



# Shore Futures

A collective vision for healthy harbours and communities  
in the Kawhia and Aotea catchments.

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## Preferred Futures Report

## Abbreviations

DOC	Department of Conservation
HPA	Historic Places Act 1993
LGA	Local Government Act 2002
LTCCP	Long Term Council Community Plan
NZAA	New Zealand Archaeological Association
NZHPT	New Zealand Historic Places Trust
RMA	Resource Management Act 1991
WRP	Waikato Regional Plan
WRCP	Waikato Regional Coastal Plan
WRPS	Waikato Regional Policy Statement

## Acknowledgements

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# 1 Executive summary

The Kawhia and Aotea catchments and harbours are high quality environments. The current land use is well-suited to the conditions and is having minimal environmental impact, much of which can be attributed to good land management practices and stewardship of the land owners. There is a strong link, as with other parts of New Zealand, between the natural resources of the area and the economic activity of the area. The harbours are important areas for recreation and fisheries, particularly as harbours provide spawning areas for fish. There is a long history of agriculture being the main land use in the area. Any proposed development or land use changes should have minimal environmental impacts and aim to retain the high quality environment that underpins the rural and marine economies and not detract from the natural look and feel of the area, which is important to the local communities.

The aim of the Shore Futures project is to provide a framework, or strategy, to help manage change within the Kawhia and Aotea catchments. Integrated management across district boundaries and between the land and sea will be achieved by a multi-agency approach. The participating agencies are Environment Waikato, Otorohanga, Waikato and Waitomo district councils, Federated Farmers and the Department of Conservation.

The biggest challenge facing the area is the continuing population decline, which is placing social infrastructure (such as schools and medical services) at risk and creating challenges for councils to fund physical infrastructure (such as roads). This decline is primarily in response to national and international economic factors that are beyond the control of local councils. Another factor is the area's relative isolation from major employment centres and markets. The councils are responding to this challenge by reviewing their planning documents so that they more clearly state how environmental features are to be managed to enable appropriate development. The councils are also very mindful of the need to provide services at a cost that ratepayers can afford, and are committed to maintaining appropriate levels of service. For their part, land owners need to be able to respond to these national and international factors as they see fit within the context of sound environmental management, to secure ongoing financial viability and to be able to retain families in the catchments.

The Shore Futures project created the opportunity for agencies to pool resources and work together to address issues that affect the harbours and catchments. They were able to gather information on subjects where little knowledge previously existed. Identification of areas of high natural character, outstanding landscapes, coastal development setbacks, community concerns and aspirations and historic information were some of the gaps in information that were filled and will be used to help better manage the catchments and harbours.

A large number of people participated in the Shore Futures consultation. This valuable contribution helped to capture the differing views of the communities within the Kawhia and Aotea catchments. These views recognised the need to balance the rights of the community to enjoy the environment with the rights of individuals to continue to make a living, as well as the potential to develop their land. Therefore, it is up to the agencies involved and the communities to achieve the balance between economic, cultural and social development and a healthy natural environment.

While there was diversity in opinion, there were a number of themes that arose. Agreement and partnerships were formed by participating councils and the Department of Conservation in attaining necessary information. This information helped to identify some key objectives for the Kawhia and Aotea catchments. The information was also used by the participating agencies and organisations to determine the recommendations for the district councils, the regional council and other stakeholders. The recommended actions provide the platform and direction for the participating agencies as they progress through plan and policy statement reviews to ensure actions are undertaken in a consistent and integrated manner. While no formal commitments have been made to develop joint plans, partnerships have been developed between the councils and there will be ongoing cooperation as plans are developed. Furthermore, political representatives of each agency will meet each year to ensure ongoing integrated management.

This report is grouped into four chapters. The first three chapters are based on community feedback on the most important issues and cover heritage, the natural environment and development and infrastructure considerations. The final chapter details the recommended actions needed to achieve the Shore Futures objectives.

The Preferred Futures Report is a strategic guide – not a formal council plan. The Shore Futures objectives will be achieved through changes to formal council plans and budgets and through activities of the participating agencies and community. It is intended that communities and agencies will continue to collaborate and develop those opportunities that will provide local benefits.



## 2. Introducing Shore Futures

The Shore Futures project brings together several councils and a range of community groups to plan the future of the Kawhia and Aotea catchments. We are seeking to foster a sense of partnership and to ensure that together we respond well to the emerging issues and challenges facing us.

The purpose of the Shore Futures project is to provide an overall framework within which complex issues will be addressed across the various local bodies and agencies.

The Kawhia and Aotea Harbour communities enjoy a high quality and attractive environment. The area includes outstanding landscapes, large areas of natural vegetation and habitat, high water quality, tranquility and a strong sense of community. There are, nonetheless, significant challenges facing the community, and people are concerned about the future and the long term viability of these small communities. Challenges include: population decline, reducing services, increasing transport costs, high costs to upgrade infrastructure, and few employment opportunities. This project has arisen out of these concerns. Furthermore, there is recognition that uncontrolled development could degrade the environment. Inappropriately managed land intensification could cause erosion and degrade water quality, while subdivision and housing development in prominent or sensitive areas could spoil the landscape and important heritage sites. Shore Futures aims to provide direction to avoid such problems.

Through Shore Futures, the participating agencies will:

- identify the key issues facing communities and the environment
- agree upon the direction which will shape the future
- identify the recommended actions to take and who should take them
- continue an ongoing partnership between the councils and communities.

For councils, this project has enabled a sharing of resources, the gathering of important information not previously available on matters such as landscapes, natural hazards and cultural heritage and is a step towards greater consistency in integrated planning across councils. Better-informed decision making will be reflected in the Long Term Council Community Plans which outline the budgets for the local authorities and in both district and regional plans (land and water use controls).

Some of the challenges within the catchments are significant. There is no simple quick fix. Nor can these challenges be overcome by individual effort. Nonetheless, there is a strong sense of community and a desire to address these challenges so that the communities remain viable and prosper. This project has enabled the councils and the community to focus on the key issues and address them through a combination of:

- direct use of council resources and budgets
- changes to regional and district plans
- community initiatives
- joint work between councils and communities
- joint lobbying of external agencies.

This document is a strategic guide – not a formal council plan. However, the key principles that have been agreed on through Shore Futures between the participating agencies and the community provide direction as statutory plans and policies come up for review. For district councils, a number of the recommended actions will provide clear guidance for the LTCCP decision making process and for changes to be made to district plans. For the regional council, the Shore Futures project will provide guidance in the LTCCP decision making process (including the ongoing catchment management work) and the review of the Waikato Regional Policy Statement on the aspects of the natural environment that need to be protected and where it is best for development to take place. For other agencies, the principles will also be able to be incorporated into their relevant plan and strategy review processes.

For the communities within the catchments, the Shore Futures Preferred Futures Report provides a valuable opportunity to continue to work with a range of agencies to promote the aspirations they spoke about during the consultation.

## The Shore Futures process

Shore Futures focuses on the Aotea and Kawhia Harbours and catchments (see Figure 1 for a map of the Shore Futures area). It is a joint agency project that involves Environment Waikato, Waitomo District Council, Otorohanga District Council, Waikato District Council and the Department of Conservation (DOC).

Many other agencies, organisations and people have contributed to the project and to the production of this report. A technical working group was formed that comprised technical staff from each participating council, Federated Farmers and DOC.

Issues relevant to Kawhia and Aotea have come from two key sources – existing legislation and policy and community and stakeholder consultation. Extensive community consultation was undertaken during 2006 and 2007 in order to identify the relevant issues. A number of information days were held, and a questionnaire was posted out to 1200 land owners, residents and other stakeholders within the catchments. Questionnaires were also made available at the information days.

Workshops were held in order to gather information from the community. At these workshops three topics were chosen for discussion: water quality, development and landscape values. The decision to focus on these issues was based on community opinion and concerns raised through discussion with district and regional councils. Consultation also took place with iwi and key stakeholders to discuss these topics. A Shore Futures Consultation Report was put together that summarised the key aspects of the community feedback<sup>1</sup>.

In order to test if the Preferred Futures Report achieved the right balance between social, economic and cultural development and a healthy natural environment, the draft report was made available to the community for their comment and feedback. The feedback period ran from 12 June until 27 July 2009. There were a number of ways in which the draft report was made available to the public for their comment:

- a newsletter was distributed to approximately 1100 people outlining the process and where they could access a copy of the report
- a media release from Environment Waikato was sent to local newspapers
- copies were made available in a number of key locations such as libraries and local stores
- the Shore Futures webpage was updated and the draft report was available for downloading.

Fifty individuals/organisations provided feedback on the draft report. This feedback helped the governance group to finalise the report and achieve a balance between maintaining the high quality environment and enabling the continuation of economic and social prosperity in the area.

A governance group and community reference group were formed to give political and community input to the project. As the technical working group developed the Shore Futures Preferred Futures Report, they routinely met with the governance group and the community reference group to gain approval on the content and key recommendations of the report.

The report was developed by:

- a technical working group – staff planners from each council together with representatives from DOC and Federated Farmers, who undertook the work and advised the governance group
- a governance group – politicians from each council, and representatives from DOC, who made recommendations back to their respective agencies or groups
- a community reference group – representatives of the community from within the Kawhia/Aotea area including iwi/Maori, who advised on matters of significance to the community.

## Kawhia and Aotea catchments – basic facts<sup>2</sup>

The Kawhia and Aotea catchments have a land area of approximately 649 km<sup>2</sup>. The two harbours cover a significant area, with Kawhia Harbour being 70 km<sup>2</sup> and Aotea 31 km<sup>2</sup>.

Kawhia is the main residential area within the Shore Futures catchment. The population of Kawhia township is 390 people. For the last few years the population in Kawhia has been declining. Since the 2001 census there has been a population decrease in Kawhia of 117 people. Within the wider Shore Futures area, the population is estimated to be 980 people. The townships of Kawhia and Aotea have a significant holiday population, and over the summer period the population increases to approximately 2500 people. Key community events such as the annual Kawhia Kai Festival also draw thousands of people to the town.

In terms of ethnicity, Maori make up 53.5 per cent of those living in Kawhia, which is significantly higher than the Maori population in the Waikato region (21 per cent). European is the second highest ethnic group. Furthermore, a much higher number of people in the Kawhia community speak Maori (25.4 per cent) when compared with people in the Waikato region (6.1 per cent).

## Structure of the report

The four chapters that form the main body of this report are grouped under themes of heritage, the natural environment, development and infrastructure and recommended actions and implementation. The first three chapters were chosen primarily because they were raised as key topics through community consultation. In order to inform these chapters, existing and new technical information was drawn together, and the following issues are addressed:

- the history of settlement in the catchments
- water quality and quantity
- land and soil
- landscape and natural character
- biodiversity
- hazards and climate change
- infrastructure considerations
- social service provision
- future management of growth and development.

The topic chapters provide information on the present state of the resource and those aspects that may need careful management – management which will enable ongoing use and the potential for intensification to maintain the quality of natural environment that is important to the communities in the area. How current policy and legislation have addressed the management of the resource and what still needs to be addressed are outlined. The chapters also detail what the community wants and provides some key recommended actions that the participating agencies and the community can take in order to achieve good outcomes.

The implementation chapter lists the recommended actions necessary to achieve the outcomes and desired changes, and mainly relate to resource management issues. It is intended that these actions will be incorporated into district and regional plans and other agencies' strategic plans through future statutory processes.

The conclusion provides a brief summary of the report. It summarises key policy recommendations that will help achieve changes to the relevant plans and policies and the actions needed to implement the recommendations. Gaps and further work are also discussed.

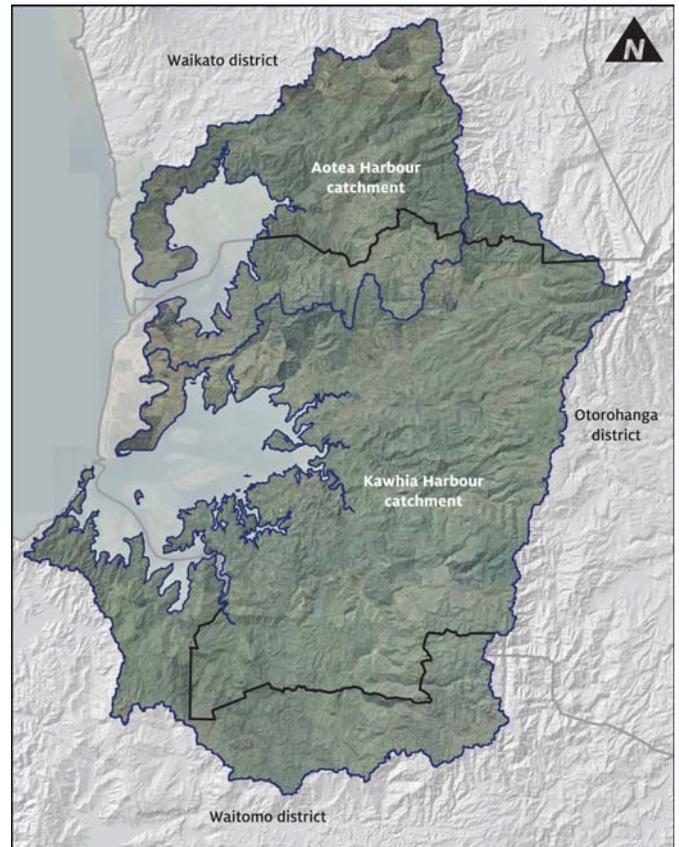


Figure 1: The Shore Futures catchment and harbours (shaded area).

# 3. Heritage

## Introduction

New Zealand's historic heritage is rich, varied and unique<sup>3</sup>. It is a legacy of all generations; it helps us to identify where we have come from, who we are today and where we are going. The heritage of Kawhia and Aotea catchments provides a distinct insight into the ongoing relationships of the people, the land and the environment over time. It provides a sense of connection and belonging and is a taonga passed from one generation to the next.

Through the consultation undertaken with Shore Futures, feedback received from across the community identified that the heritage character of the area is important. In particular, cultural heritage came through as one of the defining features of these two catchments. There was specific concern raised by iwi/Maori forums regarding the degradation of waahi tapu, cultural sites and cultural landscapes. In a community survey undertaken as part of the Shore Futures consultation, heritage was identified as a stand alone topic, second in importance only to that of the natural environment.

This chapter provides a contextual overview of the historical background that is present. It is in no way a comprehensive representation, but rather is a sample of the richness, wealth and diversity of the heritage resource in the catchments which intends to highlight the magnitude and significance of the area's heritage. The chapter details the legislative framework to provide clarity and understanding of the interacting nature of the key pieces of legislation. The key issues and pressures affecting heritage are discussed and an analysis of the regional and district council planning provisions that manage the impacts on the heritage resource is provided. From this, a management framework is put forward in which local authorities, community and relevant heritage agencies can play a role.

## Historical background<sup>4</sup>

Kawhia and Aotea Harbours have provided sustenance and wellbeing for people since the first recorded history of the land. Over time, people have fostered a strong relationship with the land and harbours, which is founded on mutual care and nurturing and where dependency on the resources of the land and sea provided for human habitation. Through time, geological and human made features mark places that commemorate the relationship and its significance between people and the land, harbour and the sea.

In earliest recordings, reference is made to a people that occupied the land in the time of Kupe<sup>5</sup>, the first discoverer of Aotearoa, and how he left some of his people in Aotea to care for the land. Some time later, the Tainui waka, captained by Hoturoa, travelled from Hawaiki landing initially on the East Coast before travelling around the upper North Island to arrive in Kawhia Harbour. The pohutukawa tree Tangi-te-Korowhiti is believed to be the first mooring site of the Tainui waka<sup>6</sup> around the Kawhia township area, and its final resting place is known as Te Tumu o Tainui<sup>7</sup>. This site lies beneath the altar known as Te Ahurei<sup>8</sup>, where Hoturoa and the other members of his crew gave thanks for the successful completion of their journey. These places are of utmost importance and significance to the people of the Tainui waka and provide a significant connection with their heritage, the land and the sea.

Hoturoa and the other members of the Tainui waka settled up and down the coastline, from Raglan to Mokau<sup>9</sup>. The first expedition made inland was by Kahupeka and her son Rakamaomao following the passing of her husband, Ue<sup>10</sup>. From this expedition came many names of which are still in place today, although somewhat shortened. For example, when Kahupeka came upon Pirongia she named it Pirongia-te-aroaro o Kahu (the scented pathway of Kahu)<sup>11</sup>. Upon coming to another volcanic form, she named it Kakepuku-te-aroaro o Kahu (the swollen stomach of Kahu, which referred to the advanced pregnancy of Kahupeka) and further still, Pureora o Kahu<sup>12</sup>. These names represent significant events that occurred during their expedition, the importance of which is still remembered and retained today.

Some generations on, there was the rivalry<sup>13</sup> between the sons of Tawhao, Whatihua and Turongo. This rivalry was displayed in many different events, the most significant being the courting of the celebrated beauty Ruaputahanga<sup>14</sup>, a young woman whom Turongo met on a journey to Taranaki. Securing her betrothal, Turongo returned to Whare-ongarere, Kawhia<sup>15</sup>, to make ready his home to receive her and her people.

