. However, woody vegetation on erosion prone land is more protective than pasture. From 2002-08, 1000 ha of catchment land was converted from plantation to pasture, almost 60% on erosion-prone LUC class 6e and 7 land. From 2001-08 intensification occurred on 31% of pastoral land in the catchment, 32% of which was on LUC 6e, and 7 land.

Stream bank erosion is a major source of sediment in the Waipā River. A high percentage of stream banks remain unprotected in the Waipā catchment, despite some riparian improvements (Waikato Regional Council, 2012a). In a 2010 report on riparian characteristics in the Waikato region (Storey, 2010; cited in Palmer et al, 2013), around 54% of stream bank in the Waipā catchment were estimated as fenced. Palmer et al (2013) report that Hicks and Hill (2010) and Hicks (2011) suggested that stream bank erosion was one of the major sources of sediment in the Waipā River, together with mass movement and the 1991 Tunawaea slip.

Climate change impacts could include heavier rainfall events, creating more run off from steep LUC class 6-8 farmland not afforested.

The implications of erosion / sedimentation for the Waipā catchment include:

- Loss of natural soil resource that takes hundreds of years to create and associated loss of productivity and land use options
- Impacts on water quality
- Impacts on the habitats of taonga species in the catchment
- Potential negative effects overall on indigenous biodiversity, river recreation and flood risks, as well as future pastoral productivity and community prosperity
- Aggradation of main channel leading to increased erosion and flood hazards.

3.2 Land use change / intensification

Global population growth will increase demand for primary products and drive further intensification of NZ's dairy industry. Local population growth will drive expansion of town centres. The economics of dairying will continue to drive intensification on existing pastoral land.

The catchment's peat soils are also vulnerable to land use change and intensification, becoming prone to loss through over-drainage, which allows oxidation to break peat soils down, and losing quality/function if pugged by livestock. Cropping activities can also lead to peat degradation.

Increased demand for pastoral land in conjunction with expansion of town centres could result in further land use change.

The implications for the Waipā catchment include:

- Productive soils threatened by intensification and rural development.
- Agricultural activities pushed to less-productive soils, requiring increased inputs (water; fertiliser) and increasing adverse environmental effects.

- Higher stocking rates affect soil's capacity to filter excess nutrients, resulting in a further decline in water quality.
- Land use change from plantation to pasture, particularly on LUC 6-7 soils, will exacerbate erosion, increase sedimentation and nutrient loads in the river and its tributaries and increase downstream flood risk.
- Loss of habitat and features of a river system valued by mana whenua and communities
- Increased demand for water for agricultural use[9].
- Continued/increased use of current fertilisers will result in the slow accumulation of fertiliser micro-contaminants such as cadmium and fluorine in soils resulting in less versatility of use and possible impacts on grazed livestock.
- Ribbon development extending from town centres along rural roads will affect availability of high-quality agricultural land.
- Increased community expectations regarding infrastructure, water supply, flood protection and recreational access to the river and its tributaries.
- Potential negative effects overall on indigenous biodiversity, river recreation and flood risks, as well as future pastoral productivity and community prosperity.

3.3 Declining water quality

In general, the water quality in the Waipā River declines from the upper reaches to the lower reaches. In particular the Waipā River has high sediment inputs from streambank erosion and unstable soils. Changing land use and intensification from hill country farming to dairy farming is increasing nutrient levels in the catchment. Faecal contamination (measured by *E. coli*) is high but stable in the catchment and the predominant source of this is from diffuse loss of contaminants from the land. In some areas, urban and other non-agricultural point sources also contribute to poor water quality.

Increased sedimentation, nutrient loads and temperature have a negative impact on water quality. Intensification, land use change and climate change all have potential to exacerbate these problems. Achieving National Policy Statement – Freshwater Management and Waikato River Authority outcomes is of high priority, and will require significant investment and land management changes in the zone, and in the region. Soil stability and water availability are key issues for the upper catchment, while water quality is more of an issue in the downstream areas.

Mana whenua have identified a number of concerns around declining water quality in the Waipā including effects on populations of taonga species in the catchment, reduced opportunities to use land and water, marae drinking water supplies and the use of water resources that are highly valued because of particular properties such as healing or rongoā (NIWA, 2014).

Sediment levels in the Waipā River

The Waipā River is the biggest contributor of sediment to the Waikato River system, supplying 67% of the total load of the lower Waikato River[10]. Erosion-prone soils and unstable areas deliver high loads of sediment to the main stem of the Waipā River and some tributaries. Almost 75% of the catchment's stream length consists of small channels draining from pastoral land. Only 40% of this length is fenced off and planted with woody vegetation, which helps reduce water temperature and filter nutrient run-off.

[9] At the time of writing the WCP the catchment is considered to be at or near to full allocation in terms of the provisions of Chapter 3.3 Water Takes of the WRP.

[10] Hicks DM and Hill R B 2010. Sediment regime: sources, transport and changes in the riverbed, pages 71 – 91, in Collier K J et al, 2010. The Water of the Waikato: Ecology of New Zealand's longest river.

Streambank erosion is a major source of sediment, together with mass movement and the 1991 Tunawaea slip.

Nutrient levels in fresh water in the Waipā catchment

Long-term monitoring by Waikato Regional Council shows rising trends in nitrogen in the Waipā River over the last 20 or more years (Vant, 2013), due to land use changes and intensification (Waikato Regional Council website, accessed March 2014). The Waipā River also has moderate but reasonably stable levels of phosphorous at most monitoring sites, although it is rising at the most downstream monitoring sites (Vant, 2013).

Nutrient levels above water bodies' natural background levels can over fertilise aquatic plants, lead to excessive plant growth, algal blooms and depletion of dissolved oxygen, affecting fish and other aquatic life (Waikato Regional Council website, accessed March 2014).

Recent trends indicate an intensification of stocking rates on existing dairy farms in the Waipā catchment, which is expected to continue, and conversion of steeper land into dairy production (Waikato Regional Council, 2012a). The link between both intensification (more cows per hectare of land) and dairy expansion, and water quality is clear. In catchments dominated by pasture, especially dairy pasture, nutrient loss rates are much higher than forested land (Parliamentary Comissioner for the Environment, 2013).

Microbial contamination of fresh water in the Waipā catchment

Long-term monitoring by Waikato Regional Council shows high but stable levels of *E. coli* bacteria in the Waipā River (Vant, 2013). The influence of farm animals is likely to be the dominant source of E. coli in the Waipā River (http://www.waikatoregion.govt.nz/Environment/Natural-resources/Water/Rivers/Waikato-River/Downstream-change-to-water-quality/Changes-in-bacteria-levels/)

Shallow lakes

Water quality in the catchment's shallow lakes is also an issue, affected by peat subsidence, and nutrient and sediment loading resulting from drainage, cropping and development of surrounding land.

Failure to address catchment water quality issues could result in:

- Proliferation of stream plants and algae in open, low-gradient channels.
- Loss of some migratory fish populations including taonga species, due to high turbidity of lower parts of the Waipā River.
- Loss of sensitive and rare fish species which currently live in cool, forested, headwater habitats.
- Loss of condition of ecologically-significant limestone springs and seepages.
- Loss of submerged plant communities which help maintain a clear-water state in lakes.
- Increased prevalence of algal blooms in lakes (this can happen very rapidly and is difficult to reverse).
- Reduced recreational enjoyment and eco-tourism opportunities.
- Impacts on marae drinking water supplies

Population growth and a continuation of the trend towards agricultural intensification will increase demand for water. Climate change is predicted to increase rainfall across the zone but may increase potential for drought in the southwest.

3.4 Loss of indigenous biodiversity

The Waipā is now a highly modified catchment with indigenous ecosystems severely reduced in extent. To demonstrate this, estimated historic and current extent of indigenous ecosystems can be seen in Figures 2 and 3 respectively. Clearance of indigenous forest, draining of peat bogs, wetlands and lakes, especially in lowland areas has been very extensive and the condition of rivers, streams and lakes are declining. The ecological integrity (health) of the remaining indigenous ecosystems and species are subject to an increasing amount of pressure from a range of threats including:

- Grazing by livestock
- Ongoing vegetation removal
- Fragmentation
- Increased edge effect
- Isolation and lack of connection
- Altered hydrology
- Nutrient contamination of low nutrient ecosystems
- Plant pest competition
- Predation and browsing by pest animals.

Climate change will also have a long term impact on catchment biodiversity. Changes in the habitat range of plant and animal species, including pest and domestic species are expected to occur which will compound the lack of connection between remnant indigenous habitats. There may be increased incursions of plant and animal pest species that have previously been unable to survive in the catchment's climate.

Loss of indigenous habitat and species has a negative impact on erosion/sedimentation, water quality and flood management and likewise many of the implications detailed in those sections are relevant here.

It also results in:

- Loss of cultural values
- Loss of amenity values and recreational opportunity
- Loss of economic opportunity. In this respect prevention of biodiversity loss is a nationally significant issue. A 1997 study by Massey University economists suggested that the total annual value provided by New Zealand's native biodiversity to the country's economy could be more than twice the value of our gross domestic product[11].

[11] https://www.biodiversity.govt.nz/picture/biodiversity/why.html

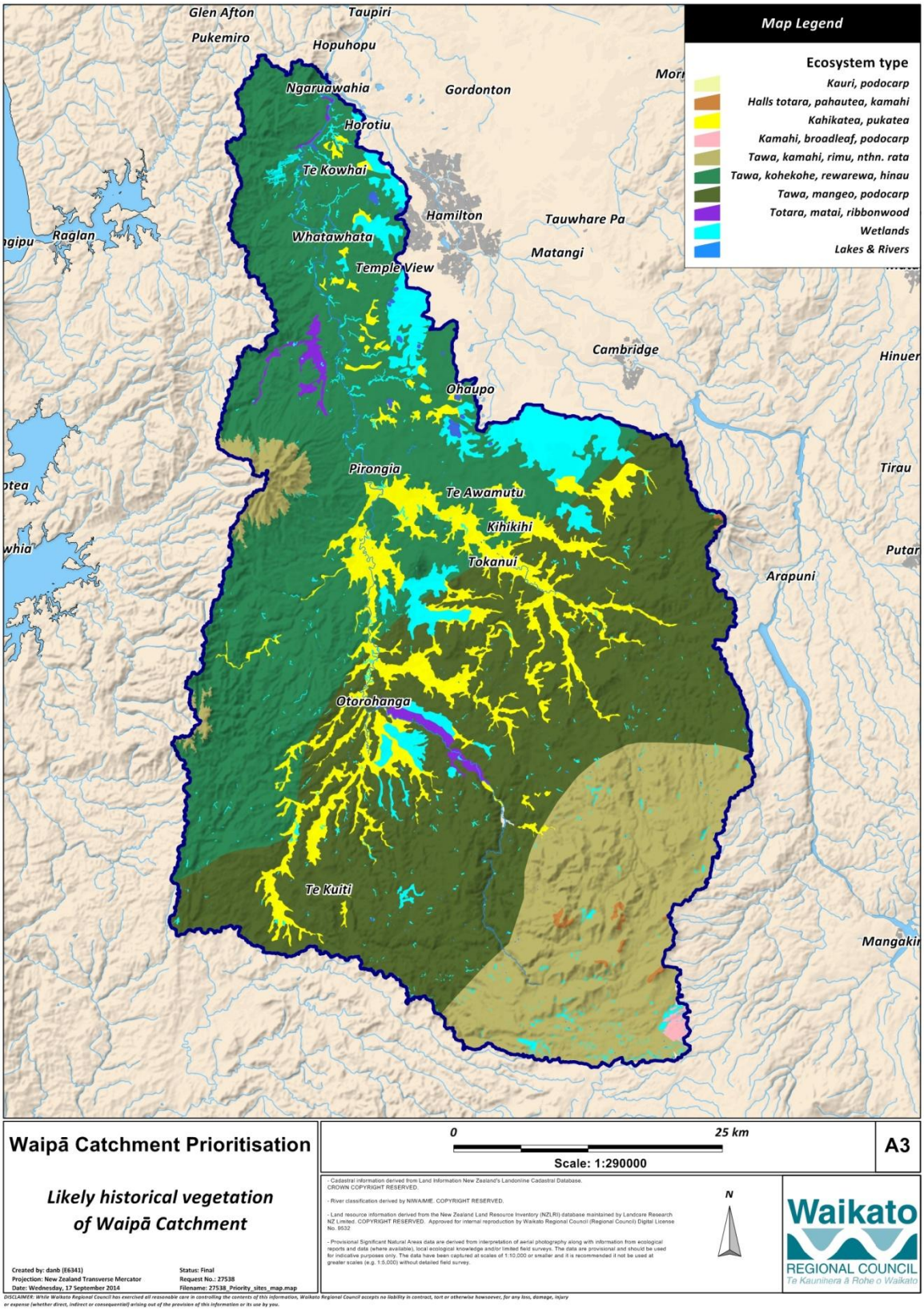


Figure 2 Likely historical extent of indigenous ecosystems in the Waipā Catchment (Singers and Rogers 2014).

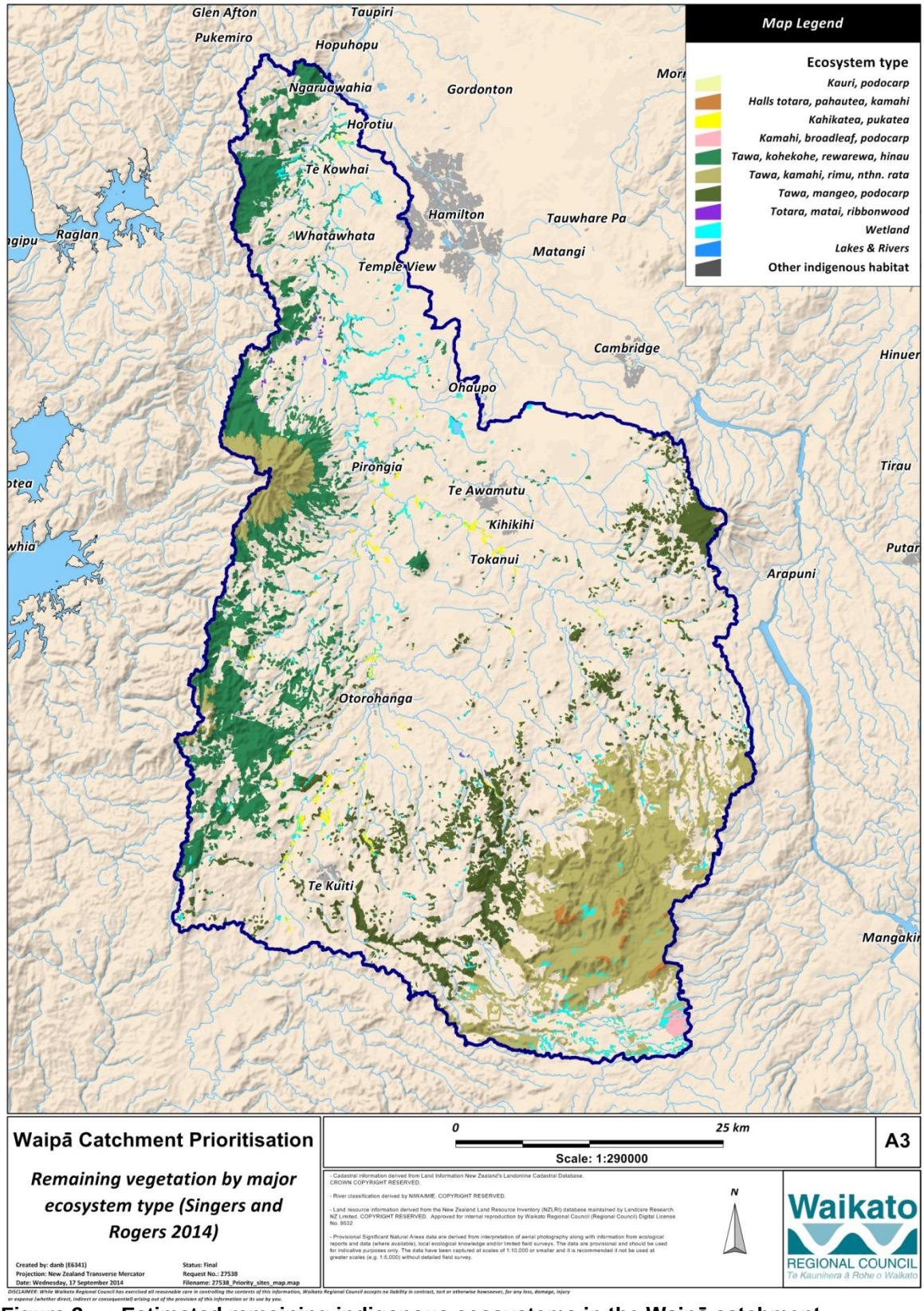


Figure 3 Estimated remaining indigenous ecosystems in the Waipā catchment (Singers and Rogers 2014).

Successfully maintaining and enhancing ecological integrity for the wide range of indigenous ecosystem types within the Waipā catchment is complex and challenging.

Once habitat is lost and/or species decline to a critical level, recovery is difficult if not impossible, expensive and takes a long time.

In order to acknowledge this and assist with planning 'onground' works, WRC has produced a 'toolbox' of land management practices that may help to address threats to indigenous habitats and biodiversity (Bryant and Beatson, 2014a, 2014b, 2014c, 2014d). Detailed descriptions of the threats and pressures on each broad indigenous ecosystem type and the practices needed to address them in the Waipā can be found in the 'toolbox' (Bryant and Beatson, 2014c. in prep.).

Headwaters of many tributaries of the Waipā contain high quality water and correspondingly instream biodiversity values are highest in these areas. High value streams and rivers correlate strongly with locations of intact indigenous forests of the western ranges (e.g., Pirongia) and Rangitoto range in the South east. Although largely not reduced in extent, stream and river habitats are subject to many pressures including barriers to fish passage and degradation of 'instream' fish habitat. Effects of increased sedimentation, nutrient levels and microbial contamination are described in section 3.3 and all contribute to the degradation of water quality and therefore in-stream biodiversity which accumulates down the catchment.

Indigenous wetland and floodplain habitats and the species they contain have been drastically reduced in extent. The remaining isolated remnants in the catchment are degraded and are continuing to decline in condition. They are particularly vulnerable to influences from surrounding agricultural land use which increases nutrient input and can alter hydrology, which in turn can exacerbate impacts of introduced plants such as alligator weed. Where stock have direct access impacts include direct input of urine and dung, grazing and trampling wetland plants, disturbance of wildlife and increasing pest plant invasion.

There are 14 peat lakes and one riverine lake in the Waipā catchment (Map 5a). All are located within predominantly pastoral catchments and few have extensive marginal wetlands remaining. The peat lakes represent some of the few remaining wetland areas associated with the formerly extensive Komakorau, Rukuhia and Moanatuatua peat bogs. Detailed information on each of the lakes in Waipā catchment can be found in the Waikato Regional Council Shallow Lakes Management Plan (Dean-Speirs, in prep).

A particularly important feature of western Waipā hill country is the unique karst dominated ecosystems which developed undisturbed for many thousands of years. These ecosystems typically arise due to unusual environmental conditions, are mostly small, often support unique biodiversity, and commonly have an ecological significance disproportionate to their size The Waikato region has one of the largest areas of karst landscape in New Zealand (Floyd and Clarkson 2014 in *prep*). Within the Waipā catchment the most well recognised and highest concentration of karst is located in an area around the Waitomo caves. Within this area there are three cave systems of international geological importance (Worthy 1990).

The largest remnants of indigenous forest and shrubland are found on the predominantly steeper areas of upper catchment e.g., Pirongia and the Rangitoto ranges. Lowland remnants are very small and fragmented within a predominantly pastoral landscape. The small size of many of these remnant habitats is an issue that will be difficult to address in the long term as many have a pronounced 'edge effect' resulting in an increase in pest plants, increased light, wind and extremes of temperature and humidity. Lack of habitat connectivity adds to these issues.

Ecological integrity is severely compromised by the impacts of pest animals and plants in indigenous forest and shrublands. As with other habitat types, direct stock access will further exacerbate these issues. Burns et al (2011) concluded that even if stock were excluded from small forest fragments, without additional management actions to deal with edge effects and lack of connectivity long-term degradation is likely to continue.

3.5 Flood management

Te Kuiti township is located in the floodplain of the Mangaokewa Stream and was severely flooded in the 1958 flood. Work to alleviate flooding has included enlarging the stream channel and providing a floodway through the urban area of Te Kuiti. This work provides a design capacity against a 2% Annual Exceedance Probability (AEP) flood.

Other historic work undertaken by the former Mangapu Drainage Board includes works to the Mangaokewa Stream channel over the entire reach from Te Kuiti to Otorohanga and to the Mangapu Stream over much of its length.

The floodplain of the Waipā River at Otorohanga was also completely inundated during the 1958 flood. Some houses within the town were flooded almost to eaves level and evacuation efforts were required to prevent loss of life. The subsequent flood protection for Otorohanga consisted of stop banking with extensive channel realignment through the urban area and for approximately 7km downstream to the confluence with the Mangaorongo Stream. In addition, flood pumps designed to operate in conjunction with ponding areas were provided to control internal runoff from the catchment behind the stopbanks. Extensive alterations were made to the North Island Main Trunk railway, State Highway 3 and State Highway 31 to facilitate stopbank construction. The design capacity for the works was to protect against the 1% AEP flood. A Scheme[12] review in 1983 confirmed the capacity of the channel and stopbanks to contain the original design discharges and indicated that these design discharges appeared to be somewhat conservative.

The flood protection scheme for Otorohanga township is owned by the Otorohanga District Council but serviced by the WRC through a service level agreement.

During the 1958 flood the Waipā River channel was severely obstructed with willows and this resulted in significantly elevated water levels throughout the entire river system and lateral bank erosion at many locations along the river. The flood control scheme works, in an effort to improve drainage, also cleared the Waipā River channel of willows and obstructions over its entire length all the way downstream to Ngaruawahia. However the Waipā River is bounded by extensive floodplains as illustrated in Map 7 (Flood Map 1% AEP). These are inundated on a regular basis in response to heavy rainfall in the upper catchment. Inundation times vary depending on a number of factors including upper catchment saturation/runoff rates and rainfall, however it is fair to say that residence times increase further down the catchment. The lower river is also affected by high flows in the Waikato River which can impede the drainage particularly during events which effect both catchments or if peaks coincide at the confluence of both rivers.

Many of the other main tributaries within the Waipā catchment, such as the Mangaorongo, Mangawhero, Puniu, Mangapiko, Mangaohoi and Moakurarua have had historic work completed by former drainage boards and territorial authorities to remove willows, improve drainage and reduce flooding. Stopbanking, including floodgates, was constructed along the Mangawhero Stream as an historic minor work to reduce flooding

[12] The Lower Waikato Waipā Flood Control Scheme

in the lower reaches of that stream. All of these works require maintenance to ensure they continue to perform as designed and intended.

Flood protection and river improvement works are all integrated and need to be maintained and refurbished to ensure protection of both Te Kuiti and Otorohanga up to the confirmed level of service.

Design assumptions for the catchment's flood protection scheme are based on 1960s data and may not reflect current reality or provide sufficient "status quo" protection if:

- climate change results in higher rainfall and more extreme weather events in the zone
- other zone issues which exacerbate the potential for flooding are not addressed (e.g. forestry land being converted to pastoral farming).

Intensification (and the related increase in investment) is leading to higher expectations of flood protection. Rural development is also increasing expectations of the flood protection scheme. The aforementioned catchment improvement initiatives have also alleviated flooding issues in the lower reaches by reducing flow volumes. In the High Flow Management Plan developed by Mighty River Power, and WRC's own internal flood warning procedures, the Waipā River is seen as a critical contributor to flood levels in the lower Waikato River.

As part of WRC's flood warning network, a number of real time monitoring stations have been established across the catchment (including both water level and rainfall) to ensure appropriate and timely warnings can be provided to the community and data can be fed into our flood forecasting models.

WRC also supports district plan review processes to ensure that future land use and other types of development take place cognisant of the flood risks.

Funding for maintenance of the flood protection works and the river maintenance activities throughout the Waipā catchment is provided through Project Watershed, a comprehensive funding system that covers the entire Waikato and Waipā catchments and which was implemented in 2002. Responsibility for maintenance activities required for the flood protection works and river channels within urban areas currently sits with the relevant territorial authority while responsibility for maintenance of the rural works currently sits with WRC. This approach of different agencies being responsible for the maintenance of different parts of the collective river and flood protection works can lead to different standards of maintenance throughout the catchment.

The implications of flooding for the Waipā catchment include:

- danger to people
- damage to scheme assets (structures, riverbanks and plantings)
- more widespread damage to property and infrastructure and related economic, social and environmental cost and disruption.
- damage to reputations of organisations involved in flood protection. Loss of support from community and potential objections to rates payment for scheme maintenance.
- increase in cost for scheme if it is tailored to meet higher expectations.

3.6 Waipā people and communities

Within the Waipā catchment there is an estimated population of 67,000, a number of rural and small urban towns and communities, and a range of governance,

organisational, and community groups, including district councils, iwi trusts, industry support, and environmental and other community groups.

The economy of the catchment is dominated by agriculture, which is the single largest employer. Within the agricultural sector, dairy farming is the largest income earner, followed by drystock.

Other sectors that have a significant contribution to the economy within the Waipā Catchment are retail and wholesale, manufacturing and tourism.

Many people and organisations are reliant on the natural and physical resources of the catchment for their social, economic, cultural and environmental well-being. It is important that management of resources is undertaken in a manner that reflects peoples' aspirations and that they are actively involved in the restoration of the catchment.

The Waipā River is of deep cultural significance to Maori. According to Maniapoto their relationship with the Waipā River is 'historic, intellectual, physical, and spiritual, and it 'lies at the heart of their spiritual and physical wellbeing and their tribal identity and culture.' The river provided 'all manner of sustenance....including physical and spiritual nourishment that has over generations maintained the quality and integrity of Maniapoto marae, hapu and iwi[13].

Key implications of resource use activities in the Waipā Catchment for people and communities include:

- Land uses and other activities have adversely impacted upon traditional food resources for Maori, e.g. decline in the availability of freshwater species
- Damage to waahi tapu and other sites of cultural / spiritual significance
- Reduced recreational enjoyment and eco-tourism opportunities.

[13] M Cunningham 2014 page 15.

4 Implementation plan

4.1 20-year goals

The 20 year goals for the Waipā Catchment are listed below.

These goals assist in the implementation of Te Ture Whaimana o te Awa o Waikato (the Vision and Strategy for the Waikato River), Waikato Regional Council Regional Policy Statement and the WRC Land and Water 10 year strategic objectives. The goals reflect the aspirations in the current WZMP (as determined by the Waipā Liaison subcommittee in the development of that Plan), and the goals identified during workshops with WRC, the Waipā Zone Liaison subcommittee, and river iwi.

Goal 1: Soil conservation

Land use in the Waipā Catchment matches capability, and soils are stable and productive, with erosion and associated sedimentation reduced in priority areas in a way that gives effect to Te Ture Whaimana o te Awa o Waikato (The Vision and Strategy for the Waikato River).

Explanation

Erosion-prone soils and unstable areas deliver high loads of sediment (and phosphorus) to the Waipā River and some tributaries (and ultimately to the Waikato River). In addition new land uses are becoming more intensive and are occurring in areas where that use does not match the productive capability of the land. This goal seeks that land uses match capability in order to maintain stable and productive soils and that erosion and associated sedimentation is reduced in the priority areas identified in Map 1.

This goal will ensure that agencies and landowners will undertake land management activities in a sustainable manner. This will contribute to achieving the overarching purpose of the Te Ture Whaimana o te Awa o Waikato (The Vision and Strategy for the Waikato River) to restore and protect the health and wellbeing of the Waikato River.

Goal 2: Water quality

Water is a swimmable quality throughout the catchment and visibly clearer at the confluence with the Waikato River at Ngaruawahia.

Explanation

In general, the water quality in the Waipā River declines from the upper reaches to the lower reaches and at the confluence with the Waikato River at Ngaruawahia. Many parts of the catchment are no longer swimmable due to high sediment loads and rising levels of nutrients. This goal seeks to return the waters of the Waipā Catchment to a level where it is swimmable and visibly clearer than it is in 2014.

The decline of the water quality in the catchment's shallow lakes is also an issue, affected by peat subsidence, nutrient and sediment loading resulting from drainage, cropping and development of surrounding land. This goal seeks to return the water quality to a level where water is clear enough for native aquatic plants to grow.

Goal 3: Indigenous biodiversity

Ecological health is measured, maintained and enhanced throughout the catchment and comprehensive ecological networks are established and managed.

Explanation
The Waipā Catchment is highly modified and contains a variety of significant ecosystems, including peat lakes, wetlands, karst systems and areas of significant indigenous vegetation and habitats of indigenous fauna. The remaining habitats are largely fragmented and small – the key to improving ecological health at the catchment scale is to establish comprehensive ecological networks to allow indigenous biodiversity to thrive and ensure that the ecological health of the catchment is maintained and enhanced.

Goal 4: Flood management

People, property and services (infrastructure) are protected from floods, through scheme and river management and enhanced natural retention capability in the catchment.

Explanation
Parts of the Waipā catchment are subject to flooding. Some of these areas, including Otorohanga, are protected by flood control works. These works and the associated river management works need to be maintained and refurbished to ensure protection of confirmed levels of service in the WRC Asset Management Plan.

Goal 4 ensures that people, property and services continue to be protected through the maintenance of scheme works and river management programmes. This will include enhancing the natural retention capability of the catchment (i.e. retaining upper catchment wetland areas) and refurbishing existing works where necessary.

Goal 5: Co-management and partnerships

Co-management partners and stakeholders are working collaboratively towards the sustainable use and health of the Waipā catchment's land and water, and to give effect to Te Ture Whaimana o te Awa o Waikato (the Vision and Strategy for the Waikato River).

Explanation
The overarching purpose of the Vision and Strategy is to restore and protect the health and wellbeing of the Waikato River so it can support current and future generations in prosperous communities.

As well as WRC's iwi co-management partners there are multiple agencies, companies and landowners undertaking works that contribute positively to the sustainable use and health of the catchment's land and water resources.

The WCP recognises that it is essential all partners work collaboratively to achieve the Vision and Strategy and work towards the sustainable use and health of the catchment's land and water resources.

Goal 6: Cultural values

Catchment management acknowledges tangata whenua and the wider community's economic, environmental and social aspirations and historical, cultural, spiritual and customary connections with the river and its catchment.

Explanation
People living in the catchment are reliant on its natural and physical resources for their social, economic, cultural and environmental well-being. Goal 6 recognises that

catchment management must acknowledge and take into account tangata whenua and the wider community's environmental and social aspiration as well as their historical, cultural, spiritual and customary connections with the catchment.

Tangata whenua values are a collective understanding of the traditional and contemporary Maori worldview which encompasses the cultural, spiritual, economic and environmental well beings of the iwi, hapū and whānau. Tangata whenua is a common term relating to people of the land. In regards to iwi, hapū and whānau, specific to a geographic area (rohe), tangata whenua is replaced with manawhenua.

Mana whenua exercise their rangatiratanga, kaitiakitanga and manaakitanga responsibilities over their geographical area or rohe. Mātauranga Māori is a transferred body of oral and applied traditional knowledge which encompasses the Māori worldview. The Māori worldview is the holistic intergenerational relationship between Māori and the spiritual, physical and natural world.

Goal 7: People and communities

People and communities are active in the restoration of the Waipā catchment as a place to work, live and play.

Explanation

Goal 7 is seeking that the people and communities within the catchment are thriving and are actively involved in restoring the health and wellbeing of the Waipā river catchment. The purpose of the goal is to encourage everyone living in the catchment to contribute positively to its overall social, economic, environmental and cultural well-being.

4.2 Strategies and implementation actions

This section of the WCP details the strategies and associated actions proposed to achieve the 20 year goals stated in Section 4.1 above. Each action is accompanied by a statement of who may be responsible for achieving it and an indication of when it will be commenced and completed.

The strategies and actions are designed to work together to achieve multiple goals and are focussed on the near to medium term to achieve long term goals. For example, strategies designed to address soil conservation will also assist in achieving objectives of maintaining and improving water quality and protecting / restoring indigenous biodiversity.

Funding for implementation of the WCP is dependent on the approval of additional resources through the WRC Long Term Plan 2015-25 and through provision of funding by external providers.

4.2.1 Soil conservation

(Implements Goals 1, 2, 3, 5, and 7)

Strategies

1. Establish new catchment management schemes in Priority 1 soil conservation sub-catchments (Moakurarua and Kaniwhaniwha; Map 1) and develop a full implementation plan including partnerships, community engagement and funding mechanisms.