Whatihua also heard of her beauty and decided to take her for himself. As Turongo made preparations, Whatihua advised him to trim the ridge pole of the whare<sup>16</sup> so it was not too big. He also advised him to plant out his kumara to create a large garden to look at, which depleted the food stores of Turongo<sup>17</sup> prior to the arrival of Ruaputahanga. Happy with his scheming, Whatihua returned to Wharenui, Aotea, to make a large house and harvest food in readiness.

On the arrival of Ruaputahanga, Turongo realised his mistake in that he could not accommodate nor feed Ruaputahanga and all of her people. Whatihua obligingly stepped forward and invited Ruaputahanga and her people to take residence at his whare. Upon witnessing the vast contrast in wealth on show between the two brothers, Ruaputahanga married Whatihua and not Turongo. Turongo left in dismay and journeyed to the east coast where he met and joined with another celebrated beauty, Mahinaarangi, thus uniting "the chiefly lines of the east coast tribes with those of the Tainui tribes"<sup>18</sup>. Many other sites in the area are associated with these brothers, such as Rangihua (Kawhia), Rangiatea (Otorohanga), Manuaitu and Pohotangi<sup>19</sup> (Aotea), which are still held with reverence to this day.

Over time, Kawhia and Aotea provided for many tribes and their people, one of which is the renowned Maori chief Te Rauparaha of Ngati Toa who is the originator of the now famous haka<sup>20</sup> "Ka Mate Ka Mate". Whilst Te Rauparaha originated from Kawhia and enjoyed many successes in battle here, he and his people were eventually pushed south where they established their mana over the lands that they now occupy.

The first arrival of Pakeha in the area occurred in 1825, with the arrival of Captain Kent<sup>21</sup> and his ship *Elizabeth Henrietta*<sup>22</sup>. Captain Kent traded with Kawhia and inland Maori and eventually set up the first trading post in the area<sup>23</sup>. He eventually settled at Heahea and married Amohia, the daughter of the high chief Te Wherowhero<sup>24</sup>. He brought other Pakeha with him who settled in the area who also married Maori women<sup>25</sup>.

The next significant arrival of Pakeha occurred with the arrival of missionaries, with the establishment of a Wesleyan mission station at Kawhia in 1834 under the Reverend John Whiteley<sup>26</sup>. The teachings of Christianity struck a chord with Maori up and down the country as well as in Kawhia and Aotea, to the point where requests were made from Aotea Maori for a missionary to be established in that area. This request resulted in the appointment of Reverend H.H. Turton<sup>27</sup>.

Reverend Whiteley settled at Ahuahu (Te Waitere) in 1839 with his wife and two children. The mission prospered and produced grapes, potatoes, kumara, peaches and cherries as well as goats, milk, cream and pigs. It was at Ahuahu that the district's first post office, or perhaps mail station, was established, run by the Mission from 1843 until 1855. This was later named Te Waitere, the Maori transliteration of Whiteley's name. Since Whiteley's time, Ahuahu has been variously known as Lemon Point and Te Waitere. One of the lemon trees planted by Reverend Whiteley still bears fruit in the reserve at Te Waitere.

The next significant event was the journey of Captain William Cornwallis Symonds with the Treaty of Waitangi<sup>28</sup>. Captain Symonds did not make it to Kawhia or Aotea but sought assistance from Reverend Whiteley to secure signatures of the chiefs of that area. Reverend Whiteley obtained some signatures from the Kawhia area<sup>29</sup>. Further to this, Captain Symonds, through his travels in the north Waikato, secured signatures from an assortment of minor chiefs from as far south as Mokau<sup>30</sup>, but failed in securing the signature of the High Chief Te Wherowhero.

Kawhia was a favourite port for trading vessels, and considerable shipments of wheat, flour, flax, pigs and potatoes were exported in return for clothing, tobacco, guns and ammunition<sup>31</sup>. However, trade with (and settlement of) Pakeha came to a halt as a result of the Waikato land wars. At the conclusion of the land wars the area was opened up to surveyors and the formal subdivision and sale of residential properties in Kawhia township occurred in 1884<sup>32</sup>. The original town block comprised 40 to 50 acres<sup>33</sup>.

The Kawhia Harbour website<sup>34</sup> provides the following information on the town area and how the history of Kawhia can be understood by looking at the street names.

The main street is **Jervois Street**, named after Sir William Jervois, appointed Governor of New Zealand in 1882, when he visited Kawhia. He was very popular among the colonists. Jervois was born on the Isle of Wight and died in a horse carriage accident in 1897. From Jervois Street runs **Tainui Street**, named after the Tainui waka, the ocean-going canoe that brought the ancestors of the Tainui people to Kawhia in the 14th century. Tainui means 'big tide'.

Travelling up Tainui Street you pass **Charleton Street**, named after John Charleton, one of the early Pakeha settlers who claimed ownership of a Kawhia township block. Next comes **Fairchild Street**, named after John Fairchild who was famous for two things. He was master of the *Hinemoa*, which was used to set up the Kawhia Harbour beacons in 1883. He claimed the Kawhia town block from John Charleton Junior in settlement of a debt. The government eventually bought the block in 1880 either from Fairchild or the Charleton estate.

Next is **Cowell Street**, named after yet another John – John Cowell, a flax and firearms trader, who originally claimed the Kawhia town block after paying two Kawhia chiefs for it. He paid them in powder, muskets, blankets, clothing, tobacco, pipes and tools. Cowell sold the block to Charleton, to settle a debt. On the northern side of the town block is **Pouewe Street**. This was the original name of the Maori settlement in this area, Pouewe township, and the Pouewe Stream. The name refers to a significant landmark. It is often wrongly spelled 'powewe' which means a dog yelping at night.

Through sale or acquisition through the Native Townships Act 1895 and other pieces of legislation, more land began to be opened up by the government. Native titles were established slowly but after they were settled the government was able to acquire more land. The Pirongia block of 17,000 acres was balloted for in 1893. After the Pirongia block was opened, the Hauturu and Kinohaku blocks followed.

Research undertaken for Shore Futures by Lynette Williams identifies that “in 1894 there were only 10 entries in the [provincial] directory for Kawhia and not all listed an occupation”<sup>35</sup>. Those listed were a boardinghouse keeper (G. Grey), native interpreter (Mrs. M. Morgan), constable (John Morgan), and two men both listed as being shipping agent and postmaster (Walter Morgan and Thomas Turnbull), presumably reflecting a change of office-holder in this year. William Melbourne is listed as a flaxdresser, and it may be his mill that was at the Pouewe Street end of Jervis Street. In 1894 there were 17 directory listings in Aotea, including farmers, labourers and flax workers.

After the balloting of land in 1902, Pakeha settlers began to arrive in larger numbers. Some of the first settlers to take up land in the Te Waitere/Kinohaku area were Harry Derecourt and Harry Green, who formed a company (Green and Derecourt). They introduced the new oil launch, *Kinohaku*, in 1904. The launch delivered the mail, passengers and supplies on a regular basis between Kinohaku, Waiharakeke, Te Waitere, Te Maika and Kawhia. Supplies would come by steamer to Kawhia and then by launch to Kinohaku. The Kinohaku Wharf and shed were built in 1910 and the Te Waitere Wharf in 1912.

Farming practices were the mainstay for the families and communities around the Kawhia and Aotea area where Oparau, Te Waitere and Te Mata had dairy (butter) factories and their associated cream runs that collected milk and cream from their local communities. Te Mata was part of the social history of the Aotea Harbour area and had a major influence in terms of access and facilities. By 1910 it had a school and a store as well as the dairy factory.

Historian Lynette Williams describes Kawhia in the 1930s as “a single sandy street [which] straggled down towards the jetty where the west coast boats brought provisions once a fortnight or so, according to the state of the [sand] bar. There were a few stores, a tiny branch bank, a billiards saloon, an imposing boarding-house and Post Office – that was all”<sup>36</sup>.

Williams provides further information from the 1930 provincial directory which lists the residents who paid to be listed in the directory and their occupations. The majority of the names listed are Pakeha and are not seen as a comprehensive list but an indication of the professions, skill sets and people in these townships.

- For Aotea, there were 22 entries. Most were listed as farmers, with one each of a sawmiller, school teacher and postmaster.
- At Te Maika, there were 39 listings. Many do not list their occupations, but of those who do, most are farmers, with two teachers and a postmistress.
- At Te Rauamoia, all but two of the 24 listings are farmers, the exceptions being a teacher and the other citing no occupation.
- At Te Waitere, 25 listings included one for the New Zealand Insurance Company, whose agent was at the Kawhia South Co-operative Dairy Company. The majority were farmers, plus a wharfinger, a Presbyterian minister, a postmistress and boarding-house keeper, saw miller, bus driver, factory manager and carpenter. Two listed no occupation<sup>37</sup>.

Over time, Kawhia and Aotea have seen changes in population. Accounts estimate the Maori population in the area prior to Pakeha settlement to be approximately 6000. This population was augmented by Pakeha settlement for a period, but since then the overall population has decreased to present day numbers.

## Heritage in the legislative context

The establishment of the Ministry of Culture and Heritage, which is committed to improving heritage practice in New Zealand, has led to a number of Crown-driven initiatives on Crown-owned land and properties. The four main pieces of legislation that have relevance to the roles and responsibilities of local authorities in regards to heritage are:

- the Historic Places Act 1993 (HPA)
- the Resource Management Act 1991 (RMA)
- the Building Act 2004
- the Local Government Act 2002 (LGA).

As there is no one piece of legislation nor one discrete agency that manages heritage, the following provides an overview of heritage management and how these pieces of legislation interact with a particular focus on the roles and responsibilities of relevant agencies.

### Historic Places Act 1993

The HPA has a regulatory component relating to archaeological sites as well as provisions for the identification of historic places, historic areas, waahi tapu and waahi tapu areas. The Historic Places Trust administers the HPA and, as such, is required to keep a register. The purpose of the register is to identify such places, inform owners and assist with the protection of such places under the RMA.

Registration does not, of itself, protect historic places but assists in their protection by notifying property owners and the public of their significance. Additionally, local authorities are required to have regard to entries in the register when developing district and regional plans. Regulations and enforcement action of statutes may also be easier to apply to registered places. Protection for historic heritage from inappropriate subdivision, use and development is reliant on district and regional councils through district and regional plans and policy statements, not through registration<sup>38</sup>.

The RMA requires places registered with the Historic Places Trust to be recorded on LIM reports and councils are obliged, in considering resource consents where a registered item is affected, to consult the New Zealand Historic Places Trust.

### Resource Management Act 1991

The RMA identifies historic heritage and the relationship of Maori and their culture and traditions with their ancestral lands, water, sites, waahi tapu, and other taonga, as a matter of national importance.

The RMA defines historic heritage as being:

- (a) those natural and physical resources that contribute to an understanding and appreciation of New Zealand's history and cultures deriving from any of the following qualities:
- (i) archaeological
  - (ii) architectural
  - (iii) cultural
  - (iv) historical
  - (v) scientific
  - (vi) technological

and

- (b) includes:
- (i) historic sites, structures, places and areas
  - (ii) archaeological sites
  - (iii) sites of significance to Maori, including waahi tapu
  - (iv) surroundings associated with the natural and physical resources.

The RMA provides the ability to use a heritage order, which is a provision that prevents anyone from doing anything that affects the heritage characteristics of the place without written consent from the appropriate heritage protection authority. Heritage orders are not intended to be the primary means of protecting historic heritage but could be seen as a last resort for heritage protection<sup>39</sup>.

## Building Act 2004

The Building Act 2004 regulates all buildings in New Zealand. Local authorities are required by the Act to ensure buildings are safe, promote physical independence and wellbeing, have adequate fire escape provisions and are designed and constructed in ways that promote sustainable development. Local authorities are also required to facilitate the preservation of buildings of significant cultural, historic or heritage value.

## Local Government Act 2002

The LGA identifies cultural wellbeing as one of the four wellbeings in the purpose of the Act. This requires local authorities to pay greater attention to their area's heritage resources and their contribution to the wellbeing of the community.

Cultural wellbeing is defined by each respective local authority community through the community outcomes in the Long Term Community Council Plans (LTCCP). Analysis by Opus International Consultants<sup>40</sup> of the four councils' LTCCPs involved in Shore Futures identified that the Waikato Regional Community Outcomes refer to "the rich and diverse natural and cultural heritage" which is supported by the need "to preserve and value heritage sites and landscapes of significance to whanau, hapu and iwi"<sup>41</sup>. Emphasis is also placed on the retention of historic buildings and places.

Otorohanga District Council's 2009-19 LTCCP also has clear community outcomes including identifying, marking and preserving sacred and historic sites as well as maintaining the historic nature of Kawhia. Heritage issues are addressed in Waikato District's community outcomes through the outcome area entitled 'Vibrant Waikato'<sup>42</sup>.

Waitomo District Council's 2009-19 LTCCP contains a specific community outcome relating to cultural heritage and social harmony. The outcome aims to ensure that the district is enriched by the values of all its people. In particular, Maori heritage, culture, beliefs and way of life are an inherent and valued part of community life.

Given the rich heritage of the area, Kawhia and Aotea catchments have a considerable number of heritage sites (as shown in the archaeological sites map in the appendix). A number of these have been studied and information relating to them is publicly available. However, a large number are still to be recorded and knowledge of these sites remain only with the kaumatua of the area.

There are a number of issues, threats and risks facing the heritage sites located in the Aotea and Kawhia catchments as defined in the report undertaken by Opus International Consultants<sup>43</sup>. The report identifies these issues as generic as they apply across the region as a whole:

- Growth and development can have a substantial impact on the historic heritage resource unless it is sustainably managed. Ongoing development in the region is likely to exacerbate the risks to historic heritage. This level of management is reliant on the heritage resource being identified and appropriately managed and protected. There are a number of data limitations within the study area.
- A lack of knowledge and understanding can lead to fear and uncertainty, particularly in respect of waahi tapu and archaeological sites. This requires sensitive handling by councils to ensure RMA requirements are met.
- There is a general lack of awareness of the effects that land use activities and subdivision can have on the heritage resource.
- There is uncertainty around the concept of cultural landscapes and the scale of area that it encompasses. The introduction of the cultural landscape into the historic heritage definition via the RMA amendment has yet to be fully tested in case law.
- There is a general lack of understanding of the dynamic nature of historic heritage and how that can change and evolve. There is a perception that historic heritage has to be old. There is a poor monitoring system in place to monitor and record the effects of subdivision and development on sites.

## Heritage in the planning context (district and regional plans)

The primary statutory instruments for local authorities in protecting historic heritage are district plans and regional policy statements and plans. A review<sup>44</sup> of the heritage related provisions of the Waitomo, Otorohanga and Waikato district plans and the WRPS and WRP identified the following points.

- European built heritage<sup>45</sup>, particularly with regard to the identification of specific buildings, is generally well covered. The European inventories are weak on identifying the less attractive heritage items and have not covered industrial, rural or infrastructural heritage adequately. The emphasis has also been on individual sites rather than on curtilage, precincts or on the broader cultural landscape.
- Fairly comprehensive archaeological site registers are contained in some plans. These plans rely on the old NZAA data. The old data is unreliable and has caused considerable difficulty for some councils. European archaeological sites are grossly under-represented.
- Waahi tapu are not strongly nor comprehensively represented in any of the statutory instruments.
- Cultural landscapes encompassing both Maori and European history are not represented in any of the plans. Landscapes are represented but the cultural element, if it has been introduced, is not immediately apparent.
- The objectives and policies, particularly in the first generation plans, tend to mirror the wording of the RMA and are not particularly useful in assessing discretionary and non-complying activities.

The above analysis provides an overarching assessment of the planning documents and identifies strengths and weaknesses as a collective representative. Comparative assessments of these documents highlighted the differences of each document in regards to the management of historic heritage and the activities that can affect them.

## Principles for managing heritage

Opus International Consultants<sup>46</sup> recommends the adoption of a holistic approach to historic heritage management. The collective approach of the Shore Futures project provides the opportunity to identify consistent management approaches that can apply across local authority boundaries. The framework and key principles below are derived from the analysis undertaken by Opus. In order to achieve the objectives, input of resources and commitment from a number of stakeholders (not just councils) would be required.

- Councils are responsible for managing their obligations under the RMA. Historic heritage is a matter of national importance and needs to be considered accordingly in reviews of district plans, regional policy statements and regional plans. The definition of historic heritage under the RMA is holistic and requires councils to deal with all aspects of historic heritage (buildings, archaeology, waahi tapu, cultural landscapes, areas and sites). All heritage is accorded an equal weighting.  
**Principle – all aspects of historic heritage need to be considered a holistic framework if the requirements of the RMA are to be fully met.**
- The Historic Places Act 1993 accords legal protection to archaeological sites but does not afford any other heritage item legal protection. Legal protection for buildings, waahi tapu and other non-archaeological historic heritage can be legally protected only under the RMA. Prior to the inclusion of historic heritage into the RMA, there was a debate as to whether archaeology should be considered as part of Section 7 considerations.  
**Principle – Archaeology is a fundamental part of historic heritage and needs to be accorded protection under the RMA. Councils serve a dual function of protecting archaeology alongside Historic Places Trust. The RMA is the predominant instrument for protecting historic heritage in New Zealand.**
- Other legislation such as the Building Act 2004 and the LGA sit alongside the RMA and Historic Places Act.  
**Principle – In reviewing the statutory instruments, an integrated approach should be adopted to ensure district plans and regional policy statements plans sit well with community outcomes in the LTCCP. Policies on earthquake-prone buildings must be consistent with district plan policies.**
- The relevant case law should be considered in setting up the heritage framework. There are a number of principles to be considered but primarily the court will always take a balanced approach, which may result in the loss of proven historic heritage items and places once all factors are considered.  
**Principle – The court will not freeze large tracts of land as this is considered unsustainable. This principle will severely limit the size of buffer zones or sensitivity areas that are applied in district plans and regional policy statements and plans. High quality evidence (written and oral) is essential if historic heritage items are to withstand scrutiny in the Environment Court.**

- European buildings are generally well protected under the various district plans, but inventories are deficient in the area of agricultural, industrial and infrastructural heritage as well as protecting areas, landscapes and precincts. The archaeological information in the first generation plans is deficient and unreliable. European archaeology and archaeological landscapes are neglected. Waahi tapu are grossly neglected in all the statutory instruments.

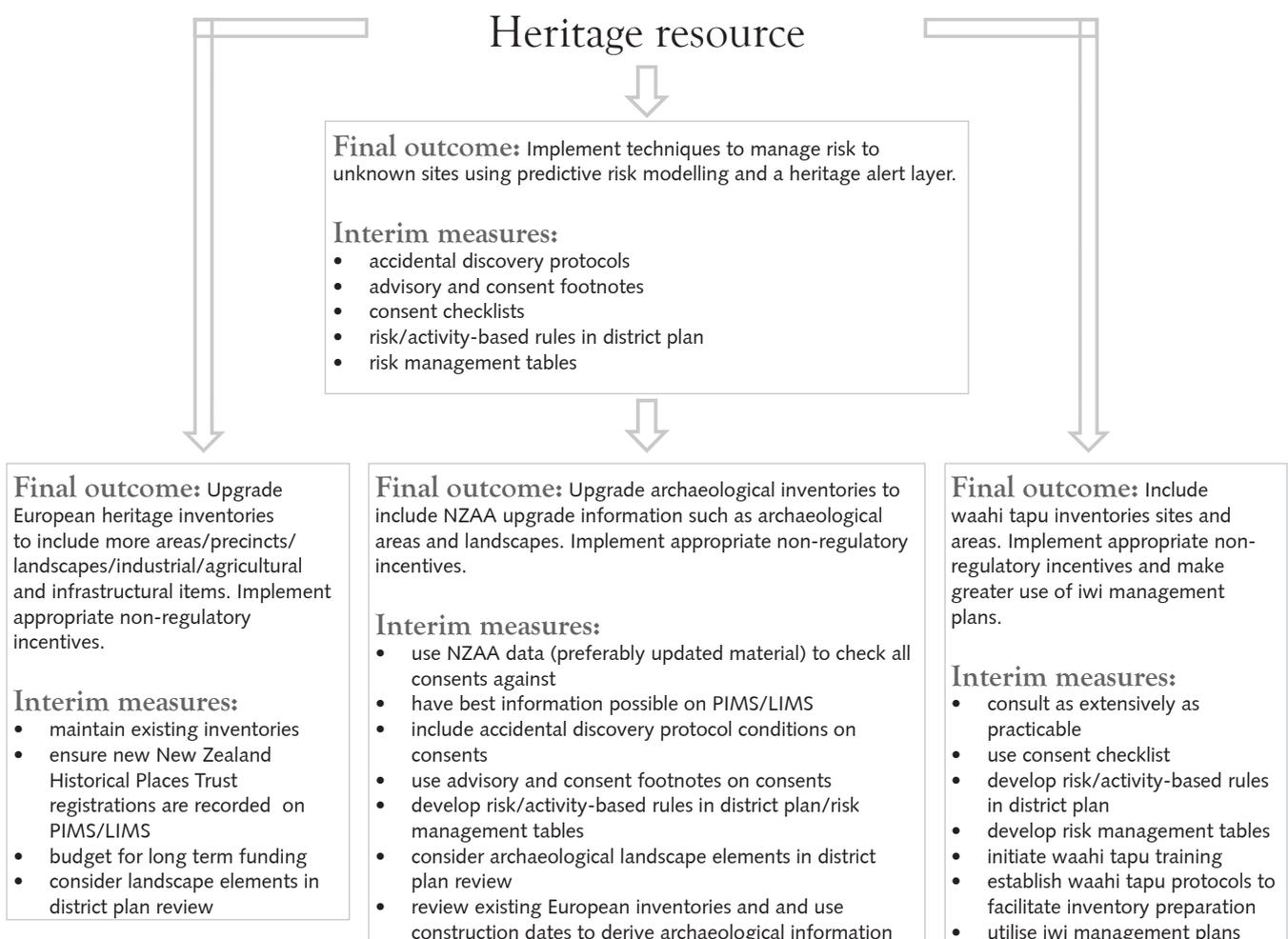
**Principle – Waahi tapu sites are not protected in any of the plans and this fails to meet council’s RMA obligations. This is an area of major concern and needs to be urgently addressed. Once the NZAA upgrade material is available this archaeological information should be included in the respective councils’ statutory instruments and at a minimum included as an advice schedule in the rear of the document. Statutory protection is preferred. The deficiencies in the European schedules should be addressed as funding becomes available. In the review of the statutory instruments, cultural landscapes should be considered as part of the landscape assessments.**

- A range of regulatory and non-regulatory instruments should be applied to protect historic heritage. Silent files should not be used as a tool as they have proven to be unreliable and practically difficult to administer. Large scale sensitivity zones and buffer areas have proven to be unacceptable to the court as a blanket approach is considered unsustainable.

**Principle – A range of tools should be applied, appropriate to the community need. A recommended range of tools is shown in the flowchart below with emphasis on the establishment of a waahi tapu schedule as a priority, closely followed by the inclusion of New Zealand Archeological Association (NZAA) data and a later introduction of heritage alert mapping. A regulatory approach is most effective when supplemented by a range of non-regulatory instruments.**

The development of a comprehensive heritage framework is both time- and cost-intensive. A phased approach should be adopted. The flowchart below sets out the desired outcomes, along with interim introduction measures.

## Heritage management framework



## Implementation

To achieve implementation of the principles and the proposed management framework, considerable input of resources and commitment from a number of stakeholders, not just councils, will be required over a period of time. It is considered more feasible and practical to phase implementation over a period of time and to commit resources accordingly.

The framework separates the heritage resource into four categories, each with respective measures that can be used to make progress towards, and ultimately provide, a holistic heritage management framework. Initial progress can be made by updating inventories and ensuring common processes are implemented across all councils' management of heritage. Over a longer timeframe, work will need to be progressed, with respective agencies and/or iwi/Maori authorities defining and building inventories that address cultural landscapes.

Table 1: Recommended actions

<b>All heritage sites</b>	Explore the opportunity to use historic names, such as for new roads.
	Raise awareness of the historic heritage of the area through such measures as signage, published material and heritage events.
	Support iwi/Maori authorities and/or community groups in securing funding to undertake assessment, protection and restoration works of sites identified in inventories.
<b>Unrecorded heritage sites</b>	When reviewing of the WRPS, WRP and district plans provide integrated management policies, rules and discovery protocols that provide protection of sites upon accidental discovery.
	In the consent process use advisory footnotes on consents issued and develop consent checklists to indicate likelihood of discovery.
<b>European heritage</b>	Maintain and build upon existing inventories to include industrial and agricultural heritage resources.
	When reviewing of the WRPS and WRP and district plans, provide integrated management policies and rules that protect sites identified in inventories. Refine buffer zones around identified sites to reflect level of accuracy of known site.
	Ensure listed sites are identified and relevant information is included on PIMs and LIMs.
<b>Archeological inventories</b>	Maintain and build upon existing inventories increasing coverage of total number of sites and the accuracy of these sites.
	When reviewing of the WRPS, WRP and district plans provide integrated management policies and rules that protect sites identified in inventories. Refine buffer zones around identified sites to reflect level of accuracy of known site.
<b>Waahi tapu inventories</b>	Maintain and build upon existing inventories to include and increase coverage of waahi tapu sites.
	Develop and support initiatives for iwi/Maori to build iwi/Maori inventories, maps and/or iwi heritage management plans.
	Establish protocols and agreements for the use of iwi/Maori inventories maps and/or iwi heritage management plans.
	Support iwi/Maori authorities in securing funding for the development of iwi/Maori inventories maps and/or iwi heritage management plans
	When reviewing of the WRPS, WRP and district plans provide integrated management policies and rules that protect sites identified in iwi/Maori inventories, maps and/or iwi heritage management plans.

# 4. The natural environment

## Introduction

The Kawhia and Aotea catchments and harbours are high quality natural areas. The natural environment of rivers and streams, harbours, biodiversity, landscapes, and the general remoteness of the area are highly important to the Kawhia and Aotea communities. Low intensity land use and low population densities have helped to maintain the area in a relatively healthy unspoilt condition. However, in the future, some locations may come under increasing pressure for change, and this could need to be managed so that the natural values of the area are maintained.

This chapter provides a snapshot of the condition of the Kawhia and Aotea environment. It also identifies potential environmental pressures facing the area and covers those aspects that the community have told us are important to them. The information is based on data from investigations for the Shore Futures project, Environment Waikato's monitoring programmes, reports from various agencies and community consultation.

This chapter also outlines policies and measures that could be adopted for the sustainable management of natural resources in the area, whilst taking into account those natural values important to the community and the need for economic growth.

## Water

### Summary

Overall, the water quality in the catchments is good. At some locations in recent years there has been a slight decline in the quality of water draining from catchments. However, the quality is not so low as to cause serious concern.

The community has clearly voiced a desire to maintain or improve water quality. For food gathering and spiritual reasons, clean water is of special significance to Maori. There are a number of possible actions councils, land owners and the community can take to address this. Priority issues include stormwater and wastewater (sewage) discharges, sediment and nutrient inputs, groundwater supply and stock access into waterways.

### Why water is important

Water quality is a significant issue at both a national and regional level. Similarly, water quality is important to the Kawhia and Aotea communities. Out of the 145 people who completed the Shore Futures questionnaire, 133 (90.5 per cent) said water quality was an important value, and it was ranked as the highest priority value in the catchment. A range of industries are based around the harbour (such as shellfish farming and fishing) and depend on good harbour water quality for the continuation of these activities. It is, therefore, important that any new development contributes toward maintaining or improving the current good status of the water quality in the harbour.

Water is used for a variety of purposes and has a variety of values. Examples of uses include:

- domestic (drinking, cooking, cleaning, waste disposal, gardens)
- commercial (farming, fishing, tourism, catering)
- recreational (swimming, fishing, surfing, sailing, skiing, canoeing)
- food-gathering (shellfish, whitebait, eels, koura, watercress, crayfish, fish)
- spiritual/health (hot pools, baptism)



Photo: Pete Ashton

- transport (Te Maika)
- ecological (supporting freshwater, terrestrial and marine species, essential for life).

Maori have strong cultural, traditional and historic links with wetlands, inland waterways and harbours. The lives of Maori were (and continue to be) closely connected to the quantity and quality of the freshwater that was available to them. These resources provide habitat and spawning grounds for indigenous plants, bird and fish life, building and weaving materials (such as raupo and flax), and medicines and dyes used for seasoning timber and restoring precious artefacts. They are also a traditional source of foods such as tuna (eel), whitebait, watercress, shellfish, birds and fish.

Kawhia township and a substantial subdivision near Aotea township rely on groundwater for their water supplies and the quality of groundwater in these areas is critical to human health. Groundwater is also an essential resource for farming activities. For all other areas in the catchments, including several smaller population centres (Aotea township, Te Waitere, Kinohaku, and Oparau) rain fed tanks are in place.

## What we know

Information gathered to date indicates water quality in the catchments is generally good because of current land practices. However, in some locations, contaminant inputs (mainly sediment) are very gradually degrading fresh water quality in the catchments, and there has been some localised bacterial contamination in Kawhia Harbour (Puti Point and Kawhia township).

## Rainfall

Rainfall is a key part of the water cycle and the subsequent movement of material (including soil/sediment and nutrients). Higher rainfall generally leads to more leaching of nutrients, more overland flow, and a greater potential for transporting sediment into streams<sup>47</sup>.

Average rainfall in the area is 1600 mm per year, which is near to the middle of regional averages, which typically lie between 1000 mm and 3000 mm per year<sup>48</sup>. However, recent climate change predictions indicate that the west coast could be up to 8 per cent drier in summer and autumn and up to 10 per cent wetter in winter by 2090<sup>49</sup>. Heavy rainfall events will become more frequent and more varied rainfall patterns and peak flood flows may be substantially greater than at present.

Some of the predicted impacts of a moderate rate of climate change for Waikato include changes in average temperature, sea level rise and rainfall patterns. In general, Waikato, like much of the west coast of New Zealand, is likely to become warmer and wetter. The Waikato region could be up to 20 per cent wetter with more varied rainfall patterns and flooding could become up to four times as frequent by 2070.

## Streams and rivers

Aotea and Kawhia catchments have around 230 km and 700 km of streams and rivers respectively<sup>50</sup>. Stream water quality information for the area is limited (see Figure 2 for water quality monitoring sites). To date, water quality monitoring has focused on the Oparau River partly because it is broadly similar to other waterways in both the Kawhia and Aotea catchments<sup>51</sup>.

Overall water quality in the Oparau River is considered satisfactory. The Oparau is a naturally turbid (or murky) system and has low to moderate levels of phosphorous and nitrogen. A slight decline in water quality has occurred in the Oparau River over the last ten years, which is similar to what is occurring in other parts of the region<sup>52</sup>. A recent summer survey (2005/06) of other streams in the Kawhia catchment indicates these are also of reasonable quality.

The extent (numbers and types) of invertebrate stream life, or the ecological health of a stream, is a useful additional indicator of water quality. Stream life in the Kawhia catchment has been routinely monitored over the last decade. Results show the ecological condition of the streams has remained steady and that the streams are generally in fair to very good ecological condition.

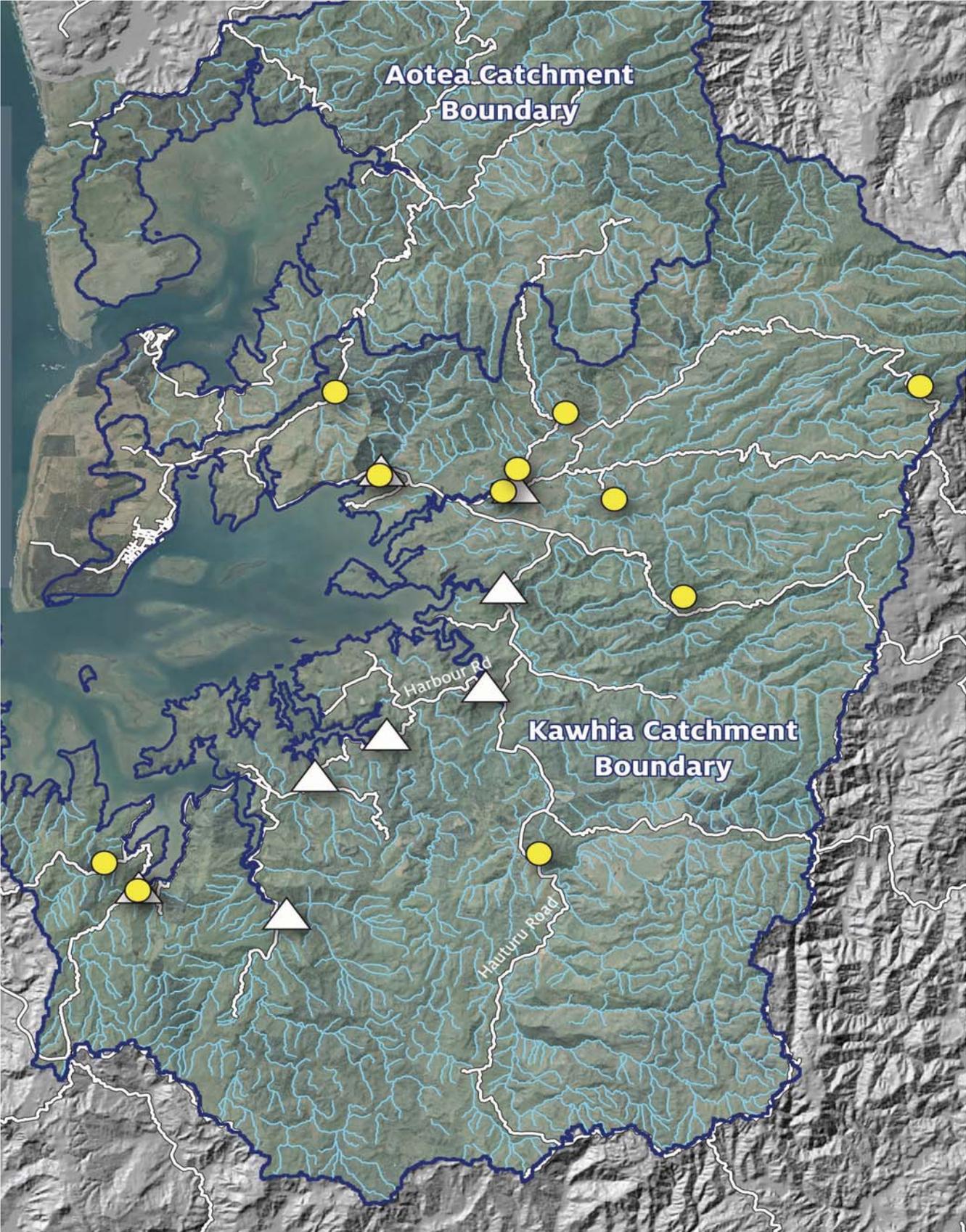


Figure 2: Locations of stream water quality (triangles) and ecological health (dots) monitoring in the Shore Futures area<sup>53</sup>.