2. WRC will promote good soil conservation practices and will actively work with landowners and industry to prepare and implement farm / property plans starting in Priority 1 soil conservation sub-catchments.

Property / farm plans will be aimed at assisting landowners to achieve multiple goals / objectives, including reducing erosion from all sources, maintaining water quality (reducing nutrients, E. coli and sediment) and protecting biodiversity. The use of farm plans will be targeted to priority areas for each matter.

3. Make funding incentives and environmental programme agreements available upon application for landowners in Priority 2 soil conservation sub-catchments (Waitomo, Mangarapa, Mangatea, Mangarama, Upper Puniu and Firewood Creek; Map 1).

4. WRC, co-management partners, stakeholders and the private sector will work together to support prioritised work programmes.

5. WRC will oversee the maintenance of existing soil conservation works.

6. Identify rivers and streams for priority erosion protection through stabilisation and establish implementation programmes for remediation.

7. Continue to promote practices to improve soil conservation to the wider catchment outside of identified high priority sub-catchments, including retention of existing indigenous vegetation.

8. Maintain and enhance the integrity of the main channel of the Waipā River.

9. Work with Maori Multiple Owned Land Blocks (MMOLB) trustees to achieve sustainable land management outcomes.

Actions	**Who**	**When**
1. Pilot and implement at least five property / farm plans in each of the two Priority 1 soil conservation sub-catchments (Map 1) as follows: • Moakurarua above Ormsby Road bridge • Kaniwhaniwha above Te Pahu Road bridge.	WRC	Commencing 2014/15
2. Assess the cost benefit of establishing new soil conservation schemes in Priority 1 soil conservation sub-catchments	WRC	Commencing 2014/15
3. Review legal protection mechanisms for catchment management works.	WRC	Commencing 2014/15
4. Identify farms in Priority 1 soil conservation sub-catchments that require full property / farm plans.	WRC	Commencing 2014/15 – completed by end of June 2015.
5. Develop and implement comprehensive property / farm plans for all identified farms, where landowners are willing, in Priority 1 soil conservation sub-catchments.	WRC Industry Landowners	Commence July 2015 until 2025.
6. Encourage and work with remaining landowners in Priority 1 soil conservation sub-catchments to prepare and implement comprehensive property / farm plans.	WRC Industry Landowners	Commence July 2015 until 2025.

7. Develop and implement pro-active river management programmes in Priority 1 soil conservation sub-catchments.	WRC	Commencing 2015/16
8. Existing soil conservation programmes (Project Watershed funding[14]) are available to landowners in Priority 2 sub-catchments (Map 1) as follows: • Waitomo • Mangarapa • Mangatea • Mangarama • Upper Puniu • Firewood Creek.	WRC	Ongoing
9. Priority catchments review • Priority soil conservation sub-catchments are reviewed at three yearly intervals • Identify priority sub-catchments where new soil conservation schemes will assist meeting Waipā Catchment Plan goals • Develop and review criteria to guide decision making for funding new soil conservation schemes • Seek funding for new soil conservation schemes, e.g. rates, external funding, other mechanisms.	WRC	Commencing 2016
10. Carry out investigations into the long term effectiveness of soil conservation programmes in the Waitomo catchment and the potential risks to water quality improvements.	External providers	2015/16
11. Existing Waitomo soil conservation scheme: • Ensure that all property files are accurate and up-to-date. • Develop an inspection programme of soil conservation assets and follow-up any maintenance required with landowners • Where appropriate review agreements with landowners to ensure that the assets are contributing to achieving the purpose of the scheme and negotiate variations to agreements where required. • Maintain current levels of service as described in Table 26 page 83 of the Waipā Zone Management Plan.	WRC	Ongoing
12. Develop implementation programme for high priority streams/rivers (outside of Priority 1 soil conservation sub-catchments) for maintaining channel capacity and improving bank stability. Priority streams/rivers are (Map 2): • Mangapiko Stream • Mangapu Stream	WRC	Commenced 2014.

[14] Refer to WRC document #752002

• Mangatutu Stream • Puniu River • Waitomo Stream • Waipā River main channel.		
13. Review priority streams/rivers with a consideration for factors such as stability, flood passage, corridor formation, water quality, in stream habitat, access and culturally important sites.	WRC	Commencing 2016/17
14. Maintain existing WRC river management levels of service as described in Table 25 page 81 of the Waipā Zone Management Plan.	WRC	Ongoing
15. Implement new riparian enhancement programmes[15], along High Priority waterways as follows: • Mangapiko Stream between Te Awamutu and Pirongia (Map 3) • Waipā River between Toa's bridge and the confluence with Mangaorongo Stream (Map 3) • Waipā River between the Kaniwhaniwha and the confluence with the Waikato River (Map 3) • Mangapu sub-catchment (Map 4). **Note** It is important that external providers contact WRC as part of their project planning to ensure that bank stabilisation requirements are considered as part of these projects.	Opportunity for external providers, including iwi, community groups etc.	Commencing 2014/15
16. Address isolated river/stream bank erosion through bank stabilisation works, removal of obstructions and river training/improvement works as appropriate.	WRC	Ongoing
17. Map and record WRC river management and stream stabilisation works in Conquest database[16].	WRC	Commencing 2014/15
18. Provide information and advice on soil conservation and river management to landowners and communities throughout the Waipā catchment.	WRC and industry	Commencing 2015/16
19. Complete current investigation into river morphology and downstream impacts on streambanks and bedload of the Tunawaea slip.	WRC	2014/15
20. Develop a management plan for addressing the impacts of the Tunawaea slip.	WRC	2015/16
21. Refer to Action 12 in Protecting / Restoring indigenous Biodiversity (Section 4.2.4) when undertaking soil conservation or river management works.	WRC	As required when undertaking soil conservation and river management

[15] See Glossary
[16] See Glossary

		works.
22. Work with local councils to protect high value soils and indigenous vegetation through district and regional plans.	WRC, TLAs	Ongoing
23. Investigate alternative land use options, including afforestation, for areas where land use does not match capability.	WRC Opportunities for external providers	2015/16
24. Identify and support landowner champions to promote sustainable land management practices in the catchment.	WRC Industry Iwi	2015/16
25. Incorporate a whole farm systems approach in property /farm plans where appropriate.	WRC, external providers	Ongoing, commencing 2014/15.
26. Identify MMOLB trustees and develop a programme to share best practice and mentoring within the catchment.	External providers	Commencing 2015/16
27. Identify the needs and aspirations of MMLOB trustees and develop specific and targeted environmental programmes that suit their unique needs.	External providers	Commencing 2015/16

Note Refer to Appendix 1 for an explanation of the Rationale for selection of Priority 1 and 2 Soil conservation catchments.

4.2.2 Maintaining / improving water quality

(Implements Goals 1, 2, 3, and 5)

Strategies

1. Refer to Strategies 1, 2, 3, 4, 6, 7 and 8 Soil Conservation, and Strategies 3, 4, 5, 6, 7 and 8 Protecting / Restoring Indigenous Biodiversity.

2. Work with landowners, co-management partners and key stakeholders in identified shallow lake catchments to reduce nutrient loads.

3. Work together with co-management partners and stakeholders to achieve improved management practices in identified priority nutrient areas (Map 6) and the exclusion of stock from waterways and wetlands on all farms in the catchment.

4. WRC will work with industry and communities to prepare landowners and natural resource users for change as a result of Healthy Rivers Plan Change 1 to the WRP.

5. Promote land management practices that result maintained or improved water quality.

Actions	Who	When
1. Identify properties in shallow lakes catchments that would benefit from property / farm plans to reduce nutrient loads in the catchment (in order of priority): • Mangakaware[1] • Milicich • Posa and Pataka • Ruatuna	WRC (for Mangakaware), external providers, landowners (for other lakes)	2014/15

• Ngaroto[1] • Mangahia.		
2. Develop and implement comprehensive property / farm plans for all identified farms, where landowners are willing, in shallow lakes catchments to reduce nutrient loads.	WRC, external providers, landowners	Commencing 2014/15
3. Develop and implement a programme for the protection and restoration of Waipā wetlands, including a funding strategy, and provide incentives for protection at these sites.	WRC, co-management partners, key stakeholders	Commencing 2015/16
4. Monitor and report on water quality in priority catchments as per monitoring strategy in 4.2.8 in this plan.	WRC	Commencing 2014/15
5. Prepare and release consistent information on the Healthy Rivers Plan Change 1 Project and any WRP / WCP changes resulting from it.	WRC	Ongoing as required.
6. Prepare and distribute user guides to any modified WRP policies and rules, including Healthy Rivers Plan Change 1.	WRC	As required as WRP rules are modified.
7. Assess the cost/benefit of implementing Sustainable Milk Plans[17] in priority nutrient areas (Map 6) in the catchment.	DairyNZ	Commencing 2014/15
8. Implement Sustainable Milk Plans in identified priority nutrient areas (Map 6) in the catchment.	DairyNZ	Commencing 2015
9. Provide information and advice to landowners on the methods to maintain and improve water quality throughout the Waipā Catchment, including how to operate within limits once Healthy Rivers Plan Change 1 is publicly notified.	WRC	Ongoing
10. Investigate impact of land use intensification throughout the catchment, e.g. dairying, cropping, and horticulture.	External providers	2015/16
11. Work with industry to promote stock exclusion from all waterways, Karst systems, indigenous forests and wetlands, including seeps.	WRC, external providers	Ongoing
12. Include objectives, policies and methods (including rules) in the WRP that result in improved sustainable land management and water quality.	WRC	At WRP review and during development of Plan Change 1 Healthy Rivers.

[1] Nutrient planning is underway in these catchments.

4.2.3 Protecting / restoring indigenous biodiversity

(Implements Goals 3, 5, and 7)

Strategies

1. Strategies 1, 2, 3, 6 and 7 Soil Conservation, strategy 2 Maintaining/ improving water quality, strategies 1, 2, 4, and 5 Co-management partners, strategies 1, 2, 3, 6 and 7 People and communities, strategies 1 and 2 Waikato Regional Council funding strategy apply.

[17] Sustainable milk plans are nutrient management plans for individual properties, refer to http://www.dairynz.co.nz/what-we-do/advocacy-and-policy/environment/upper-waikato-sustainable-milk-project/

2. A comprehensive network of indigenous ecosystems in the Waipā Catchment is maintained and enhanced.

3. WRC, co-management partners, landowners, key stakeholders and the community undertake active restoration and monitoring of biodiversity in priority indigenous habitats (Maps 5a and 5b, and Appendix 2.)

4. Funding incentives and assistance is available for biodiversity protection and restoration in priority indigenous habitats (Maps 5a and 5b, and Appendix 2.).

5. Promote management practices that protect and restore indigenous biodiversity throughout the Waipā River catchment.

6. Review site based animal and plant pest control programmes and align with priority indigenous habitats as listed in Appendix 2.

7. Develop and implement projects to enhance habitat for key taonga[18] species.

8. Seek opportunities to enhance indigenous biodiversity through ecologically sensitive delivery of soil conservation and river and flood management activities.

9. Maintain existing biodiversity restoration programmes.

Actions	**Who**	**When**
1. Identify additional priority indigenous habitats and potential linkages to enable a comprehensive ecological network to be managed in the Waipā catchment.	WRC, DOC, TLAs	Project is currently underway.
2. Identify properties with shallow lake and priority wetlands (as listed in Appendix 2) that would benefit from biodiversity protection and restoration programmes.	WRC, external providers	2014/15
3. Implement biodiversity protection and restoration programmes with willing landowners in identified priority shallow lake catchments (as listed in Appendix 2). **Note** Management actions required for these sites are detailed in the WRC Shallow lakes management plan.	WRC, Co-management partners, external providers, willing landowners	2014/15
4. Implement biodiversity protection and restoration initiatives with willing landowners of identified priority wetlands (as listed in Appendix 2). Note: Key management actions required for these sites will include stock exclusion (fencing), plant and animal pest control and restoration planting.	WRC, Co-management partners, external providers, willing landowners	2014/15
5. Implement biodiversity protection and restoration initiatives in under represented threatened indigenous ecosystems (as displayed in Map 5b and listed in Appendix 2). **Note** Management actions required for these sites will include stock exclusion (fencing), plant and animal pest control and restoration planting.	WRC, Co-management partners, external providers, willing landowners	2014/15

[18] Definition of taonga species

6. Maintain existing large scale biodiversity restoration programmes at large ecologically intact indigenous terrestrial habitats. For example: • Pirongia forest • Maungatautari sanctuary • Kakepuku • Rangitoto range.	WRC, Co-management partners, key stakeholders, external providers	2014/15
7. Develop and implement projects to protect and restore riparian habitat for taonga species such as kokopu, piharau, tuna and koura. Key waterways to enhance, include: • Firewood Creek to Waipā River • Kaniwhaniwha catchment to Waipā River • Mangakara stream to Waipā River • Mangatutu headwaters to Puniu River.	Co-management partners, external providers, willing landowners	Commencing 2014/15
8. Identify data deficient locations for taonga fish species in the catchment above Toa's bridge and develop and implement a programme to better understand the distribution of these species.	Co-management partners, WRC, external providers	Commencing 2015/16
9. Develop robust fish survey methods for non-wadeable rivers (such as Waipā main stem and large non-wadeable tributaries).	External providers	Commencing 2015/16
10. Through the use of LIDAR identify new locations in the catchment that may provide a barrier to fish passage.	WRC	Commencing 2015/16
11. Provide guidelines and assistance to local communities to improve fish passage of taonga species where barriers exist.	WRC, co-management partners, National Fish Passage Advisory Group, external providers	Commencing 2015/16
12. Investigate the potential of using lateral inundation areas of rivers and streams for promoting native fish productivity over that of exotic fish species.	External providers	Commencing 2016/17
13. Develop a joint management strategy for management of priority karst ecosystems.	DOC and WRC	Commencing 2015/16
14. Monitor and report on ecological condition of managed terrestrial, shallow lake and wetlands ecosystems (see monitoring strategy in 4.2.8)	WRC, Co-management partners, external providers, willing landowners	Commencing 2015/16
15. Provide information and advice to landowners on the protection and restoration of biodiversity throughout the Waipā Catchment.	WRC, DOC, QEII, TAs, and other biodiversity stakeholders.	Commencing 2015/16
16. Provide support, advice and funding for landowners undertaking biodiversity restoration projects (e.g. existing project watershed funding) on an individual case by case basis. **Note** Funding will be allocated based on a number of criteria including ecological values of sites and	WRC	Commencing 2014/15

advocacy value of project.		
17. When undertaking soil conservation or river management works WRC will seek to maintain, and where possible enhance, biodiversity values, for example: • Create additional native fish habitat as part of design of asset and river management structures • Include native plant species in river management programmes.	WRC	As required when undertaking soil conservation and river management works.
18. Undertake investigations to determine the response of indigenous aquatic species to in-stream enhancement structures.	External providers, co-management partners, WRC	Commencing 2015/16
19. Work with territorial authorities during district plan reviews to ensure maintenance of indigenous biodiversity and protection of significant natural areas.	WRC, co-management partners	As district plans are reviewed.
20. Work with territorial authorities in the development and implementation of local indigenous biodiversity strategies (RPS Method 11.1.10).	WRC, territorial authorities, co-management partners and other stakeholders	Local biodiversity strategies are to be developed 2016 /17 to 2018/19.
21. Include objectives, policies and methods in the WRP, when it is reviewed, that protect significant natural areas and other measures to maintain wetlands, seep areas, shallow lakes, karst systems and areas of indigenous vegetation and habitats of indigenous fauna.	WRC and co-management partners.	WRP review commences late 2015.
22. Work with Nga Whenua Rahui to restore and protect priority wetlands, lakes, underrepresented indigenous habitats (see appendix 2) and large intact indigenous habitats that are identified on MMOLB.	WRC and Nga Whenua Rahui	2014 - ongoing

4.2.4 Flood management

(Implements Goal 4)

Strategies

1. Ensure river management works are carried out in an integrated manner that delivers agreed levels of service (as included in the WZMP) and enhances indigenous biodiversity, sustainable land use and water quality outcomes.

2. Work towards establishing informed community expectations and awareness about flood protection, warning and management and encourage district councils' plans to support these expectations.

3. Identify and retain upper catchment wetlands (natural flood storage) and supplement with man-made control mechanisms as required.

4. Promote retention of water in upper catchments through afforestation.

5. Ensure a WRC service level agreement is in place to service flood protection assets and that required works are undertaken.

Actions	Who	When
1. Maintain existing flood protection scheme elements so they function at agreed levels of service, refer to Table 24 page 79 WZMP. Maintain existing flood warning network and flood management arrangements in accordance with WRC's flood warning manual.	WRC	Ongoing – Refer to levels of service in the Waipā Zone Management Plan.
2. Ensure service levels are maintained or modified as required. • Services levels o 1 in 100 year (1% AEP) level of flood protection for the Otorohanga urban area. o 1 in 50 year (2% AEP) level of protection for Te Kuiti urban area. o Annual maintenance works undertaken as required for the Kawa drainage scheme, including weed spraying. Condition and performance report produced annually.	WRC	Ongoing through Waipā Catchment Asset Management Plan.
3. Promote the fencing and retirement of hill-country wetlands for their water retention, nutrient stripping and biodiversity functions in the development of property / farm plans or in the development and implementation of biodiversity protection and restoration plans.	WRC	Commencing 2014/15
4. Investigate and implement opportunities to retire and re-vegetate upper catchment areas.	WRC	Commencing 2015/16
5. Submit on district plan reviews to prevent / control development on flood prone areas as identified by WRC. This includes working with District Councils to identify areas that are suitable for development.	WRC	As required when district plans are reviewed.
6. District Councils refer to WRC to obtain flood hazard information when considering subdivision and development in rural areas (Map 7).	District councils	As required when district plans are reviewed.
7. When reviewing the WRP, identify high flood hazard zones in the Waipā catchment and methods to manage these zones.	WRC	Commencing 2015/16
8. Identify routine river management activities that could become controlled activities under the WRP review.	WRC	Commencing 2014/15
9. Work with mana whenua to identify cultural knowledge of flooding and its relationship with their values of rivers and streams. This may include areas that flooded historically that could be recreated as food gathering or flood retention areas.	WRC	Commence 2015
10. Invite tangata whenua and other stakeholders to review annual consented WRC river management programmes to ensure cultural and environmental values are retained and enhanced.	Iwi, key stakeholders	Annually
11. Investigate necessity to prepare a hazard management plan for the Waipā Catchment that	WRC	Commence 2015

identifies hazard areas and appropriate strategies to avoid, remedy or mitigate the adverse effects of these hazards.		

4.2.5 Co-management partners

(Implements Goals 5, 6, and 7)

Strategies

1. Co-management of the Waipā River catchment occurs consistent with Te Ture Whaimana o te Awa o Waikato (The Vision and Strategy for the Waikato River).

2. All co-management partners and catchment stakeholders are working on an agreed plan of action for management activities in the Waipā Catchment.

3. Catchment plan activities recognise and provide for cultural landscapes[19].

4. Work with iwi authorities and mana whenua to support the identification of their cultural, social, economic and environmental aspirations for the catchment.

5. Support and implement tangata whenua goals and aspirations as established through their strategic plans (including but not limited to Integrated River Management Plans) as part of catchment activities.

Actions	Who	When
1. Facilitate an annual meeting of co-management partners and catchment stakeholders to consider priorities, identify common areas of interest and areas for potential collaboration. This information will be used to develop more detailed co-ordinated work programmes.	WRC, co-management partners	Yearly commencing 2015
2. Implement actions identified Section 3.5.1 of the Waipā Catchment Community Engagement Plan in Appendix 3.	WRC, Co-management partners	Commencing July 2014 - ongoing
3. Identify Wāhi tapu and areas/sites of cultural significance throughout the Waipā catchment (Intellectual property with iwi), including engagement in the Wharepuhanga rohe.	Iwi, WRC	Commencing 2014/15
4. When reviewing district plans and regional plans map and protect identified Wāhi tapu and areas/sites of cultural significance.	Iwi, territorial authorities, WRC	Commencing 2014/15
5. Develop plans to restore access, mahinga kai and other cultural uses of the awa[20]. Customary resources are restored where access exists.	Iwi and WRC	Commencing 2014/15
6. Monitor catchment water quality and ecosystem health including science and cultural health indicators.	WRC, iwi	2014/15

4.2.6 People and communities

(Implements Goals 6 and 7)

Strategies

[19] Include definition of cultural landscapes
[20] River.

1. Ensure information on sustainable land management and programmes of implementation is easily accessible e.g. real time water quality reporting, location of Significant Natural Areas.

2. Encourage all people and communities to be involved in the restoration of the Waipā River and its tributaries.

3. Implement relationship and communication initiatives to encourage responses that achieve the Waipā Catchment Plan goals and contribute to the achievement of Te Ture Whaimana o te Awa o Waikato (The Vision and Strategy for the Waikato River).

4. Identify and provide for the cultural values of Waipā communities.

5. Understand the social and economic benefits of implementing the WCP.

6. Work alongside the Waipā Catchment landowners, community, and stakeholders to assist implementation of the strategies and actions of the WCP.

7. Acknowledge and provide for Multiple Maori Owned Land Block (MMOLB) trustees' objectives as part of overall mana whenua aspirations within the catchment.

Actions	**Who**	**When**
1. Develop and implement educational programmes in partnership with Enviroschools, WaiMaori programme and other initiatives to involve school children in understanding and caring for the Waipā Catchment.	WRC, co-management partners, external stakeholders	Commencing 2015/16
2. Develop prioritised list of community projects and implement to enable "quick wins" in engaging people with the Waipā River Catchment.	WRC, co-management partners, key stakeholders	Commencing 2014/15
3. Where appropriate identify and enhance recreation sites, including those that provide environmentally appropriate tourism and adventure opportunities consistent with the goals of the WCP.	WRC, co-management partners, key stakeholders, community groups	Commencing 2014/15
4. Identify and support specific projects to engage tāngata whenua and the community in achieving their aspirations for rivers, streams, lakes, wetlands, karst and areas of indigenous vegetation or habitats of indigenous fauna.	WRC, co-management partners, external stakeholders	Commencing 2014/15 - ongoing
5. Implement the actions identified in Section 3.5 of the Waipā Catchment Community Engagement Plan (Appendix 3) to encourage the community to engage with the goals of the WCP and to support the actions taken.	WRC, co-management partners, key stakeholders	July 2015 - ongoing
6. Develop a Waipā Catchment Plan internet page on WRC's website that has accompanying links from co-management partners, territorial authorities, and key stakeholders websites.	WRC, co-management partners	2014/15
7. Refer to Action 1 co-management partners.	WRC, co-management partners	Commencing 2015.
8. Undertake work to identify MMOLB trustees	WRC, co-management	Commencing

within the catchment and understand their goals and aspirations for their farms. Appropriate consideration is given for how these are then included in specific sub-catchment plans.	partners and externals providers	2014/15

4.2.7 Waikato Regional Council funding strategy

(Implements Goals 1 to 7)

Funding for implementation of the WCP is dependent on the approval of additional resources through the WRC Long Term Plan 2015-25 and through provision of funding by external providers.

Strategies

1. Provide funding incentives for activities across the catchment according to the level of priority in this plan.

2. Jointly fund and undertake priority works with co-management partners, Waikato River Authority, other stakeholders and landowners.

Actions	Who	When
1. Soil conservation: • In mapped Priority 1 soil conservation sub-catchments (Map 1) the costs of implementing priority soil conservation and erosion control works on LUC class 6-8 land identified in property plans will be funded by WRC[21] (35%),funding partners (35%) and landowners (30%), subject to availability of funding[22]. Landowner share will include in-kind contributions such as assisting with fencing, planting, and in some cases, the land which is retired[1]. • In mapped Priority 1 soil conservation sub-catchments (Map 1) the costs of implementing priority river management/bank stability works will be funded by WRC (up to 50%), funding partners (25%) and landowners (25-50%) subject to availability of funding. Landowner share will include in-kind contributions such as assisting with fencing and planting. • In Priority 2 soil conservation sub-catchments landowners implementing soil conservation and erosion control works will be eligible for a 35% funding contribution from WRC upon application and subject to availability of funding. • For mapped priority streams/rivers (Map 2) implementation of river management works for improving bank stability will be eligible for up to a 50% funding contribution by WRC upon application and subject to availability of funding. • Throughout the remainder of the Waipā catchment landowners may be eligible for up to a 35% funding contribution for undertaking soil conservation and erosion control works if the project meets one or both of the following criteria: o Site containing isolated and severe erosion o High potential for a flag ship site for advocacy and education purposes. • Throughout the Waipā catchment landowners and community groups will be able to receive information and advice on preventing and remediating erosion.	WRC	2015/16

[21] Existing Project Watershed funding provisions as set out in #752002 and based on beneficiary models

[22] Where significant public funding is applied to a landowners property appropriate legal protection mechanisms are applied to protect public funding investment/benefits.

2. Water quality: • In Priority 1 nutrient areas (Map 6) landowners implementing water quality enhancement works (e.g. wetland retirement, riparian planting) may be eligible for a 35% funding contribution from WRC upon application and subject to availability of funding. • Throughout the remainder of the Waipā catchment landowners may be eligible for up to a 35% funding contribution for undertaking water quality enhancement works if the project has a high potential for a flag ship site for advocacy and education purposes.	WRC	2015/16
3. Throughout the Waipā catchment landowners and community groups will be able to receive information and advice on maintaining and improving water quality.	WRC, industry	2015/16
4. Biodiversity: • In Priority 1 biodiversity sites (Map 5a and b and Appendix 2) the direct costs of implementing biodiversity protection and enhancement works that include restoration planning, fencing, planting and plant pest control may be fully funded by WRC and funding partners, subject to availability of funding. • Throughout the remainder of the Waipā catchment landowners may be eligible for up to a 35% funding contribution for undertaking biodiversity protection and enhancement works if the project meets one or more of the following criteria: o High existing biodiversity value e.g. presence of threatened species, underrepresented ecosystem o High biodiversity education value	WRC and external providers	2015/16
5. Encourage regular liaison between WRC and agencies that fund activities that complement WRC's funding to: • Share information and alert one another to changes in funding priorities, criteria or process • Encourage strategic funding of projects to make best use of limited resources.	WRC and external providers	Ongoing
6. Undertake a three yearly review of funding policies and amend as required to reflect changes in regulatory and non-regulatory approaches.	WRC	2017/18

[1] Proportional contributions from in-kind works will vary. Value of retired land is recognised as significant in the contribution it makes to community outcomes but also recognises that it remains in existing ownership and is likely to provide ongoing value to a property.

4.2.8 Monitoring / reporting

(Implements Goals 1 – 7)

Strategies

1. Collect and share appropriate information to inform all co-management partners and stakeholders on the outputs and outcomes of implementation of the Waipā Catchment Plan.
2. Use efficient and effective methods to gather information about the water quality and ecological health of priority shallow lakes and to detect significant changes in these.
3. Regularly report the results of monitoring and ensure stakeholders are up to date with the condition of water quality, soils and biodiversity in priority catchments and sites in the catchment.

Actions	Who	When
1. Investigate the feasibility of establishing permanent sediment monitoring sites in Priority 1 soil conservation sub-catchments.	WRC	August 2014
2. Establish sediment monitoring sites in the Moakurarua and Kaniwhaniwha catchments.	WRC	November 2014
3. Develop a whole of catchment monitoring implementation plan including (but not limited to) • Identification of those existing sites and methods that are no longer useful for measuring outcomes of catchment management programmes (See Appendix 4 for summary of existing monitoring) • Identification of additional sites, methods and resource requirements to measure outcomes of implementation of the catchment plan • Appropriate biodiversity monitoring • Opportunities for community led monitoring • Assessment of cultural health indicator (CHI) monitoring opportunities and resource requirements.	WRC and Co-management partners	Commencing 2015
4. Establish an appropriate monitoring network to gather sufficient information about the water quality of Waipā peat lakes to underpin future modelling and management programmes that are focussed on improving their condition.	WRC and external providers	2014/15
5. WRC to include WCP actions for each year in their annual reporting. Report progress on catchment plan implementation on a quarterly basis.	WRC	Ongoing
6. Report on progress on catchment plan implementation at an annual meeting of co-management partners and catchment stakeholders and at joint committee meetings with co-management partners.	WRC, co management partners, external stakeholders	Yearly commencing 2015
7. Review the WCP when Healthy Rivers Plan Change 1 to the WRP is publicly notified to ensure consistency with the objectives, policies and methods (including rules) of that document.	WRC	Early 2016
8. Implement the Community Engagement Evaluation Plan detailed in Section 4 of Appendix 3.	WRC	

References

Bryant A, Beatson A. 2014a. Review of farm management practices to address riparian erosion. Waikato Regional Council 2014 (In prep.).

Bryant A, Beatson A. 2014b. Review of farm management practices to address hill country erosion. Waikato Regional Council 2014 (In prep.).

Bryant A, Beatson A. 2014c. Review of farm management practices to address threats to biodiversity. Waikato Regional Council 2014 (In prep.).

Bryant A, Beatson A. 2014d. Review of farm management practices to address elevated nutrient levels and microbial contamination of fresh water. Waikato Regional Council 2014 (In prep.).

Burns BR, Floyd CG, Smale MC, Arnold GC 2011. Effects of forest fragment management on vegetation condition and maintenance of canopy condition in a New Zealand pastoral landscape. Austral Ecology, 36: 153-166.

Collier K J et al, 2010. The Waters of the Waikato: Ecology of New Zealand's longest river. Environment Waikato and the Centre for Biodiversity and Ecology Research (The University of Waikato), 2010.

Cunningham M 2014. The Environmental Management of the Waipa River and Its Tributaries. Case Study commissioned by the Waitangi Tribunal for Te Rohe Potae district inquiry (Wai898). Waitangi Tribunal 2014.

Dean-Speirs, T. 2014. Waikato Region shallow lakes management plan. Waikato Regional Council 2014 (In prep.)

Environment Waikato 2002. Waikato River Catchment Services. "Project Watershed". Level of Service & Funding Policy. Environment Waikato (Doc # 752002)

Environment Waikato. 2010. Faecal Contamination of Rural Waikato Waterways. Sources, Survival, Transport and Mitigation Opportunities. A review for Environment Waikato. Environment Waikato Technical Report 2010/38.

Floyd CG and BD Clarkson 2014. Identification and significance assessment of potential karst ecosystems in the Waikato Region: A report for the Waikato Regional Council Significant Natural Areas Programme (In prep.)

Hicks DM and Hill R B. 2010. Sediment regime: sources, transport and changes in the riverbed, pages 71 – 91, in Collier K J et al, 2010. The Waters of the Waikato: Ecology of New Zealand's longest river. Environment Waikato and the Centre for Biodiversity and Ecology Research (The University of Waikato), 2010.

Maniapoto Māori Trust Board. 2007. He Mahere Taiao: Maniapoto Iwi Environmental Management Plan 2007.

Matthew Cunningham, 2014. The Environmental Management of the Waipa River and Its Tributaries. Case-study commissioned by the Waitangi Tribunal for Te Rohe Potae district inquiry (Wai 898), March 2014.

NIWA 2010. Waikato River Independent Scoping Study. National Institute of Water and Atmospheric Research, New Zealand, 2010.

NIWA 2014. Draft – Maniapoto Priorities for the Restoration of the Waipā River Catchment. Prepared for Maniapoto Maori Trust Board. NIWA June 2014.

Palmer D, Dymond J, Basher L 2013. Assessing erosion in the Waipa catchment using the New Zealand Empirical Erosion Model (NZeem®), Highly Erodible Land (HEL), and SedNetNZ models. Waikato Regional Council Technical Report 2013/54. Prepared for Waikato Regional Council by Landcare Research.

Parliamentary Comissioner for the Environment 2013. Water Quality in New Zealand: Land use and nutrient pollution. Parliamentary Comissioner for the Environment

Raukawa Charitable Trust. 2012. Raukawa Fisheries Plan 2012.

Singers, N.J.D. and Rogers, G.M. (2014). A classification of New Zealand's terrestrial ecosystems. Science for Conservation 325. Department of Conservation, Wellington.

Vant B 2013. Trends in river water quality in the Waikato region, 1993-2012. Waikato Regional Council Technical Report 2013/20.

Waikato Regional Council, 2012a. Waipa Zone Management Plan: Summary. Waikato Regional Council Policy Series 2012/06.

Waikato Regional Council, 2012b. Diffuse sediment in Waikato waterways – sources, practices for reduction, and policy options. Waikato Regional Council Technical Report 2012/02.

Waikato Regional Council, 2012c. Waipa Zone Management Plan (DM # 1897960). Waikato Regional Council Policy Series 2011/17.