## Groundwater

Currently there is little information about groundwater resources in the Aotea and Kawhia catchments. However, the demand for groundwater is presently low,<sup>54</sup> and iron levels in shallow groundwater (30 m) near Kawhia township are relatively high.

## Lakes

There are approximately 50 freshwater lakes in the catchments, totalling 0.29 km<sup>2</sup>. Approximately 37 of these lakes are located within the Kawhia catchment, including Lakes Koroha, Parangi, and Te Rotopupu.

Environment Waikato carried out lake health monitoring at Lake Parangi over the summer of 2007/08. The lake is approximately 12 ha in area and has a maximum depth of 16 m. Results indicate that the lake is still in reasonable condition compared to the majority of the region's shallow lakes. Environment Waikato results show that total nitrogen and phosphorus concentrations in the lake are quite high and an algal bloom was observed during one visit.

The land owner has been working with Environment Waikato to fence and improve the condition of the lake. A wide riparian margin of about 25 m has been fenced to exclude stock and to assist with the removal of nutrients from farm run-off. This is an example of a co-operative response towards achieving a positive environmental outcome.

There is little information available about water quality of other lakes. Lake Te Rotopupu is likely to be similar to Lake Parangi. Lake Karoha is in a forested DOC reserve and is likely to be in good condition. In general lakes have long residence times, which mean that lakes tend to collect and retain pollutants. Any management strategies need to be mindful of this cumulative effect.

## The harbours

Kawhia Harbour is a large headland-enclosed inlet (6765 ha) containing five estuaries. It is 13 km both in greatest length and in greatest width, and more than half the area is shallow or tidal. Aotea Harbour is smaller (3190 ha) and is a shallow estuarine harbour enclosed by a large sand spit and extensive dune system. Aotea Harbour is one of the few Maataitai Reserves in New Zealand. Maataitai reserves recognise the use and management practices of Maori in the exercise of non-commercial fishing rights<sup>55</sup>.

In general, the effects of any existing or potential contaminants are more evident in harbours and estuaries (compared to the open coast) because they are enclosed and there is less tidal flushing and wave action.

Bacteria levels at Aotea, Kawhia Wharf and Karewa Beach have been routinely monitored (every second year) over the last decade to ensure safe levels for swimming. Water quality in the harbours is considered to be excellent. However, bacteria levels in some of the water samples collected at Kawhia Wharf for the 2004/05 and 2006/07 summers exceeded the national standard (280 enterococci per 100 ml). These excesses are thought to be due to contaminated stormwater or failing septic tank systems. Efforts have been made by Otorohanga District Council to locate the contamination source. However, the source is still unknown.

Water quality monitoring is undertaken on a regular basis at the oyster farm near Puti Point in Kawhia Harbour. This monitoring is for the purposes of ensuring that harvested shellfish are safe to eat, so the standards are very high. A comparison of the bacteriological results taken under fine conditions with those taken following rainfall indicates that Kawhia Harbour is affected by intermittent microbiological pollution. The most significant impact of rainfall events identified is run-off from the immediate catchment, which directly affects the harvesting of oysters<sup>56</sup>.

The abundance of seagrass is a good indicator of a healthy harbour and good water quality. Both harbours have large areas of seagrass. Kawhia Harbour has some of the most extensive seagrass beds in the Waikato region (Figure 3).

A recent Environment Waikato survey of sediment in Kawhia and Aotea Harbours was undertaken to determine levels of metal and organic contaminants from chemical or natural sources. From the results obtained during this sediment sampling, it appears that the risk to aquatic ecosystems caused by concentrations of trace elements and/or organic compounds is low. However, in the Kawhia Harbour concentrations of arsenic and DDT detected at one location fall within ranges where adverse effects might be expected for some organisms. Arsenic is usually

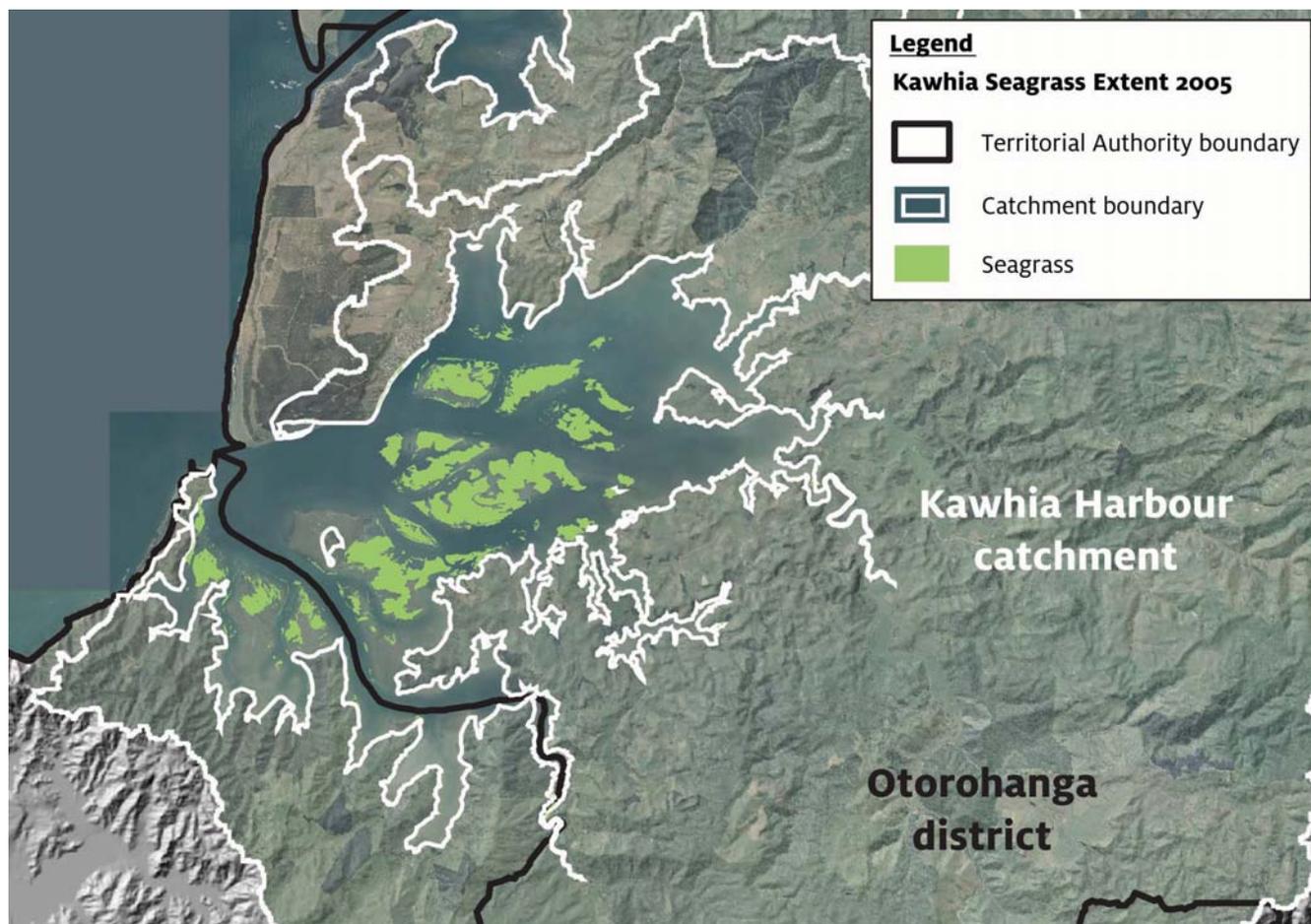


Figure 3: The distribution of seagrass beds in the Kawhia Harbour.

from natural geological sources or mining. DDT is from farm run-off. As DDT is no longer in use, DDT levels are expected to decrease over time, and no action is necessary.

The Ministry for the Environment is in the process of developing a national environmental standard for onsite wastewater treatment systems<sup>57</sup>. The standard would require regional councils to identify areas of risk and require property owners in these areas to gain a warrant of fitness for their onsite wastewater disposal systems every three years. It is likely that this will have implications for the septic tanks within the catchments (particularly those located near the coastline).

## Pressures

### Stormwater

Stormwater drains are designed to carry clean rainwater into waterways. Pollutants get into streams and coastal water because waste, contaminated water and rubbish enter the stormwater drains. The main contaminants are sediment, rubbish, heavy metals (especially from roads), excess nutrients and sewage. It is preferable to avoid contamination occurring. However, there are ways to improve the quality of stormwater.

### Wastewater

Wastewater discharges can occur directly (such as from boats), or indirectly (such as through overflowing sewage ponds, failure of septic tanks or run-off from pasture). Faecal contamination of water poses an immediate risk to human and stock health. If faecal coliform bacteria, *E. coli* and enterococci bacteria are present in water, it is classified as unfit for human consumption. As the density of bacteria increases, water is progressively classed as unfit for shellfish harvesting, contact recreation and sheep and cattle consumption. Health risks to livestock include reduced growth, ill-health or mortality.

Animal faecal material in water can also pose health risks. This material can enter waterways directly by stock having free access to unfenced waterways or by the transport of dung in surface run-off when it rains. However, most current management practices (particularly with low stocking rates and the predominance of sheep and beef

farming in the catchments) are appropriately suited to the land and the risk of this contamination is, therefore, low. Faecal contamination can also come from animal pests in conservation or forested catchments. Pigs, deer, possums and goats are sources of faecal contamination in water from non-farmed catchments.

## Sedimentation

Sedimentation is a natural process, however, human activities lead to accelerated sedimentation. Contributors include:

- earthworks (for example, through building roads)
- vegetation clearance
- farming activities
- altered hydrology (water flow)
- pest species destroying vegetation.

Suspended sediment levels are generally two to five times higher in streams draining pasture catchments than those draining native forests. Farm management practices can help reduce these levels but some sediment run-off is inevitable as part of using the productive landscape. Deforestation, unless well managed, may initially increase sediment loads a hundred-fold, which indicates that this is an activity that needs care<sup>58</sup>.

## Changes in agricultural land use

Any intensification of agricultural activities (such as the change from sheep and beef farming to dairying) needs to be well managed and modern farming methods used to avoid or mitigate the likelihood of increased nutrients, faecal material or sediment entering waterways. There is anecdotal evidence that there have been some changes within the catchments from sheep and beef farming to dairy support. However, observations suggest that this is not a trend at present within the catchments, and the good water quality is evidence of current appropriate land use and management.

## Increasing pressure on groundwater

Groundwater quality is affected by a range of factors, including the type of geological 'structure' within which the water is located. Land use activities may also significantly affect groundwater quality. For example, groundwater quality may be maintained by low intensity land use, or may be degraded by poorly managed intensive land use, due to nutrient and chemical loading. Currently, groundwater quality is good within the catchments.

Pressure from increased water take in some areas in the catchment can affect the ability of groundwater to recharge. As little is known about groundwater resources in the catchments (particularly near Kawhia township), some investigation would enable the supply potential of aquifers to be assessed. This would ensure that current and future groundwater use does not exceed the ability of the aquifers to recharge. Exceeding groundwater supplies leads to:

- saltwater intrusion into groundwater aquifers
- inadequate recharge of deep aquifers and discharge into surface water catchments
- a reduction in the yield for existing and potential future uses, including community water supplies, agriculture, industry and domestic supplies.

This is of particular concern in areas close to the coast where groundwater is subject to saltwater intrusion if the demand for water (for example, during peak holiday periods) is greater than the groundwater recharge time.

## What we want

In response to the focus question on water quality at each Shore Futures community workshop, 83 per cent of the community felt that something should be done to maintain the high water quality within the catchments. Suggestions for improving water quality included addressing the causes (such as septic tanks, stock in waterways and erosion), fencing of streams and harbour margins and replanting<sup>59</sup>. Of the 145 questionnaires that were received from the community, 90 per cent rated water quality as the most highly valued aspect of the catchments. In order to maintain water quality, the community felt that more frequent and in-depth water quality monitoring would help in determining the causes of any water quality decline.

The fact that in some areas stock are still able to access waterways was a key issue for many people within the community, and while fencing off waterways was supported by most people there was some concern about whether this might have an impact on the economic viability of farming in the area<sup>60</sup>.

Septic tank failure was also a key concern raised by the community. Upgrading septic tanks and increased monitoring to prevent breaches was supported by many within the community, particularly in areas close to the coast where the potential for water contamination is greatest. Wastewater disposal was seen as an important issue in further development within the established areas<sup>61</sup>.

## **Our response: potential actions**

### **Implementing current plans**

#### **Monitoring of stock exclusion rules**

The WRP states that livestock must be excluded from streams flowing into a harbour or estuary within two kilometres of the coastal marine area and around the margins of significant wetlands. Increased monitoring of this rule would assist Environment Waikato and district councils in determining compliance and would help with developing targeted education and information for land owners.

#### **Continued monitoring of water quality to assist in improving our understanding of the causes of decline**

Responsibilities for water quality management lie largely with Environment Waikato under the RMA. Due to the close links with land use and water quality, land owners and land managers (including district councils) also have responsibilities, as do other water users (such as recreational users). Other agencies, such as the Ministry of Health and the Waikato District Health Board, Ministry of Fisheries and DOC also have interests and functions in relation to water quality.

There is some water quality monitoring undertaken by Environment Waikato and district councils in the Kawhia and Aotea catchments and the community has signalled a desire to know more. In order to build on the knowledge of water quality in the Kawhia and Aotea catchments, Environment Waikato could increase its current monitoring programme. This could include more regular sampling of harbour water quality and wider sampling of freshwater quality.

Where the risk of contamination is high, district councils could also potentially increase the requirements to monitor water quality as conditions on the resource consents they grant. This could provide a variety of information on a range of qualities from short term monitoring of sediment levels during earthworks, to longer term monitoring of the quality of discharges to water bodies. The cost of this monitoring would fall on the consent holder.

The community could undertake water quality monitoring by establishing stream and harbour care groups. Such groups help to raise the awareness of the community, which in turn may lead to continued good water quality in the area.

#### **Avoid wastewater discharges to water**

The WRP contains rules regarding discharges of sewage and effluent to water. The WRCP prohibits discharges of untreated sewage into the coastal marine area and requires a resource consent for the discharge of treated sewage. Otorohanga District Council currently requires anyone redeveloping small sections (under 2500 m<sup>2</sup>) to upgrade their septic system to meet the standards set out in the WRP. More monitoring could be undertaken by district councils in order to ensure compliance with the district plan rules.

The community has clearly signalled that wastewater discharges to water (both animal and human) are not appropriate and highly unacceptable culturally. There are no public sewage schemes in the catchments. However, this option does have some favour for Kawhia township. The introduction of the national environmental standard will help to improve the performance of onsite wastewater systems and reduce the number of breaches in sensitive areas (particularly those near the coastline) within the catchments. This national environmental standard is currently being drafted by the Ministry for the Environment.

#### **Avoid contamination of stormwater**

Avoiding contamination of stormwater (which flows into streams, lakes and the harbours) might involve providing infrastructure such as rubbish bins, upgrading and maintaining septic tanks and other sewage systems and low impact stormwater design. Communities can make sure they prevent paint, construction run-off or chemical leftovers from entering stormwater drains. District councils could undertake targeted environmental education to encourage the community about the impacts that contaminating stormwater has on water quality.

### **Avoid accelerated sedimentation**

Environment Waikato undertakes river maintenance works to maintain the waterway channel and stabilise river banks which, in turn, has positive benefits in terms of reducing river bank erosion and sedimentation. The type of works carried out by Environment Waikato includes the removal of waterway blockages, placement of erosion control structures and stream planting.