Waikato Regional Plan. 2007. http://www.waikatoregion.govt.nz/Council/Policy-and-plans/Rules-and-regulation/Regional-Plan/Waikato-Regional-Plan/

Waikato-Tainui Te Kauhanganui Incorporated. 2013. Tai Tumu Tai Pari Tai Ao: Waikato-Tainui Environmental Plan.

Works Consultancy Services. 1991: Tunawaea Stream Landslide Dam, Preliminary Engineering Assessment Report No. 1734. Works Consultancy Services Ltd.

Worthy TH. 1990. An analysis of the distribution and relative abundance of moa species (Aves: Dinornithiformes). *NZ Journal of Ecology* 17: 213-241.

Glossary of terms

Biodiversity[23]: the variability among living organisms from all sources including, inter alia, terrestrial, marine and other aquatic ecosystems and the ecological complexes of which they are part; this includes diversity within species, between species and of ecosystems.

Catchment[24]: An area of land that provides water to a stream, river, lake or estuary.

Co-management: A formal arrangement required under legislation between local authorities and tangata whenua identified in the legislation, for the sharing of duties, functions, and the exercise of certain powers in the Waikato and Waipā river catchments. For the Waikato Regional Council, the sharing of duties, functions and exercise of power with tāngata whenua are in the processes involved in resource consent assessments, monitoring and enforcements, and the review, changes and preparation of RMA planning documents. In the arrangement with Waikato – Tainui, there is a requirement for local authorities to recognise customary activities. Legislation includes the Ngati Tuwharetoa, Raukawa, and Te Arawa River Iwi Waikato River Act 2010, Waikato-Tainui Raupatu Claims (Waikato River) Settlement Act 2010 and Nga Wai o Maniapoto (Waipā River) Act 2012.

Co-management partners: Tangata whenua indentified in legislation as co-management partners.

Conquest database: Asset Management Software containing asset register, history of completed works and scheduling of future works for Waikato Regional Council.

Design discharge: Is the volume of water that passes through a given cross section (area) per unit time measured in cubic metres per second (m^3/sec). Design discharge is calculated based on the level of service adopted for the scheme (annual exceedance probability AEP).

Erosion control[25]: Measures to reduce soil erosion including structures, planting, and stock and farm management practice.

External providers: Parties external to WRC who provide funding, assistance or services to other stakeholders, landowners and/or community groups.

Iwi: A large number of whanau groups or collections of hapu who have common ancestry.

Land use capability[26] : A mapping system used in New Zealand which identifies the productive capability of land, and its erosion potential.

Mana whenua: The priority given to people to make decisions about the use of resources over an area of land that they are responsible for (RPS decisions version).

[23] Ministry of External Relations and Trade and Ministry for the Environment, United Nations Conference on Environment and Development: Outcomes of the Conference, 1992.
[24] Waikato Regional Plan
[25] Waikato River Catchment Services. "Project Watershed". Level of Service & Funding Policy. (Doc # 752002)
[26] Ibid

Man made control mechanisms: Compacted earth structures such as stopbanks, detention dams and earth spillways and reinforced concrete, steel and timber structures such as floodgates, pumps and control gates.

Multiple Maori owned land blocks (MMOLB): Maori customary land, Maori freehold land and General land owned by Maori as per Te Ture Whenua Maori Act 1993.

Project watershed[27]: The Waikato River Catchment Services Project.

Property / farm plans: A plan for identifying and documenting actions, timeframes and costs to achieve desired WCP outcomes at a property level.

Riparian enhancement programmes[28]: Programmes undertaken for the purposes of improving bank stability, protecting or enhancing water quality, aquatic habitat or for enhancing the natural character of a riparian area

River management: Involves works and services in relation to rivers to achieve stability, management of flows and integration of a range of activities.

Scheme[29] : A specific area of works or services related to flood protection and soil conservation. Established from 1960s onwards, including: Lower Waikato Waipā Control Scheme, Karapiro/Arapuni Catchment Control Scheme, Waitomo CCS, Paeroa range CCS, Reporoa CCS and Lake Taupo CCS.

Soil conservation[30] : The management of land to maintain New Zealand's soil and water resources to provide the widest range of sustainable benefits for the needs and aspirations of present and future generations, and includes:

a. the maintenance of the productive potential of the nation's soil resources to retain sustainable land use options for present and future generations
b. the maintenance of catchments to provide high quality water resources for downstream users
c. land management practices that further enhance the protection of waterways from suspended sediments, nutrients, harmful micro-organisms and other pollutants
d. the mitigation of the impacts of land related hazards including flooding, subsidence and erosion
e. the maintenance of aesthetic, scientific and cultural values related to land and water.

Tangata whenua: In relation to a given area, the iwi, hapu or whanau that holds mana whenua over that area.

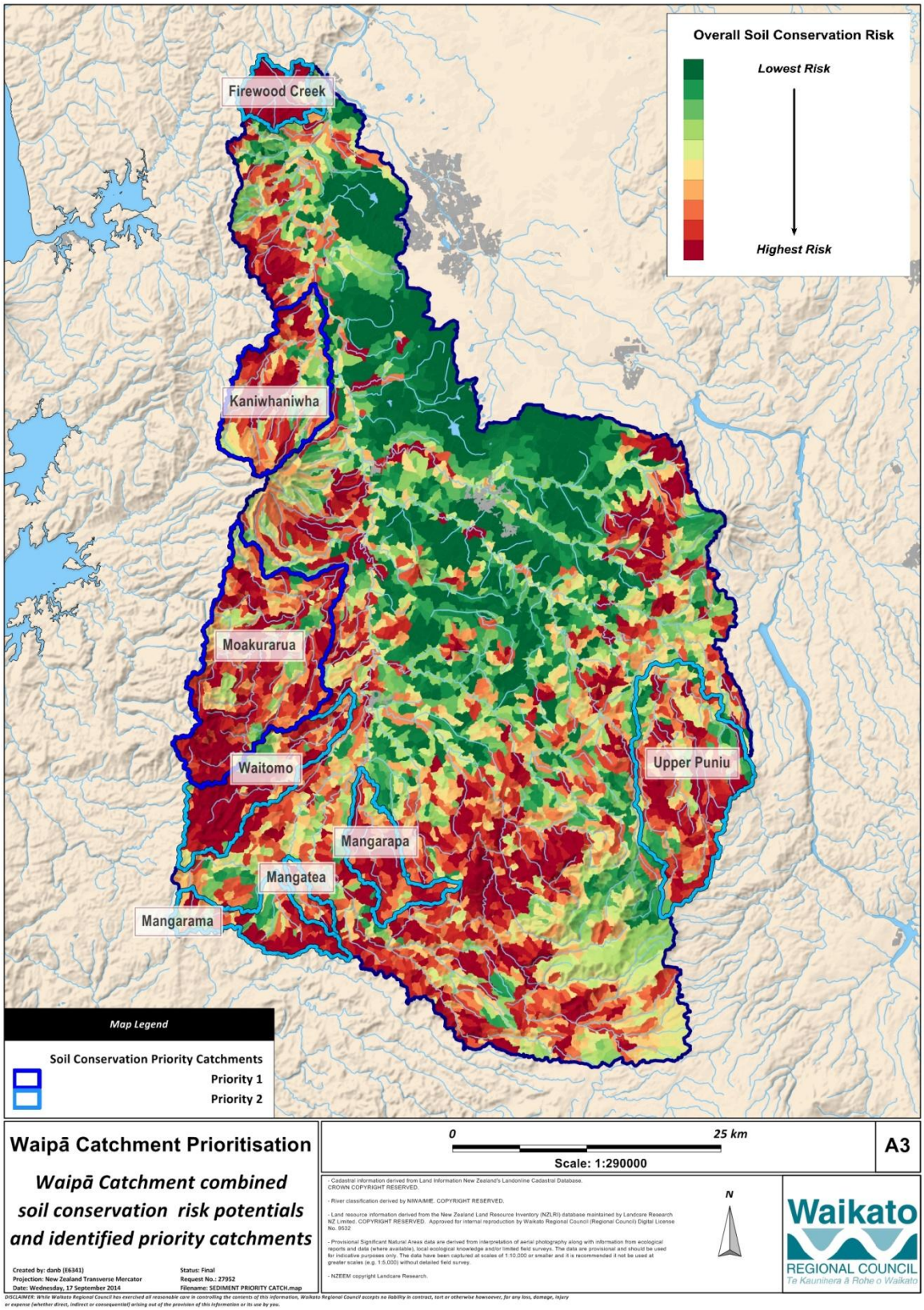
Taonga species: Native birds, plants, and animals of importance or significance to Māori including those species that are culturally important or significant or that contribute to the ecological integrity of the ecosystem (e.g., harakeke and paru for weaving, whio, kaka, bats, native frogs, long tail bats, king ferns, miro).

Water quality: The physical, chemical and biological attributes of water that affect its ability to sustain environmental values and uses[31].

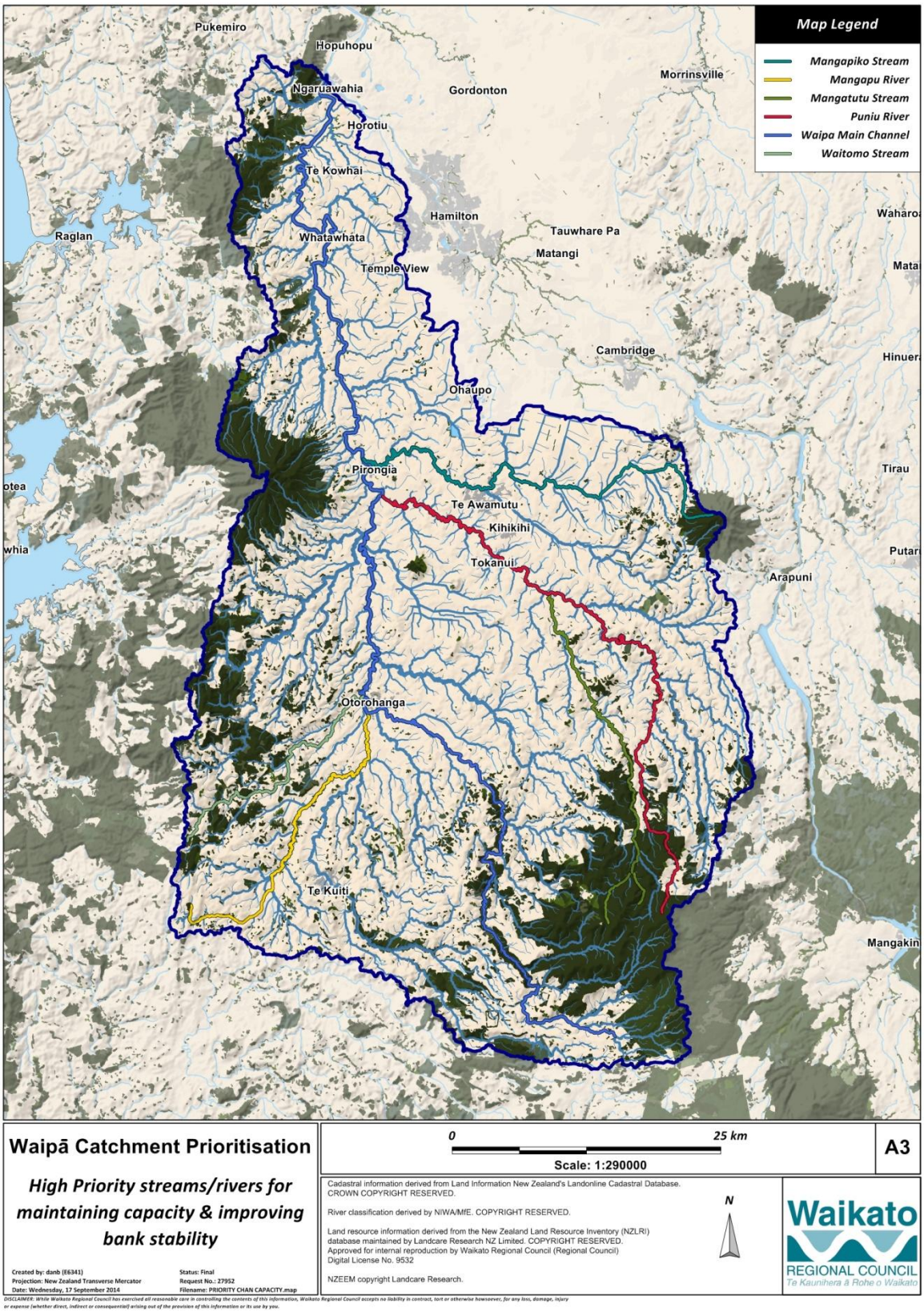
[27] Ibid
[28] Waikato Regional Plan Glossary of Terms
[29] Ibid
[30] N.W.A.S.C.A., Soil Conservation Policy Circular No. 1987/13.
[31] Waikato Regional Plan

Maps

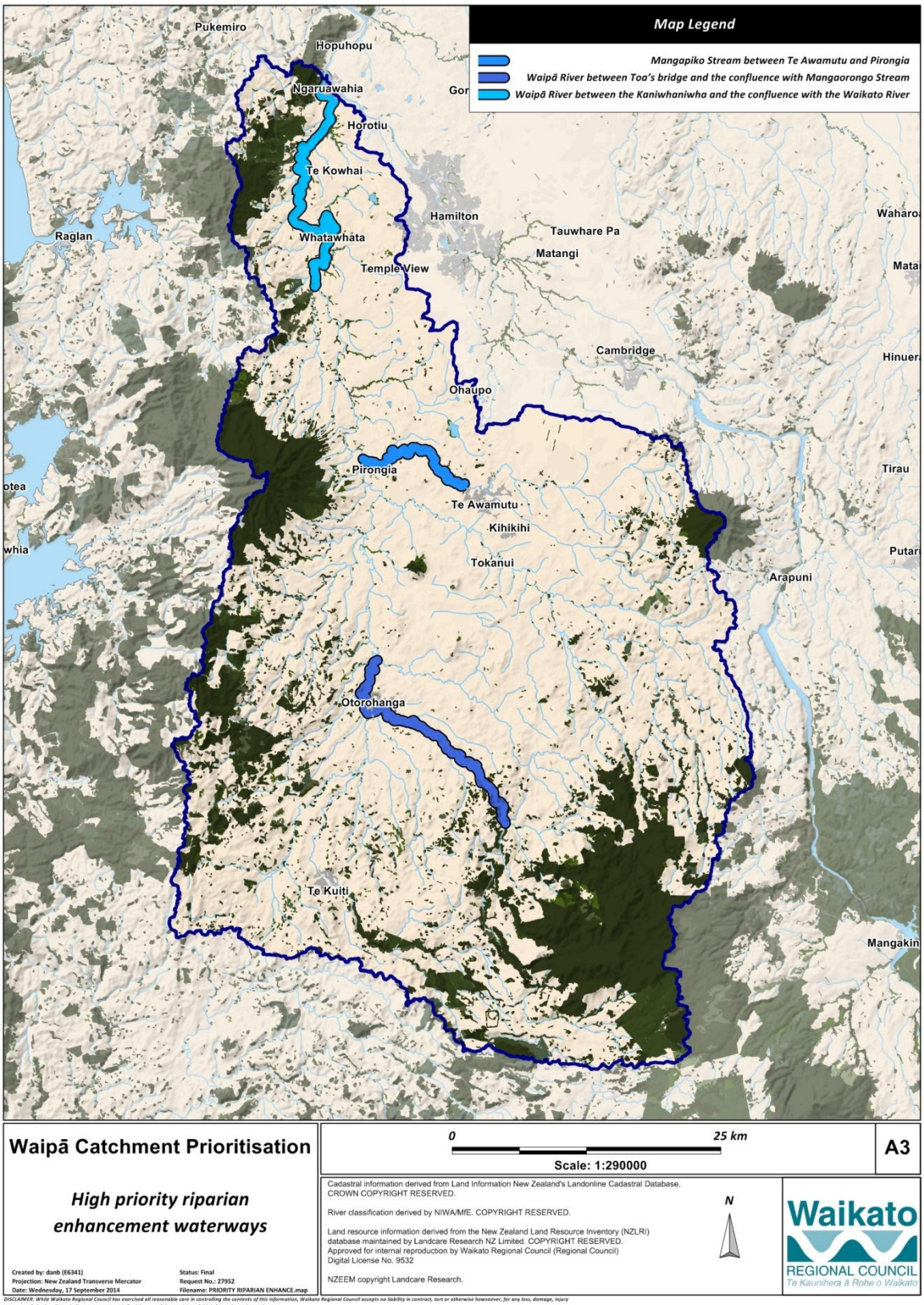
Map 1 Priority 1 and 2 soil conservation sub catchments



Map 2 High priority rivers / streams for river management works



Map 3 Waipā Catchment high priority water ways for riparian enhancement



Waipā Catchment Prioritisation

High priority riparian enhancement waterways

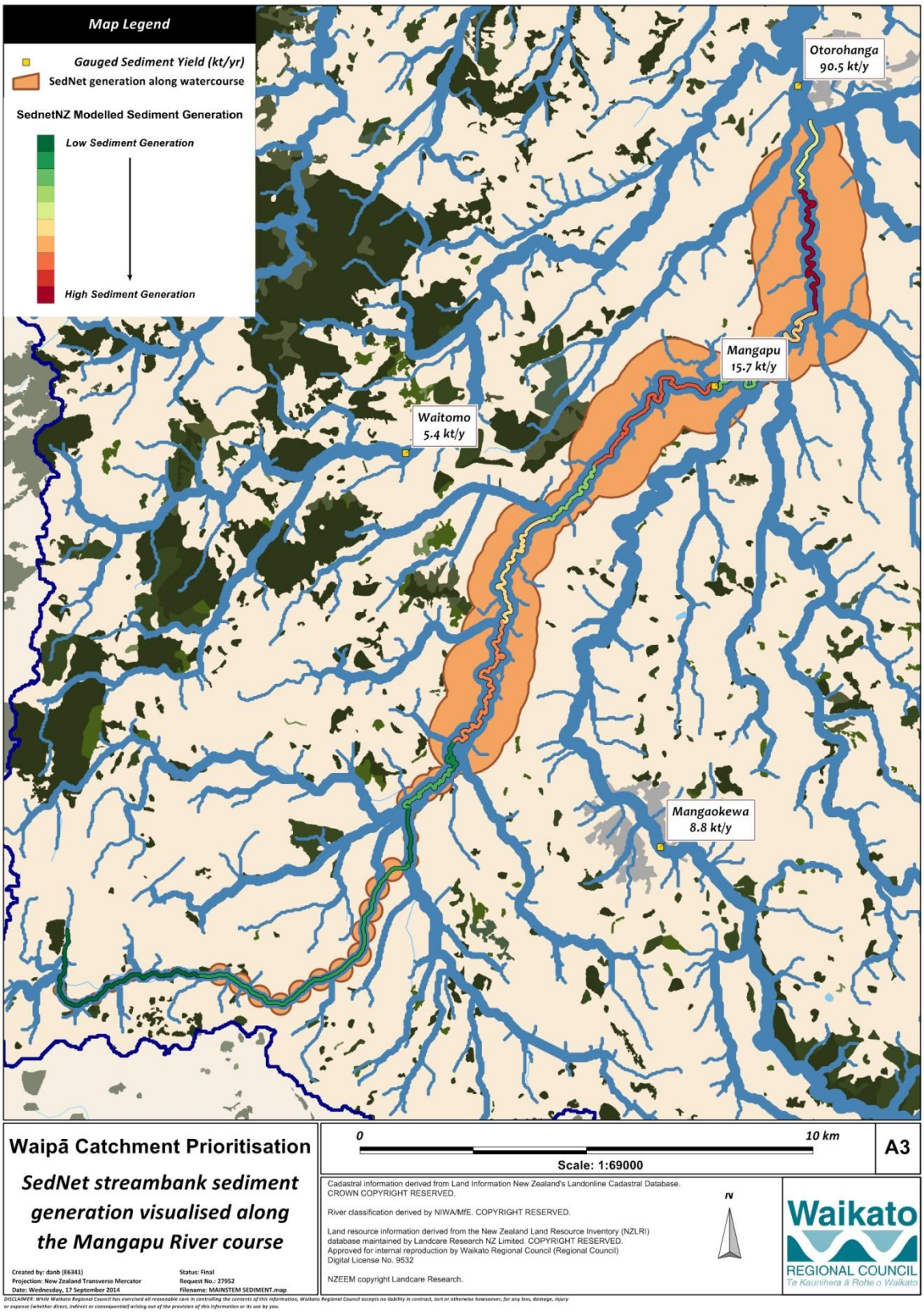
Created by: danb (E6341)
Projection: New Zealand Transverse Mercator
Date: Wednesday, 17 September 2014
Status: Final
Request No.: 27952
Filename: PRIORITY RIPARIAN ENHANCE.map

0 25 km

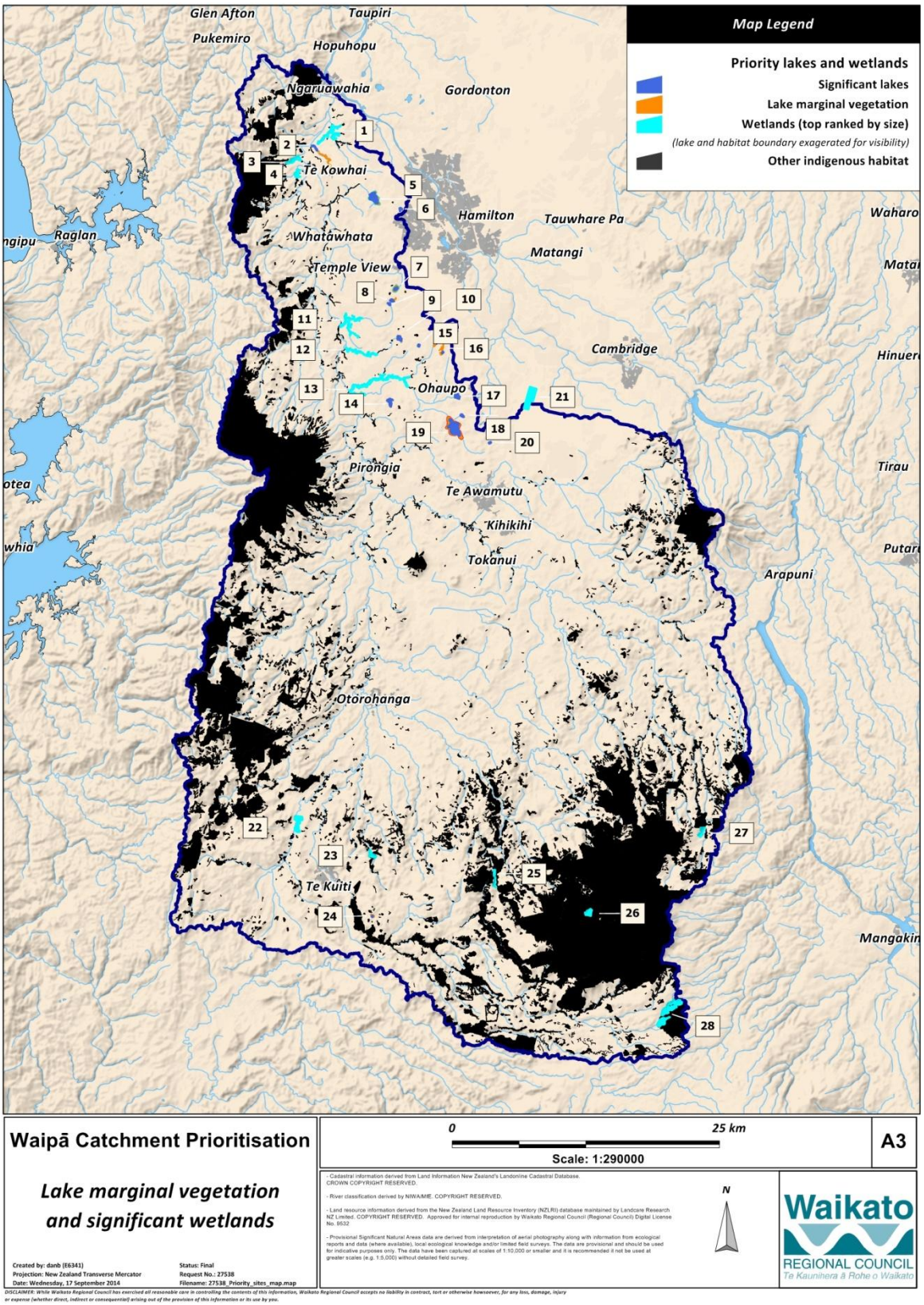
Scale: 1:290000

A3

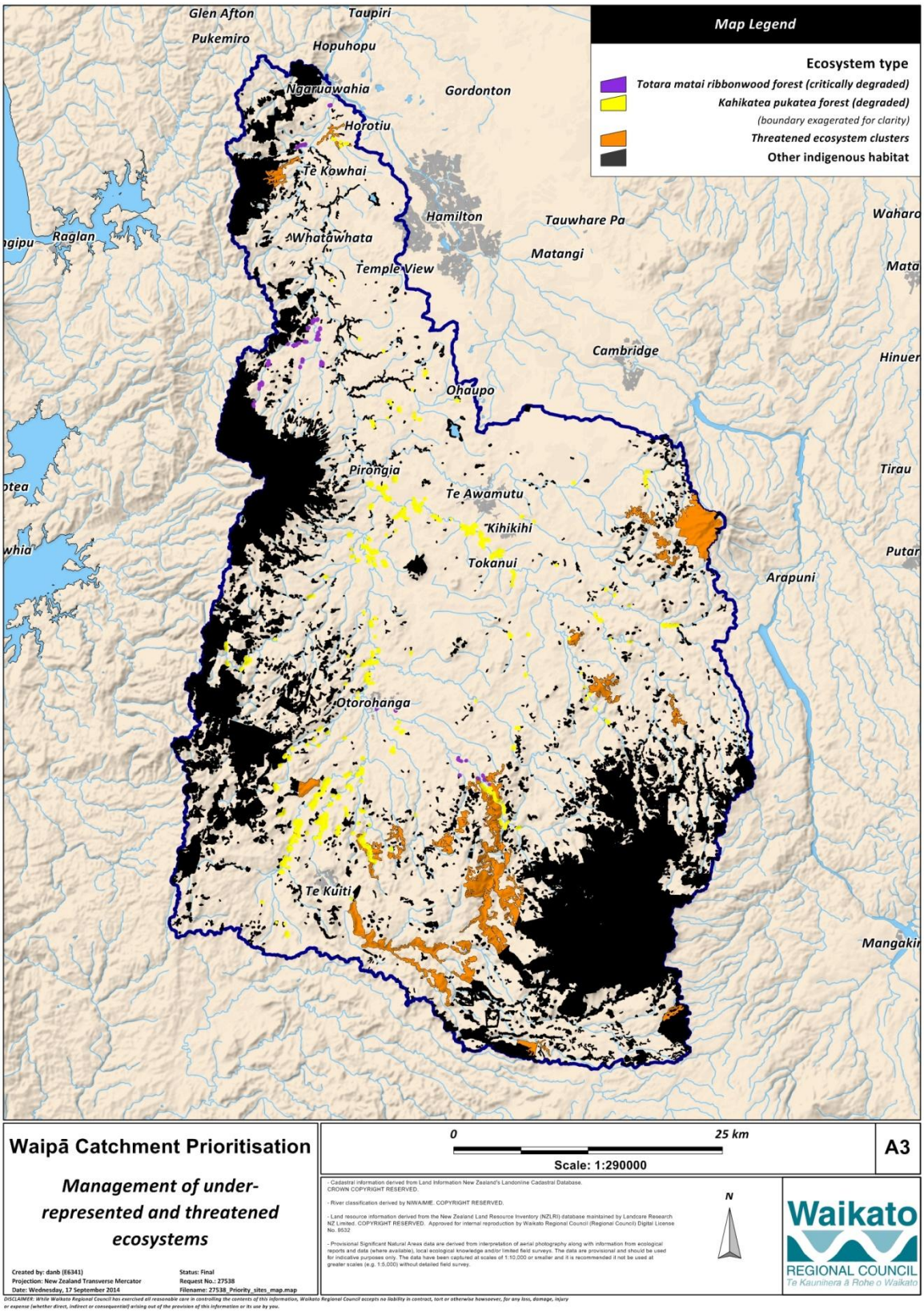
Map 4 Mangapu River priority reaches for riparian enhancement



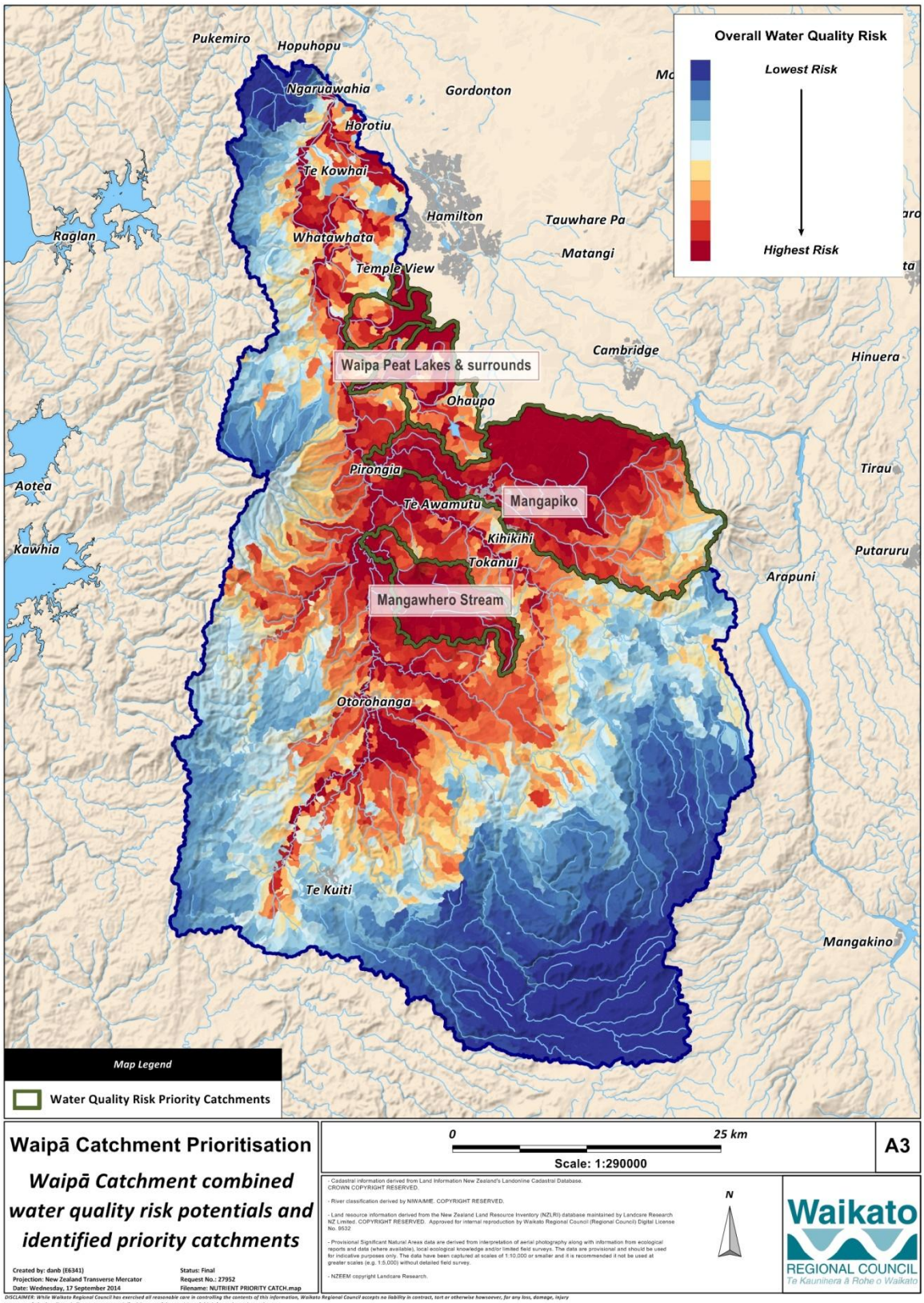
Map 5a Waipā catchment priority lakes and wetlands



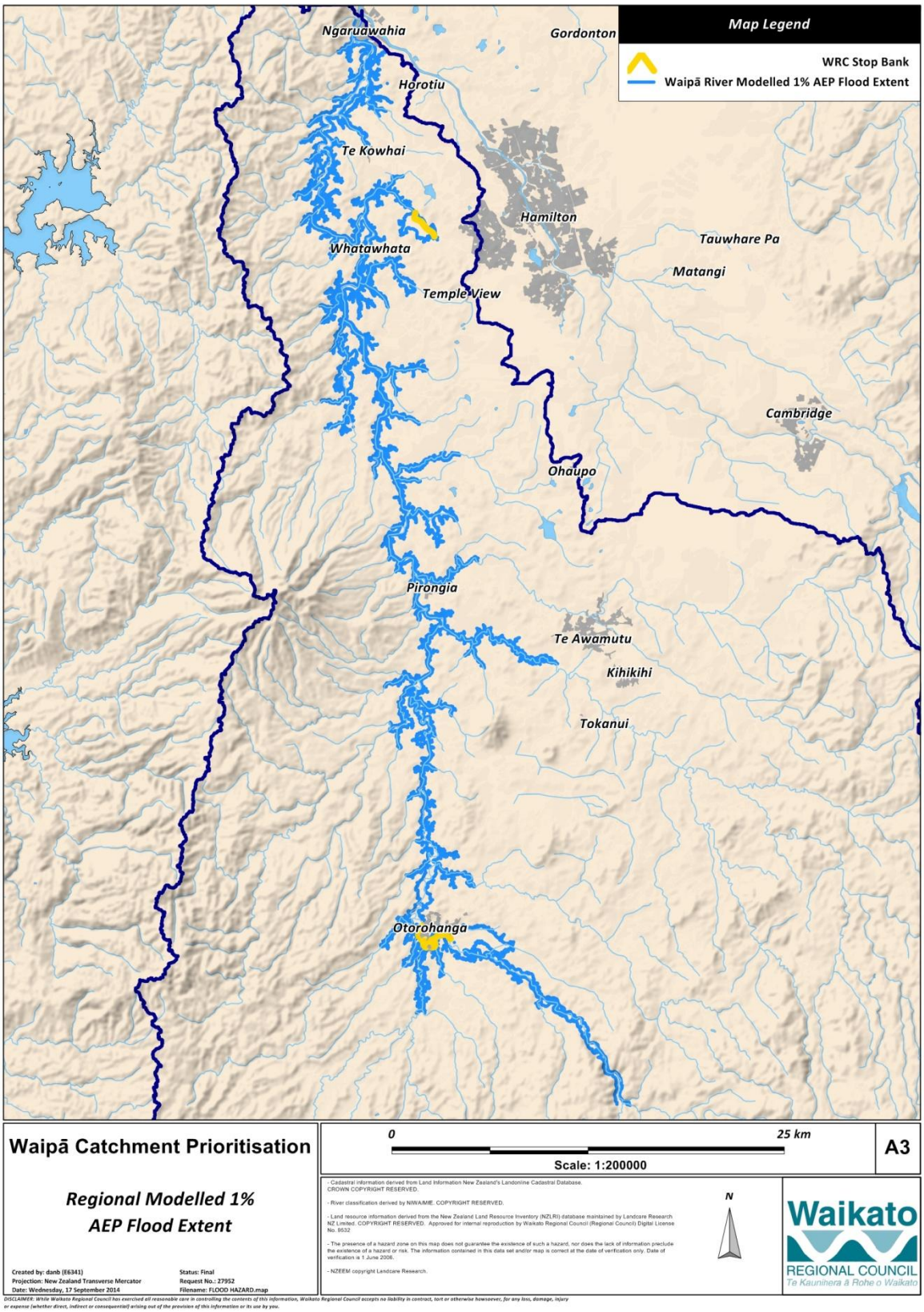
Map 5b Waipā catchment under-represented ecosystems



Map 6 Priority nutrient areas for nutrient load reduction



Map 7 Flood map 1% AEP on Waipā River



Note This only includes the 1% Flood extent for the Waipā main channel and not other rivers or streams.