Some land owners voluntarily choose to retire steep and/or unstable land from use. Often this land will be marginal for uses such as grazing. Other areas might be converted from pasture to exotic forest which may stabilise the area in the short- to medium-term but can create issues with harvesting. Environment Waikato has an assistance package focused on soil conservation, similar to its Clean Streams package.

Avoiding accelerated sedimentation will involve a combination of methods such as retiring steep land, continuing or undertaking appropriate farm practices (including riparian management), managing forest and vegetation clearance and restoring indigenous vegetation. Many of these activities are already occurring within the catchments.

### **Protect wetlands**

Well vegetated, saturated wetlands serve many useful purposes. They:

- provide habitat for plants, insects, birds and fish
- remove nitrates from water
- filter out sediment and phosphorus
- store water during times of rain to prevent flooding downstream.

Fencing wetlands and ensuring any drainage schemes are appropriate for the area are the two most important actions that can be undertaken to protect wetlands.

### **Incentives**

#### **Increase the uptake of riparian management schemes and systems**

It is well accepted that appropriate riparian management is vital to maintaining the quality and biodiversity of our water bodies<sup>62</sup>. Waterways not benefiting from such management exhibit degraded water quality which is unsuitable for many desired uses such as swimming, water supply and, in some cases, even for stock watering<sup>63</sup>.

Good riparian management involves establishing or protecting appropriate vegetation along the margins of waterways. This generally requires the exclusion of stock in farming situations through fencing and the provision of appropriate crossings for stock and vehicles. It may also require the provision of alternate water supplies for stock.

Since 2001, Environment Waikato has provided advice and financial assistance of up to 35 per cent of farmers' costs for fencing and planting waterway margins through the Clean Streams programme. Provision has been made in Environment Waikato's 2009-19 LTCCP for the Clean Streams programme to continue, albeit at a reduced level and through a different mechanism of funding. This work, in addition to other soil conservation activities, will be undertaken within Environment Waikato's 'Catchment New Works' programme for which the 35 per cent grant may be available. The works may include protection of river, stream, wetland and harbour margins as well as erosion control planting and the retirement of erosion prone land particularly in upper catchment areas.

To date, very little stream fencing has been undertaken in the Kawhia and Aotea catchments. So far, approximately 5.5 km of fencing has been completed which has resulted in 35 ha of land being retired in order to protect streams or conserve soil resources. A total of 3215 plants were used to revegetate the streambanks.

As at the time of writing, Clean Streams and Soil Conservation works are proposed on a further four properties in the catchments over the next financial year and will include just over 3 km of fencing. It is anticipated that approximately 3700 plants will be used as part of these works.

In order to increase the uptake of Clean Streams funding, Environment Waikato could provide targeted education and promotion of the programme to farmers within the catchments, particularly those in the livestock exclusion areas as defined in the WRP.

## Education

### Use best practice for farming activities

Research undertaken by the agricultural industry, Crown Research Institutes and universities is ongoing about the best ways to carry out different activities with regard to factors such as environmental effects, financial costs and effort required and outputs. Minimising environmental effects also has other benefits – a well-cared for environment is a selling point in the tourism industry.

The effects of certain farming activities on water quality can be reduced or avoided through the adoption of sound management techniques. Examples include:

- reducing fertiliser and pesticide use
- constructing stream crossings
- minimising roading or tracking
- implementing sound grazing practices (for example, retiring steep land and good stock rotation practices)
- appropriate drainage, cropping and harvesting practices.

Many land owners and farmers within the catchments have already implemented many of these techniques and practices and continue to look for ways to improve land use and minimise environmental impacts. Environment Waikato will continue to work with and advise land owners on good practice for farming activities. Federated Farmers and other key stakeholders in the agricultural industry also continue to promote best practice through the implementation of standards and codes of practice.

### Reviews of policies and plans

The WRPS could be reviewed to have stricter controls around nutrient run-off to maintain the desired water quality within streams and coastal waters. Such controls may require modern environmental management practices for future intensification of land use (for example, a shift within the catchment from sheep and beef farming to dairy) if the land use has greater nutrient run-off than is currently taking place. As always, there is a balance to be reached between economic growth, compliance costs and the environmental thresholds.

## Land and soil

### Summary

Land and soil resources underpin the economy of the catchment which is largely production based. Roughly 88 per cent of the catchments' soils are Class VI to Class VIII under the land use capability classification system. These are the three lowest quality classes in the classification.

The catchments are potentially erosion-prone and need careful management. Approximately 84 per cent of the catchments are classed as moderately steep (21-25 degrees) to very steep (greater than 35 degrees). There are a number of factors that accelerate erosion processes and lead to excessive loss of soil resources.

The community has clearly voiced a desire to continue to protect the land from erosion to ensure the ongoing sustainability of the farming industry (including economic sustainability). There are a number of possible actions the councils, land owners and the community can take to assist in ensuring erosion is minimised. Priority areas for action include accelerated erosion and the loss of the productive capability of soils.

### Why land and soil are important

Soil is a non-renewable resource. It takes thousands of years for rocks to weather into soils, and for rich organic matter, important for good soil structure and sustaining healthy plants, to build up. Land and soil resources form the basis of the regional economy, with farming being one of the predominant land uses (along with urban development, forestry, tourism and recreation). Land and soil resources also support our indigenous biodiversity, underpin our landscapes and provide important mineral resources.

### What we know

Generally, the Kawhia and Aotea catchments are characterised by steep, sedimentary hill country, with large tracts of native forest and extensive cave and karst<sup>64</sup> systems. Remarkable limestone outcrops feature through much

of the southern part of the Kawhia catchment. The materials underlying these catchments are considered very unstable and highly sensitive to land use activities.

The geology of the Aotea catchment is characterised by sands north and south of the harbour entrance, sedimentary rocks southeast and east, and andesite and basaltic rocks to the northeast. Soils within Aotea catchment include 'brown soils' (aerobic soils) – which are extensive throughout New Zealand – and undeveloped 'recent soils' (young soils).

The Kawhia catchment is geologically diverse, comprising large dune systems, intertidal flats, steep and divided hill country, limestone areas, and a basaltic volcano (Mount Pirongia). A variety of soil types are found in the catchment because of this diversity, however, clay loams are the most extensive soils found.

Land use capability (LUC) classes are one way of assessing the limitations of land. Land is assessed according to its:

- tendency to erode – for example, flat land versus steep hill country
- type of soil
- wetness – for example, too much or too little drainage
- climate – including hours of sunshine, rain levels, wind, maximum and minimum temperatures.

There are eight land use capability classes, ranging from Class I (flat land with good soil and few limitations) to Class VIII (steep land with severe physical limitations). Classes I to IV are suitable for cultivation. Classes V to VII are not suitable for cultivation, but may be better suited to farming or forestry. Class VIII is not suitable for any productive use and is best left in native bush for catchment protection.

Soils within the catchments include Class III through to Class VIII soils. Table 2 shows relative proportions of each LUC soil class in the catchments. This information indicates that the catchments are best suited to the land uses of pastoral farming, exotic and native forestry and that careful assessment needs to be given to potential development of Class VII and VIII land.

Table 2: Land use capability within the Kawhia and Aotea catchments

LUC class	Basic definition <sup>65</sup>	Area (km <sup>2</sup> )	% of total area
<b>Class III</b>	Moderate limitations – can be used for cultivated crops, pasture or forestry.	11.49	1.78
<b>Class IV</b>	Land with severe limitations to arable use. Careful management required. Usually kept in pasture for long periods.	58.34	9.03
<b>Class VI</b>	Most of this class is good, fairly stable, hill country where soil erosion can be minimised by good pasture establishment and management. Well suited to grazing and forestry.	483.25	74.82
<b>Class VII</b>	This land is unsuitable for arable use and has severe limitations or hazards under perennial vegetation. Usually not suited for grazing as it requires special soil conservation practices. In some cases it may be moderately suited to forestry.	80.9	12.52
<b>Class VIII</b>	Predominantly very steep mountain land. Land has unfavourable characteristics and severe limitations to use. Unsuitable for forestry and grazing and best restricted to catchment protection and recreation.	11.94	1.85

The WRCP identifies sixteen important geological sites in the catchments, including nationally significant fossil sites and landforms. The Environment Court determined that Motutara Peninsula is an “outstanding natural feature of national importance”<sup>66</sup>. The southern shores of Kawhia Harbour are a rich collecting ground for fossils, including the find in 2006 of a very significant fossil penguin (estimated to be 25-30 million years old). The sand dunes at the northern head of Aotea Harbour are the largest and best example on the west coast of the region and are ranked as nationally important in the Geopreservation Inventory. This area is gazetted as a scientific reserve and is believed to be internationally unique.

Waikato region is the most important mineral-producing region in New Zealand. Aggregate resources are found throughout the Waikato region and are the most valuable mineral produced in New Zealand<sup>67</sup>. These are put to a number of uses but by far the most significant use is as roading material. In other areas, access to aggregate supplies has been severely restricted by urban and rural residential development. The WRPS seeks that the ability to extract mineral resources is not unnecessarily restricted. Within the catchment, there are significant iron sand resources. Just south of the Kawhia and Aotea catchments is an established iron sand mining industry site (Taharoa)

and there has been interest in the potential for further operations along the west coast. East of Kawhia Harbour, the Waitaheke opencast coal mine on the Kawhia coalfield was operated until the mid-1990s.

## Pressures

### Accelerated erosion

Soil erosion needs to continue to be managed well so that it does not become one of the main land and soil problems facing the catchments. This is particularly important for the hill country areas and along river banks. The catchments are characterised by steep potentially erosion-prone geology that is vulnerable during or following large rainfall events. The slope map (as shown in the appendix) illustrates the low, moderate and high potential erosion risk areas in the Kawhia and Aotea catchments.

The effects of accelerated soil erosion include:

- loss of soil productivity, capability and versatility
- land instability hazards (for example, landslides after rainfall).

Erosion that occurs in the catchments can be caused by heavy rainfall and is potentially increased by a number of localised factors including vegetation clearance (mainly historical), poor farming practices (such as cultivating on steep slopes), inappropriate land use (such as subdivision in steep unstable areas) and animal pests that destroy native vegetation.

### Vegetation clearance

Historical vegetation clearance is probably the most significant contributing factor to the soil erosion. Land cover in the catchments, particularly the Kawhia catchment, has changed dramatically over time to provide for pastoral use (as shown in the basic land cover map in the appendix). The amount of native forest vegetation cover in the two catchments has reduced in the last 160 years from approximately 98 per cent across the whole study area to approximately 28 per cent in Aotea and 37 per cent in Kawhia.

While pastoral farming in the Kawhia and Aotea catchments has expanded over the last 160 years, farming has possibly become less intensive with stock densities in these areas being comparatively low regionally<sup>68</sup>. While stocking intensity in the catchments has been relatively low, some practices have resulted in localised accelerated erosion. These practices include allowing stock access to waterways, overgrazing or grazing on unsuitable land.

### Reduced soil quality

Reduced soil quality is another potential pressure in these catchments if land use intensifies and best management practices are not continued. Maintaining soil quality (a measure of how good the chemical, physical, and biological condition of the soil is for the current land use) has been identified as a goal for the hill country areas of the Kawhia and Aotea catchments. In other more intensively farmed parts of the Waikato region, land management practices have reduced soil quality by changing the physical condition of the soil (such as compaction from grazing in wet conditions), and upsetting the chemical balance of the soil (such as too much fertiliser). However, due to current farm management practices in the catchments there have only been isolated cases of soil compaction, and excess soil fertility is unlikely.

### Loss of access to mineral resources

Mineral exploration and development activities will have some adverse environmental effects. Land use and development of the environment near mineral resources may be sensitive to the effects of extraction activities. This is often called reverse sensitivity. Similarly, some land uses can make it impossible to access mineral resources if they are located near or above the resource. Both situations may lead to conflicts between land uses.

### Loss of important geological sites

The study area is rich in geological sites and landform features (including karst and fossil sites)<sup>69</sup>. Activities such as earthworks, subdivision, paving and sealing have the potential to damage or destroy important geological sites or restrict access to them.

## What we want

The Kawhia and Aotea community want to maintain the good state of land and soil within the catchments. The community felt that protecting the productivity of the land is vital in order to enable the continuation of farming within the area and is also important to safeguard indigenous biodiversity and landscape, amenity and natural character values. Protecting the integrity of the land is also important to the community's sense of wellbeing and the tourism industry. Access to mineral resources is important to the regional and national economy.

## Our response: potential actions

### Implementing current plans

#### Reduce erosion by stopping vegetation clearance and re-vegetating less productive land

Environment Waikato is tracking changes in native vegetation to assist with policy making and resource consent decisions and is helping to protect areas of native vegetation through education and funding support.

In order for forested areas to flourish, appropriate pest management practices need to be in place. Environment Waikato has responsibilities for the control of animal pests (such as goats and possums) to promote the growth of healthy forests, which provides benefits in terms of erosion, run-off and flooding.

### Reviews of policies and plans

Environment Waikato could assess the effectiveness of the regional approach to land and soil management, particularly around sensitive locations such as waterways and harbours.

### Community involvement

Communities could help to increase native vegetation and prevent soil erosion in the catchments by:

- joining an environmental group such as the Royal Forest and Bird Protection Society or the Native Forest Restoration Trust that purchases and manages natural areas
- creating areas of native vegetation by planting a nurse crop, such as manuka, in areas unsuitable for other uses, such as steep land or alongside streams
- helping land owners with areas of native forest to maintain them by controlling weeds and animal pests
- planting around and between areas of native forest to increase their size and the amount of habitat available.

### Education

#### Increase soil quality

Environment Waikato undertakes a range of initiatives to manage soil quality in the Waikato region including soil quality monitoring, the development of tools to help farmers with nutrient management, environmental education and support for voluntary guidelines and codes of practice. Environment Waikato provides advice and some funding assistance to land owners to help them manage unstable or erosion prone areas on their property. To date, some minor soil conservation work has occurred within the Kawhia catchment involving 350 metres of fencing on one property to retire an unstable area of land.

In terms of managing soil quality the options for land owners in the Aotea and Kawhia catchments include:

- matching land use to land and soil type to minimise soil damage
- using fertiliser and pesticides carefully and only when necessary (following the Code of Practice for Fertiliser Use)
- minimising soil compaction by keeping or moving cattle off wet soils to prevent pugging and reducing heavy machinery use
- use of nutrient budgets to help maintain optimal soil fertility and reduce the risk of excessive fertiliser application.

Many farmers within the catchments are currently implementing these land management practices.

#### Reduce erosion through appropriate farming practices

There has been a growing awareness in the agricultural industry of the need to adopt appropriate farming practices that save money and achieve positive environmental outcomes. A greater uptake of pasture management systems (such as keeping stock out of streams, retiring steeply sloped land from grazing and letting steep pastures revert to native vegetation) than has already been adopted by farmers would further assist in reducing the risk of accelerated erosion.

## Incentives

Two central government initiatives currently in place may assist in preventing soil erosion and vegetation clearance: the Afforestation Grant Scheme (AGS) and Permanent Forest Sinks Initiative (PFSI). The AGS is a contestable fund designed to encourage more planting of trees in small forests and on farms. The PFSI is designed to allow greater economic benefit to be gained from marginal land. However, it delivers many other benefits, including improved biodiversity, soil, water and flood protection and better protection of existing natural forest remnants.

Environment Waikato and district councils could assist in increasing the uptake of these central government initiatives by providing targeted information and education to land owners within the catchments on these schemes. Furthermore, district councils could consider implementing rates rebates in order to assist land owners to retain areas of indigenous forest. Such rebates help to recognise that land owners are providing a range of community benefits by protecting forested areas on their land. To complement rates rebates, district councils could also consider providing financial incentives that could help to contribute to the maintenance of forested areas (including fencing and pest management).

## Legal protection

There are a number of mechanisms available for legal protection on private land. For example, the QEII National Trust protects significant natural and cultural features on private land through open space covenants. Features protected include landscapes, forest remnants, wetlands, grasslands, threatened species habitats, and cultural and archaeological sites. Nga Whenua Rahui is a contestable fund that is serviced by DOC and provides funding for the protection of indigenous ecosystems on Maori-owned land.

## Landscapes and natural character

### Summary

The rugged, isolated look and feel of Kawhia and Aotea is something that the community holds in high regard and feels is worth protecting. There are high landscape values within the catchments. There are a number of possible actions the councils, land owners and the community can take to preserve the natural values that are important.

Priority issues include containing residential development to cluster around current residential areas and making sure that significant ridgelines, hilltops and the coastal marine area are protected from inappropriate development.

### What are landscapes and natural character?

**Landscape** is more than just what we can see. The way people see and value landscapes (and natural character) depends on their individual experiences and tastes. For example, people with holiday homes in Kawhia or Aotea probably come to the area because they value the quietness it offers and, therefore, they will appreciate the open space vistas and low levels of development. A teenager, however, might find the area dull and prefer a city landscape with all the opportunities it promises. Someone who has had a near-drowning experience might find something menacing in the harbour views. A fisherman will view the harbours with different eyes than a swimmer, windsurfer or parent with young children. Our perceptions also change over time and may involve all of our senses, not just sight. Smells, taste and hearing all help us develop our perceptions<sup>70</sup>.

**Natural character** is a term that has been in New Zealand's planning laws for decades but has not been strictly defined. Through the courts, however, there is some good direction. Natural character is the expression of natural processes and covers the full range from natural (unmodified) environments at one end to largely modified built environments at the other. The word 'natural' does not apply only to native elements but indicates a product of nature (including pasture, exotic trees, and animals) as opposed to human-made structures and modifications<sup>71</sup>.

### Why landscapes and natural character are important

New Zealand's natural beauty is highly valued – it plays a critical role in enhancing our social, economic, cultural and environmental wellbeing. The importance of landscape and natural character to New Zealanders is recognised in the RMA, and the proposed New Zealand Coastal Policy Statement 2008 (NZCPS) also has an objective around the preservation of the natural character of coastal landscapes.

The RMA requires that councils recognise and provide for the preservation of the natural character of the coastal environment, wetlands, and lakes and rivers and their margins as a matter of national importance<sup>72</sup>, and requires that they be protected from inappropriate subdivision, use and development.

The RMA also requires that particular regard be given to the maintenance and enhancement of amenity values and of the quality of the environment.

## What we know

An assessment of the landscape and natural character of Kawhia and Aotea was undertaken in 2006/07<sup>73</sup>. This assessment was based on the requirements of the RMA and relevant directions in case law.

Each part of the catchment was rated in terms of landscape into one of three categories:

- outstanding landscape
- visual amenity landscape
- no landscape rating.

The assessment found significant areas of high natural character and landscape value in both catchments. The harbours themselves have high natural character. Remoteness, extensive native forest, exposure to the west coast and a low level of built development give the catchments an isolated rural character that is increasingly rare in New Zealand (as shown in the high natural character and outstanding landscapes map in the appendix).

In addition, the catchments were assessed in terms of natural character and areas determined to have high natural character were identified. A total of 275 separate units (91 coastal and 184 land) areas within the catchments were identified<sup>74</sup>. Of these, 22 were assessed as being outstanding landscapes and 110 were assessed as visual amenity landscapes. Of the 91 coastal units, 31 areas were assessed as containing high natural character. The report additionally identifies a number of significant streams and rivers in the catchment.

During consultation, there were two extra areas in particular that received specific mention – Waipuna (or pancake) Rocks and the Rakaunui Rocks, both in Kawhia Harbour. Many people saw that both these areas are worthy of protection.

The Environment Court also commented on the Kawhia catchment recently in its decisions on two local cases (at Waiharakeke and Motutara Peninsula). In both cases, the sites were labelled as iconic. Motutara was identified as a “significant promontory in Kawhia Harbour which adds significantly to the natural character of the area”, and an “outstanding natural feature of national importance”<sup>75</sup>. The court was also satisfied that the general area of Waiharakeke is a Maori heritage landscape<sup>76</sup>. At this stage, limited information is available with regards to cultural and heritage landscapes.

While they were not identified in the landscape report, Te Puia Springs (literally meaning ‘hot springs’) are a well-known geothermal area that is located along the open coast beach, west of Kawhia township. They are a special feature not only to the local community but are an important tourist attraction for the area. It has been estimated that approximately 5000-10,000 locals and visitors, including foreign tourists, use the springs for bathing purposes each year.

Access to Te Puia Springs is via Te Puia Springs Road, which links Kawhia township to the open coast. Hot pools can be dug in this geothermal area during a one hour period either side of low tide. Water in the hot spring area is 53°C and strongly chloride, indicating contamination by sea water.

## Pressures

### Land use change – subdivision and development

Development and changing economic opportunities bring pressure on existing landscape character. Pressure for change in the New Zealand coastal environment has been typified by subdivision, but other influences can have more impact. The existing character of the Kawhia and Aotea areas could be influenced by significant land use change, including subdivision and residential development and energy generation (in particular wind turbines along prominent ridgelines). The vegetation clearance that accompanies development can also significantly alter the natural character of the area and have a negative impact on water quality and soil loss.

The community agrees that land use change is a key consideration – the results from the Shore Futures questionnaire identified this as the highest priority issue. The adverse effects of development on landscape or natural character are permanent. In landscape and amenity court cases, it can be the first development that causes the most damage<sup>77</sup>. In particular, development on significant ridgelines of hills can affect the perception of it as a natural area.

Land use change has the potential to diminish the values present in the catchments. Demand for development has the potential to increase, given the national demand for coastal development and the increasing mobility of the workforce, which could have negative impacts on landscape and natural character. While historical land management practices have contributed to the positive current state of the resource and land owners' roles are acknowledged, the resources need to be actively managed in the future to ensure that they are not lost.

Particular community concerns that were expressed during consultation included the standard and appearance of relocatable dwellings, particularly near the entrance to Kawhia. The style of future development was also of concern – people did not want to see high-rise type development. Some people mentioned the need to avoid ribbon development and instead focus on growing existing settlement patterns, while others were concerned about the implications (and possible restrictions) for property owners. However, people overwhelmingly agreed that the landscapes and character of Kawhia and Aotea were valued and worth protecting.

Two subdivisions have been established on elevated or headland positions in Aotea Harbour. As yet, these are not significant visual elements in the wider landscape but provide a precedent (particularly for two-storey structures on ridgelines). This issue requires immediate consideration if the present landscape and natural character of the coastal area of the catchments are to be maintained. The Aotea Harbour landscape is the most visually sensitive area to this type of development and is also potentially the most attractive site due to the elevated sites that surround it<sup>78</sup>.

Other issues that some of the community were concerned about were lighting (signalling the presence of development and reducing the sense of isolation), visible scarring (such as from driveways), uncertainty over the success of planting as mitigation, and the potential for large scale subdivision (and the subsequent accumulation of effects).

Both Kawhia and Aotea Harbours are important components of the landscape, and effects on their ecology have impacts on natural character. Specific pressures on the harbours include vehicle and stock access, the damage and destruction of wetlands and salt marshes, increased siltation and the potential for energy generation and mineral extraction in the coastal marine area.

## What we want

Many people within the community value the overall character of Kawhia and Aotea, which includes its landscapes and natural character, was evident through Shore Futures consultation. Over 78 per cent of people who answered the Shore Futures questionnaire chose 'landscape features' as an aspect of the catchments they valued and over 80 per cent chose 'open space' as something of value which characterises much of the landscape surrounding the two harbours.

Fifty-five per cent of people who returned the Shore Futures questionnaire state that they wanted the catchments to stay the same in the future, and 37 per cent wanted controlled development (such as building around already developed areas) that still preserved the natural character of the area. Controls around development that were suggested by the community included not building along significant ridgelines and containing development within existing settlements.

## Our response: potential actions

There is little in the way of active landscape or natural character protection undertaken in the catchments by regulatory agencies (Environment Waikato and district councils) through the WRPS, WRP and district plans. Rather, the *effects of activities* (such as subdivision) on these resources are assessed on a case-by-case basis when resource consent applications are processed.

## Reviews of plans and polices

The review of the WRPS review could specify stronger provisions around the protection of landscape and natural character.

District plans could be reviewed to give protection to areas of outstanding and high landscape values. In particular, clearer rules around vegetation clearance, subdivision and land use near intertidal flats would assist in maintaining the natural character of the catchments.

More directive policy in relation to coastal setback zones and more controls around appropriate areas for subdivision and further urban development would assist in maintaining the landscape values in Kawhia and Aotea and protect the area from inappropriate subdivision. District plans could control activities within certain areas (such as on significant ridgelines) in order to preserve natural character.

## Legal protection

Voluntary protection measures undertaken by private land owners (such as QEII National Trust covenants or retiring land that is prone to erosion) assist in maintaining natural character while also having positive benefits for slowing soil erosion (as discussed in the Land and Soil section of this chapter).

## Biodiversity

### Summary

The significant area of remaining indigenous forest, variety of habitats, and the number of species in Kawhia and Aotea harbours are reasons for the high biodiversity values of the area.

The community voiced its support for pest management in maintaining biodiversity within the catchments. Furthermore, effective land and soil management is seen as vital to maintaining and improving water habitat.

Priority issues include investigating legal protection for areas of significant indigenous forest not already protected, tighter controls in district plans around the clearance of indigenous vegetation and gathering more accurate information on biodiversity within the catchments to help inform decision making.

### Why biodiversity is important

New Zealand's plants and animals have developed during 80 million years of isolation. High percentages of these species are endemic (that is, they are found nowhere else on earth). New Zealand has lost a significant proportion of its indigenous biodiversity and this trend is continuing, with over 2000 species of plants, insects and animals threatened with extinction. In addition to these intrinsic values, biodiversity is important to both our national identity and the New Zealand economy and enhances the quality of people's lives. Maori regard all plant and animal life, particularly indigenous species, as significant, each with a particular purpose.

The RMA includes a number of provisions that promote the protection of areas of biodiversity<sup>79</sup>, and regional and district councils have responsibilities to maintain and enhance biodiversity<sup>80</sup>. The New Zealand Coastal Policy Statement 1994 (NZCPS) also contains numerous biodiversity protection policies within the coastal environment that local authorities 'must give effect to'.

### What we know

The Aotea and Kawhia catchments contain remnant indigenous biodiversity throughout a range of ecosystems including indigenous forest areas, karst landscapes, wetlands, rivers and streams, dunelands and the Aotea and Kawhia harbours and estuaries. All of these ecosystem types provide habitat for indigenous species of plants and animals, many of which are rare or threatened. Such species include longfin eel and shortjaw kokopu in the rivers and streams, New Zealand dotterel and wrybill around the harbours, pingao and sand tussock on the dunes, *Hebe Scopulorum* and native bats within the karst landscape, and a variety of vegetation types from mixed podocarp-hardwood forest and lowland forest to coastal forest and estuarine vegetation such as saltmarsh and seagrass.

The Kawhia and Aotea harbours are of particular importance – both harbours meet the Ramsar Convention criteria as wetlands of international significance as well as being identified as Areas of Significant Conservation Values within the WRCP. The ecological health of the harbours is intricately linked to the catchment (and to the remnant areas of forest) via the numerous streams and rivers that flow from the hill country to the sea.

The Aotea catchment retains approximately 29 per cent of its landcover under native forest, with around 18 per cent of this indigenous cover protected and managed by DOC as public conservation land. The Kawhia catchment retains approximately 38 per cent of its landcover under native forest with around 17 per cent of this indigenous cover protected and managed as public conservation land.

## Indigenous flora and fauna

The Aotea and Kawhia catchments retain a reasonable proportion of indigenous forest cover in both public and private land. Indigenous vegetation loss has occurred more in the coastal and lowland areas, and what remains is often fragmented and of small size (as shown in the basic land cover map in the appendix). However this mosaic of remnant indigenous biodiversity contains a variety of habitats that range from estuarine and coastal through lowland to hill-country and their associated species.

The sand dune systems in and around the Aotea Heads Scientific Reserve contain a variety of wading birds including banded dotterel, New Zealand dotterel, godwits and knots. The flora species include pingao (*Desmoschoenus spiralis*) and Spinifex (*Spinifex hirsutus*). Indigenous vegetation associated with sand dunes on private land are a national priority for protection of biodiversity, as sand dune ecosystems have become uncommon due to human activity. Only 11.6 per cent of their original extent remains.

Indigenous forest over significant limestone and other associated karst features are an important component of the Kawhia and Aotea catchments. These special landscape features have resulted in the development of unique ecosystems (particularly to the south east of Kawhia Harbour). Here a number of rocky outcrops and the associated forest fragments provide important refuges for threatened plants. The forest fragments also hold at least one nationally critical fungus species that is still to be rediscovered in the Awaroa area. Plant species found in the area are Kirk's Daisy (*Brachyglottis kirkii* var. *kirkii*), Awaroa Koromiko (*Hebe scopulorum*) and Stalked Adder's Tongue Orchid (*Ophioglossum petiolatum*), all listed as threatened plants. To protect the biodiversity of these rocky outcrops and forest fragments, they have received a national priority designation where they are known to occur on private land.

Scattered remnants of coastal forests still exist, including rare ecological transitions from estuarine to coastal forest. Coastal forest species including kohekohe, nikau, puriri and tawa are present in the catchments. Semi-coastal forest occurs on the lower slopes of the hill country and is dominated by secondary podocarp and broadleaved forest. Most large podocarp trees have been logged or cleared during historical agricultural settlement, and a few scattered kauri trees remain on ridge tops. Any remaining indigenous vegetation within coastal and lowland areas is likely to meet the national priority for biodiversity protection, given the extent of loss within these environments.

## Wetlands

There are a number of small wetlands within the Kawhia and Aotea catchments. The coastal wetlands are estimated to cover approximately 360 ha and there are around 20 inland wetlands that cover about 50 ha<sup>81</sup>. Only 9.4 per cent of the original extent of wetlands remains in New Zealand and the majority of lowland wetlands are likely to be on private land. For this reason indigenous vegetation associated with wetlands is a national priority for protection. Environment Waikato is currently undertaking work to map the wetland areas as part of a biodiversity prioritisation project and it is anticipated that this will be completed in 2011. A range of species associated with wetlands include raupo, sedges, manuka and cabbage trees and birds such as the Australasian bittern and banded rail.

## Rivers and streams

Numerous rivers and streams drain to the Aotea and Kawhia Harbours from the surrounding catchments. Some support threatened species such as longfin eel and shortjaw kokopu. The Awaroa River and Waiharakeke Stream have been identified as nationally important for biodiversity by DOC as part of the Waters of National Importance programme. Other streams, such as Te Kauri Stream, also have high values, as the catchment is almost entirely forested. However, all the streams are important in terms of the health of the harbours and for native fish breeding and habitat.

## Harbours and the coast

Both Kawhia and Aotea harbours have a high conservation value for natural and historic reasons. They are both important breeding and feeding areas for a number of coastal birds (particularly wading birds) and fish<sup>82</sup>.

The quality of the water in Aotea Harbour is particularly high due to regular tidal flushing and the high quality of the water that comes from the catchment. The WRCP notes that Aotea Harbour has extensive seagrass communities.

Saltmarsh and seagrass habitats are present in the estuaries within the catchments. The intertidal flats of the harbours provide an important filtering role and a buffer between land and sea also plays an important role in providing for bird nesting and feeding. Both Kawhia and Aotea harbours are identified as Areas of Significant Conservation Value within the WRCP. The draft NZCPS has identified a proposed marine mammal sanctuary along parts of the west coast of the North Island, which would include the waters of both harbours.

Kawhia Harbour is an outstanding wildlife habitat because of its importance to international and internal migratory birds. The threatened New Zealand dotterel, Australasian bittern and banded rail are residents in the harbour. Environment Waikato has recently, with the help of research agencies and DOC, ranked the region's harbours and estuaries according to their ecological values. Using this method, Kawhia Harbour was ranked the region's most important harbour because of a wide range of habitats and species.

## Pressures

Development has modified and limited native ecosystems, animals and plants within the catchments. This has led to loss of biodiversity and fragmentation of the remaining resource into relatively small areas. Lack of good information on the location, extent and condition of remaining biodiversity can also hinder its effective management.

The remaining areas of high biodiversity value are still at risk from pests and weeds and from land use activities such as vegetation clearance, drainage of wetlands, and continued stock access to waterways in some places<sup>83</sup>. Sedimentation and pollution from the catchment can have adverse downstream impacts on the biodiversity of the harbours, although the quality of the water entering the harbours is quite high because of low stocking rates and good land management practices on rural land.

## What we want

During the Shore Futures workshops, some people spoke about the damage caused by vehicles in the beach environment (such as destroying birds and shellfish)<sup>84</sup>. These activities would also, by implication, destroy the fragile and rare dune environments.

Pest management (such as control of possums and plant pests) is seen as an important issue in the catchments. Appropriate pest management will have a positive impact on indigenous biodiversity and will improve the condition and health of the remaining forest fragments.

The community is clear that effective land and soil management is vital to maintaining and improving water quality. Retention and enhancement of the remaining forest fragments within the catchment for biodiversity purposes will also provide for improved land, soil and water outcomes.

A significant proportion of the community wanted the landscape and natural character of the area to remain the same – 55 per cent of those who responded to the Shore Futures questionnaire wanted no change within the catchments<sup>85</sup>. Biodiversity is intricately linked to natural character and landscape values, so protection and enhancement of biodiversity will also provide for the retention of landscape and natural character values.

## Our response: potential actions

### Implementing current plans

#### Gather more information on biodiversity within the catchments

While some information is known about the biodiversity values within the Kawhia and Aotea catchments, there are still knowledge gaps within the area. Environment Waikato is currently undertaking a biodiversity prioritisation project for the Waikato region which is expected to be completed by 2011. This project will assist with providing more detailed information on the ecosystems and the range of flora and fauna within the catchments and will assist Environment Waikato and district councils to more adequately protect biodiversity values.

Environment Waikato could also assess the extent to which district councils within the catchments use the WRPS assessment criteria for significant indigenous vegetation. This would ensure consistent identification of what is deemed to be significant vegetation across the region.