Appendix 1 Prioritisation process for soil conservation, water quality, biodiversity and riparian management

1.0 Introduction

The prioritisation process is largely build around the development and use of a spatial analysis framework which brings together available spatial models outputs and other data sets to provide a broader set of information use for targeting (prioritisation) catchments and sub-catchments for implementing soil conservation, water quality, biodiversity and riparian management mitigations. The process includes development of the spatial framework and the development and use of spatial analyses ("a spatial analysis toolbox") to identify risk s and pressures within catchments and sub-catchments that meet defined criteria (e.g. erosion, sediment production, water quality parameters such and total N, total P and *E. coli* and biodiversity values). Outputs from the framework and analyses are essentially a decision support system. Previous prioritisation approaches generally use a simple level of characterisation based on a one static dataset showing the location of high to low values. The outputs can be difficult to interpret because of the wide spatial scatter of the high values at sub-catchment scale. Often only one model will be used or one main factor used to determine catchment priorities. For example for determining soil conservation implementation for Project Watershed only New Zealand Land Resource Inventory (NZLRI) Land Use Capability (LUC) classes 6e, 7 and 8 as well as land cover (as determined by the Land Cover Database 1- LCDB1) and 1:50,000 scale hydrology were applied to assess implementation locations and resource requirements.

The new spatial technique brings together multiple datasets, where available, and additional spatial decision making criteria that consider upstream and downstream criteria, including mitigation investment, catchment condition, network development and receiving environment. The technique has benefits over existing conventional prioritisation techniques because it identifies the optimal mix of catchments for mitigation required to achieved imposed soil conservation and water quality and biodiversity goals (i.e. priority catchments may be different for different issues of concern; high N nutrient catchments may be different to erosion risk priority catchments which in turn may be different to biodiversity value priority catchments). The approach allows the combining of catchment values for secondary benefit assessment. For example, a soil conservation priority catchment will have secondary biodiversity values and benefit from implementing mitigations.

1.1 The scope and purpose of this report

This summary is limited to providing an outline of the overall spatial approach, the biophysical datasets and the spatial analysis of the biophysical datasets to identify priority catchments for soil conservation, water quality and biodiversity.

The tools developed are essentially a decision support system, a collection of spatial analysis approaches, intended for the use by a spatial analyst under direction of land scientists and land management practitioners.

1.2 Objectives

In line with RPS policy, develop a spatial prioritisation technique (set of tools) the outputs of which will inform the Waipā Catchment Plan and subsequent implementation:

(1) identifying areas of high contaminants for catchments and watersheds within the Waipā Catchment and

(2) determine the optimal combination of catchments and watersheds to prioritise for mitigations for soil conservation to reduce or prevent the deterioration of water quality and biodiversity in the Waipā Catchment.

2.0 Spatial prioritisation approach

The approach is a desktop spatial prioritisation of biophysical variables based on regional and national datasets and models. In the past implementation decisions have been based on a single or limited number of individually considered biophysical datasets: predominantly the NZLRI and the LCDB. The new approach brings together multiple data sources and model outputs, using established models, with the flexibility to incorporate new data as it becomes available. The River Environment Classification (REC) watersheds are used to provide a hydrologically contiguous platform for the spatial analyses relating to the soil conservation and water quality components. Datasets are used to formulate "base models" that allow multiple data to be combined and applied to a common spatial framework. Spatial data outputs are normalised to allow combining. A simple high to low ramp is used for each. A high score is achieved when there are multiple high occurrences for a watershed. Outputs are designed to assist and guide the prioritisation of soil conservation, biodiversity and water quality issues in the catchment.

The spatial prioritisation approach involves a number of general steps:

1. Identifying available datasets (including model outputs).
2. Combining datasets to derive spatial "base models" for selected variables (e.g. erosion risk, sediment yield).
3. Spatial analysis to consider individual catchments relative to other catchment values elsewhere in the catchment (i.e. upstream and downstream catchment linkages).
4. Providing a set of spatial outputs (maps) and data to assist decision making (prioritisation of catchments).
5. Providing a set of spatial outputs (maps) and data to assist decision making for implementation within selected priority catchments.

Additional steps will follow beyond this initial assessment;

6. Identify and spatially assign mitigations.
7. Apply cost-benefits and determine resource allocation.
8. Add or update datasets as new data becomes available.

This summary focuses on Steps 1 to 5, with limited discussion of Steps 6 to 8. A similar approach has been taken for soil conservation and water quality with a similar approach but different datasets for biodiversity).

2.1 Spatial framework

The River Environment Classification (REC) provides the spatial platform for all analyses related to the soil conservation (including riparian management) and water quality components. The REC consists of hydrologically contiguous reaches and associated watersheds. Spatial datasets can be overlain and interrogated to provide spatial outputs. The biodiversity prioritisation component, although spatially determined and represented was developed separately. The biodiversity prioritisation approach is described in section 2.5 of this appendix. Specific datasets employed for soil conservation, water quality, biodiversity and stream-banks for riparian management analyses are shown in Table 1.

Table 1 Datasets employed for soil conservation, water quality, biodiversity and riparian management analyses

Key matter	Dataset/model output	Issue/base model	Description
Soil conservation	NZLRI erosion type and severity	Erosion risk	Area of erosion identified
	SedNet stream-bank sediment yield	Erosion risk	Relative sediment estimate from stream-bank
	NZeem® landslides and earth-flow	Erosion risk	Area of erosion identified
	LCDB3 land cover	Land use pressure	Used to locate pasture
	AgriBase™ stock unit density	Land use pressure	Stock pressure part of land use pressure – higher stocking on NZLRI LUC 6e, 7 and 8 pasture (LCDB3) - high stocked farms 17.5 to >35 SU mid dairy and greater.
	NZLRI LUC 6e, 7 and 8	Land use pressure	Estimates land use that does not match land use capability
	CLUES sediment	Sediment yield	Estimates relative sediment generation for catchments
	WRC compartments	Investment	WRC soil conservation investment
Water quality	CLUES Total N yield	Combined water quality state	Estimates relative nitrogen generation for catchments
	CLUES Total P yield	Combined water quality state	Estimates relative phosphorus generation for catchments
	CLUES *e. coli yield*	Combined water quality state	Estimates relative *e. coli* generation for catchments
	LCDB3 land cover	2008 land use	Uses LCDB3 and flattened 2008 AgriBase™ farm type
	AgriBase™ farm type	2008 land use	Uses LCDB3 and flattened 2008 AgriBase™ farm type
Biodiversity	Significant natural areas	Lakes and wetlands	Waipā Significant Natural Areas – Lakes
	Historical ecosystems type	Under-represented ecosystems types	Estimated areas of under-represented ecosystems types
Riparian management	NZLRI erosion type and severity	Erosion risk	Area of stream-bank erosion identified
	SedNet stream-bank sediment yield	Erosion risk	Relative sediment estimate from stream-bank

Key matter	Dataset/model output	Issue/base model	Description
	WRC fencing	Investment	WRC soil conservation investment

Datasets are combined for each grouping to produce “base models” from which various analyses are undertaken, with consideration of the values in different parts of the catchment to produce outputs to guide the initial prioritisation. The selection and use of the various outputs depends on the questions being asked by the practitioner and the specific goals set. Once the prioritisation process has been undertaken and sub-catchments prioritised the input datasets can be queried to determine the mitigations required to mitigate the issues within the sub-catchment (Step 5) and resource costs attributed to the mitigations (Step 6). Once mitigations are enforced the new base models can be run and implementation and planning reassessed by the practitioner (Step 4).

For the approach to remain flexible it needs to be able to allow the input and upgrading of input datasets as well as adjustment of goals (Step 8).

2.2 Spatial outputs to select catchments

Three main spatial outputs were derived to assist with the prioritisation of catchments (Table 2.)

Table 2 Spatial outputs used for the prioritisation process

Spatial output	Description
Potential map	Cumulative normalised relative value of combined model outputs as well as considering the output relative to upstream and downstream values.
Balanced (catchments) map	Hydrologically contiguous catchments delivering equal proportions of whole of catchment contribution. The number of catchments is pre-selected. Useful for identifying “workable” catchments.
Priority catchment map	Potential map with draft selection of priority catchments. The data associated with this map was used to prioritise catchments.

All maps can be seen in section *4.0 Potential, balanced and priority maps.*

The Potential and Balanced map outputs provide good tools for identifying potential catchments by simplifying the complexity of the catchment values; often values are scattered and priority catchments are difficult to identify. Data for each of the datasets can be assessed once potential catchments of interest are identified using the Reach outputs. The Balanced maps were used to determine usable sized catchments.

2.3 Prioritisation for soil conservation catchments

The prioritisation for soil conservation catchments used potential and balanced maps, in conjunction with the values for inputs from datasets identified in Table 1. A simple prioritisation of highest to lowest normalised values for variables in the datasets was undertaken to provide a relative comparison across datasets. The two catchments with

the highest combined ranking were confirmed as *Priority 1* catchments. The six other catchments were confirmed as *Priority 2* catchments.

Simple metrics were used to identify priorities. These metrics were selected to represent important factors contributing to soil conservation issues. The two highest ranked catchments were identified for each of the following metrics:

A) Workable catchments (~8000 – 12,000 ha),
B) Highest sediment generation,
C) Highest stream-bank sediment,
D) Highest earth-flow and landslides,
E) Highest stock unit density,
F) Highest earth-flow and landslides,
G) Highest NZLRI erosion,
H) Highest probable biodiversity gain,
I) Highest existing investment.

Table 3 Priority 1 catchments for each metric and the overall two priority 1 catchments

Metric	***Priority 1* catchment**	**Comment**
A) Workable catchments (~8000 – 12,000 ha)	Kaniwhaniwha , Waitomo	Catchments of this size are workable for implementation
B) Highest sediment generation	Upper Puniu, Moakurarua	Priority for soil conservation
C) Highest stream-bank sediment	Kaniwhaniwha, Mangatutu	Priority for hills-slope soil conservation
D) Highest stock unit density	Upper Mangahoi, Upper Mangapiko	Priority for soil management
E) Highest at risk land	Firewood Creek, Upper Puniu	Priority for land use management
F) Highest earth-flow and landslides by area	Mangarapa, Mangarama	Priority for hills-slope soil conservation
G) Highest NZLRI erosion by area	Firewood Creek, Kaniwhaniwha	Priority for hills-slope soil conservation
H) Highest probable biodiversity gain	Moakurarua, Upper Puniu	Priority to build on existing state
I) Highest existing investment	Moakurarua, Waitomo	Priority to build on existing state
Overall Priority 1 catchments	**Moakurarua, Kaniwhaniwha**	**Other catchments are Priority 2 catchments**

The Upper Puniu had an equivalent ranking as the two selected Priority 1 catchments but was dropped to a Priority 2 catchment ranking because it did not fit within the workable catchment size range. The prioritisation process included discussion with the members of the Waipā Liaison Subcommittee.

2.4 Prioritisation for water quality catchments

The Water quality prioritisation uses the same approach as is used for Soil conservation. input data is limited to CLUES for N, P and E.coli data inputs and a 2008 land use dataset was used to run the CLUES model and determine relative catchment yields for N, P and *e. coli.* Outputs were combined to give a single water quality potential map. Water quality balanced maps were also used to determine usable sized catchments. Priority catchments were then confirmed with DairyNZ staff to align with their Sustainable milk plan work.

2.5 Prioritisation for Biodiversity

Site based prioritisation

There are over 2000 SNA groups (clusters of vegetation fragments) in the Waipā catchment. So, recognising that within the timeframe of this plan (and the constraints of available funding) there is only a finite amount of new work that can be successfully achieved by contributing stakeholders, we have sought a finite subset of all 2000 possible sites. This analysis identifies a shortlist of high-value land requiring very urgent management action. This subset predominantly focuses on highly degraded and/or under-represented ecosystem types. The list of sites that follows is not exhaustive, and it is recognised that there are sites of known high biodiversity value that are not included. Large sites on public conservation and private land with well represented ecosystem types are still important at a landscape scale. Maintenance and restoration of these sites is addressed through joint Council, Department of Conservation and community programmes in action points listed in section 4.2.3. For the purpose of the first 3-years of this catchment plan, new initiatives should target sites with critically underrepresented ecosystems, focusing on large clusters of these habitats for operational economies of scale. The shortlist of sites is organised as follows:

1. Lakes and wetlands
2. Under-represented ecosystem types

Lakes and wetlands

All lakes identified in the *Significant Natural Areas – Lakes* (DOCS#1948471) data set that fall within the Waipā catchment boundary are included for management under this plan (Table 4). Note for the purposes of this plan all contiguous indigenous vegetation associated with each lake is included in the management unit.

Priority wetlands were selected from the 1011 remnant wetlands based on size. The shortlist of wetlands below is a list of the largest wetland complexes (Table 5). Complexes were assembled based on a 'touching' relationship between individual fragment polygons. Clustering was necessary because fragments of a wetland need to be assembled into a wetland system. Some wetlands were removed that were also lake-margin vegetation. Each wetland cluster was visually assessed using aerial photography to ensure that obvious wetland parts of the systems weren't being excluded just by the numerical rank and clustering. Rank and area stats are based on the cluster.

These wetlands are the immediate priorities but there are other wetlands in the top 50 largest of wetland complexes that should also be considered in operations planning (refer to GIS layer when available).

Table 4. Waipā catchment lakes and associated contiguous habitats in order of priority for biodiversity management.

Map label	Lake name	Lake type	Predominant tenure	Area (ha) (Lake + marginal veg.)
24	Rotokotuku	Riverine	Private	1.3
14	Mangakaware	Peat	Crown	18.3
10	Mangahia	Peat	Private	17.6
17	Ruatuna	Peat	Crown	17.3
15	Milicich	Peat	Private	3.6
19	Ngaroto	Peat	Crown	127.8
5	Rotokauri	Peat	Crown	61.8
16	Henderson's Pond	Peat	Private	16.1
9	Posa	Peat	Private	2.5
8	Pataka	Peat	Private	7
7	Koromatua	Peat	Crown	17
6	Waiwhakareke	Peat	Crown	11
20	Rotopataka	Peat	Crown	3.3
2	Te Otamanui	Riverine	Crown	24.8
18	Ngarotoiti	Peat	Crown	6.6

Table 5. Waipā catchment largest wetland complexes (excluding those associated with lake habitats) for immediate biodiversity management. Note: there is no priority order assumed.

Map label	Wetland name	Wetland type	Predominant tenure	Area (ha)
1	Crawford Road wetland	Willow-infested wetland complex	Private	43.3
3	Mt Kokaka Forest wetlands	Willow infested wetland	Private	24.5
4	Johnstones wetlands	Willow infested wetland	Private	12.0
11	Tuhikaramea tributary riparian margin	Willow infested wetland	Private	28.6
12	Mangahia stream riparian margins	Mixed indigenous scrub and hardwood species.	Private & Crown	30.5
13	Mangaotama stream willow wetlands	Grey willow wetlands with small areas of emergent kahikatea.	Private & Crown	88.4
21	Moanatuatua peat scientific reserve	Restiad rushland	Crown	115.4
22	Pehitawa wetland / kahikatea system	Remnant kahikatea and wetland.	Private	47.0

23	Tutaitokotoka Stream	Wetland kahikatea with surrounding herbaceous wetland vegetation	Indeterminate	16.7
25	Tauraroa forest	Riparian wetland within Tauraroa Forest	Private	11.2
26	Pureora forest wetland	Potential wetland associated with montane frost flat ecosystem.	Indeterminate	19.0
27	Waipari Stream wetland	Submontane riparian wetland and shrubland	Private	11.8
28	Waipā mires	One of the largest mires of restiad bog and tussockland	Crown	90.1

Under-represented ecosystems

Predicted (potential or likely historic extent) vegetation patterns were mapped using the classification systems developed by Singers and Rogers (2014). Mapping of vegetation extents was estimated using a variety of historical maps and publication sources (see *Singers 2014 Potential vegetation map of the Waikato Region*, in progress and due for completion regionally by February 2015). Potential vegetation extents for Waipā catchment are presented in Figure 2 of section 3.4 and in Table 6 below.

The remnant fragments of indigenous vegetation and wetlands captured in the *site prioritisation* process described above were overlain onto the potential vegetation map so as to classify remaining native vegetation under one or more of the potential ecosystem types. This is presented in figure 3 of section 3.4. The proportion of vegetation remaining for each ecosystem type was calculated by comparing the potential area of each ecosystem type with area of remaining vegetation in that class. This fraction is a best-estimate of remaining vegetation, acknowledging that many patches of vegetation in the Waipā catchment are already degraded or of a different current vegetation type due to historical logging and clearance, regeneration and selective survival of plant species.

The Regional Policy Statement identifies that vegetation types having less 20% of historical extent remaining, are considered critically under-represented and should be candidates for management and restoration. To assist with site prioritisation ecosystem types were analysed to identify which ones have less than 20% of historic extent remaining (Table 6).

Table 6. Likely historic and estimated current extent of indigenous ecosystem types in Waipā catchment.

Ecosystem type	**Likely current area (ha)**	**Likely historic area (ha)**	**Per cent remaining**
Totara matai ribbonwood forest	27	2373	1%
Kahikatea pukatea forest	312	26856	1%
Tawa mangeao podocarp forest	7820	106163	7%
Wetland	1859	15564	12%
Tawa kohekohe rewarewa hinau	19102	102494	19%

podocarp forest			
Tawa kamahi rimu northern rata forest	28173	53863	52%
Halls totara pahautea kamahi forest	503	551	91%
Kamahi broadleaved podocarp forest	547	556	98%

Map 5b displays underrepresented ecosystem types in two ways. The first (purple and yellow) show all areas that are likely to be Totara matai ribbonwood forest and Kahikatea pukatea forest, the two most critically degraded ecosystem types. All sites (rather than just a subset) have been mapped for these classes as there is real risk of these ecosystem types becoming locally extinct without intervention.

Three further critically degraded ecosystem types of less than 20% remaining were mapped highlighting only the 25 largest clusters of these vegetation fragments (see maps in Section 4.3 of this Appendix, orange). Smaller or isolated patches of these vegetation types are still important, and work on these can be considered on a case by case basis, however they have been dropped from the shortlist in favour of locally clustered fragments where economies of scale mean better vegetation protection for the catchment. There is no specific site-list presented for these sites as they are numerous; it is intended that the GIS layer be used to guide management based on watershed-level operations planning.

2.6 Prioritisation of Waipā main-stem and tributary stream-banks for riparian management

Following consultation at the Waipā Liaison Subcommittee workshop and with Waikato River Authority, the Waipā River main stem and tributaries were analysed to identify priority reaches for stream-bank erosion mitigation via riparian management. The SedNet model (estimating relative stream bank sediment generation) and NZLRI stream bank erosion were used to identify reaches with high likelihood of stream bank erosion and sediment generation. The highest generation reaches were identified on maps, as an initial guide to implementing riparian management.

3.1 Additional spatial analyses

Additional spatial analysis methods are being developed to inform the implementation stages of the Waipā Catchment Plan. These focus on identifying secondary benefits of mitigations and supporting farm planning. Although outside the scope of this initial prioritisation process consideration of the scalability from catchment to farm scale is an important consideration for supporting farm planning, implementation of mitigations, resourcing and staging of resources.

3.1.1 Secondary benefits

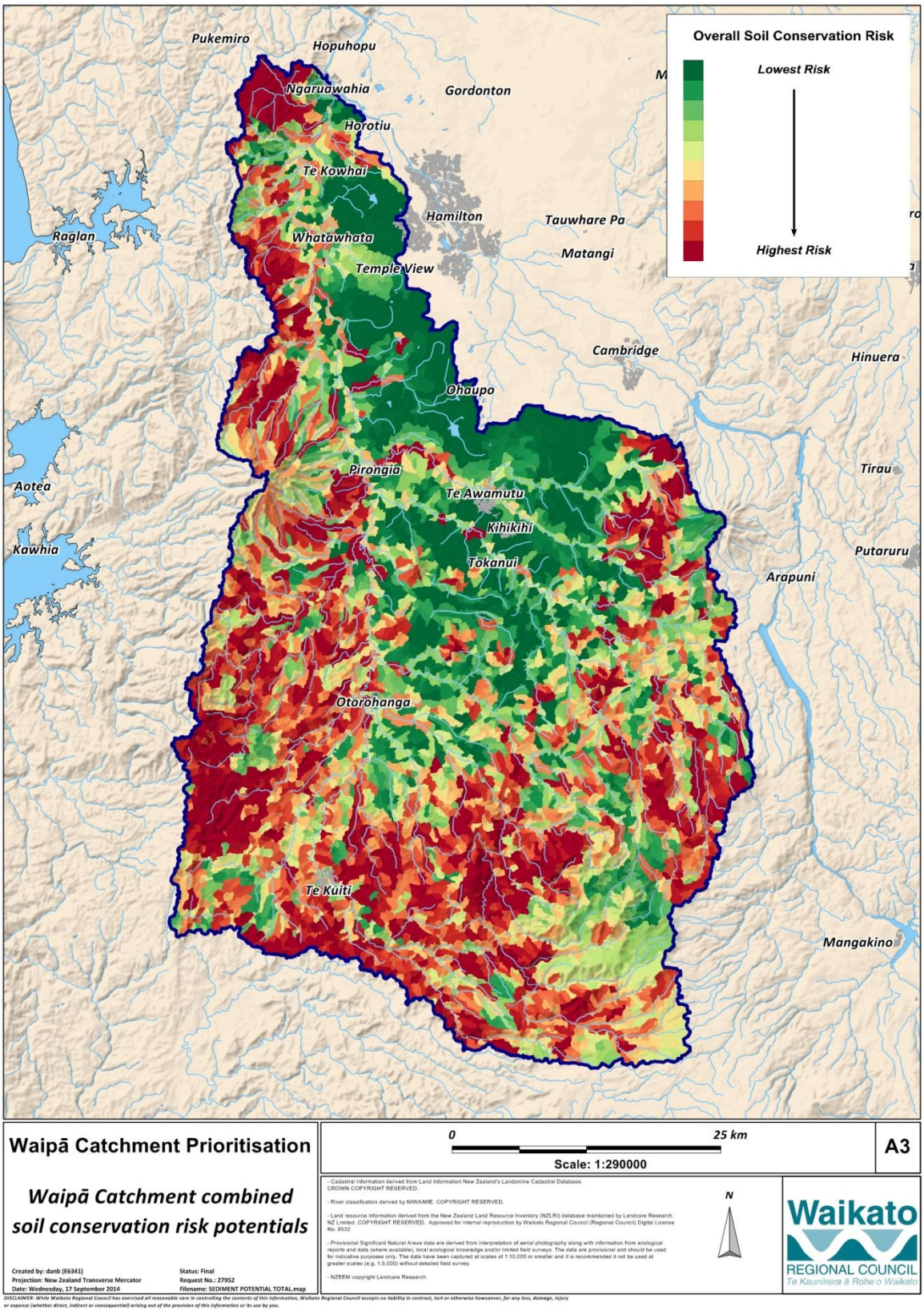
Within a catchment spatial analysis is used to assess the implementation of works, targeting implementation to achieve the greatest gains first. This is also useful for staging and resourcing implementation. These tools will be employed for prioritising and implementing within-catchment work.

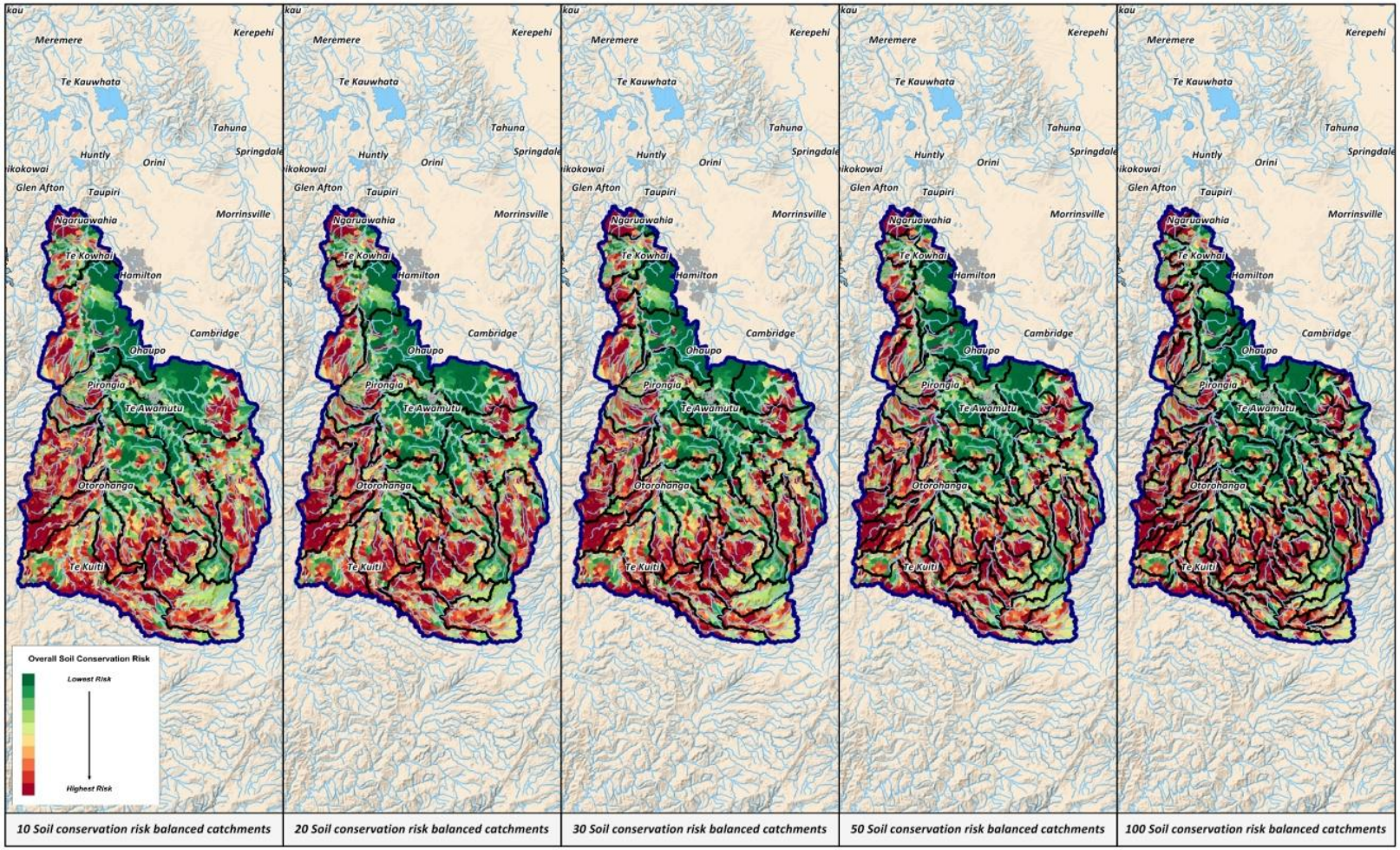
3.1.2 Spatial outputs for implementation within a catchment

Within a catchment spatial analysis is used to assess the implementation of works, targeting implementation to achieve the greatest gains first. This is also useful for staging and resourcing implementation. These tools will be employed for prioritising and implementing within-catchment work.