### Reviews of plans and policies

The WRPS review could provide for a more active role in the coordination of biodiversity management at a regional level and provide more directive policy on the protection of biodiversity.

District plans could be reviewed to give greater protection to biodiversity through objectives, policies and rules. In particular, clearer rules are needed around vegetation clearance, subdivision and land use to avoid further fragmentation of native ecosystems. District councils could also consider subdivision incentives to improve or enhance biodiversity.

### Community involvement

The community possum control scheme in the Hauturu Awaroa area began in 1998 as a result of land owners, together with the wider community, working to reduce possum numbers and increase the quality of forested areas in the Kawhia catchment.

In 2007, the priority possum control areas were developed by Environment Waikato under the Regional Pest Management Strategy. The Pirongia-Hauturu possum control operation is a collaborative project between Environment Waikato, DOC and land owners and covers approximately 74,000 ha of land. Approximately half of this possum control project falls within the Kawhia and Aotea catchments. The most recent monitoring results indicate that the operations were successful. While the anticipated budget for maintenance of the possum control scheme was reduced for the 2009/10 financial year through Environment Waikato's 2009-19 LTCCP decision making process, monitoring activities have been intensified to identify 'hotspots' where control is needed. Once identified, these areas will be subject to pest control.

### Education

One of the most effective non-regulatory methods that regional and district councils can use to improve environmental outcomes is community education. Environment Waikato and district councils could provide more targeted information to land owners and other members of the community about why biodiversity is important, how it can be preserved and what benefits it can offer. District councils can also continue to promote and encourage good land use practices to avoid soil run-off and sedimentation of streams and harbours.

The community could establish voluntary ecosystem restoration such as beach care and stream care groups. A number of successful beach care groups, which help to restore sand dunes through replanting and enhance the condition of the dune ecosystems, operate within the Waikato region.

### Incentives

As previously mentioned, the uptake of Clean Streams funding assistance has been low within the catchments. Environment Waikato could do more to promote the scheme to land owners within Kawhia and Aotea in order to raise awareness of the scheme's existence. Furthermore, continuing to work with agencies such as Federated Farmers and key stakeholders within the agricultural industry will also help to raise the awareness of the Clean Streams programme.

## Legal protection

As mentioned in the Land and Soil section, there are a number of ways to legally protect areas of land in order to protect and enhance biodiversity.

Table 3: Recommended actions

<b>Maintain current fresh and harbour water quality within the catchment.</b>	Provide environmental education and the appropriate infrastructure so that contamination of stormwater is avoided.
	Work with land owners to manage erosion and protect wetlands through fencing and appropriate water-level management.
	Undertake environmental education and provide information to support best practice farm management.
	Undertake harbour and catchment management plans for key streams, estuaries and embayments.
<b>Protect biodiversity values within the catchments.</b>	Work with land owners to protect wetlands and areas of significant indigenous vegetation from inappropriate development.
	Through environmental education and information provision promote the use of covenants on private land to protect biodiversity values.
	Consider subdivision incentives to improve or enhance biodiversity.
	Explore opportunities for developing a biodiversity fund for the Kawhia and Aotea catchments which assists private land owners to protect indigenous vegetation and areas of high biodiversity values.
	Acknowledge voluntary actions by land owners to protect biodiversity values on private properties using QEII covenants, and encourage further voluntary protection by considering providing rates relief for covenanted land.
	When reviewing the WRPS, regional plan and district plans, make provision for the use of education and incentives as methods to achieve biodiversity objectives.
<b>Protect outstanding landscapes and high natural character areas from inappropriate development.</b>	When reviewing the WRPS, regional plans and district plans to implement provisions for the protection of outstanding landscape and high natural character from inappropriate development.
	Continue to support land owners to protect outstanding landscapes and high natural character.

# 5. Development and infrastructure

## Introduction

The area is characterised by a gentle pace of life, small scale bach-type buildings, and seasonal population fluctuations. Over the past two decades the permanent population of the area has declined along with industrial and commercial activities which supported the population.

First settled by Maori of the Tainui Waka who were followed by European settlers, this area once supported a thriving population. This early period of relative prosperity relied heavily on natural resources to support both fishery and agricultural industries. However, its distance from the main population centres of New Zealand has significantly reduced its viability for supporting its residents to live and work in the area. Achieving a balance between the desire for the community to survive and prosper, and the consequences of encouraging growth has been central to the dialogue surrounding the Shore Futures project.

Aside from its relative isolation, there are significant constraints and issues to consider in regards to sustaining current activities and providing for future growth and development for Kawhia and Aotea catchments, which include:

- environmental constraints such as natural hazards, natural character, biodiversity, landscape, terrain, water quality and waahi tapu
- physical infrastructure constraints such as drinking water supply, roading, power, telecommunications and wastewater disposal
- social infrastructure and service constraints such as shops, schools, medical services, public transport and emergency services
- land tenure constraints such as availability of freehold land, Maori multiply-owned and leasehold land for development
- maintaining current economic activity and future opportunities for growth of existing industries and potential for new industries to develop in the area.

The beauty and peacefulness of the area draws a significant number of holidaymakers. It is anticipated that there will continue to be an interest in building holiday and retirement accommodation in this locality. In addition, the area is attracting interest from industry as there are significant natural resources yet to be tapped. For example, the iron sand, wind, and tidal resources could face development pressures in the future. Any significant levels of industrial development would require a local labour base, potentially increasing the local population which in turn may put pressure on the settlements surrounding the harbours to provide for residential growth.

An increase in development, either industrial or residential, provides employment opportunities, financial investment in the community, a potential population growth (permanent or holiday population) and increases the use of social services and the viability of existing commercial activities. Although growth can provide several benefits, it is also important to consider what impacts various types of growth could have on the environment. The agencies involved are seeking to provide some positive direction about what growth and development can occur with relatively little impact on the environment.

This chapter outlines development trends that are important in relation to potential growth and development in the Kawhia and Aotea catchments. The current state of the social and physical infrastructure is discussed and detail is provided on both the potential for, and constraints on, expansion.

## Background residential development trends<sup>86</sup>

Between the 2001 and 2006 censuses, the resident population of the Kawhia community decreased from 507 to 390. At the 2006 census there was a total of 405 dwellings in Kawhia township, of which 180 were occupied. This trend in declining population is not unique to the Kawhia and Aotea communities, and is consistent with national demographic changes. Over the last 20 years in New Zealand, there has been a population movement from rural areas to larger towns and cities which has been primarily for employment opportunities. During the summer season the population of Kawhia is estimated to rise to a peak of between 2000 to 2500 residents and visitors. It is this peak demand that places a significant strain on the infrastructure, including the drinking water supply and wastewater disposal.

While the population has been declining over recent years, there has been an increase in houses being built. Between 2000 and 2009, Otorohanga District Council records show that there have been 40 building consents issued for new dwellings in the Kawhia community ward (which includes Aotea). Since 1999, Otorohanga District Council records show that 12 subdivision applications were received for the Kawhia township, which resulted in 16 new sections. Development in the Aotea catchment that falls within the Waikato district has been very low. Since 2004 there have been only an additional four lots created.

Between 2006 and 2008 only six sections have been sold in Kawhia itself. Currently a 19-lot subdivision application in Kawhia is being considered by Otorohanga District Council. A subdivision in Aotea is being completed, and there is further interest in subdivision in this village.

In the Te Waitere/Kinohaku area there has been limited development since 2000, where six building consents have been issued for new dwellings. Recently, there has been increased interest in lifestyle opportunities in the area with a number of smaller lifestyle type subdivisions being approved. These include allotments ranging in size between 2500 m<sup>2</sup> and 5 ha. Between 2000 and 2008, 12 subdivisions in and around Kinohaku and Te Waitere have been approved, potentially creating an additional 40 lifestyle blocks.

Statistical information from the 1996 and 2001 censuses indicates an increase in population in Te Waitere from 36 to 51 people. At the 2006 census, the population had declined slightly to 45 people. For the broader Te Waitere/Kinohaku area population numbers have remained relatively static.

## The balancing act

Each community must balance up the rights of the community to enjoy the environment, and have it remain as it is, with the rights of individuals to continue to make a living as well as the potential to develop their land. The rules for this balancing act are set out in district and regional plans. District plans outline activities where resource consent is required and, if consent is required, each council will then decide how much opportunity the community will be given to be involved in the consent application process.

It is important to get quality information into these plans as a lack of information can stifle development, whereas good information can facilitate development by creating more certainty. For instance, the recently completed landscape assessment for the catchments helps to identify where subdivision and development can take place without adversely affecting the landscape. This situation contrasts with the two recent Environment Court cases in which the Court had to make a decision on subdivision applications. In the absence of such information, the Court took a precautionary approach which assumed each of the proposed areas of subdivision was significant and declined both applications.

A second reason for obtaining this information is to reduce costs to consent applicants. A lack of information in plans typically increases costs for individual land owners because the onus falls on them to provide information. For example, by including flood levels in the district plan, land owners will more easily identify where new houses should go to avoid the hazard.

The role of the councils is to work with the community to identify what environmental features are important and embed provisions within district plans to guide where and how development can occur in particular areas. There will be different levels of control depending on how important an area is. The following discussion outlines the overall approach that the councils are recommending. Final decisions will be made through the district plan review process, in which all members of the community will be able to have their say.

In bringing together the best mix of controls and incentives in district and regional plans to achieve the right balance, councils and communities need to recognise the importance of people being able to continue to earn a living as well as the importance of looking after the environment which underpins the local economy and the future of families in the area. In so doing, councils and communities need to recognise that local economies are subject to global and national fluctuations. These global market changes are not able to be influenced by district and regional plans, and communities will need to continue to respond with innovation and flexibility in order to continue to prosper.

## Environmental considerations

Issues of cultural heritage and the natural environment are discussed in chapters 2 and 3 respectively. These chapters describe features of the environment that need to be taken into account when considering the location and scale of growth and development in Kawhia and Aotea catchments.

## Hazards

There are various types of hazards including flooding, coastal erosion and landslips. If people live in such areas then they put their property and lives at risk. Risks can be managed by:

- avoiding development in hazard-prone areas (by leaving them as open space)
- designing development to cope with the hazard by
  - modifying the environment, such as building stopbanks or seawalls
  - modifying the development, such as ensuring floor levels are built above flood levels.

The level of development in an area should reflect the level of risk. Low risk areas are those where hazards would cause minor inconvenience for land owners and minor property damage. These areas can be developed provided that the development is designed to cope with the hazard. High-risk areas are those where life is threatened or injury is possible or structural damage to buildings could occur. Examples include areas that are regularly flooded, where floodwaters are deep or swift during a major flood, and sandy coastal areas that could erode if sea currents shift or sea levels rise. These areas are unsuited to intensive developments and should remain as open space.

Flood risk management has been of particular focus as a result of issues experienced in recent flood events around the country, including Manawatu and Northland. The Ministry for the Environment, in conjunction with the Flood Risk Management and River Control Review Steering Group, has released a report which provides guidance on this matter<sup>87</sup>. Furthermore, both regional and district councils have a statutory obligation under the RMA to control land use and the effects of land use to avoid or mitigate natural hazards.

Protection works (stopbanks or seawalls) are generally not favoured because of cost and environmental impacts and because they do not guarantee safety; protection works can and do fail occasionally. Such works may be appropriate in a few local, low-risk areas provided costs are low, they fit in with the natural environment, will be effective in the long term and do not affect existing high value buildings or infrastructure.

The conclusion is that a better-safe-than-sorry, or precautionary, approach should be taken so that risks to people and property decrease over time rather than increase. This means avoiding development in high-risk areas. In practice, intensive development should be set back from the coast and streams and should not be in floodways or on unstable slopes. This also means modifying development in low risk areas to cope with the hazard. For example, buildings in slow-flowing areas should have floor levels raised above the 100-year flood level. Environment Waikato has identified high- and low-risk areas within the catchments, and district plans will contain development standards for these areas.

## Climate change

Recent climate change predictions indicate that the west coast could be up to 25 per cent wetter with more varied rainfall patterns and that flooding could become up to four times as frequent by 2070<sup>88</sup>. Some of the predicted impacts of a moderate rate of climate change for the Waikato region include changes in average temperature, sea-level rise and rainfall patterns. In general, Waikato, like much of the west coast of New Zealand, is likely to become warmer and wetter.

The RMA requires regional and district councils to have particular regard to the effects of climate change. Further consideration will need to be given by district councils as to how they might respond to sea level rise and increased rainfall and the implications it may have for infrastructure such as seawalls (for example, the seawall at Aotea Harbour).

## Natural and cultural values

Consultation undertaken in 2006 and 2007 indicated that the community appreciates the rural and open space feel of the Kawhia and Aotea catchments and wanted them to remain largely as they are. The community was also interested in protecting native vegetation and habitats. The cultural heritage of the area is also highly valued. The RMA states that the following matters are of national importance:

- protecting outstanding natural features and landscapes from inappropriate subdivision, use and development
- preserving the natural character of the coastal environment, wetlands and lakes and rivers and their margins from inappropriate subdivision, use and development
- protecting areas of significant native vegetation and habitat
- the relationship of Maori and their culture and traditions with their ancestral lands, water, sites, waahi tapu, and other taonga.

When the Kawhia/Aotea area is put into national context, it rates very highly for the attributes mentioned above. There are large areas of native vegetation in some places reaching from the coast to high elevation. There are large areas of coast around Kawhia and Aotea where there are no buildings, and there are a number of outstanding natural features and landscapes in the catchments (as shown in the special areas not legally protected map in the appendix). The natural environment chapter discusses these attributes in more detail.

Kawhia is the landing site of the Tainui waka and so is central to Tainui's cultural heritage and identity. The heritage chapter discusses in more detail the relationship that Maori and non-Maori have with the area.

## Landscapes and natural character

To date, there have not been detailed provisions in district plans to protect landscape and natural character. However, increasing community awareness of the importance of these values and the potential for development in sensitive areas means that more controls are going to be needed in the future. It may be that particularly important areas will need to be kept free of buildings. In other locations, buildings might be allowed, but may be subject to controls around the exact location, building height and colour scheme. In areas not considered to be significant landscapes, there will be standard building controls.

## Native vegetation

In terms of native vegetation and habitats, there has been much debate around the country regarding what controls councils should put on land owners. Each district council in this area has already debated this issue through the district plan process and has adopted controls on native vegetation clearance. While there will be an opportunity for the community to debate these matters each time a district plan is reviewed, the councils are not intending any substantial change to the rules that are already in place.

However, there is scope for councils to consider giving more support and encouragement to land owners to look after these areas. Options include rate remission, free advice and funding assistance for protection works. In most cases, active management (such as pest control) is needed for these areas to be properly maintained. If no active management is undertaken then these areas will gradually degrade through pest invasion.

## Cultural heritage

In terms of Maori cultural values, the iwi/Maori authorities participating in the Shore Futures project identified their concern regarding the lack of protection of significant cultural sites and landscapes and raised the need for greater community awareness and education about the importance of these sites for iwi and Maori.

Various matters are being considered by councils, including how much culturally sensitive information can be made public, what district plans should contain in relation to significant cultural sites, tangata whenua involvement in consent processes and tangata whenua access to significant sites.

Tangata whenua would like to be able to develop papakaianga housing on communally-owned ancestral lands. District plans will need to recognise this aspiration and manage Maori and European heritage in a way that also recognises the various constraints on all types of development.

## Coastal development setbacks

To address issues associated with coastal hazards, climate change, landscapes and natural character, public access, native vegetation and natural processes and features, Otorohanga District Council and Environment Waikato commissioned a landscape study and coastal development setback study. These reports have been combined to define an area considered to be the landward portion of the coastal environment.

These reports identify the need for greater consideration to be given to land use and subdivision activities located within the coastal environment. This will need to be incorporated into the review of statutory planning documents such as district plans, the WRPS and WRP. Waikato district has a defined coastal zone in which setbacks for coastal development have been set. A similar exercise would need to be undertaken for the coastal margins of Waitomo district in order to determine coastal setbacks for this area.

## Social infrastructure

One of the consequences of the declining population in Kawhia and Aotea has been a reduction in social services to support the remaining population. The declining number of people living and working in the area has diminished job opportunities, changed the age structure of the community and placed pressure on the remaining social infrastructure. People living in the area have become accustomed to using Te Awamutu, Otorohanga, Te Kuiti and Hamilton to access social and health services.

The decreasing number of young people and the relatively high proportion of older people and those nearing retirement will continue to have an impact on the support structures required by the community. This has been evidenced in the closing of Oparau school and the review of the operation of Kawhia school by the Ministry of Education.

This kind of migration from the area could also have further impacts on the size and composition of the community. For instance, there could be a decrease in permanent residency in the area, and a transition from permanent homes to holiday baches. Alternatively there could be an increase in the retirement-aged population who may require greater access to health services. These changes could trigger subsequent migration from the area.