4.0 Potential, balanced and priority maps

4.1 Soil conservation maps





Waipā Catchment Prioritisation

Modelled total soil conservation risk catchments balanced by approximately equal risk values

Created by: danb (66341)
Projection: New Zealand Transverse Mercator
Date: Wednesday, 17 September 2014
Status: Final
Request No.: 27952
Filename: SEDIMENT BALANCE MODEL TOTAL.map

Balanced hydrologically contiguous catchments of equal modelled value

A3

0 50 km

Scale: 1:720000

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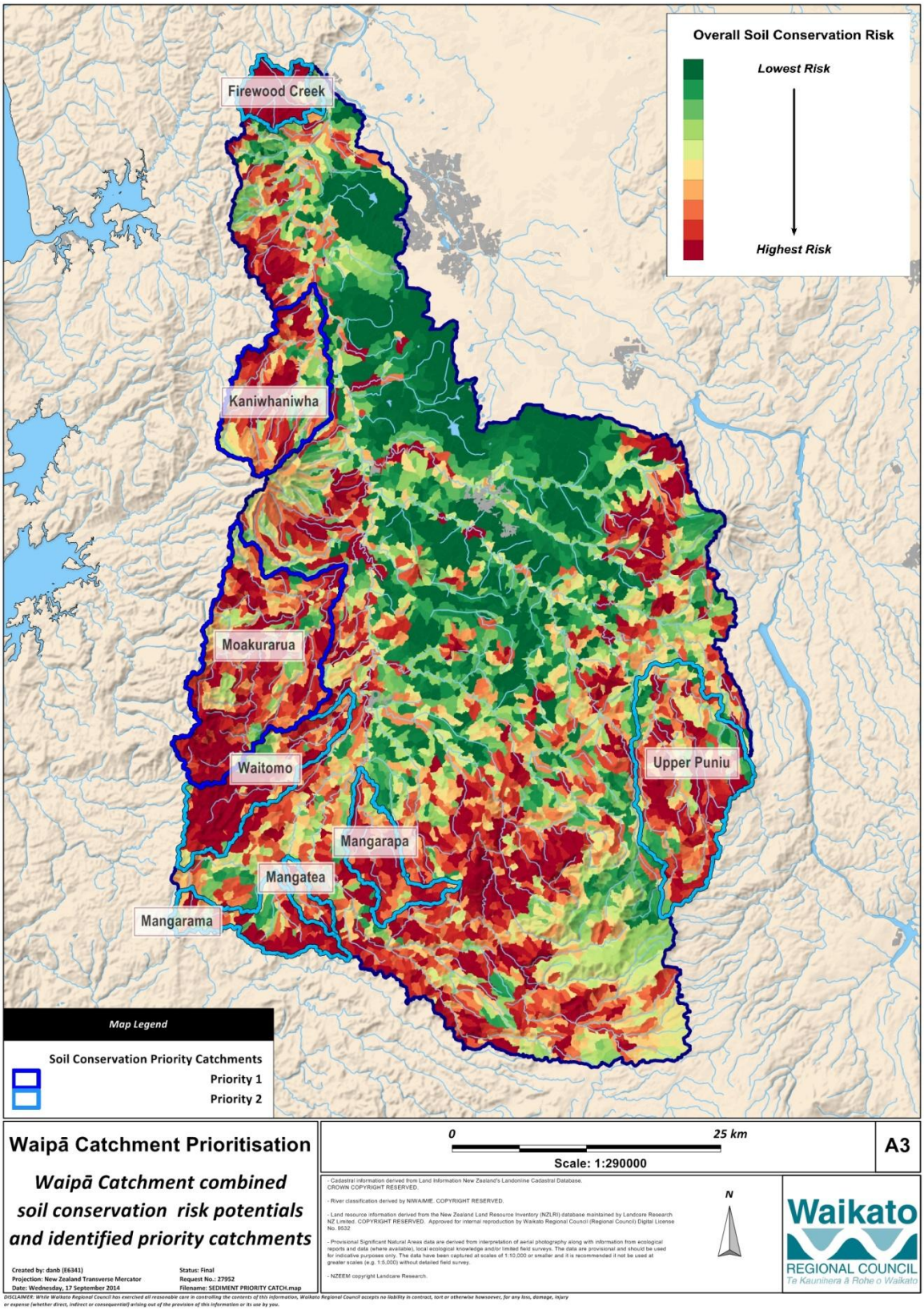
Overall Soil Conservation Risk
Lowest Risk
Highest Risk
Firewood Creek
Kaniwhaniwha
Moakurarua
Waitomo
Upper Puniu
Mangarapa
Mangatea
Mangarama
Map Legend
Soil Conservation Priority Catchments
Priority 1
Priority 2
Waipā Catchment Prioritisation
Waipā Catchment combined soil conservation risk potentials and identified priority catchments
Created by: danb (E6341)
Projection: New Zealand Transverse Mercator
Date: Wednesday, 17 September 2014
Status: Final
Request No.: 27952
Filename: SEDIMENT PRIORITY CATCH.map
0
25 km
Scale: 1:290000
A3
- Cadastral information derived from Land Information New Zealand's Landonline Cadastral Database. CROWN COPYRIGHT RESERVED.
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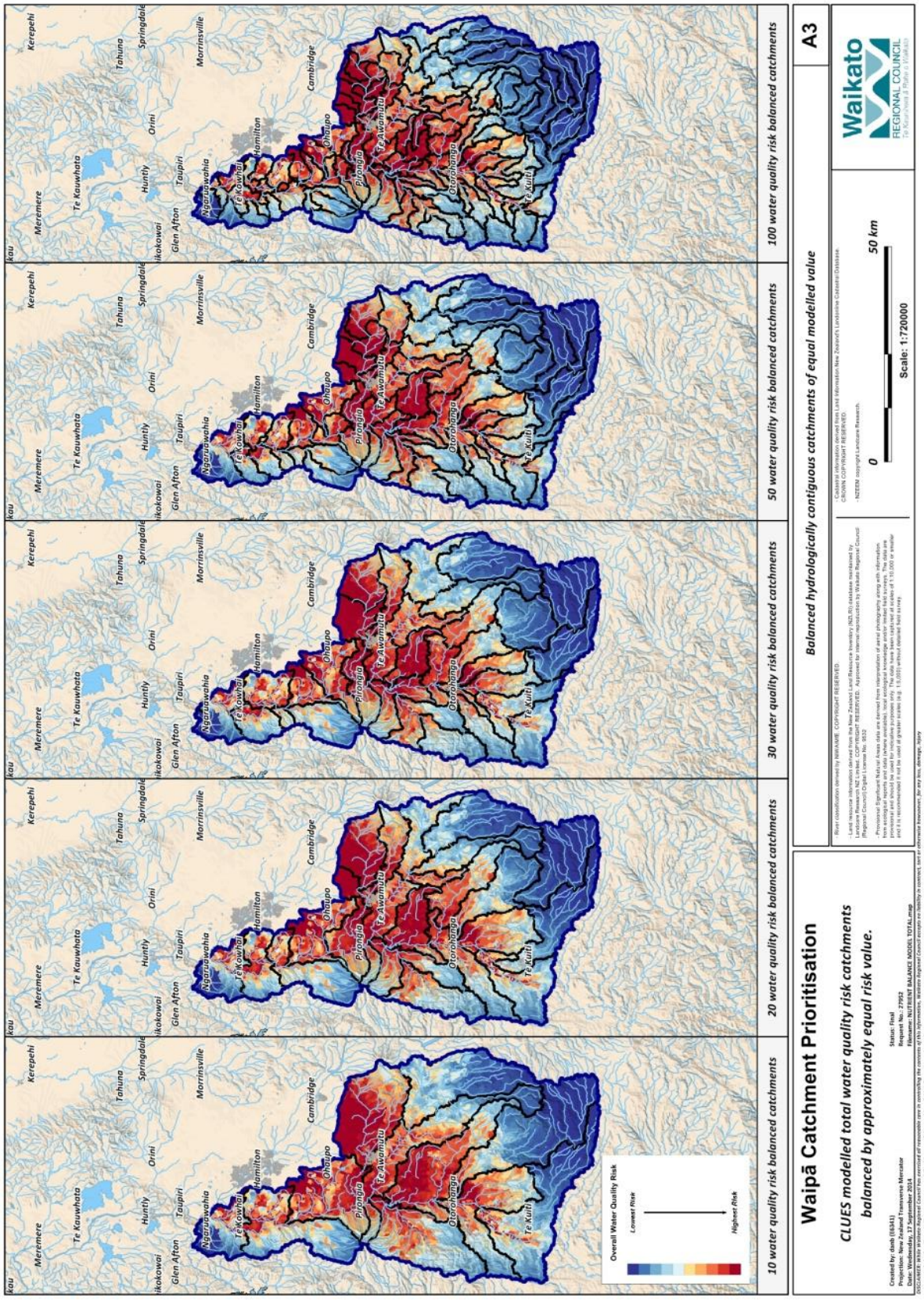
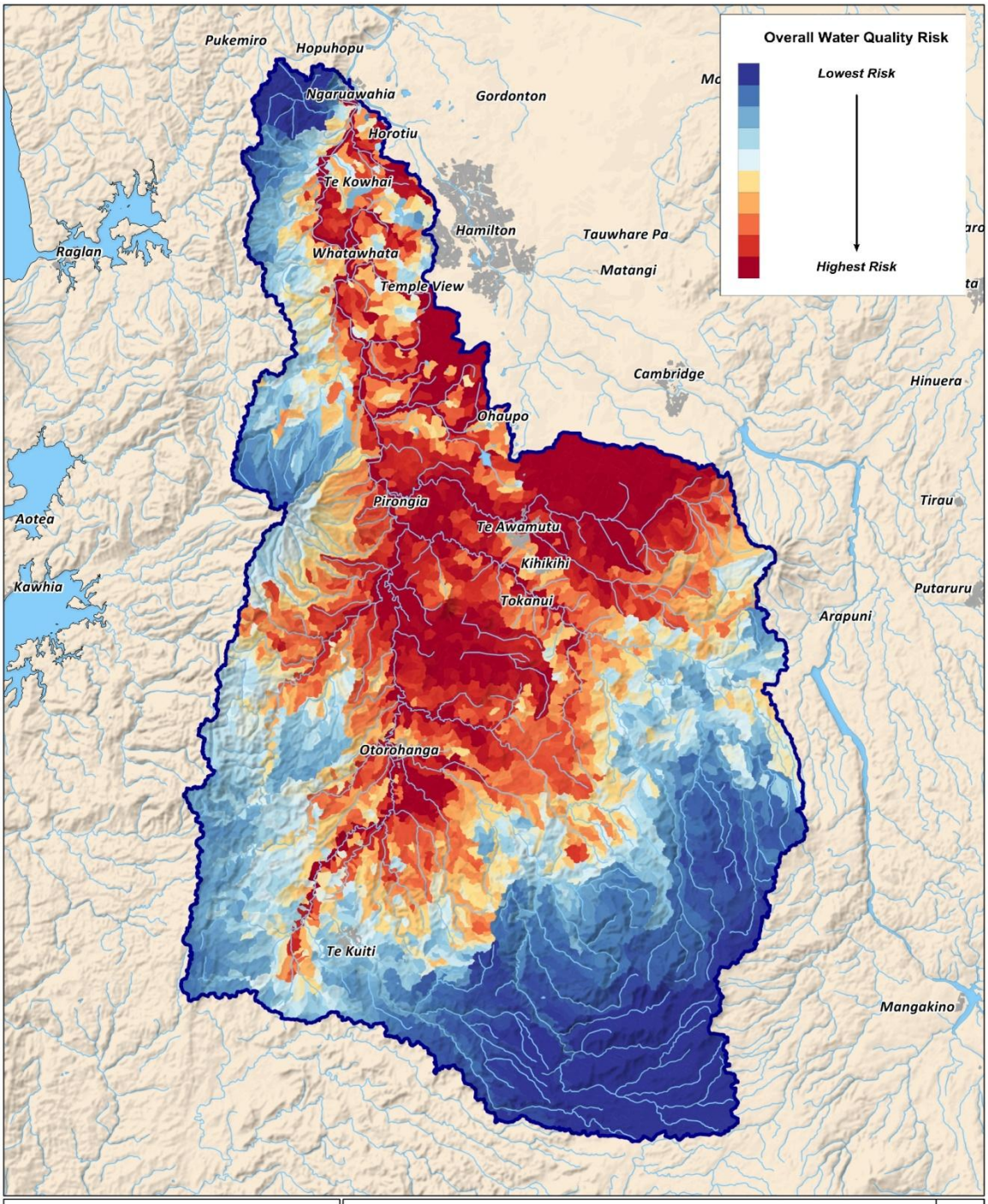
4.2 Water quality maps




Overall Water Quality Risk
Lowest Risk
Highest Risk
Pukemiro
Hopuhopu
Ngaruawahia
Gordonton
Horotiu
Te Kowhai
Hamilton
Tauwhare Pa
Raglan
Whatawhata
Matangi
Temple View
Cambridge
Hinuera
Ohaupo
Pirongia
Tirau
Aotea
Te Awamutu
Kihikihi
Kawhia
Putaruru
Tokanui
Arapuni
Otorohanga
Te Kuiti
Mangakino
Waipā Catchment Prioritisation
Waipā Catchment combined water quality risk potentials
0
25 km
Scale: 1:290000
A3
N
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Created by: danb (E6341)
Projection: New Zealand Transverse Mercator
Date: Wednesday, 17 September 2014
Status: Draft
Request No.: 27952
Filename: NUTRIENT POTENTIAL TOTAL.map
- Cadastral information derived from Land Information New Zealand's Landonline Cadastral Database. CROWN COPYRIGHT RESERVED.
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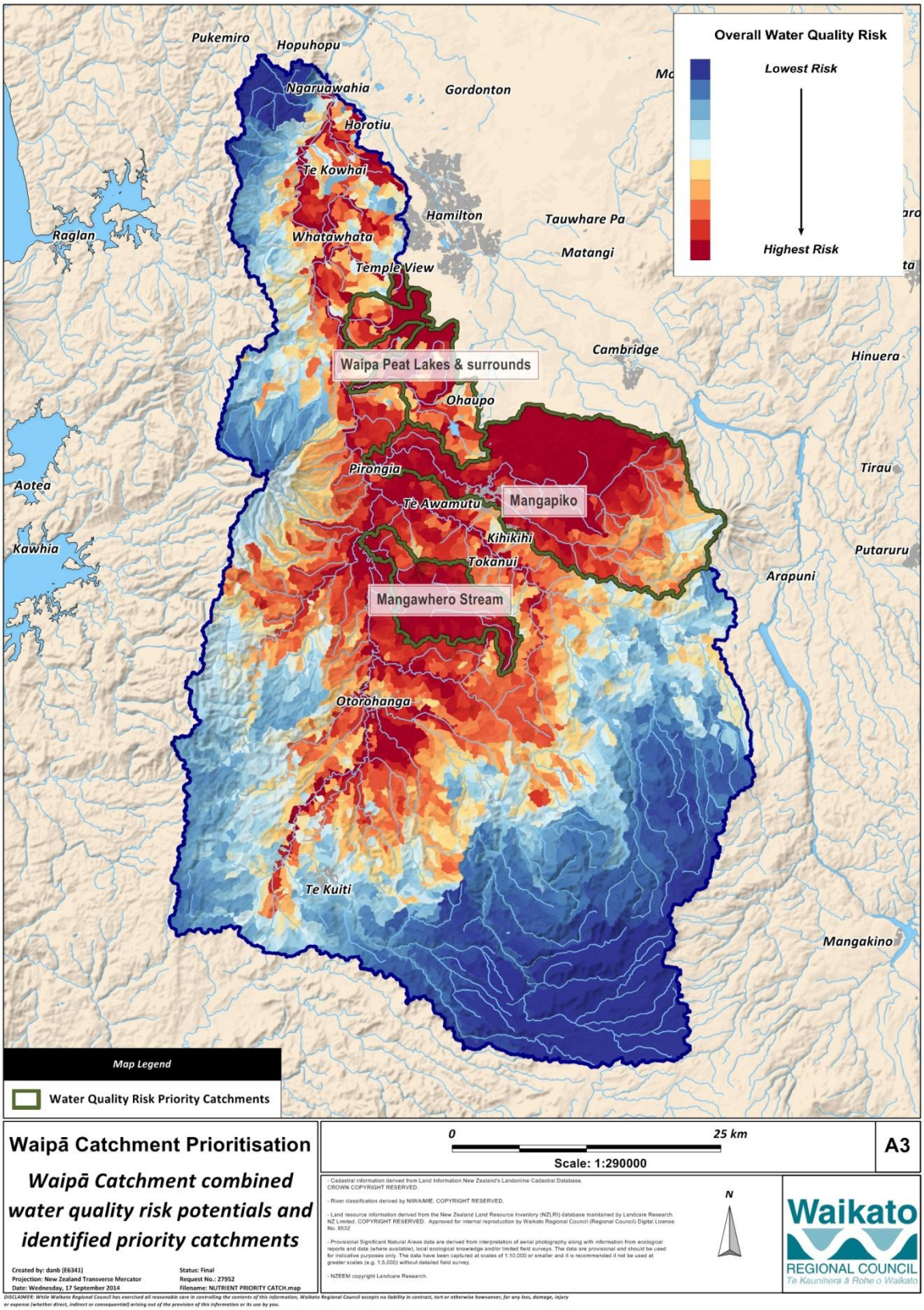
Overall Water Quality Risk
Lowest Risk
Highest Risk
Pukemiro
Hopuhopu
Ngaruawahia
Gordonton
Horotiu
Te Kowhai
Hamilton
Tauwhare Pa
Raglan
Whatawhata
Matangi
Temple View
Cambridge
Hinuera
Waipa Peat Lakes & surrounds
Ohaupo
Tirau
Pirongia
Aotea
Te Awamutu
Mangapiko
Kihikihi
Kawhia
Tokanui
Putaruru
Arapuni
Mangawhero Stream
Otorohanga
Te Kuiti
Mangakino
Map Legend
Water Quality Risk Priority Catchments
Waipā Catchment Prioritisation
Waipā Catchment combined water quality risk potentials and identified priority catchments
Created by: danb (E6341)
Projection: New Zealand Transverse Mercator
Date: Wednesday, 17 September 2014
Status: Final
Request No.: 27952
Filename: NUTRIENT PRIORITY CATCH.map
0
25 km
Scale: 1:290000
A3
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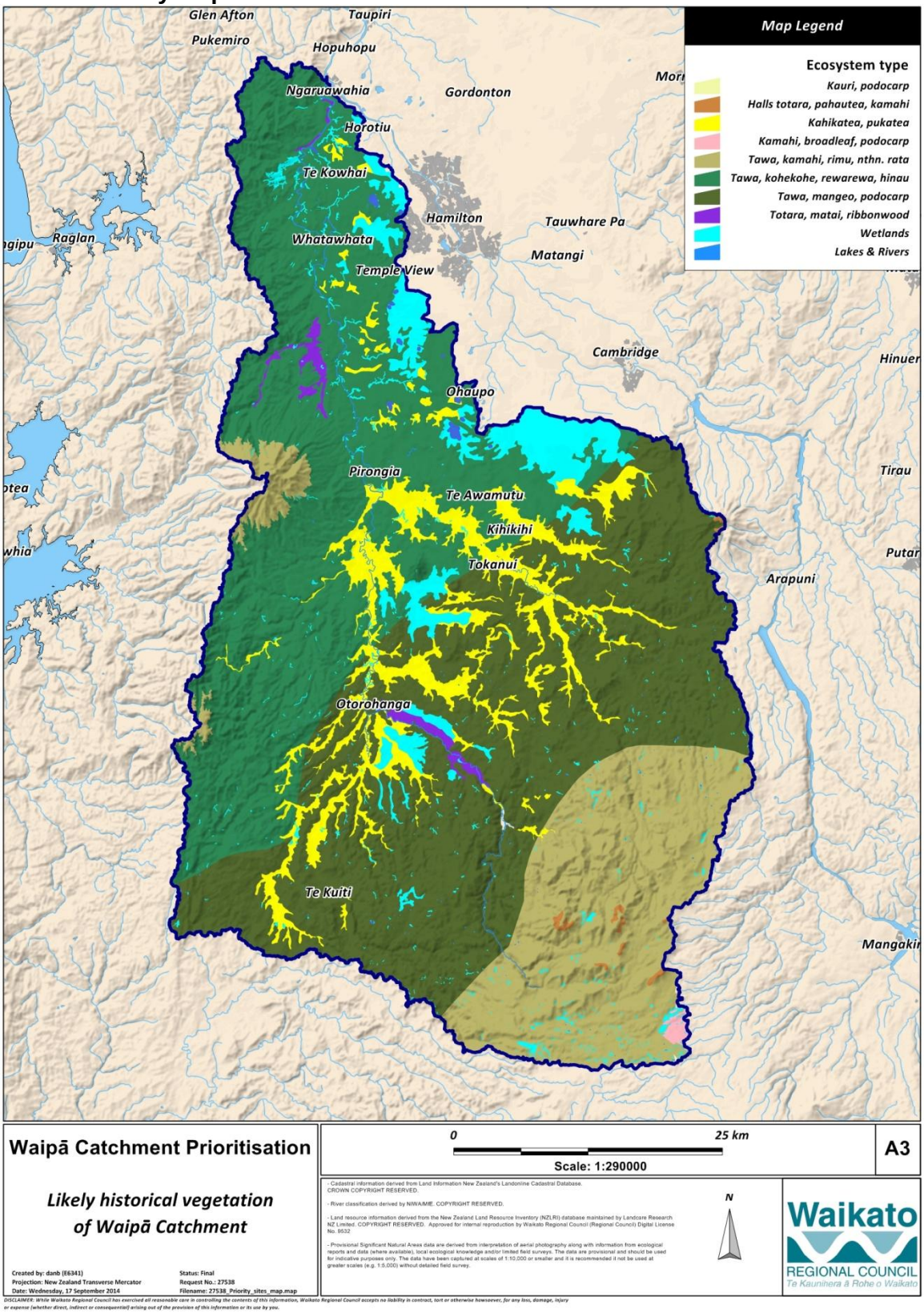
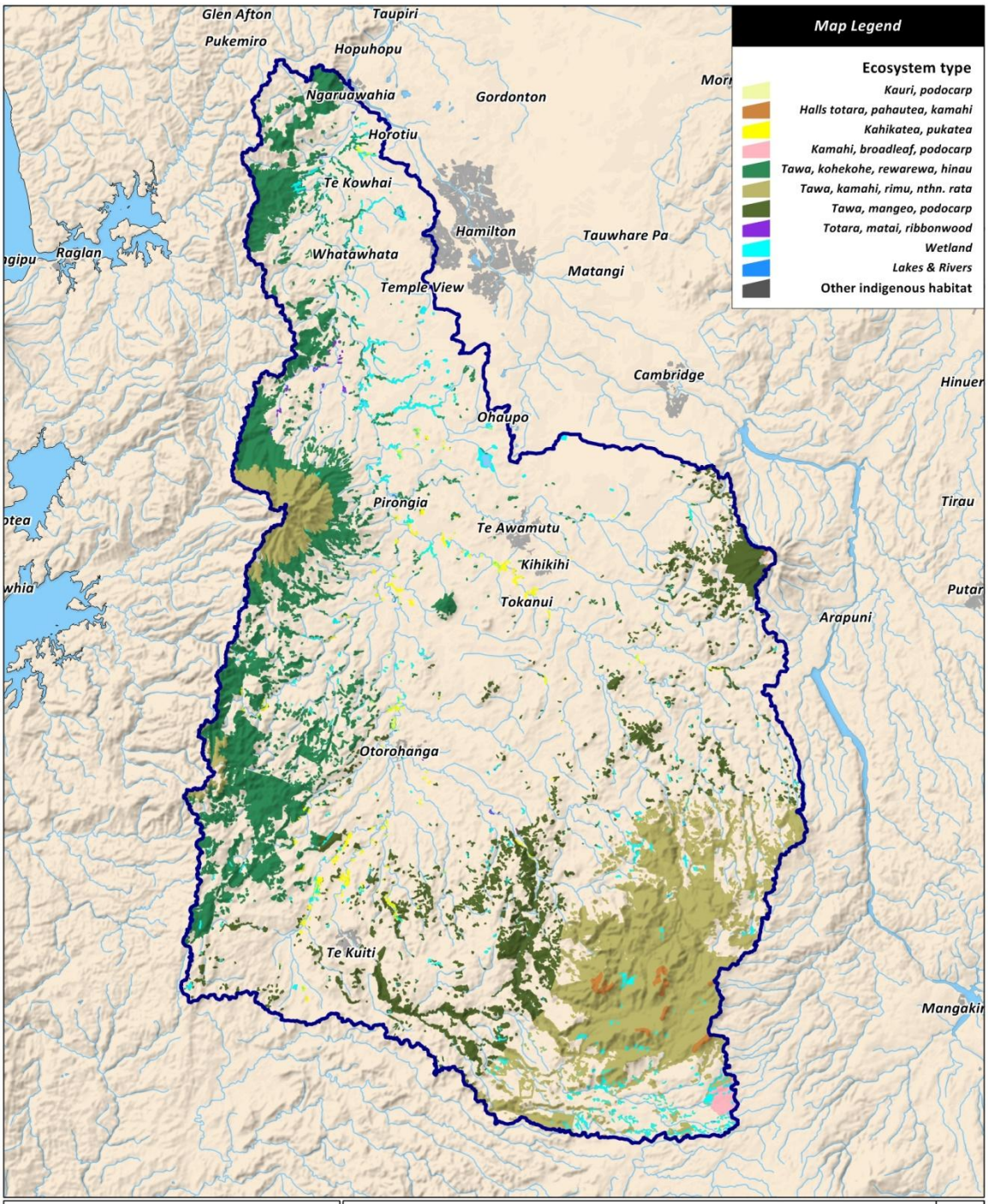
4.3 Biodiversity maps





Waipā Catchment Prioritisation

Remaining vegetation by major ecosystem type (Singers and Rogers 2014)

0 — 25 km

Scale: 1:290000

A3

Created by: danb (E6341)
Projection: New Zealand Transverse Mercator
Date: Wednesday, 17 September 2014

Status: Final
Request No.: 27538
Filename: 27538_Priority_sites_map.map

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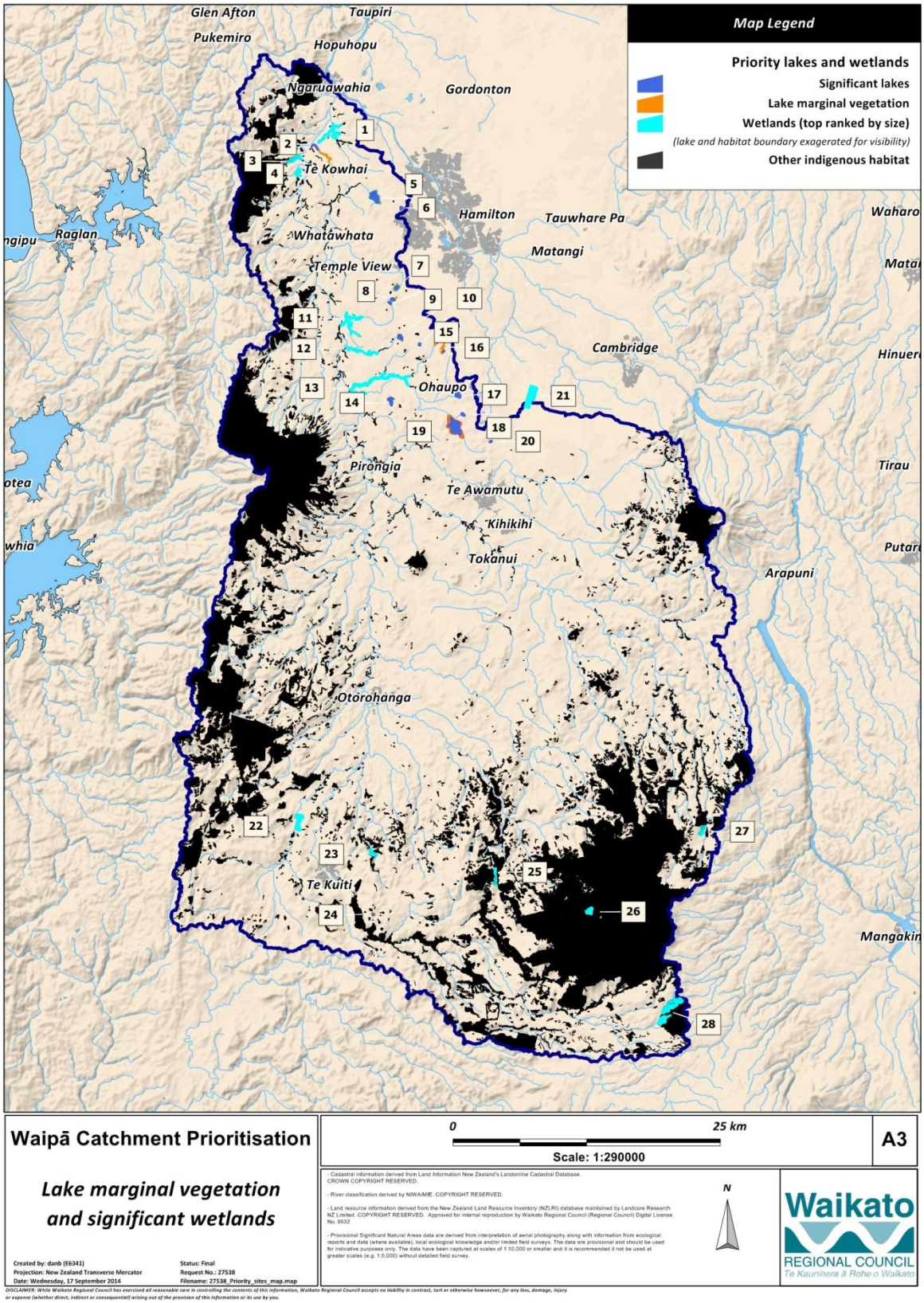

Waipā Catchment Prioritisation

Lake marginal vegetation and significant wetlands

0 — 25 km

Scale: 1:290000

A3

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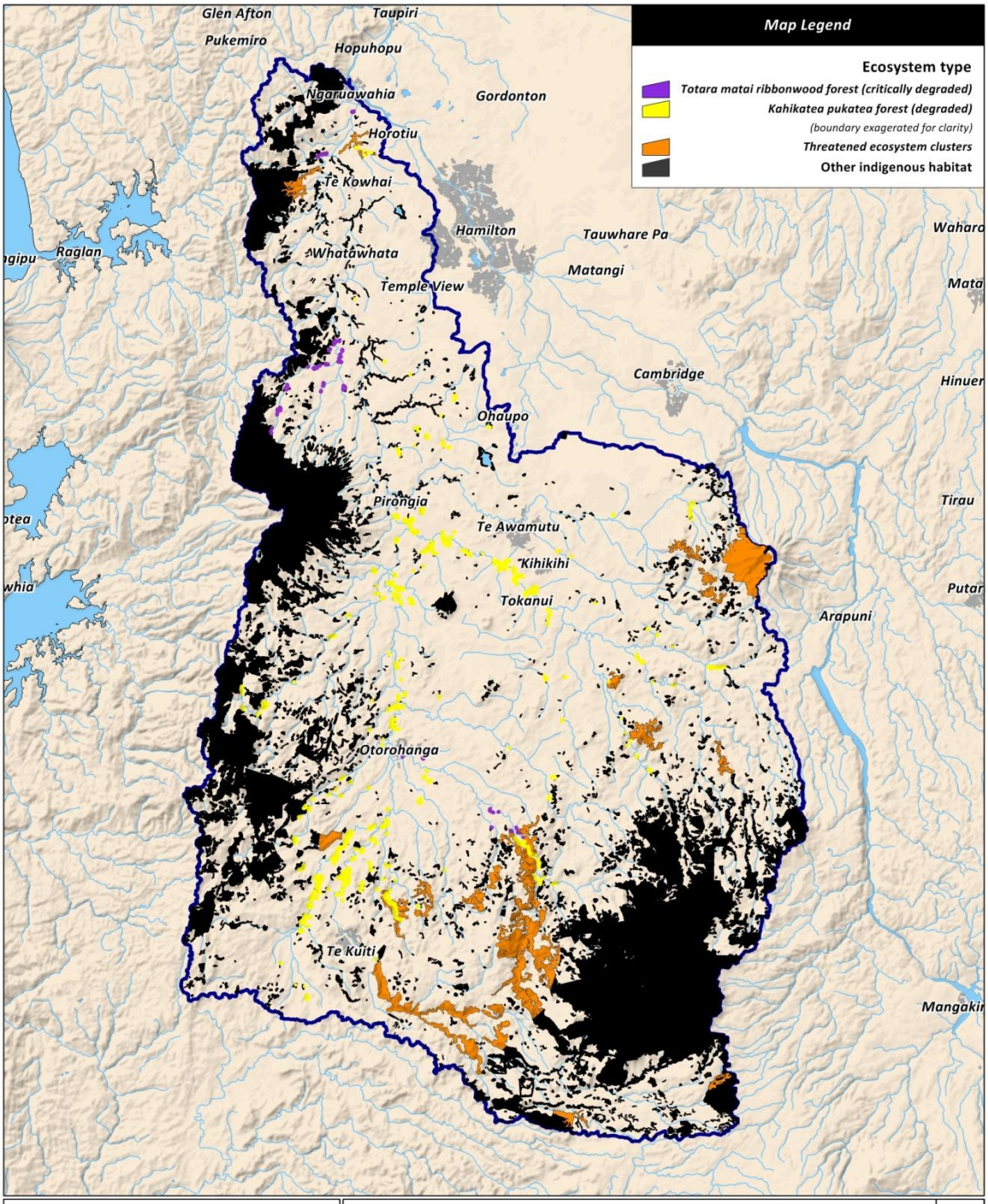
Created by: danb (E6341)
Projection: New Zealand Transverse Mercator
Date: Wednesday, 17 September 2014

Status: Final
Request No.: 27538
Filename: 27538_Priority_sites_map.map



Waipā Catchment Prioritisation

Management of under-represented and threatened ecosystems

Created by: danb (E6341)
Projection: New Zealand Transverse Mercator
Date: Wednesday, 17 September 2014

Status: Final
Request No.: 27538
Filename: 27538_Priority_sites_map.map

0 — 25 km

Scale: 1:290000

A3

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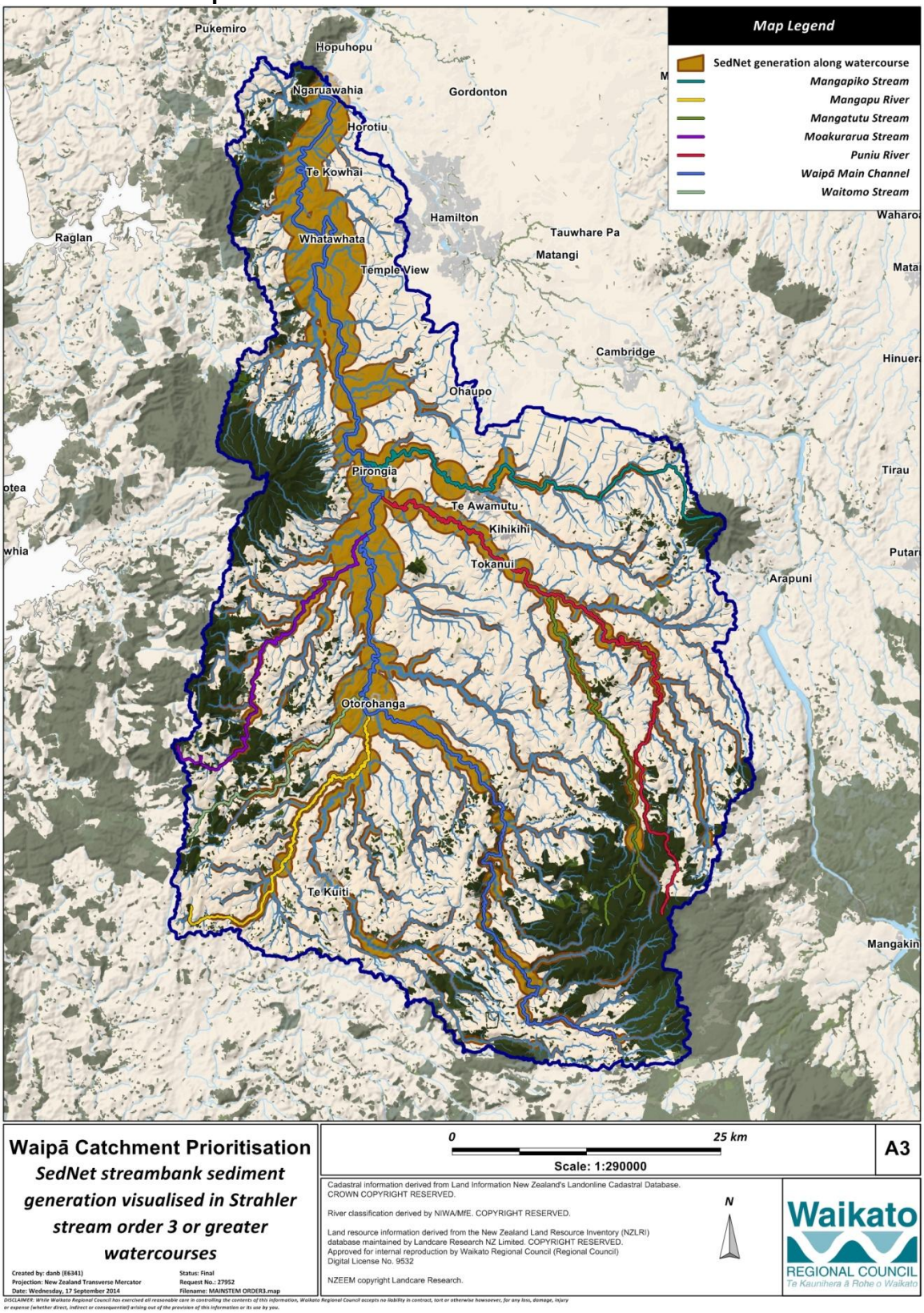
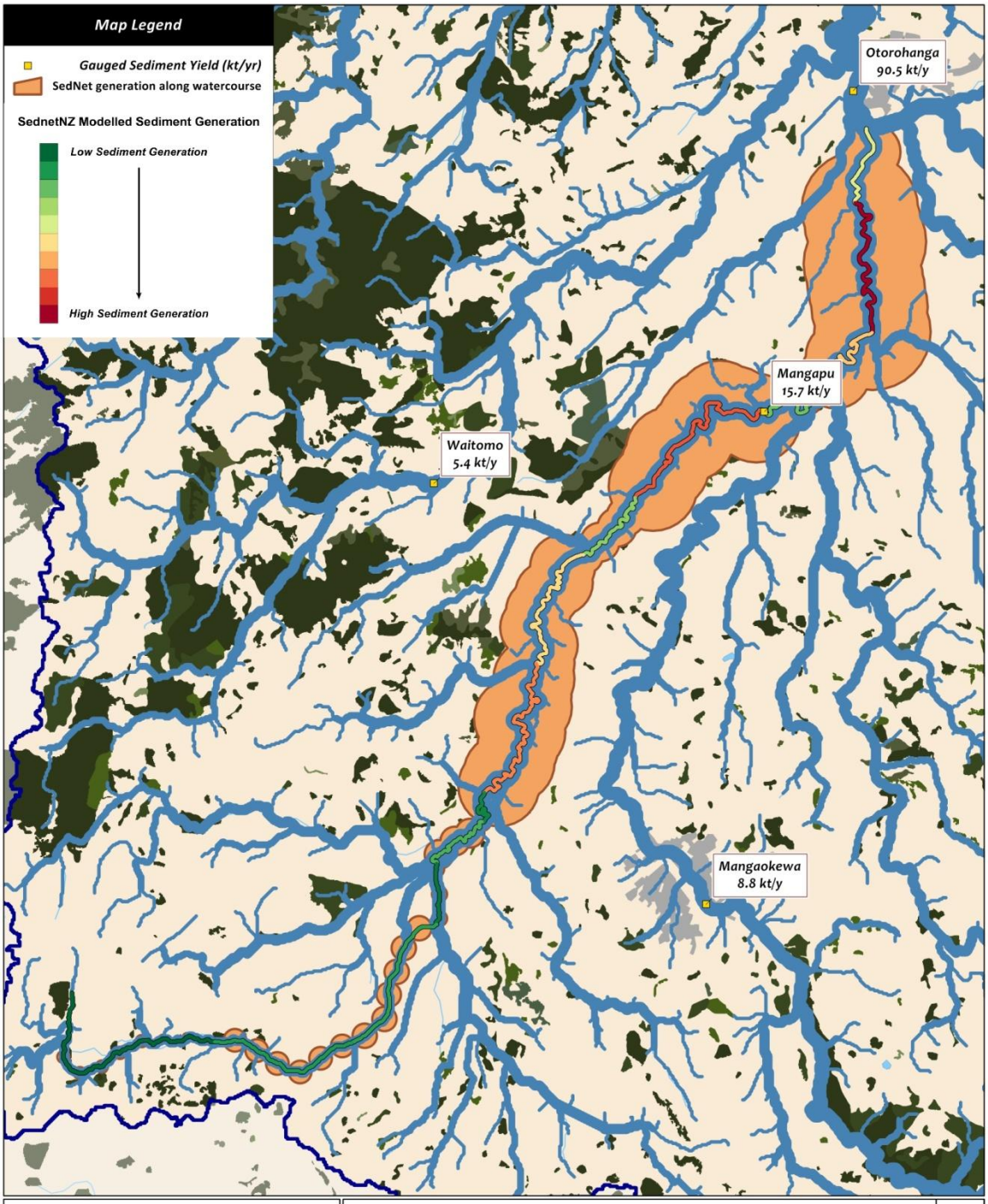
4.4 Streambank maps





Waipā Catchment Prioritisation

SedNet streambank sediment generation visualised along the Mangapu River course

Created by: danb (E6341)
Projection: New Zealand Transverse Mercator
Date: Wednesday, 17 September 2014

Status: Final
Request No.: 27952
Filename: MAINSTEM SEDIMENT.map

0 — 10 km

Scale: 1:69000

A3

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Appendix 2 Priority biodiversity sites

Table 1. Waipā catchment lakes and associated contiguous habitats in order of priority for biodiversity management.

Map label	Lake name	Lake type	Predominant tenure	Area (ha) (lake + marginal veg.)
24	Rotokotuku	Riverine	Private	1.3
14	Mangakaware	Peat	Crown	18.3
10	Mangahia	Peat	Private	17.6
17	Ruatuna	Peat	Crown	17.3
15	Milicich	Peat	Private	3.6
19	Ngaroto	Peat	Crown	127.8
5	Rotokauri	Peat	Crown	61.8
16	Henderson's Pond	Peat	Private	16.1
9	Posa	Peat	Private	2.5
8	Pataka	Peat	Private	7
7	Koromatua	Peat	Crown	17
6	Waiwhakareke	Peat	Crown	11
20	Rotopataka	Peat	Crown	3.3
2	Te Otamanui	Riverine	Crown	24.8
18	Ngarotoiti	Peat	Crown	6.6

Table 2. Waipā catchment largest wetland complexes (excluding those associated with lake habitats) for immediate biodiversity management.

Map label	Wetland name	Wetland type	Predominant tenure	Area (ha)
1	Crawford Road wetland	Willow-infested wetland complex	Private	43.3
3	Mt Kokaka Forest wetlands	Willow infested wetland	Private	24.5
4	Johnstones wetlands	Willow infested wetland	Private	12.0
11	Tuhikaramea tributary riparian margin	Willow infested wetland	Private	28.6
12	Mangahia stream riparian margins	Mixed indigenous scrub and hardwood species.	Private & Crown	30.5
13	Mangaotama stream willow wetlands	Grey willow wetlands with small areas of emergent kahikatea.	Private & Crown	88.4

21	Moanatuatua Peat Scientific Reserve	Restiad rushland	Crown	115.4
22	Pehitawa wetland / kahikatea system	Remnant kahikatea and wetland.	Private	
23	Tutaitokotoka Stream	Wetland kahikatea with surrounding herbaceous wetland vegetation	Indeterminate	16.7
25	Tauraroa forest	Riparian wetland within Tauraroa Forest	Private	11.2
26	Pureora Forest wetland	Potential wetland associated with montane frost flat ecosystem.	Indeterminate	19.0
27	Waipari Stream wetland	Submontane riparian wetland and shrubland	Private	11.8
28	Waipā Mires	One of the largest mires of restiad bog and tussockland	Crown	90.1

Table 3. Likely historic and estimated current extent of indigenous ecosystem types in the Waipā catchment.

Ecosystem type	Likely current area (ha)	Likely historic area (ha)	Per cent remaining
Totara matai ribbonwood forest	27	2373	1%
Kahikatea pukatea forest	312	26856	1%
Tawa mangeao podocarp forest	7820	106163	7%
Wetland	1859	15564	12%
Tawa kohekohe rewarewa hinau podocarp forest	19102	102494	19%
Tawa kamahi rimu northern rata forest	28173	53863	52%
Halls totara pahautea kamahi forest	503	551	91%
Kamahi broadleaved podocarp forest	547	556	98%

Appendix 3 Waipā catchment community engagement plan

Waipā catchment community engagement plan

Prepared by:
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Hamilton 3247

For:
Waikato Regional Council
Private Bag 3038
Waikato Mail Centre
Hamilton 3240

June 2014

Contents

1 Introduction

1.1 Purpose

The Waipā Catchment Community Engagement Plan (WCEP) is a plan for working alongside the Waipā catchment farmers, community and stakeholders in order to assist the implementation of the Waipā Catchment Plan (WCP).

The WCEP should be read in conjunction with the WCP. The WCP outlines the identified issues, goals, strategies, intended actions and priorities to assist with the protection and restoration of the health and well being of the Waipā River, including streams and tributaries, in the Waipā catchment, and explains the relevant legislative information, and the existing partnerships. This document presents a framework for engaging key stakeholders, farmers and the wider community with the intended strategies as outlined in the WCP.

1.2 Information sources

Information for this plan was sourced from (i) interviews, both telephone and face to face, with key stakeholders within the Waipā catchment[32] and Waikato Regional Council staff; and (ii) documentation including, but not restricted to: Integrated Catchment Management (ICM) evaluation reports[33], the Waipā Zone Management Plan, Plan Change 1 Healthy Rivers project, Stakeholder Engagement Strategy, Waipā 'Toolbox' reports[34] (currently in prep.), and other community engagement plans and guides[35].

1.3 This document

The document outlines some principles of community engagement, and then presents an action plan for engagement to be applied to this catchment from which more detailed operational actions will be developed and implemented.

2 Community engagement

2.1 Defining community engagement

The definition of community engagement depends, to some extent, on the context it is being discussed in. For example, 'community engagement' is defined by one guide[36] as *"a process where people come together to participate in decision making on an issue that affects them and their community",* and by another[37] as, *"a planned process with the specific purpose of working with identified groups of people, whether they are connected by geographic location, special interest, or affiliation or identity to address issues affecting their well-being."*

Common to both definitions is the idea that engagement is a 'process', and to this end, can be thought of as something that evolves and develops over time, with a number of

[32] Interviewees included representatives from primary industry organisations, members of the Waipā Zone Liaison subcommittee, iwi, community and environmental groups, and landowners in the Waipā catchment.
[33] Hungerford (2009; 2010).
[34] Bryant and Beatson (2014) – In press.
[35] Bryant and Beatson (2014); Department of Sustainability and Environment (2005); Hungerford (2009;2010); Ministry of Civil Defence and Emergency Management (2010); Twyford, et al., (2006); Waikato Regional Council (2013).
[36] Ministry of Civil Defence and Emergency Management (2010) p. 6.
[37] Department of Sustainability and Environment (2005) p. 10.

different facets and activities, depending on the stage, purpose or objectives of a project. For example, at the beginning of a project, getting people interested in the topic may be a major focus and it will be necessary to generate as much interest as possible. As the project develops, key people may become more engaged in the process while others may play a less active role.

2.2 Engagement tools

2.2.1 Determining levels of engagement

In terms of how engagement happens or works, some guides refer to engagement as a 'conversation' between groups of stakeholders, and that this can happen at a number of different levels, depending on the objectives of the project or the purpose of the engagement[38]. The International Association for Public Participation (IAP2) has developed the Public Participation Spectrum[39]as a model, to highlight the possible levels of engagement with stakeholders and communities. The spectrum is a continuum of increasing levels of public impact from basic information sharing (inform) through to the highest level where decision making is placed in the hands of the community (empower). This tool can be used to determine the desired level of engagement needed and the types of methods that can be used to achieve this.

2.2.2 Building a community profile

A common recommendation in engagement is to start[40] with building a community profile. That is, to build up a knowledge base about the local community; who lives there, what is happening in it, what is important to the people in it, who the key stakeholders are, and what the existing networks, activities and projects are. The profile should include:

- Demographic and geographic details. For example, the size and population of the catchment, number of towns, key industries, soil and geology.
- Partners, stakeholders and existing networks[41]. For example, iwi trusts, local government, subcommittees, primary industry and support organisations, community and/or environmental groups, non-government organisations, business and industry groups, ratepayers associations.
- Existing activities and projects. For example, river clean-up projects, riparian planting and fencing projects, erosion control activities, farm planning activities, river walkway development.
- Existing information networks and events. For example, group newsletters, mailing lists, databases, DairyNZ discussion groups, local agricultural days, community events.

2.2.3 Developing an engagement action plan

It is a good idea to develop an engagement action plan for each engagement activity, in order to provide some direction and guidance for the activity. An engagement action plan should:

- detail the purpose[42], aims and objectives

[38] e.g. Department of Sustainability and Environment (2005).
[39] Please refer to Appendix 1 for a copy of the IAP2 Public Participation Spectrum.
[40] Although stated as a 'first step', profiling the community is also an ongoing aspect of engagement and it is important to continue to add to the knowledge base about a community throughout the plan implementation.
[41] When determining stakeholders, it is also important to ensure that included amongst the key stakeholders are the WRC staff (e.g. LMOs, Biodiversity, RUG staff) who work within the catchment, as they are not only a source of information, and will also have existing networks and/or projects that can be linked with, it is important that there is integration across the various groups within the WRC.
[42] Determining the purpose of the engagement is important, as it provides direction for who to involve and how the engagement will proceed.

- detail the desired outcome
- detail who the target community[43] is
- have a timeline
- detail the resources needed, including financial, time, and human resources
- outline the method/s to be used.

2.2.4 Enabling and encouraging engagement

There are a number of key factors that have been identified by other research[44] and by stakeholders interviewed for this plan, which enable or encourage engagement both in the wider community and, more specifically, in encouraging landowners to make on-farm changes. A series of reports currently in draft (at the time of writing), the 'Waipā Toolbox' reports[45], have been prepared specifically to provide detailed information and strategies to enable effective engagement in the Waipā catchment. These reports will be used to assist with developing detailed operational plans for implementation and engagement[46].

The following presents a summarised list of the key factors, identified in interviews and other research, which either enable community engagement and/or encourage on-farm change. They are included here to provide some context for this plan, and as a quick reference for key factors to consider when planning the engagement activities detailed in the next section (3. Waipā Engagement Action Plan, p.7).

2.2.4.1 Enabling engagement

Use existing networks and groups to engage a community. Partnering and working collaboratively with organisations (e.g. primary industry support), community groups (e.g. care groups), and other stakeholders is an efficient approach[47]. Ways these networks can assist community engagement include, for example: (i) having existing mailing lists that can be used to send out key messages; (ii) enabling introductions to community groups and/or individuals; (iii) providing opportunities for joint applications for funding projects; (iv) having existing programmes (e.g. farm plans) that can be linked into; and (v) providing access to volunteers to assist with activities (e.g. clean-up, planting, open days).

Understand the challenges within stakeholder groups. A point raised by interviewees for this plan, and as well other literature[48], is the need to be aware of challenges faced by voluntary groups. For example groups may have: limited funding available; volunteers with varying levels of skill or training (e.g. some may be highly-skilled, trained or experienced about animal pest control or appropriate vegetation for riparian planting, and others may be less experienced or skilled); a lack of volunteers and/or limited hours that volunteers can give. Supporting groups with funding for co-ordination and/or ongoing works (e.g. maintenance) and/or volunteer training can help mitigate some of these issues.

Have clear roles for stakeholders. Alongside the above is the need to ensure that there are clear roles for stakeholders. For example, clarifying who the 'lead' agency

[43] It is important to identify the specific community to engage with, and within that community to identify any key stakeholders, existing groups, individuals, and community leaders who may assist with the project / plan and begin to develop and build trusted relationships and partnerships with these people.
[44] For example, the Waipā Toolbox reports (Bryant & Beatson, 2014) and the evaluations of the WRC ICM projects in the Little Waipā and the Waipāpa catchments Hungerford, 2009; 2010).
[45] Bryant and Beatson (2014).
[46] For example, to help identify what barriers could be expected or to which strategies would be the most effective to use with a particular sub-group.
[47] Ritchie, (2011) cited in Bryant and Beatson, (2014).
[48] For example, Ritchie, (2011) cited in Bryant and Beatson, (2014).

might be, who is responsible for co-ordinating the project or informing stakeholders of progress, and 'who is doing what' in terms of project activities.

Have consistent messages across different sources. The need to have consistent messages, from multiple sources, is an important tool for quality engagement[49]. *"Repetition can help to reinforce a message and build confidence, especially if it comes through different channels and from different sources. The key is to ensure the message is consistent across the range of sources."*[50]

Time it right. Timing is crucial. Determining *when* to engage is an important step in the planning, and this depends on the project itself (e.g. if planting then this may need to occur in specific seasons) as well as the community (e.g. engaging with schools during the holiday periods or farmers when they are calving is less successful). Also, knowing about what events are occurring in a community is useful as they can either be linked with as a vehicle to engage the community, and /or my need to be worked around so they do not conflict with the, for example a planned event.

Focus on the positive. In terms of communicating to the wider community about the WCP, a number of interviewees stressed the need to focus, not on what is wrong (i.e. with the river), but on what is going well (i.e. what is being done and what has worked), both in order to build a positive connection with the river, and to build momentum within the community. As Bryant and Beatson (2014 in prep.), note, *"public acknowledgement of existing good practice is an important tool for building support. It is important to recognise what has already been achieved by the community, as well as identifying what is still to be done. Celebrating success is useful in maintaining the momentum of change and motivating others to get involved."* (p.20)

Be creative. In terms of effective engagement, particularly of the wider community, being creative' can be a useful tool, and generate more interest and thus engagement[51]. For example, some suggestions from interviewees include having kayak tours or walking tours (walkshops) along parts of the river that have had some riparian planting completed, rather than a standard 'public meeting' for example. Other authors suggest social media and other forums also be utilised[52].

Be honest about what can (and cannot) be done. One of the potential barriers to engagement in the Waipā catchment, that was highlighted in interviews, was that there are some geological features (e.g. limited access to the river headwaters; slips that have caused issues) that may mean there are limited solutions or those that are possible may be prohibitively expensive. It is important therefore to be honest about what can and cannot be achieved, rather than making 'promises' that cannot be kept, or sidestepping the 'too hard' issues.

2.2.4.2 Encouraging on-farm change

There is a range of research literature about what encourages, and conversely what blocks, farmers'[53] willingness to adopt new initiatives or make changes to their farm system, in order to positively impact the environment. The following are some of the elements that have been found to encourage on-farm change to occur, and they are included here because one of the key strategies in the WCP is on-farm planning.

[49] Bryant and Beatson, (2014), citing Beatson, (in preparation); Panell, (2006).
[50] Bryant and Beatson, (2014), p.12.
[51] Giera et al., (2007) cited in Bryant and Beatson, (2014).
[52] Giera et al., (2007) cited in Bryant and Beatson, (2014).
[53] Note that in this document 'farmers' and other references to primary industry refers to all types of farming operations including both agricultural, horticultural and forestry.

Use a whole-farm and one to one approach. Although resource-intensive in terms of staff time, whole farm planning with individual landowners, has been noted by a number of researchers, as an effective tool for change[54]. By contrast a 'one size fits all' approach is not appreciated by farmers and is less effective at encouraging on-farm change as it does not take into account the differences across farms and farm systems[55].

Understand what the target audience needs. It is important to listen to the target audience, and recognise and understand the needs of the target audience. For example, van Reenen (2012), who undertook research with sheep and beef farmers, reported that in order to make changes farmers need to understand the problem, have clarity about the benefits and costs specific to their farm system, be given appropriate support and be rewarded for good practice.

Have achievable solutions. In order to maximise uptake of on-farm initiatives, solutions they -should be practical, achievable, affordable, tailored to the individual farm system (i.e. whole- farm planning approach), and have on-farm benefits (e.g. improved stock management due to fencing waterways).

Use incentives and/or provide access to funding options. A key barrier to adoption of on-farm change is both the financial costs of labour and materials to put in interventions and the cost of their ongoing maintenance, as well as perceived or actual economic costs[56]. Solutions to this include: sourcing, and then assisting landowners to access resources or funding to offset costs, and/or the provision of incentives[57] to encourage adoption. Tools such as incentives have been shown to increase the *rate* of adoption of good practice although do not necessarily increase the overall *number* of adopters[58].

Understand and have strategies to overcome common barriers. Being aware of the common barriers, and either having possible solutions in place, and/or being willing to source solutions is a key factor for engagement success. The overall approach needed is that *"organisations and communities must work to remove barriers to make* '*the right choice the easier choice*'*"*[59].

Provide 'the science'. A 'distrust of the science' is a common barrier for farmers[60], and therefore having strategies to provide farmers with *"sound practical scientific knowledge of the issues and the effects of farm practices"* is a key influencing factor in farmer adoption of best practice[61]. Effective strategies include involving farmers in *"identifying the problems and solutions and in monitoring outcomes,"* and *"fostering interaction between scientists, technical advisors and land managers"* in order to *"bridge the gap between science and on-farm practice"*[62].

Have the 'right' staff. A key aspect to emerge from the interviewees and other research (e.g. ICM evaluations) is the importance of the skills of staff who were the 'face' of the work (i.e. those who were working on-farm directly with the farmers)[63]. Similar findings

[54] For example, Bryant and Beatson, (2014); Hungerford, (2009; 2010); van Reenen, (2012).
[55] van Reenen, (2012).
[56] Hungerford, (2009; 2010).
[57] For example, see van Reenen (2012), for examples of incentive schemes such as EBOP's offering property titles for every .6ha of good quality native wetland established and their provision of weed and pest control in areas of the farm that have been fenced to exclude stock.
[58] For example, Kaine et al., (2008) cited in Bryant and Beatson, (2014).
[59] Bryant and Beatson, (2014), p.6, citing Tools for Change website
[60] Hungerford, (2009; 2010).
[61] Buchan et al. (2006), cited in Bryant and Beatson, (2014) p.8.
[62] Bryant and Beatson, (2014), citing Giera et al., (2007), p.18.
[63] Hungerford, (2009; 2010).

have been reported from other researchers. For example, Bryant and Beatson (2014 in prep.) in their literature review cite research[64] that emphasises the impact of the on-the-ground staff on farmers' willingness to adopt. Across these sources, emerges a picture of staff who are technically knowledgeable, willing to listen, are empathetic and trust worthy and essentially can *"stand in the paddock and understand [the farmer's] business"*[65].

Use peer support and peer pressure. Utilising other farmers to encourage their peers to make changes is an effective tactic[66]. A typical 'peer support' strategy is to identify credible 'lead' farmers who have successfully tried and tested the practices and are respected in the community, to help spread the messages and encourage changes amongst their peers. On the flipside, peer *pressure* can also be a good motivator, as one interviewee noted: "... *if a farmer has fenced his streams and notices something amiss in the stream then he will look upstream to the farmer on the block further upstream who has not fenced his land, and let them know, 'hey your stock must be in the water."*

Acknowledge that behaviour change takes time. Information from interviewees, and findings from other research with farmers[67] has noted that *'it takes awhile to convince farmers of the necessity of doing something*[68]*".* Some[69] recommend a process of *"starting with awareness and working towards behaviour change."*

3 Waipā engagement action plan

3.1 Overview

The following outlines the action plan for engaging the Waipā Community with the WCP. The purpose of the engagement is outlined, followed by identification of stakeholders, details of the four key engagement activities, and an overall timeline of the stages.

3.2 Purpose

The Waipā Catchment Community Engagement Plan (WCEP) is a plan for working alongside the Waipā catchment farmers, community and stakeholders in order to assist the implementation of the Waipā Catchment Plan (WCP).

3.3 Overall approach

A staged approach will be undertaken in engaging the communities of the Waipā catchment in the WCP. The end point of the engagement is intended to be changes on farms in the catchment and therefore the main focus of the engagement will be farmers and those who can influence or support farmers in making those changes.

Engagement with stakeholders and partners has already begun as part of the development of this plan, and will continue to develop more detail, particularly in terms of sharing implementation roles, over the life of the plan.

Engagement with farmers will begin in two pilot priority sub-catchments, selected from the priority areas. Farm plans will be prepared on a limited number of farms in each of these sub-catchments. Farm plans will then be offered on all farms in the pilot sub-

[64] For example, Beatson, (in preparation), Leviston et al., (2011), Panell, (2006).
[65] Beatson, (in preparation), cited in Bryant and Beatson, (2014), p.15.
[66] For example, Giera et al., (2007) cited in Bryant and Beatson, (2014).
[67] For example, Hungerford, (2009; 2010); van Reenen, (2012).
[68] Quote from WCEP interviewee, 2014.
[69] For example, van Reenen, (2012).

catchments and stakeholder support will be engaged to encourage all farmers to take up the offer, and to implement the recommended actions.

Opportunities for shared collaborative or complementary implementation plans with stakeholder organisation and businesses will be explored, using feedback from the pilot processes and incorporated as appropriate into a programme of engagement and extension to promote farm planning across all of the priority catchments over the life of the WCP.

Engagement with the wider Waipā community will begin once some activities have been started in order to be able to provide some examples of the work being carried out and have opportunities for community members to engage with. This will make it easier for people to identify links with other initiatives that are under way and led by other organisations, groups or individuals and see how they can all contribute to the overall goals of protecting and restoring the health and wellbeing of the river. It will also enable ratepayers to see the practical concrete value they are receiving for their rates.

3.4 Partners and stakeholders

The WRC cannot achieve the outcomes of the WCP alone. There is a need to work with other councils, community groups, businesses, individual landowners, central government, iwi/hapu and non-governmental organisations.

As detailed in the WCP, the Waipā catchment covers an area of 306,569ha. Within the catchment there is an estimated population of 67,000, a number of rural and small urban towns and communities, and a range of governance, organisational, and community groups, including district councils, iwi trusts, subcommittees, primary industry support, and environmental and other community groups. These partners and stakeholders can be categorised into the following groups, (with the acknowledgement that there can be some cross-over between groups, and that this is not intended to be an exhaustive list):

- Tāngata Whenua (trusts, farming groups, community committees).
- WRC committees and subcommittees (e.g. Waipā Zone Liaison Subcommittee; Advisory Committee for the Regional Environment (ACRE).
- Local government and government agencies (e.g. Waipā, Waikato, Waitomo, and Otorohanga District Councils, Health, Education).
- Central government and statutory bodies (e.g. Department of Conservation (DOC), Waikato River Authority (WRA), Ministry of Primary Industries (MPI), Ministry for the Environment (MFE), Ministry of Health (MOH), Ministry of Education (MOE), Fish and Game).
- Primary Industry (e.g. farmers, Federated Farmers, forestry companies).
- Primary Industry support (e.g. farm consultants, fertiliser companies, Fonterra, DairyNZ, Beef+Lamb, Foundation for Arable Research (FAR), New Zealand Institute of Primary Industry Management (NZIPIM)), Smaller Milk and Supply Herds (SMASH),.
- Non-government organisations (e.g. Queen Elizabeth II National Trust (QEII), Farm Forestry Association, Native Forest Restoration Trust, Waitomo Catchment Trust Board, care groups, advocacy groups).
- Other industry and business organisations (e.g. tourism, industry, health)
- Community (ratepayers and residents' associations, schools, general public).
- Funding bodies (e.g. Waikato Catchment Ecological Trust (WCET), Community Conservation Partnerships Fund).

3.4.1 Role of Waipā liaison subcommittee

Catchment or Zone Liaison Subcommittees are the primary mechanism for local consultation and engagement on river and catchment management[70]. Key roles of subcommittee members include;

- To act as a conduit to the community through their networks, respective agency or stakeholder groups.
- To assist in communicating to the wider community across the relevant zone and interests.

The WZLSC have been set up since the inception of Project Watershed (2002) to link WRC staff to the Waipā community and to oversee targeted rate funding works within each Zone. In the last two years this mandate has grown to include more involvement in land and water management and, in many zones, Zone Plans are being written, reviewed or enhanced. In the Waipā, the Zone Plan has been in existence since 2011 and the Zone Subcommittee subsequently promoted the development of the WCP to bring additional science in behind the Zone Plan, to further target catchment works and priorities that reflect the aspirations of all stakeholders. It also reviews models to fund enhanced work programmes.

The subcommittee members have key roles to play in engaging stakeholders and the wider community in this purpose because of the special qualities of their existing networks and relationships. To maximise the benefits to the WCP of these relationships, the following particular opportunities are identified;

- Promotion of the objectives of the WCP through existing networks.
- Maintenance of positive relationships with key stakeholders
- Communication of key messages about the WCP to stakeholders.
- Creation of a positive and receptive mood among farmers, stakeholders and the community in relation to the WCP.
- Alerting WRC to issues, problems, risks and opportunities that they become aware of through their networks.

These roles apply across all of the Engagement Activity Plans detailed in section 3.5.

3.4.2 Relationships with stakeholders

The way in which the WRC engages with the different stakeholder groups and partners in the Waipā catchment varies. There are some existing and developing relationships in the Waipā catchment that are underpinned by legislative requirement or WRC structures or as part of the work that WRC staff are involved with (e.g. CMOs working with landowners), which the WCP aims to further develop, in order to build on past progress and enhance delivery of solutions on the ground. Some of these partner groups and agencies include, for example, the Waipā Zone Liaison Subcommittee who have worked together with the WRC staff in developing the WCP project, Waipā River iwi (Ngāti Maniapoto, Ngāti Raukawa, Waikato-Tainui, Ngāti Māhanga, Ngāti Koroki Kahukura), and the Waikato River Authority (WRA). There have also been collaborative projects with primary industry support stakeholders that WRC staff have been, or are still, involved with in the Waikato region (e.g. Upper Waikato Sustainable Milk Project). The following are examples of some of the key relationships between WRC and stakeholders.

Co-management / co-governance

[70] Waikato Regional Council, (2011) Overview of River and Catchment Services – Waikato Region, p. 22. Document #: 1717271 v11. (www.waikatoregion.govt.nz/PageFiles/22974/Overview%20of%20RCS%20services.pdf.)

The Waipā catchment is within the rohe of the following iwi: Ngāti Maniapoto, Ngāti Raukawa, Waikato-Tainui, Ngāti Māhanga, Ngati Koroki Kahukura. There is a co-management / partnership relationship between the WRC and the Waipā River iwi, which is underpinned by key legislation[71], agreements (e.g. joint management agreements (JMAs) and plans (e.g. iwi environmental management plans (IEMP)[72].

Waikato River Authority
The WRA is a statutory body formed under the Waikato and Waipā River legislation[73] to oversee implementation of Te Ture Whaimana o te Awa o Waikato (The Vision and Strategy for the Waikato River) and which administers a clean-up fund for the river. The WRC has a partnership agreement[74] with the WRA and the WRC can apply to the WRA for funding for key projects.

Primary industry support organisations
The WRC works in a range of ways with primary industry support organisations, including consulting (seeking information, support or assistance) collaborating (e.g. providing information, support or assistance and/or working on joint projects of mutual interest). Examples of recent projects in the Waikato Region include the Upper Waikato Sustainable Milk project[75], and the development of 'Menus of Practices to Improve Water Quality[76]'.

Individual farmers and landowners
WRC has a range of established working relationships and connections with individual farmers and landowners across the Waikato region, and including the Waipā catchment. The most common connection is between a catchment management officer and a farmer/landowner and may involve working with a farmer to implement on-farm activities (e.g. riparian fencing and planting) farm planning (e.g. ICM project), and/or assisting and advising on joint applications (e.g. to WRA).

Wider community and ratepayers
The wider community clearly has a major stake in the WCP and their relationships with it will be widely varied. There are numerous community groups already undertaking restoration and clean-up activities that are contributing to the quality of the catchment. There are opportunities for WCP activities to align with these initiatives and these will be explored.

Many ratepayers are included in these groups and other categories of stakeholders (e.g. farmers, Iwi or primary sector industry bodies) but there are many ratepayers who have a stake in the WCP because of their passive enjoyment of the catchment's intrinsic values, or simply because they are contributing to the costs of the project through their rates. In such cases their relationship with WRC and the WCP will be relatively remote, but should not be neglected. At the least this relationship will require keeping ratepayers informed of the project, its objectives and progress, and any opportunities for

[71] For example, the Waikato-Tainui Raupatu Claims (Waikato River) Settlement Act 2010; Ngā Wai o Maniapoto (Waipā River) Bill 231-2(2010).
[72] the way in which the WRC works with River iwi is outlined on www.waikatoregion.govt.nz/Community/Your-community/iwi/. As well, there are a number of WRC documents (e.g. Waipā Zone Plan, Overview of River and Catchment Services – Waikato Region) which outline the relationship between council and Tāngata Whenua.
[73] Section 22 Waikato-Tainui Raupatu Claims (Waikato River) Settlement Act 2010 and Section 23 Ngāti Tuwharetoa, Ngāti Raukawa and Te Arawa River Iwi Waikato River Act 2010.
[74] See: www.waikatoregion.govt.nz/PageFiles/15807/Agreement%202093404.pdf.
[75] Further information: www.dairynz.co.nz/page/pageid/2145879945/Upper_Waikato_Sustainable_Milk_Project.
[76] Menus available online at www.waikatoregion.govt.nz/menus.

involvement. This will be the subject of the community engagement process outlined in 3.5.4.

3.5 Waipā engagement activity plans

There are four key engagement activities:

i. working with iwi partners;
ii. working with stakeholders;
iii. working with farmers ; and
iv. working with the wider community.

These activities are aligned with the strategies identified in the WCP. The following presents a plan for each activity which includes its purpose, desired outcome and target community, followed by the proposed method, possible challenges, resources and timeline. The plans are intended to provide an over-arching framework, from which detailed work plans (including specific engagement tools and methods, and timelines) will be developed.

3.5.1 Activity: Working with iwi partners

As noted earlier there is a co-management / partnership relationship between the WRC and the Waipā River iwi, which is underpinned by key legislation. Iwi and the WRA (as funders) have already identified that they are working on a range of initiatives that contribute to the objectives of the WCP or demonstrate ways of working that could be applied across the catchment and there is a clear opportunity to align activities between WRC and Iwi.

3.5.1.1 The purpose

For WRC to work with iwi co-management partners in the Waipā catchment in implementing the WCP.

3.5.1.2 Desired outcome

That WRC and iwi co-management partners are able to work together, to achieve the vision and strategies of the WCP.

3.5.1.3 Target community

The target community are the Waipā River iwi (Ngāti Maniapoto, Ngāti Raukawa, Waikato-Tainui, Ngāti Māhanga, Ngāti Koroki Kahukura).

3.5.1.4 Method

1. Plan
    - Develop a clear understanding of roles and functions, the key legislation, any agreements (e.g. Joint Management Agreements), and any plans (e.g. Iwi Environmental Management Plans (IEMPs)).
2. Approach
    - Meet together with iwi representatives (together or separately, e.g. each iwi trust may have a slightly different focus based on location and their local drivers for change), to discuss the WCP and to agree on how the WRC and the trust will work together to implement the WCP, including for example: level and type of involvement; communication processes, consultation expectations and processes; key contact people; clear roles and responsibilities; available resources.
3. Implement
    - Partners work together according to the processes discussed and agreed to, to implement the WCP.

3.5.1.5 Possible challenges / barriers

The possible challenges with this activity are (i) the time needed both to set up and then to implement the processes; and (ii) staff changes and/or other factors (e.g. lack of integration within WRC) that cause miscommunication or processes not to be followed.

Solutions include allowing enough time, in the set up phase, to develop robust processes and strategies, and ensuring that these include clarity around roles and responsibilities. As well, it is important that there is good record keeping and succession planning for any staff changes that may occur, and allowance in the staff resourcing for the amount of time required.

3.5.1.6 Resources

The resources required for this include: (i) staff time from both partners; (ii) sundry expenses, for example, for meeting and travel expenses; (iii) resourcing, in-kind support, and other contributions to undertake activities within the WCP.

3.5.1.7 Timeline

The timeline for this is from July 2014 and is ongoing, as the WCP implementation progresses.

3.5.2 Activity: Working with stakeholders

As the WCP is being implemented it is vital that key stakeholders are involved and collaborated with. Stakeholder organisations can contribute a wealth of farm systems knowledge and experience and have additional resources that could potentially be applied to the objectives of the WCP. They also offer alternative engagement avenues through their own farming networks. Some have indicated a willingness to develop joint, collaborative or complementary programmes that have the potential to enhance the reach and impact of the WCP.

3.5.2.1 Purpose

For WRC to develop a process to enable stakeholders within the community to be involved with implementing the WCP, and to ensure that WRC activities are developed and implemented in a complementary manner to make best use of the opportunities created by stakeholder initiatives.

3.5.2.2 Desired outcome

Stakeholders within the community are involved in the WCP implementation in a way that (i) provides them with information about the WCP; and (ii) empowers them to participate or lead key joint, collaborative or complementary projects or activities.

3.5.2.3 Target community

The target community are organisations and individuals within the Waipā, and include (i) partners as identified in the WCP and the previous section 3.3, (ii) stakeholder organisations (e.g. primary industry and support organisations, community and/or environmental groups, non-government organisations, business and industry groups, ratepayers associations), and (iii) individuals (e.g. landowners, interested residents).

3.5.2.4 Method

1. Plan
    - Build a community profile[77], including relevant demographic and geographic details.
    - Identify stakeholders, partners and stakeholder organisations[78] within the Waipā community.

[77] Refer to Section 2 for the details of what should be included in a profile, and see the WCP for demographic and geographic details about the Waipā catchment.

- Determine 'key contact' people within a stakeholder organisation or group.
- Create a stakeholder register - categorise stakeholders into key sub-groups as appropriate[79], including for example, but not limited to: Territorial Authorities; Primary Industry Support; Community Groups; Farmers/Landowners.

2. Approach stakeholders
   - Make contact with key stakeholders, in order to determine their level of interest in the WCP, and the level of involvement[80] they would like to have in the implementation.
3. Implement engagement strategies
   - Develop suitable engagement strategies[81] and communication processes[82] dependent on the group/sub-group and the required level of involvement[83].
   - Implement engagement strategies and communication strategies.
   - Ensure that any stakeholder contact details are kept updated, and added to as needed[84].
   - Ensure that the various communications occur in a timely manner.
   - Develop and implement joint, collaborative or complementary projects and funding applications as appropriate.

3.5.2.5 Possible challenges / barriers

The possible challenges with this activity are: (i) the key contact person is not identified accurately and therefore the information does not get to the appropriate people within the organisation / group; (ii) the key contact is identified accurately but does not pass the information on to the right people, accurately and in a timely manner, and/or does not have 'sign off' authority; (iii) the stakeholder details are not updated and therefore the information does not get to the key people; (iv) the information is not provided in a timely manner so that people can make decisions about the projects and/or their involvement where relevant; (iv) people get different or mixed messages from different staff.

Solutions to the above challenges include having one key person (e.g. WRC staff member) who is responsible for co-ordinating the tasks for this activity, ensuring there is good integration within the WRC, using multiple communication tools and pathways, and ensuring that any sign-off processes are understood and allowed for.

3.5.2.6 Resources

The resources required for this include: (i) staff time to develop and maintain a database, and develop suitable communication processes and ensure these occur to establish and maintain effective working relationships with stakeholders; (ii) printing / postage costs (for any mailed information) and sundry expenses for, for example, venue hire for public

[78] Note that as part of developing this plan and the WCP, some contact has already been made with key stakeholder organisations and individuals.
[79] Note that there may be some overlap, and some people/organisations may be in more than one sub-group.
[80] Note that the desired level of involvement may change over time as the WCP develops. For example, a stakeholder may wish to be 'informed' initially, and as the plan develops they may choose to collaborate and be involved in the decision-making and implementation of a strategy or strategies.
[81] e.g. keep in mind the 'encouragers and enablers' presented in section 2 of this document and as well refer to the Waipā Toolbox reports for relevant 'tools' to utilise.
[82] could include for example, a mixture of a regular 'newsletter', direct contact (i.e. for a specific project), up to date website (or link from WRC website), and meetings (e.g. sub committee meetings, regular hui).
[83] i.e. the method of engaging with iwi partners may be different to the method for engaging with individual farmers. However, there may be an overall 'information' method (e.g. a regular update newsletter) that goes to all those on an email list.
[84] e.g. a spreadsheet or database may be useful to keep track of, and update, stakeholders and their contact details.

forums; (iii) stakeholder resources, including, for example, in-kind support[85], staff and/or volunteer time, and financial contributions.

3.5.2.7 Timeline

The timeline for this is from July 2014 and is ongoing, as the WCP implementation progresses stakeholders will continue to be identified and added to the list.

3.5.3 Activity: Working with farmers

The WCP has utilised a prioritisation tool to determine 'priority areas[86]' within the catchment. These areas are those that the tool has identified as ones which are most likely contributing to reducing the Waipā River water quality and/or which would benefit from on-farm interventions to reduce erosion, maintain water quality (reducing nutrients, *E. coli* and sediment), and protect biodiversity. Within these areas the aim is to utilise farm plans to work with farmers to implement on-farm sustainable management practices.

3.5.3.1 Purpose

For WRC and partners to engage with the farm landowners in the priority areas in order to encourage voluntary uptake of on-farm interventions to reduce erosion, maintain water quality (reducing nutrients, E. coli and sediment), and protect biodiversity.

3.5.3.2 Desired outcome

That the farmers within the priority areas are engaged with the objectives of the WCP, and enabled to implement on-farm changes as recommended in the Farm Plans.

3.5.3.3 Target community

The target community are famers within the identified priority areas.

3.5.3.4 Method

There are two phases to this activity: Phase 1 aims to pilot community engagement and property / farm plans on a limited number of farms in the two priority 1 soil conservation sub-catchments. Phase 2 will expand property / farm planning into the other properties in the sub-catchments.

Phase 1: Pilot property / farm plans with at least five farmers in each of the two priority 1 soil conservation sub-catchments (July 2014 – July 2015).

1. Plan.
    - Identify farmers to pilot property / farms plans in the two priority 1 soil conservation sub-catchments.
    - Determine the number and type of farms in each area.
    - Identify relevant stakeholder groups and existing networks for the sub-catchments.
    - Consider existing monitoring of ecological parameters
    - Consider the potential for specific community engagement strategies such as the formation of Landcare groups on a case by case basis.
    - Determine any cross-agency opportunities[87].
    - Clarify roles and responsibilities amongst the stakeholders.

[85] e.g. 'in-kind' support may include for example, assistance with developing key messages for specific groups, being able to use existing processes (e.g. community or industry group newsletters/email groups, on-farm activities) to get messages out or profile successes, linking in with existing projects, or developing joint applications.

[86] Note that this is still under development, and as a consequence this action plan may have to be 'tweaked' to accommodate the way in which the areas are prioritised.

[87] i.e. whether any stakeholders are already working on-farm with farmers and thus either have an established relationship and access and/or may be able to be the lead agency with a farmer or group of farmers and/or have existing projects.

- Determine key messages.
- Determine what incentives are available.
- Determine the best time (of the year) to approach farmers.

2. Approach farmers[88].
   - Send personalised messages to each farmer in the priority 1 soil conservation sub-catchments[89].
   - Follow up with personal contact with each farmer to explain the project and answer any questions, and engage them in the project.
   - Run community / kitchen meetings as appropriate.
   - Contact all farmers at least twice.
3. Implement property / farm plans.
   - Work with farmers in the priority 1 soil conservation sub- catchments to complete property/farm plans. The target is to work with at least five farmers in each priority 1 soil conservation sub-catchment.
   - Work with farmers to overcome barriers and implement on-farm changes.
   - Individually follow up farmers to encourage implementation.
4. Evaluate.
   - Gather feedback on the process from farmers, stakeholders and partners.
   - Evaluate the process and determine any areas for development.
   - Provide feedback on the project and its progress to the farming community and stakeholders.

Phase 2. Expand property / farm plans to all farms in the two priority 1 soil conservation sub-catchments.

1. Plan.
   - Review evaluation of pilot property / farm planning process and adapt as necessary.
   - Consider the potential for specific community engagement strategies such as the formation of Landcare groups on a case by case basis.
   - Determine any cross-agency opportunities[90].
   - Clarify roles and responsibilities amongst the stakeholders.
   - Determine key messages, including feedback from pilot process.
2. Approach farmers[91].
   - Send personalised messages to each farmer in the priority 1 sub-catchments[92].
   - Follow up with personal contact with each farmer to explain the project and answer any questions, and engage them in the project.
   - Run community / kitchen meetings as appropriate.
   - Contact all farmers at least twice.
3. Implement property / farm plans.

[88] Note that the intention here is that the WRC staff are the 'on-the-ground' staff who are approaching farmers and undertaking the farm planning. However, it may be that some 'partnering' or joint project options may be able to be utilised to make more effective use of resources and/or to work in with activities or farm planning that is already occurring in an area.

[89] Note that the intention of this is to ensure that all farmers in the priority 1 soil conservation sub- catchments are receiving the same message about the project.

[90] i.e. whether any stakeholders are already working on-farm with farmers and thus either have an established relationship and access and/or may be able to be the lead agency with a farmer or group of farmers and/or have existing projects.

[91] Note that the intention here is that the WRC staff are the 'on-the-ground' staff who are approaching farmers and undertaking the farm planning. However, it may be that some 'partnering' or joint project options may be able to be utilised to make more effective use of resources and/or to work in with activities or farm planning that is already occurring in an area.

[92] Note that the intention of this is to ensure that all farmers in the priority catchments are receiving the same message about the project.

- Work with farmers in the priority 1 soil conservation sub-catchments to complete property / farm plans. The target is to develop an agreed property / farm plan on every farm in the sub-catchment.
- Work with farmers to overcome barriers and implement on-farm changes.
- Individually follow up farmers to encourage implementation.

4. Evaluate.
   - Gather feedback on the process from farmers, stakeholders and partners.
   - Evaluate the process and determine any areas for development.
   - Provide feedback on the project and its progress to the farming community and stakeholders.

3.5.3.5 Possible challenges / barriers

The possible challenges with this activity are: (i) having sufficient staffing resource to complete the property / farm plans and co-ordination with stakeholders; (ii) financial (i.e. cost of implementing the recommended changes) and economic (e.g. loss of income due to land retirement) cost for farmers; (iii) distrust by farmers of the 'science'; (iv) farmers' not willing to engage; (v) stakeholders losing enthusiasm if they are not 'kept in the loop', (vi) losing control of the messaging if stakeholder organisations are taking a key role in contacting farmers; and (v) stretching the resources (e.g. volunteer time) of community stakeholder groups.

It will be important to ensure that the staffing is sufficient to carry out the property / farm planning work[93] either by employing sufficient staff and/or by working in with other partners and linking the farm plans to existing or new initiatives[94].

In terms of engaging with farmers, it is important that the staff know their information and are able to communicate this well, that they listen and take farmer concerns into account and that they identify barriers and find ways to overcome these (e.g. sourcing funding, providing information on the 'science').

Keeping stakeholders in the loop is something that can fall by the wayside as staff time is taken up with the business of getting plans in place and doing the on-the-ground work. Having a well established process for keeping stakeholders informed, as detailed in the previous activity, is one way to ensure that general information is regularly provided. As well, it would be useful to set up communication processes with the priority area stakeholders (e.g. a regular meeting or an agreed email update process) and clear indication of who is responsible for ensuring it happens).

Supporting groups with funding for co-ordination and/or ongoing works (e.g. maintenance) and/or volunteer training can help mitigate some of the challenges faced by community stakeholder groups.

3.5.3.6 Resources

The resources required for this include: (i) sufficient WRC staff resource to both work with stakeholders, (including co-ordinating activities across multiple parties, establishing partnership arrangements where appropriate) and to complete farm plans; (ii) finance to support on-farm action as appropriate (iii) other sundries (e.g. transport and mileage

[93] Evaluations of similar projects (e.g. Hungerford, 2012) have indicated that one of the biggest challenges to one on one farm planning occurring in a timely manner is, having the staff to complete the work, as it is labour intensive.

[94] For example, if partners have farm planning initiatives (e.g. Beef+Lamb LEPs, DairyNZ Sustainable Milk Plans) that either do meet the content criteria or can be 'tweaked' to do so (e.g. address on-farm erosion), then it may be possible to work to include the priority area farmers in these initiatives.

costs); (iv) stakeholder resources, including, for example, in-kind support, staff and volunteer time, and financial contributions.

3.5.3.7 Timeline

The timeline for this is from July 2014, with the expectation that Phase 1 will be far enough advanced to be evaluated by June 2015, and Phase 2 will begin implementation in July 2015.

3.5.4 Activity: Working with the wider community

As the WCP implementation progresses strategies to engage the wider community should be utilised in order to generate enthusiasm, gain some momentum, and involve, collaborate and empower the community. The overall focus of this activity is to 'celebrate success' and 'focus on the positive' in order to *maintain the momentum of change and motivate others to get involved"* (Bryant and Beatson, 2014 in prep.).

3.5.4.1 Purpose

For WRC and partners to encourage the Waipā Catchment community to engage with the goals of the WCP and to support the actions being taken on farms to achieve them.

3.5.4.2 Desired outcome

That the Waipā community develops a sense of 'ownership' of the vision of the WCP.

3.5.4.3 Target community

The overall target community is those people residing in the Waipā Catchment.

3.5.4.4 Method

1. Plan
    - Profile the community.
    - Identify key sub-groups within the community[95].
    - Clarify the key messages.
    - Identify relevant stakeholder groups and existing networks for the areas
    - Clarify roles and responsibilities amongst the stakeholders.
    - Determine when to engage[96] and develop timeframes for strategies.
    - Determine how to engage.
    - Develop creative engagement strategies that 'focus on the positive' and build connection to the river. For example:
        - Targeted strategies. i.e. targeting messages, information, or activities to specific groups (e.g. farmers)[97]
        - Create a communication strategy using generalised information strategies. i.e. targeting messages or information to the whole community (e.g. using social media, online forums, print, or audio)
        - Inviting and involving activities: i.e. using activities (e.g. open days, planting days, river tours, farm tours, public forums, displays, exhibits[98]) to invite the community to get involved.

[95] This is to enable having 'targeted' approaches. Some examples of possible target 'sub-groups' include: 'residents of priority areas' (in order to promote and gain some support for the work being done there); 'all dry stock farmers' (in order to raise some awareness amongst this farmer group.

[96] For example, whether there are key community events that could be linked with or conversely dates that should be avoided so as not to clash.

[97] This is an area in which stakeholder groups may play a key role by providing the vehicle through which messages can be delivered. For example, some of the voluntary groups have newsletters or email lists of members as do some of the primary industry groups, and being able to provide information to these groups for distribution to members would be a good use of resources.

[98] Although some 'standard' forums could be used (e.g. discussion, groups, public meetings), this is an area where some creativity could be employed to profile the WCP and/or the activities that are being undertaken. For example, stream walks, farms walks, or kayak tours, of areas that have had some work completed. Working together with stakeholder groups (e.g. environmental groups) and as well utilising

2. Implement and Evaluate
    - Implement the key strategies to the engage the community in the WCP.
    - Establish feedback processes to gather feedback from stakeholders, partners, community groups and sub-groups.
    - Use the feedback to identify areas of development, and develop new or improved strategies to implement.

3.5.4.5 Possible challenges / barriers

The main challenge with this activity is that the community may receive mixed messages about the project and/or confusion between the Healthy Rivers Plan Change 1' and the WCP. Clarifying the key messages as part of the method is important to ensure that those delivering the messages are all 'on the same page'.

3.5.4.6 Resources

The resources required for this include: (i) time to develop key messages within a communications strategy (ii) staff resource to implement the activities to work with stakeholders, including coordinating activities across multiple parties, establishing partnership arrangements where appropriate; (iii) other sundries (e.g. transport and mileage costs, venue hire, mail out, advertising costs); and (iv) stakeholder resources, including, for example, in-kind support, staff and/or volunteer time, and financial contributions.

3.5.4.7 Timeline

The timeline for this is from July 2015, once the WCP has had some successes, and then on-going.

3.6 Waipā engagement action plan stages

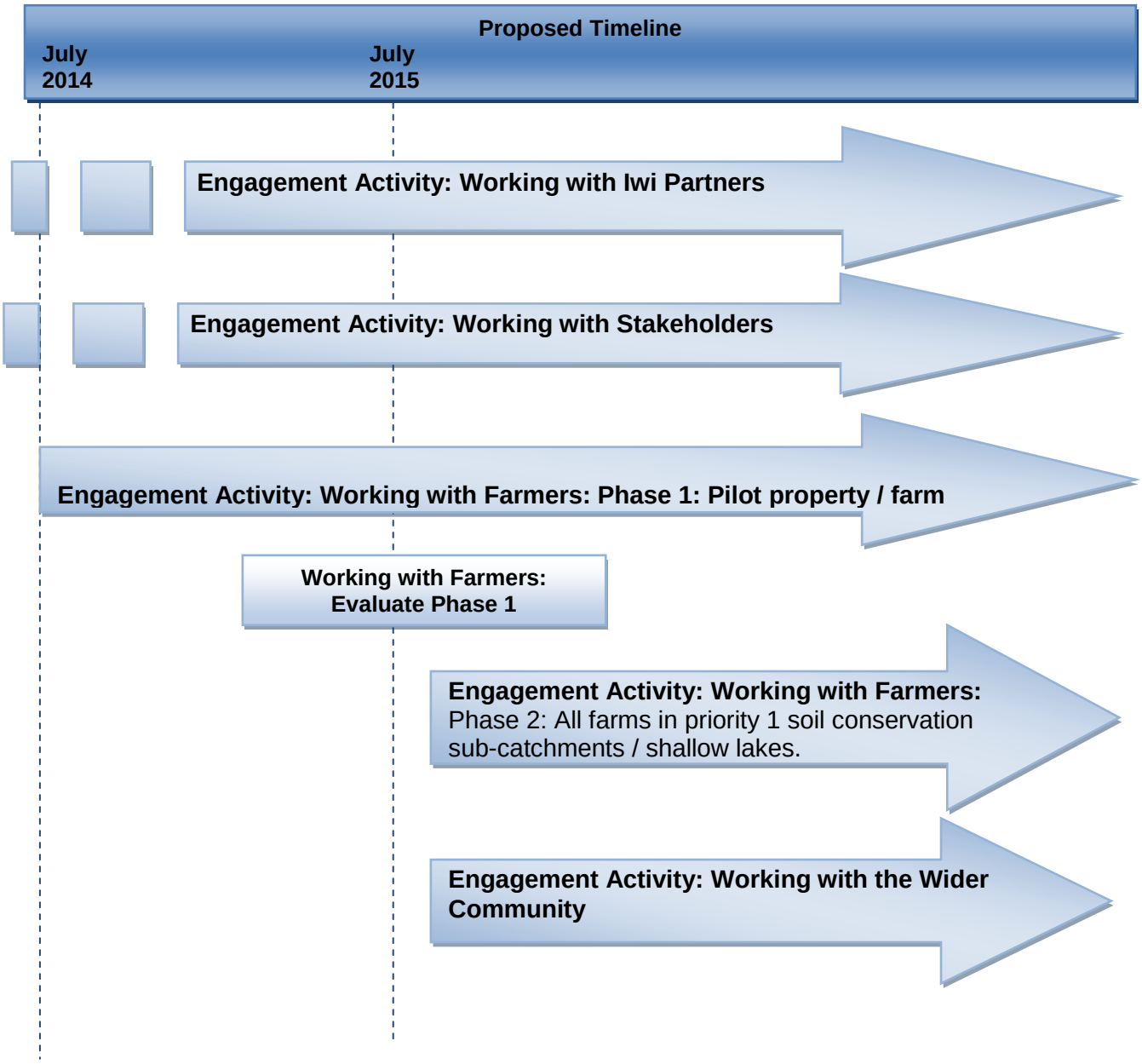
The following diagram (Figure 1) shows the proposed Waipā Engagement Action Plan activities and the various implementation stages. The intention of the diagram is to provide an overview of the Waipā engagement plan activities, and when each activity will commence.

As Figure 1 indicates the intention is to firstly commence 'working with iwi partners', 'working with WZLSC', working with stakeholders' and 'working with farmers: phase 1'. The proposed date for these to start is July 2014. Of note is that some of this work has already begun prior to July 2014, (e.g. WZLSC has been involved in developing the WCP; iwi partners have also had input into the WCP; some stakeholders have also expressed interest in being involved) and this is shown visually in the diagram with the arrows starting prior to July 2014.

By July 2015, the evaluation of 'working with farmers: phase 1' would have taken place, and 'working with farmers: phase 2' commences. 'Working with the wider community' is intended to phase in once there have been some farm plans put in place and some 'successes' to profile. The proposed date for these two activities to commence is around July 2015, dependent on the progress of the other strategies, particularly the 'working with farmers, phase 1'.

existing events populated by the target community (e.g. agricultural shows, farmers' markets, school fairs, marae hui).

Figure 1: Waipā engagement action plan stages



4 Evaluation plan

4.1 Purpose

The following outlines a plan for evaluating the Waipā community engagement process. The aims and objectives of the evaluation are outlined followed by the methodology and evaluation logic model.

4.2 Aims and objectives

4.2.1 Aim

The overall aim is to evaluate the Waipā community engagement process, activities, and achievement of desired outcomes, as outlined in section 3.5 of the WCEP, in order to support the implementation of the WCEP and the WCP.

4.2.2 Objectives

The evaluation objectives are:

1. To document the community engagement processes and strategies undertaken;
2. To document any changes made to the engagement processes and/or strategies;
3. To determine the strengths and areas for development of the engagement process.
4. To make recommendations at key points of the process, as needed, in regards to the engagement process and strategies;
5. To determine how effective the engagement was in meeting the desired outcomes of the four key activities.

4.2.3 Research questions

The evaluation aims to answer the following research questions

1. What did the Waipā community engagement process include?
2. What engagement activities were carried out?
3. What engagement strategies were used?
4. What changes were made to the engagement processes and strategies and why were these made?
5. Were the 'desired outcomes' met? If so why? If not, why not?

4.3 Evaluation methodology

4.3.1 Approach

The evaluation aims and objectives lend themselves to both process and outcome evaluation approaches. A process evaluation focuses on the internal dynamic and actual operations of a programme in an attempt to understand its strengths and weakness. In effect, process evaluations ask: what's happening and why? (Patton, 2008). An outcome evaluation focuses on the changes, benefits, learning or other effects that happen as a result of the work. In effect, outcome evaluations ask: to what extent have the desired outcomes been met?

The evaluation approach should include data collection and reporting points throughout the engagement process, that enable feedback to be provided to inform the next phases of the process. For example, feedback should be gathered from those who participate in Phase 1 'working with farmers' activities, in order to inform Phase 2.

In terms of evaluation methods, overall, these should include aspects of qualitative and quantitative methods and incorporate a mixed method design. Such a design will utilise consultation and negotiation with relevant people (e.g. WRC staff) and include a variety of data collection tools and sampling across the different phases of the engagement process.

The evaluation approach also needs to be flexible and utilise a range of methods as appropriate, depending on what aspects of the process are being evaluated, and what stage the process is at. This may mean that the 'evaluation' is in fact a series of smaller evaluations of different activities and stages of the WCEP, as opposed to one evaluation of the whole WCEP.

4.3.2 Data collection methods

Data collection methods to be included in the evaluation are detailed below:

- Document review

Collation and analysis of relevant documents to determine the extent to which the various activities are undertaken. This would be to determine for example, whether meetings are held and agreements made between WRC and iwi, and/or whether farmers receive key messages from WRC and what these messages are. Documents could include, but not limited to: minutes of meetings (e.g. WRC and iwi partner meetings, WLSC meetings); copies of letters and other communications (e.g. committee reports, progress reports, key message 'fact sheets'); copies of, agreements (e.g. between partners, stakeholders and WRC); joint funding applications, farm plans and community profiles.

- Spreadsheet and record review

Collation and analysis of relevant data from spreadsheets and other records that are being kept by staff. These would include, for example, records about farm planning activities and the stakeholder register. Analysis of these would be able to provide, for example, information on the numbers of stakeholders and the level of involvement they have, and data about the number of farm plans completed, the types of farms, and the number of visits that typically occur.

- Key informant interviews

Key informant interviews would be carried out at key phases of the evaluation with staff, stakeholders, partners, and 'target group members' such as farmers, members of the public, and volunteers for example. Key informant interviews are useful to gather in-depth qualitative data about an activity, project or programme. Some examples of where interviews would be used include: with the Phase 1 and 2 farmers, WRC staff and stakeholders, in order to inform the subsequent phases; with WRC staff and iwi partners in order to ascertain how the 'partnership relationship' is progressing and identify any areas for improvement; with WRC staff and stakeholder groups to ascertain whether stakeholders feel informed and involved and if not, how this can be improved.

- Surveys

Surveys would be carried out to gather information about aspects of the engagement process. Surveys are useful to gather comparable information from larger samples, and typically involve both closed and open-ended questions with all participants being asked the same questions so that comparisons can be made. Some examples of where surveys may be employed include: having key questions in one of the WRC region-wide surveys to gather feedback from the wider community; surveying people who attend project community events;

- Other methods

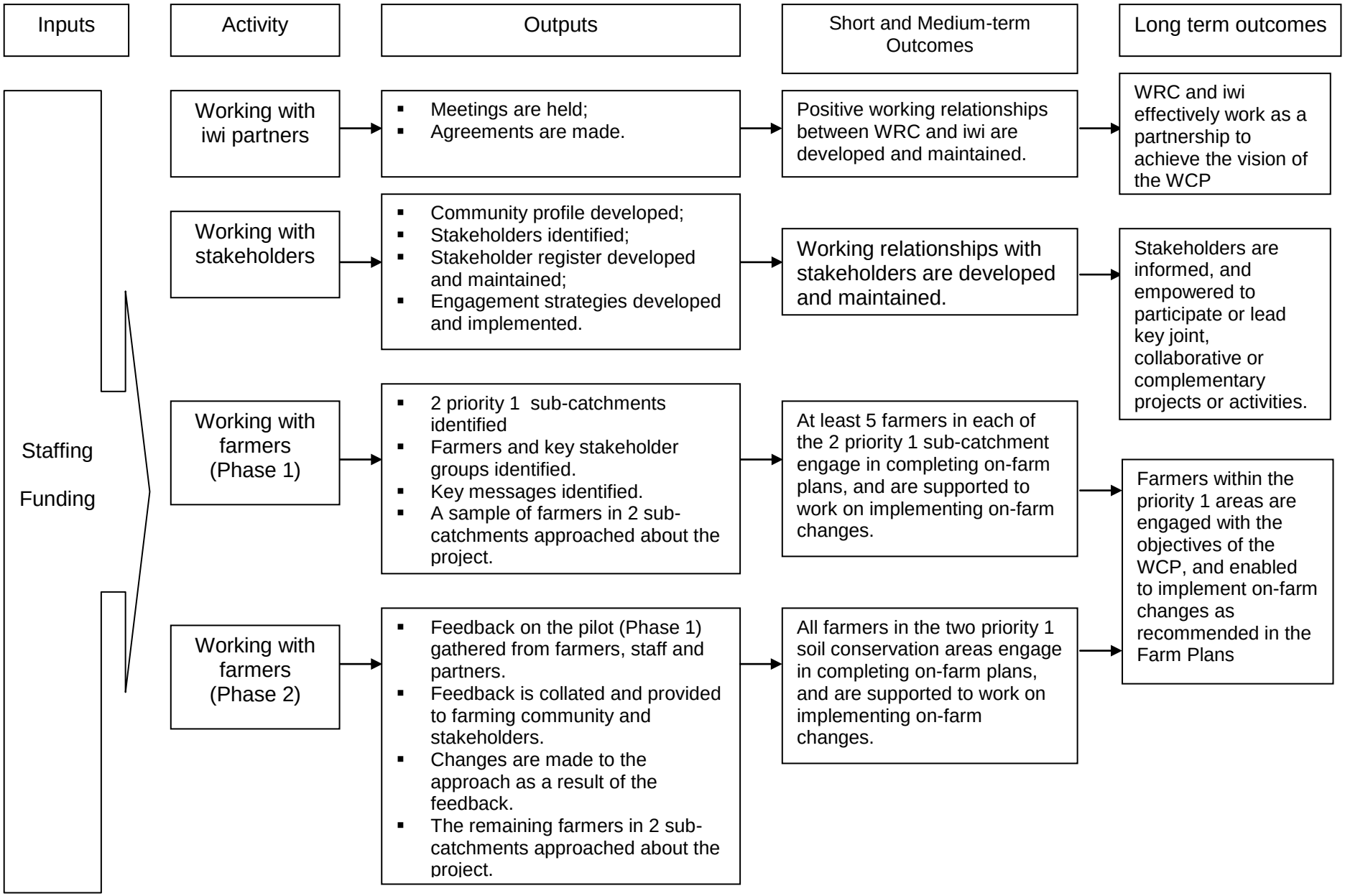
As well as the above, other methods may be employed as the engagement process progresses, and depending on what strategies are employed and what the desired outcomes of these might be. For example, there may be opportunity to undertake focus groups or participant observation of meetings, hui, events or projects or media review of the amount and tone of media coverage of the project or collation of website statistics from online strategies.

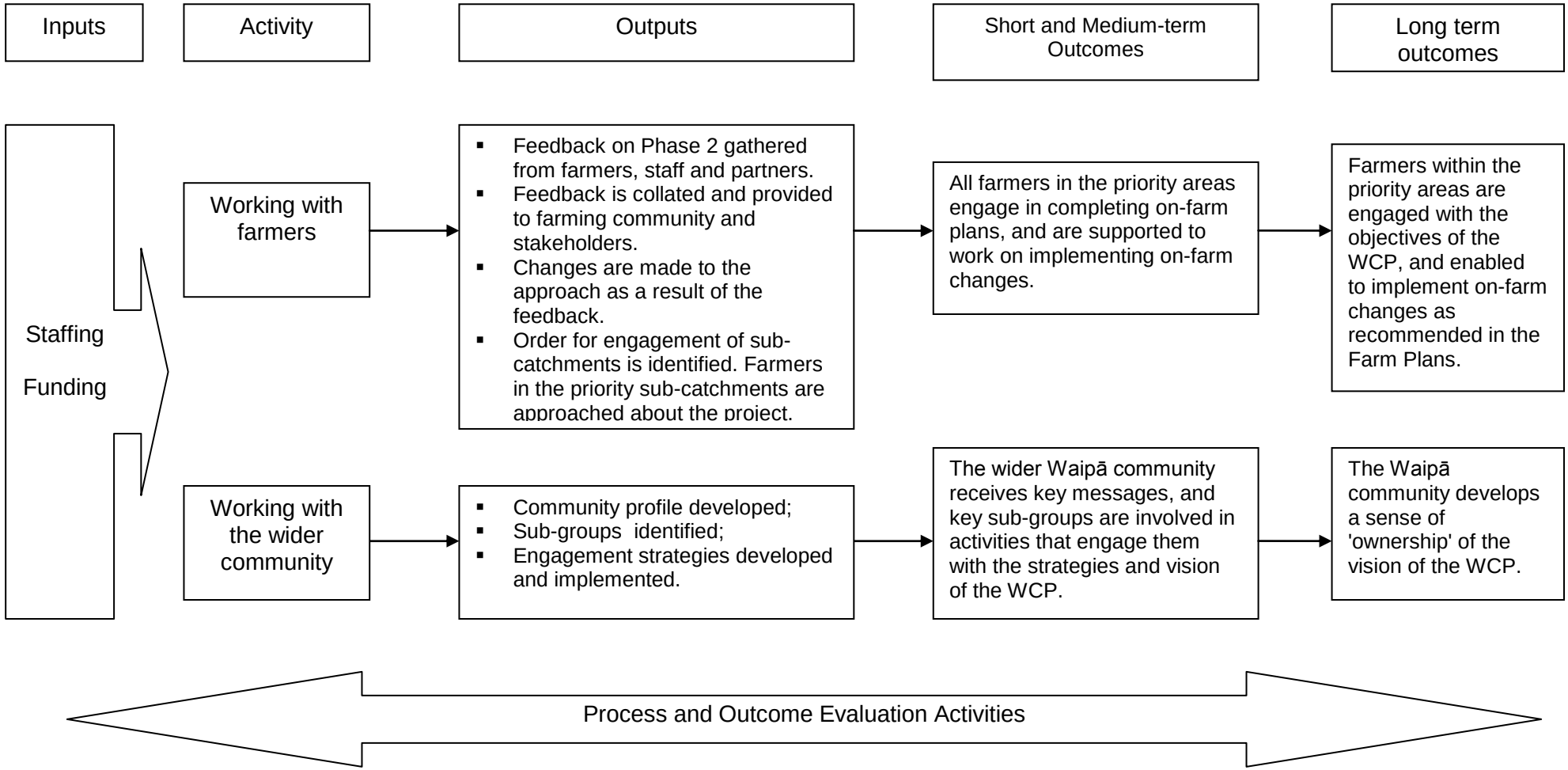
4.4 Evaluation logic

An evaluation logic model was developed and is presented in Figure 2 (overleaf). The model outlines the inputs, engagement activities, outputs, and outcomes (short, medium and long term) of the engagement process. As the model indicates, the evaluation activities occur across the project.

Although not specified in the model the key points where evaluation would logically occur would be: once some outputs have occurred (e.g. once there have been some agreements reached with iwi partners); and once some of the short-medium term outcomes would be expected to have occurred (e.g. once the phase 1 farmers have been contacted and some farm plans completed). In regards to the longer term outcomes, some of these may need a longer timeframe to be realised and this should be considered when planning the evaluation timeframe (i.e. implementation of on-farm change and community 'buy-in' to a vision takes time and is reliant on a range of internal and external factors).

Figure 2 Evaluation logic model





Evaluation data sources:

- Documents (e.g. meeting minutes, copies of letters and other communications, committee reports, progress reports, agreements between partners, stakeholders and WRC, joint funding applications, farm plans and community profiles)
- Spreadsheets (e.g. farm plan data, stakeholder register)
- Key informant interviews (e.g. with WRC staff, iwi partners, WLSC, stakeholders, farmers, community members).
- Surveys (e.g. with community members, stakeholder group members).

References

Bryant A, Beatson A 2014 in press. Tools to promote voluntary adoption of behaviour and practice change by rural landholders: Outcomes of a literature review and key informant interviews, (Draft 2). Report prepared for the Waikato Regional Council, Hamilton, New Zealand.

Department of Sustainability and Environment 2005. Effective engagement : building relationships with community and other stakeholders (Books 1-3).The Community Engagement Network Resource and Regional Services Division Victorian Government, Department of Sustainability and Environment, Melbourne, Australia.

Hungerford R 2009. Evaluation of the Integrated Catchment Management Pilot Project - final report June 2009. Environment Waikato Technical Report 2009/17. Hamilton, Waikato Regional Council (Environment Waikato)

Hungerford R 2010. Integrated Catchment Management: evaluation report June 2010. Environment Waikato Technical Report 2010/34. Hamilton, Waikato Regional Council (Environment Waikato)

Ministry of Civil Defence and Emergency Management 2010. Community engagement in the CDEM context: Best Practice Guideline for Civil Defence mergency Management Sector [BPG 4/10] Version 1.0 Ministry of Civil Defence and Emergency Management, Wellington, New Zealand.

Patton MQ 2008. Utilization-focused evaluation, 4th Edition. Thousand Oaks, Calif., SAGE Publications

Twyford V, Waters S, Hardy M, Dengate J 2006. Beyond public meetings: connecting community engagement with decision-making. Wollongong, Twyford Consulting.

van Reenen E 2012. Increasing uptake of environmental practices on sheep and beef farms. Report to Kellogg Rural Leaders Programme 2012. Lincoln, Lincoln University

Appendix 1

IAP2 PUBLIC PARTICIPATION SPECTRUM

INCREASING LEVEL OF PUBLIC IMPACT

INFORM	CONSULT	INVOLVE	COLLABORATE	EMPOWER
Public Participation Goal:	**Public Participation Goal:**	**Public Participation Goal:**	**Public Participation Goal:**	**Public Participation Goal:**
To provide the public with balanced and objective information to assist them in understanding the problems, alternatives and/or solutions.	To obtain public feedback on analysis, alternatives and/or decisions.	To work directly with the public throughout the process to ensure that public concerns and aspirations are consistently understood and considered.	To partner with the public in each aspect of the decision, including the development of alternatives and the identification of the preferred solution.	To place final decision-making in the hands of the public.
Promise to the Public:	**Promise to the Public:**	**Promise to the Public:**	**Promise to the Public:**	**Promise to the Public:**
We will keep you informed.	We will keep you informed, listen to and acknowledge concerns and provide feedback on how public input influenced the decision.	We will work with you to ensure that your concerns and aspirations are directly reflected in the alternatives developed and provide feedback on how public input influenced the decision.	We will look to you for direct advice and innovation in formulating solutions and incorporate your advice and recommendations into the decisions to the maximum extent possible.	We will implement what you decide.
Example Tools:	**Example Tools:**	**Example Tools:**	**Example Tools:**	**Example Tools:**
• fact sheets • web sites • open houses.	• public comment • focus groups • surveys • public meetings.	• workshops • deliberate polling.	• citizen advisory committees • consensus-building • participatory decision-making.	• citizen juries • ballots • delegated decisions.

Appendix 2 Waikato Regional Council monitoring programmes in the Waipā catchment

Site	Monitoring programme	Years undertaken
Mangatutu Catchment	Catchment Environmental Monitoring Programme	2003 - 2014
Kaniwhaniwha Stream	Regional Rivers Water Quality Monitoring Programme	1993 - ongoing
Mangaohoi Stream	Regional Rivers Water Quality Monitoring Programme	1993 - ongoing
Mangaokewa Stream	Regional Rivers Water Quality Monitoring Programme	1993 - ongoing
Mangapiko Stm (Pirongia/Te Awamutu)	Regional Rivers Water Quality Monitoring Programme	1993 - ongoing
Mangapu River	Regional Rivers Water Quality Monitoring Programme	1993 - ongoing
Mangatutu Stream (Waikeria)	Regional Rivers Water Quality Monitoring Programme	1993 - ongoing
Mangauika Stream	Regional Rivers Water Quality Monitoring Programme	1993 - ongoing
Ohote Stream	Regional Rivers Water Quality Monitoring Programme	1993 - ongoing
Puniu River	Regional Rivers Water Quality Monitoring Programme	1993 - ongoing
Waipā River - Mangaokewa	Regional Rivers Water Quality Monitoring Programme	1993 - ongoing
Waipā River - Pirongia	Regional Rivers Water Quality Monitoring Programme	1993 - ongoing
Waipā River - Otorohanga	Regional Rivers Water Quality Monitoring Programme	1993 - ongoing
Waitomo Stream 1	Regional Rivers Water Quality Monitoring Programme	1993 - ongoing
Waitomo Stream 2	Regional Rivers Water Quality Monitoring Programme	1993 - ongoing
Firewood Creek	Regional Ecological Monitoring of Streams (REMS) Programme	2009-11
Firewood Creek tributary	Regional Ecological Monitoring of Streams (REMS) Programme	2009-11
Whakarautawa	Regional Ecological Monitoring of Streams (REMS) Programme	2009-11
Mangatutu	Regional Ecological Monitoring of Streams (REMS) Programme	2009-11
Mangauika 1	Regional Ecological Monitoring of Streams (REMS) Programme	2009-11
Mangauika 2	Regional Ecological Monitoring of Streams (REMS) Programme	2009-11

Mangawhero tributary	Regional Ecological Monitoring of Streams (REMS) Programme	2009-11
Mangatutu Stream	Sediment Monitoring Programme	2004-ongoing
Waipā - Otewa	Sediment Monitoring Programme	1990-ongoing
Waipā - Otorohanga	Sediment Monitoring Programme	1990-ongoing
Mangaokewa	Sediment Monitoring Programme	1990-onging
Waitomo	Sediment Monitoring Programme	1990-ongoing
Waipā - Whatawhata	Sediment Monitoring Programme	1990-ongoing

Appendix 3 Background legislation for Waipā catchment plan

The table below describes the relevant legislation and identifies the key policy documents which direct the services Council delivers. The relevance of these documents for the Catchment Plan is also described. Essentially, the legislation and policies can be split into three overlapping groups and they are:

1. Legislation and policies that direct or inform the work that Council does or regulates activities within the catchment.
2. Legislation and policies that guides how Council makes decisions and charges for the services it delivers
3. Policies, plans and programmes or actions that the Catchment Plan itself can direct or seek to influence to achieve the outcomes sought in the catchment.

Legislation, Policies and Plans	What it does	Relevance for Waipā Catchment Plan
Resource Management Act 1991 (RMA)	Overriding statute for sustainable, integrated management of natural and physical resources and empowers regional councils to control (amongst other things): Taking, using, damming and diverting surface, ground and geothermal water Discharges of contaminants to land, air and water Introducing plants into water bodies Maintaining indigenous biodiversity Land use matters such as soil conservation, maintaining and enhancing ecosystems in water bodies, water quality and quantity and controlling natural hazards and hazardous substances Integrating infrastructure and land use	The Catchment Plan is a non-statutory tool for Council to exercise its responsibilities under the Act. In addition, the Act requires that the adverse effects of any activities must be avoided, remedied or mitigated. This requirement applies to any services delivered via the Plan. The current review of the RMA could have relevance for the Catchment Plan. Changes currently being proposed under the "improving our resource management system" include better natural hazard management and effective and meaningful Maori participation.
National Policy Statement for Freshwater Management 2014 (NPS)	Aims to improve freshwater management nationally and establishes the integrated management of water quality and quantity as a national priority. Directs local government to manage water in an integrated and sustainable way, while providing for economic growth within set water quantity and quality limits. The NPS-FM 2014: includes a standard list of values for which a particular freshwater body could be managed, such as swimming or fishing. While the actual values chosen for each freshwater body is a local decision, the minimum states that apply to those values are set at a national level through the NPS. The NPS incorporates the consideration of tangata whenua values, consistent with the Mana Atua Mana Tangata Framework.	Making improving water quality as a key objective for the Catchment Plan is one of the ways that Council can fulfill its obligations under the NPS and it signals to the community the priorities for the catchment.

Regional Policy Statement (RPS)	Council's overarching document for implementing the RMA. It provides an overview of the Region's resource management issues, policies and a range of methods to achieve integrated management of natural and physical resources and guides the development of sub-ordinate plans (regional as well as district) and the consideration of resource consents. Operative The Waikato Regional Policy Statement (RPS) contains objectives, policies and methods that are relevant to the WCP. The operative RPS outlines issues, objectives, policies and methods for managing accelerated erosion (3.3.7), water quality (3.4.5), wetlands (3.4.8), natural hazards (3.8.3) and plants and animals (biodiversity) (3.11.4) in the region: The proposed RPS (Decisions version) has new objectives for managing fresh water (3.13), ecological integrity and indigenous biodiversity (3.18), natural hazards (3.23), values of soils and new policies as follows: Policy 8.1 Approach to managing fresh water bodies Policy 8.2 High value fresh water bodies and wetlands Policy 8.3 All fresh water bodies Policy 8.4 Catchment-based intervention Policy 8.5 Waikato River catchment Policy 11.1 Maintain or enhance indigenous biodiversity Policy 11.2 Protect significant indigenous biodiversity Policy 11.3 Collaborative management Policy 13.1 Natural hazard risk management policy Policy 13.2 Manage activities to reduce the risks from natural hazards Policy 13.3 High impact, low probability natural hazard events Policy 14.1 Maintain or enhance the values of the soil resource The Methods under these policies are been given effect to through the Land and Water Portfolio – 10 Year Strategic Objectives.	Provides the framework for how Council will deal with resource management issues in the Region. Not only should the Catchment Plan align with the RPS, it is a vehicle for implementing its directions.
Regional Plans (WRP)	The WRP contains policy, methods and rules to manage the Region's natural and physical resources based on the directions set in the RPS. Plan Change 1 – Healthy Rivers – Waikato and Waipā River Catchment is being prepared. This plan change will primarily address water quality (N, P, E. coli and sediment) and habitat issues in the Waikato and Waipā River catchment. The WRP establishes water management classes, and includes	The Catchment Plan sets out practical strategies for managing water and soil issues within the Waipā catchment. In some instances this may be best achieved through regional rules. Council is in the preliminary stages of preparing a variation to the Regional Plan. Providing it's not inconsistent with the RPS, the Catchment Plan could make recommendations for the inclusion of policies, methods and rules in the Regional Plan that support the management of issues in the catchment (e.g. rules requiring the fencing of waterways). Activities undertaken in the Catchment Plan need to comply with any rules set through the Regional Plan.

	the following: rules controlling point source discharges of contaminants from a variety of sources, including dairy sheds and earthworks. 4. policies and methods to control non-point source discharges, 5. rules for stock in water bodies and for activities on land that may result in contaminants entering water bodies. 6. policies, methods and rules managing soil disturbance and vegetation clearance activities. Specifically the WCP implements the following the provisions of Chapter 5.1 of the WRP, including Objective 5.1.2, Section 5.1.3 Policies 1, 2 and 3 and Section 5.1.4 Methods 5.1.4.1, 5.1.4.2, 5.1.4.3, 5.1.4.4 and 5.1.4.5 of the WRP. Method 5.1.4.1 states that WRC will through environmental education programmes, raise awareness within the regional community of sustainable soil management practices that cause accelerated erosion and how these practices can be implemented and on how to undertake retirement and/or rehabilitation on land subject to severe accelerated erosion. Method 5.1.4.4 states that WRC will consider providing funding contributions for the promotion and implementation of new initiatives that assist in resolving accelerated erosion issues. Method 5.1.4.5 states that WRC will encourage and assist landowners with the development and implementation of property management plans and environmental management systems that identify erosion risk areas and measure to avoid, remedy or mitigate adverse environmental effects of land use activities.	
District Plans	District plans are prepared by district and city councils and set out the policies and rules that will be applied to managing the use of land within its boundaries. The Waipā River flows through the Waitomo, Otorohanga, Waipā and Waikato Districts	The Catchment Plan could make recommendations for the inclusion of land use policies, methods and rules in district plans that support the management of issues in the catchment (e.g. effects of certain types of land use in certain areas). Activities undertaken in the Catchment Plan need to comply with any relevant rules set through district plans.

Biosecurity Act 1993	The Act provides a legal basis for excluding, eradicating and effectively managing pests and unwanted organisms.	Effective animal and plant pest management is important for the health and stability of a catchment.
Regional Pest Management Plan (RPMP)	The Regional Pest Management Plan sets out what Council is trying to achieve through its efforts to manage pest plants and pest animals. It is support by an annual operational plan that sets targets and specific performance measures for particular pests.	The Catchment Plan can be both a tool for addressing regional pest management objectives. It could also make recommendations to RPMP with respect to the management of specific pest issues within the catchment. The RPMP must be reviewed every ten year and one is currently underway. While too late for this review, recommendations could be fed into the annual operational plan. If the RPMP was failing to achieve its objectives in the catchment or circumstances changed a review or partial review of the RPMP could be initiated.
Waikato River Settlement Legislation (various Acts) Vision and Strategy for the Waikato River (the Vision) Ngati Tuwharetoa, Raukawa, and Te Arawa River Iwi Waikato River Act 2010 Nga Wai o Maniapoto (Waipā River) Act 2012 Waikato Tainui Raupatu Claims (Waikato River) Settlement Act 2010	The overarching purpose of the legislation is for the restoration and protection of the health and wellbeing of the Waikato River. It provides for the co-management of the Waikato River and establishes the Waikato River Authority. Sets the primary direction to achieve the restoration and protection of the Waikato River. The RPS must be consistent with the Vision and regional and district plans are required to give effect to the vision and strategy. This Act contains the provisions specifically relating to iwi in the Upper Waikato catchment. It provides for: ▪ the development of Joint Management Agreement (JMA) between each iwi and affected local authorities ▪ the preparation of environmental plans by individual iwi ▪ preparation of an Upper Waikato River integrated management plan (UWRIMP). A MoU has been signed with TARIT and Raukawa is being developed. This Act applies specifically to Maniapoto iwi and the Waipā River catchment. The Act is similar the other River Acts. This Act contains the provisions that apply specifically to Waikato Tainui. The Vision and Strategy for the Waikato River is Part 1 of the Schedule to the Deed of Settlement in Relation to the Waikato River which was ratified by the members of Waikato-Tainui and signed on 22 August 2008. The Waikato Raupatu Claims (Waikato River) Settlement Act 2010 was passed on 7 May 2010. Waikato-Tainui Raupatu Claims (Waikato River) Settlement Act 2010 (except sections 22–34, 88–91, and 96 and Schedules 4–6	As with the NPS, making water quality (and specifically the water quality of the Waikato River) a key objective aligns the Catchment Plan with Council's obligations under the Waikato River Settlement Legislation. A key strategy of the Vision is to "review activities that have the potential to adversely affect the health and wellbeing of the Waikato River … to determine practicable means of restoring each aspect of river degradation and responding to the risks of degradation". The Catchment can play an important role in contributing to the restoration. JMAs with the River Iwi provide guidance on how the parties will work together on matters relating to the Waikato River. Preparation of the Catchment Plan will be of relevance to the JMA primarily from a relationship point of view. Although yet to be developed, Council is required to take into account iwi environmental plans and the UWRIMP. There is also to be a regional council component of the UWRIMP on issues related to the resource management, biosecurity and local government functions of Council. The Catchment Management Plan may well form the basis of this component.

	and 8 brought into force, on 24 September 2010, by the Waikato-Tainui Raupatu Claims (Waikato River) Settlement Act Commencement Order 2010 (SR 2010/266). Sections 22–34, 88–91, and 96 and Schedules 4–6 and 8 brought into force, on 25 November 2010, by clause 2(a) of the Waikato-Tainui Raupatu Claims (Waikato River) Settlement Act and Ngati Tuwharetoa, Raukawa, and Te Arawa River Iwi Waikato River Act Commencement Order 2010 (SR 2010/379). The Vision and Strategy (Te Ture Whaimana o Te Awa o Waikato) is repeated in Schedule 2 to the Waikato-Tainui Raupatu Claims (Waikato River) Settlement Act 2010. Under s9(2) of that Act the Vision and Strategy applies to the Waikato River and activities within its catchment affecting the Waikato River. The Vision and Strategy is repeated in Schedule 1 of the Nga Wai o Maniapoto (Waipā River) Act 2012. Under s8 of that Act the Vision and Strategy applies Under s11(1) of the Waikato-Tainui Raupatu Claims (Waikato River) Settlement Act 2010 on and from its commencement date the Vision and Strategy in its entirety is deemed to be part of the Waikato Regional Policy Statement without the use of the Schedule 1 process of the RMA. Under RMA s67(3) any regional plan must give effect to any regional policy statement. Once the Vision and Strategy is deemed to be part of the RPS, the WRC is required to give effect to it in Variation 6 by section 67(3) of the RMA. Under section 5(1) of the Waikato-Tainui Raupatu Claims (Waikato River) Settlement Act 2010 the Vision and Strategy is intended by Parliament to be the primary direction-setting document for the Waikato River and activities within its catchment affecting the Waikato River.	
Local Government Act 2002	States the purpose and powers under which local authorities operate and provides a framework for local authorities to decide what activities they undertake and the manner in which they will undertake them. It also promotes the accountability of local authorities to their communities.	While there is no specific legislation guiding the preparation of the Catchment Plan, Council needs to comply with the Part Six of the Act which deals with planning, decision making and accountability. In doing so it will need to determine the extent to which it considers "the views and preferences of persons likely to be affected by or to have an interest in" the matters dealt with in the Plan.
Long Term Plan (LTP)	The LTP is a ten year document that describes what Council will do over and why, outcomes it is working toward and how those activities will be funded.	The LTP has signaled to the community that Council is going to prepare a Zone Management Plan. In subsequent years, the Catchment Plan will inform the LTP/Annual Plans of the activities planned within the catchment and the funding required for these activities. Schedule 10 of the LGA requires Council's to state levels of service in its LTPs. This requirement has been a main driver behind previous Zone Plans as they

		have essentially been the asset management plan for soil conservation and flood protection and control works within the Catchment. An asset management plan will still be required but the high level strategy for that plan should be driven by the Catchment Plan.
Local Government Rating Act 2002	The Act: ▪ provides local authorities with flexible powers to set, assess, and collect rates ▪ ensures rates are set in a transparent and consultative manner ▪ enables ratepayers to identify and understand their liability for rates.	Consideration will need to given to how the activities undertaken by Council within the catchment are funded.
Project Watershed	Adopted by Council in June 2002, Project Watershed defines levels of service for the entire Waikato River Catchment and the associated policy to fund these services.	The Catchment Plan is likely to alter Council's priorities in the catchment. In turn, this may prompt a review of Project Watershed.
Other Legislation/Policy		
Soil Conservation & Rivers Control Act 1941 Land Drainage Act 1908	The Act provides for the conservation of soil resources and for the prevention of damage by erosion, and makes provision for the protection of property from damage by floods. Gives local authorities the powers to manage watercourses and drainage.	Soil and water conservation schemes and related works within the catchment will have been developed under this legislation. However, the provisions associated with the Act and the agreements with landowners are operational matters and are best considered as part of the Asset Management Plan. The Catchment Plan will identify high level strategies that will influence the overarching the priorities and approach taken in the Asset Management Plan. The provisions associated with this Act are operational matters and are best considered as part of the Asset Management Plan.
Civil Defence Emergency Management Act 2002 Land Transport Management Act 2006 (LTMA)	Under this Act, river and catchment management activities need to be part of the planning for and response to emergencies to minimize the effects of hazards, particularly river flooding. The purpose of the LTMA is to contribute to achieving an affordable, integrated, safe, responsive and sustainable land transport system. It also defines the function and the roles of regional councils, for land transport planning, programming and funding and regional transport committees.	The Waikato River hosts New Zealand's largest flood control scheme and, alongside water quality, hazard management is a major issue for consideration as part of the Zone Plan. The Upper Waikato Zone is traversed by a network of local, regional and national road including State Highway One. Council needs to consider both the impact of roading on catchments as well as the importance of road safety and maintaining access.
National Standards, Bylaws , internal policies and guidelines	There are a number of standards and guidelines (includes national guidelines as well as Council's internal management guidelines and practices) that impact on the way service is delivered in the Zone. Examples include Managing Flood Risk – A process Standard, NZS9401:2008; NAMS, 2006a; Navigational Safety Bylaw, Waterway Crossings (Environment Waikato, 2006).	These are primarily concerned with operational matters and are best considered as part of the Asset Management Plan
Iwi management plans	The RMA requires that planning documents recognised by an iwi authority, such as iwi management plans, be taken into account in the preparation of a regional plan, to the extent that it has bearing on the resource management issues of the region (RMA s66(2A)). In the Waipā Catchment there are three operative iwi management plans: • Maniapoto Iwi Environmental Management Plan 2007	The Maniapoto Iwi Environmental Management Plan 2007 includes the following relevant goals to water bodies in the section on participation on decision making: 1. Opportunities to participate in community development and decision-making at marae, hapū and iwi levels. Goals

	• Raukawa Fisheries Plan 2012 • Waikato-Tainui Environmental Plan	• Maniapoto are included in the decision making process of community in a way that recognises their unique status as tangata whenua. 3 The restoration and preservation of coastal and waterway environments together with the maintenance of access to them. Goals • Regeneration of native bush and healthy waterways with abundant freshwater and marine environments. • To provide more consistent access and availability of kaimoana, eels, kaio etc. • Adoption of policies that prevent the disposal or discharge of treated/untreated sewerage or wastewater into coastal and waterway environments. The Raukawa Fisheries Plan 2012: • For the purposes of the Ngati Tuwharetoa, Raukawa, and Te Arawa River Iwi Waikato River Act 2010, is an environmental plan. • For the purposes of the Resource Management Act 1991, the plan is a planning document recognised by the Raukawa Charitable Trust in its capacity as an iwi authority. The kaupapa (purpose) of this Fisheries Plan is: • To enable Raukawa to exercise mana whakahaere and effectively participate in the management of freshwater fisheries within the rohe and activities that may impact upon them. The overarching vision for freshwater fisheries within the Raukawa rohe is: • To protect, restore, enhance and rehabilitate freshwater fisheries and fisheries habitat for present and future generations. Objective 1 and policies 1-6 are relevant to the WCP. Objective 01 states: Aquatic habitats are enhanced and restored to support healthy and sustainable fisheries, including through restoration and enhancement of terrestrial ecosystems. P1 Develop a programme to work with Raukawa land owners to improve land management practices on Raukawa land, including through stock exclusion and planting of all riparian margins. P2 Advocate for fisheries habitat restoration, creation, enhancement and protection through relevant Resource Management Act 1991 processes,

		such as policy and plan development, resource consents, enforcement and monitoring, particularly in relation to: • riparian management; • fish passage; • sedimentation; • nutrient enrichment; • wetland protection; and • water level and flow management. P3 Support initiatives that will result in improved aquatic habitat that will support healthy and sustainable fisheries. P4 Identify opportunities to source funding and establish partnerships for restoration projects that will result in improved habitat. P5 Ensure consideration is given to potential impacts on fisheries from flood management and land drainage activities undertaken by councils. P6 Advocate for a catchment-based approach to land management that integrates land and water management. The Waikato-Tainui Environmental Plan came into effect in August 2013. Relevant clauses in that plan include: Clause 5.5.2 states: This Plan provides an overarching Waikato-Tainui perspective and, within the Waikato-Tainui rohe, marae and hapu may have different perspectives on the relative importance of components of the Plan. It is critical to understand the perspectives of hapuu and marae as it relates to specific issues and matters and effective engagement with hapuu and marae will lead to this understanding. There is simply no 'one-size-fits-all, uniform' Waikato-Tainui wide view of environmental matters. However, the Plan provides key guidance for external and internal users and should serve as a baseline for approaching environmental matters of importance to Waikato-Tainui. Clause 5.4.4 of the plan states: In addition, all local authorities in the Waikato-Tainui rohe should work to achieve consistency between this Plan and their own policies and plans. Generally, all entities developing policy, proposing uses, or currently using the resources in the Waikato-Tainui rohe should review such policy or use under this Plan to determine consistency and alignment with the Plan. Section 19.4 sets out Waikato Tainui objectives, policies and methods for water.

		Key objectives for water include: 19.4.1 Waikato-Tainui engage and participate in the highest level of decision-making on matters that affect waters in the Waikato-Tainui rohe. 19.4.2 Water quality is such that Waikato-Tainui fresh waters are drinkable, swimmable and fishable in all places (with water quality to the level that Taawhiao could have expected in his time). 19.4.3 An integrated and holistic approach to management of water is achieved. Other objectives, policies and methods cover water allocation, wetlands, managing soil erosion, managing river bank erosion, fisheries, and customary activities. In particular Objective 21.3.2 The life supporting capacity of land and soils states: The life supporting capacity of land and soils effectively manages soil nutrient loss and water quality so there is minimal impact on nutrient loss to waterways.