Despite a declining population, there is a strong sense of community togetherness. The townships around the two harbours form a community where residents know each other and frequently interact at gathering points such as marae, primary schools, community halls and local shops. They form an important component of the social infrastructure. Due to their necessity in the community, these places are well looked after.

Any changes to these community assets and the services that support them are keenly felt by their respective communities. This has been clearly evidenced in the recent pressures placed on primary schools and the changes to school bus routes which affect established families and communities. Central government agencies (in this instance the Ministry for Education) have an important role in working together with communities to identify the continuation of appropriate, affordable and effective services in the area.

Central government social service agencies such as the Ministry of Social Development and the Ministry of Health, as well as the Waikato District Health Board, need to continue working with the community to address these issues. Councils will, on behalf of the community, advocate for central government involvement in addressing the social service needs of the community.

## Physical infrastructure

### Why infrastructure and services are important

Infrastructure including roads, drinking water supply, wastewater and stormwater disposal, electricity and telecommunication services all enable a community to function because they are essential to its health and wellbeing and connection to the wider world.

While almost any challenge to providing infrastructure can be overcome with clever engineering feats, a small population and limited rating base constrains the ability to fund such improvements in the catchments. As in many communities outside New Zealand's main centres, infrastructure is provided to an adequate standard to serve a low density of population without jeopardising their health and wellbeing. Current infrastructure services can accommodate a small to medium level of development and growth. Any major development could place a strain

on infrastructure, funding for infrastructure upgrades and the natural environment. Such growth would potentially load limited infrastructure beyond its current capacity and the local authority's ability to find cost-effective solutions to extending that capacity.

## Roading infrastructure

The roading infrastructure is seen as a vital lifeline for the communities within the Kawhia and Aotea catchments. The provision and ongoing maintenance of the roads in these catchments are particularly difficult, given the topography of the area and the climatic conditions which has, at times, resulted in road closures. State Highway 31, which connects to the east, Te Papatapu Road and Kawhia Road, which connect to the north, and Te Waitere Road and Harbour Road (including the Waiharareke Bridge) which connect to the south are of particular importance. The roading infrastructure network, apart from the State Highway 31 which is administered by the New Zealand Transport Agency (NZTA), are funded and maintained by the respective district councils. Ongoing NZTA and district council commitment to the maintenance of the existing roading infrastructure will have a significant bearing on the ability of the communities to be sustainable and, where appropriate, to develop into the future. It is vital for the viability of the coastal community that the state highway from Ngutunui remains fully funded by central government.

The road leading to Te Waitere and Kinohaku is sealed along its whole length from the end of State Highway 37. This roading network is maintained by the Waitomo District Council. There are no plans to widen the road within the foreseeable future as it has sufficient capacity to carry the daily traffic as well as peak holiday traffic. The network is, however, very vulnerable to natural hazards as illustrated by the disruption caused in the last few years when the Waiharareke Bridge failed. The direct link between Te Waitere/Kinohaku and Kawhia was not operational until the bridge was replaced.

The area within Waikato district has 53 km of roads of which 80 per cent are currently unsealed. The levels of service are generally considered adequate for these types of road. A major slip has severed Kawhia Road at its southern end, and this has resulted in Te Papatapu Road becoming more important. The remainder of the roading network maintained by Waikato District Council is primarily sealed and has the capacity to carry the daily traffic as well as peak holiday traffic.

Kawhia ward has 241 km of roads of which 42 per cent are currently unsealed. Average traffic flows are below 100 vehicles per day (VPD). The levels of service are generally considered good for these types of roads, with the exception of parts of the Raglan Road, which has frequent slips and mud slides. The current volumes of traffic on Kawhia and Aotea roads are relatively low:

- State Highway 31 from east around 400 VPD
- Raglan Road from north 70 VPD
- Harbour Road from east 100 VPD
- Te Papatapu Road 100 VPD
- Kawhia Road 130 VPD
- estimated incoming total of around 500 at Puti
- estimated traffic count of 250 VPD into Kawhia from Aotea.

### What is the road network capacity?

Many of these roads have capacity well in excess of current traffic volumes. Current traffic volumes could potentially double on most of these roads without the need to upgrade. Nonetheless, each specific development would need to take account of issues such as safe access to the roading network for the specific locality.

### Are there any roading improvements planned?

Improvements are planned to the northern sections of Te Papatapu Road over the next few years. The northernmost section will be sealed, and the next section will remain unsealed but be upgraded to a higher standard. These works are being designed to provide a better level of service for current demands, but not to cater for significant growth. Substantial traffic increases on Te Papatapu Road, such as significant increases in tourists visiting the catchments en route between Waireinga Falls (Bridal Veil Falls) and Waitomo Caves, would result in the need for major additional works.

There are no major improvements planned for local roads in Otorohanga district within the next 10 years. The current maintenance costs are generally moderate, except on Raglan Road where the cost has been very high on a per vehicle basis. There are no planned upgrades to State Highway 31.

Waitomo District Council is not planning any upgrades within the foreseeable future as it has sufficient capacity to carry the daily traffic as well as peak holiday traffic. The network is, however, very vulnerable to natural hazards associated with the geologically difficult terrain.

Another consideration in deciding on major improvements to the roading network is the accident record. There have been very low numbers of significant accidents in the Otorohanga district, largely due to low traffic volumes on roads and generally low traffic speeds on twisty, unsealed and narrow roads.

## Water supply

Otorohanga District Council currently supplies Kawhia township with water from a nearby spring. This is augmented by a 30 m deep bore during periods of peak demand which primarily occur during the summer months.

The water supply for Kawhia easily meets the current average demands, which is 300 m<sup>3</sup>/day, with its current capacity for long term sustained supply being 500 m<sup>3</sup>/day. The water supply can meet a short term peak demand of 550 m<sup>3</sup>/day. However, long term demand of this nature, or greater, cannot be sustained and has resulted in Otorohanga District Council putting in place water restrictions during peak summer periods. In terms of water quality, the supply is currently unclassified by the Waikato District Health Board.

The possibility of extending supply to serve Kawhia, Aotea and the whole of this peninsula has recently been considered by Otorohanga District Council<sup>89</sup>. The council has identified that there would be substantial costs and environmental issues to be addressed and as a result, extending the water supply is not considered likely. The remainder of the catchment (including the areas that fall within the Waitomo and Waikato districts) do not have a reticulated service and the community is reliant on rain water collection and other modes of water supply (as is typical of small rural-based communities in New Zealand).

### Are there any water supply improvements planned?

Recent annual increases of water use of about 2 per cent on average have been experienced in Kawhia. Therefore, a treatment capacity of 700 m<sup>3</sup>/day is desirable to meet the foreseeable needs of future demand. Otorohanga District Council has embarked upon an upgrade that will be staged over the next two years to achieve this level. This upgrade will improve the water supply in Kawhia township and enable it to be classified by the Waikato District Health Board. This upgrade will also increase the quantity of water supplied to the town. Part of the upgrade involves improved filtration and UV treatment. Additionally, Otorohanga District Council is drafting a water conservation strategy to put in place measures to promote the efficient use of water. This may include the reintroduction of roof water collection tanks, leak detection and repair in the reticulated water supply and promoting water conservation during dry periods. Another separate water source would have to be developed if the supply area was to be significantly extended beyond the intended upgrade capacity of 700 m<sup>3</sup>/day.

Waitomo District Council's 2009-19 LTCCP indicates that the council will investigate the provision of a reticulated water supply in Te Waitere within the next 10 years to cater for any future growth.

Climate change is expected to make the western part of the North Island wetter<sup>90</sup>. This may lead to a faster recharge of underground aquifers as well as greater certainty regarding the potential for household water storage.

## Wastewater disposal

Currently there is no reticulated service provided in the part of Kawhia and Aotea catchments governed by Otorohanga District Council. There are approximately 350 septic tanks located across both catchments, and property owners are responsible for their maintenance and management. Some of the sections in Te Waitere are currently serviced by a communal wastewater disposal system. Requirements regarding the installation and suitability of septic tanks are outlined in the WRP.

Site capacity is dependent on the site-specific environmental conditions, whereas across the catchments there is the capacity to deal with greater levels of use. Any impacts from increased septic tank disposal would be negated somewhat from the retirement of pasture/grazing land and a subsequent decrease in cattle and sheep discharges to land.

**Are there any wastewater disposal improvements planned?**

Consultation with the Kawhia community indicated a significant level of support for a reticulated service, provided that substantial financial assistance was made available to offset the cost to the community. Without central government subsidy these improvements were considered to be prohibitively expensive. The investigation of an improved wastewater treatment system for Te Waitere will be necessary if future growth should occur to such an extent that it necessitates the provision of a water supply.

The Ministry for the Environment is currently in the process of drafting a national environmental standard for onsite wastewater systems. This would require regional councils to identify areas of risk and require property owners to hold a warrant of fitness for their onsite system that confirms they are functioning properly and being maintained to an appropriate standard.

**Stormwater disposal**

Predominant land use within both catchments is pastoral agriculture. The total area of impervious surfaces within these catchments is estimated to be 13 ha, which is a small fraction of the total land area in the Kawhia and Aotea catchments. The Otorohanga District Council infrastructure that services this area consists of two large gravity drains as well as some minor drains. Contaminant levels are generally low. Under normal rainfall total outflow is much less than 1 m<sup>3</sup>/second. Estimated peak outflow for a 10-year return period is estimated to be 2.8 m<sup>3</sup>/second. Waitomo District Council stormwater infrastructure currently consists of one stormwater manhole and three stormwater sumps in Te Waitere.

**Are there any stormwater disposal improvements planned?**

Improvements to the stormwater system will be undertaken as part of work to progress Otorohanga District Council's application for subdivision on Waiwera Street in Kawhia as well as improvements to rectify isolated cases of contamination that have been identified. Waitomo District Council plans to undertake catchment assessments, but at this point it is too early to assess the impact of any future growth on the stormwater capacity of the natural drainage systems.

**Electricity supply**

WEL Networks supply the northern part of the Aotea catchment, while Waipa Networks supply areas to the south. WEL Networks have the capacity to support modest growth in electricity demand, but major growth could have implications for the network and an upgrade may need to be considered. Currently electricity demand within the Waipa Networks area is nearing the maximum supply, with projections that by 2009/10 the supply may be constrained, based on current growth projections. The electricity supply network to the Waitomo district area is provided by The Lines Company. The company has confirmed that it has sufficient capacity to comfortably cater for future growth.

**Are there any electricity supply improvements planned?**

Waipa Networks have a ten-year asset management plan in which they are committed to supplying existing users. To address current demand and supply issues and to provide some capacity for small-scale growth, a mobile generator is to be installed. This will raise voltage and increase security of supply at the Kawhia end of the line.

Beyond the increased capacity that the generator will provide, a major and costly upgrade to the network itself would be needed to increase electricity supply. While reliant on the national grid for supply of electricity, major population growth would be dependent upon a significant upgrade of lines and substations. If a substantial increase in supply were needed, a wider range of alternative supply and generation would be required. WEL Networks have no upgrade plans at this stage.

**Telecommunications**

Currently there are a number of telecommunications service providers in the Kawhia and Aotea catchments, with Telecom and Vodafone being the predominant providers. Telecom provides landline, mobile and internet connection, while Vodafone provides mobile and internet connection. Landline services can be provided by other telecommunication companies. However, these use Telecom lines to do so. Mobile phone coverage is provided to a large part of both catchments via cell sites.

Landline broadband services are available in the Te Waitere and Kinohaku area. Vodafone provides mobile phone and wireless internet services via its 2G cell site, which provides dial up internet speed. Telecom provides dial-up service through telephone lines, as well as mobile phone and wireless internet service through their cell site.

### **Are there any telephone network improvements planned?**

The growth and development of wireless technology is shifting telecommunications reliance away from landlines which has enabled home line, mobile and internet services to be provided via cell sites. This will reduce costs and demands on new developments where provision of line services 'to the gate' is not necessary to ensure telecommunications services are provided. However, it places emphasis on the location of developments in regard to existing cell sites or the provision of new cell sites.

Vodafone has programmed an upgrade within the next two years to its existing cell site that will provide broadband internet services. This upgrade may marginally increase the existing coverage area. However, no other infrastructure investment for new cell sites has been identified. Upgrades to the Vodafone facilities above Kawhia Harbour will improve cell phone coverage in the Te Waitere area.

Telecom has committed to upgrading the cell site to W850 Network in early 2009, which will provide wireless internet access at broadband speed. Once again, this upgrade may marginally increase coverage area. Telecom has no plans to invest in new infrastructure in the Shore Futures area.

### **What are the challenges overall for physical infrastructure?**

There are physical and financial challenges to developing and maintaining infrastructure. The combination of remoteness, the rugged terrain and weather events impose a significant maintenance costs to existing infrastructure and high costs to extending services into and around the Kawhia and Aotea catchments.

Considering the small number of users and the small rating base, there is an ongoing debate underpinning infrastructure funding. This calls into question who will fund infrastructure to support any additional development and the maintenance of existing infrastructure. Consideration needs to be given to the role of all levels of government and utility operators in providing infrastructure to small isolated communities, as well as the role of developers in funding system upgrades and extensions. Examples of different funding models include central government-funded upgrades of sewerage schemes, rate-payer funding, and development contributions levied on developers to primarily fund upgrades and extensions.

### **Land tenure**

As is common across the country, there is a mixture of land tenure types within the Kawhia and Aotea catchments. The types of land tenure include European and Maori freehold, as well as multiply-owned Maori land (as shown in the property ownership map in the appendix).

Land tenure is a significant factor in investment decisions as it affects perceptions of value because of expectations of the meaning of ownership. New Zealanders' lack of familiarity with leasehold tenure affects the willingness of purchasers to enter into land tenure agreements. Some of the underlying reasons are uncertainty about the renewal of leases and the scale of rents. Tenure can also limit the ability to obtain mortgages for building.

There are significant areas of multiple-owned Maori land in the catchment. In the residential part of Kawhia, most houses are built on leasehold multiple-owned land, with the terms of the lease generally being 25 years. The outskirts of the township are also in multiple-owned land, so growth of the village is likely to include further leasehold development. In Aotea, Oparau, and Te Waitere settlements, freehold titles are more prevalent.

### **Economic activity**

Agriculture and forestry are the primary land uses in the catchment and thus provide the majority of jobs and the basis of current economic activity. The fishing industry has diminished to a level where it is purely a charter-based service of three operators. There are currently two aquaculture ventures, but there is potential for further growth.

These activities are subject to global, national and local pressures which have an impact on maintaining their economic viability. Changes in global and national trends are beyond the scope of the Shore Futures project, but councils, government agencies and the community can work together to ensure that infrastructural requirements are not a barrier or limitation to the continuation of current economic activity. For example, maintaining good

quality roads, reliable telecommunication services and power supply are important factors. Where economic opportunities are realised, these activities have flow-on effects for the rest of the community, through provision of employment opportunities, increased resident population, greater use of social services and the potential to attract other social services.

### **Farming**

Agricultural activities form the main land use within the Shore Futures area, constituting 85 per cent of the Kawhia catchment and 80 per cent of the Aotea catchment. The predominant farming activity is dry stock farming of sheep and/or beef, constituting 63 per cent of the agricultural activity for Kawhia and 54 per cent for Aotea. Dairying accounts for approximately 3 per cent of the agricultural activity in the Kawhia catchment and 2 per cent in Aotea catchment.

### **Forestry**

Forestry has both short and medium term visual effects and much greater long term effects as the crop is removed and replacement decisions are made. Most of the recent new forestry is concentrated in upland rural areas. It is being established in the upland areas of north-east Kawhia, in addition to extensive sand dune plantation planting along Raukumara Beach. Forestry has the potential to bring about a wide scale change of character in a shorter period of time than property development. The dark and regular form of pine trees marks a significant visual change from the pasture it replaces.

Kawhia based Tainui Kawhia Incorporated became the first Maori incorporation to buy out the Crown's interest in a Maori lease forest in November 1997. The forest covers an area of 1000 ha situated on the sand dunes by Kawhia Harbour and provides employment for the local community.

Central government, in response to meeting Kyoto Protocol requirements and to address climate change, has developed a New Zealand Emission Trading Scheme, focused on the trade of carbon credits to offset carbon emissions. The opportunity is for areas of marginal land to be retired in forestry, which is recognised as a store of carbon store or a 'carbon sink'. If done in accordance with the necessary requirements from central government, these areas will be accorded carbon credits, which can then be traded through the Emission Trading Scheme. This is a further economic opportunity for the management of land in the Kawhia and Aotea catchments, as well as for the rest of the country.

### **Mineral extraction**

Currently there are two quarries in operation in the Kawhia and Aotea catchments. A prospecting permit was granted in October 2007 by Crown Minerals for an area covering much of western Waikato and up to Auckland (over 9,400 km<sup>2</sup>). The permit is valid for two years and is for 19 minerals, including gold, silver, copper and ironsand. An application was lodged at the same time for prospecting off the west coast (over 6,300 km<sup>2</sup>).

Te Mata Quarries is located in Kauroa-Kawhia Road in the Aotea catchment. The rock that is extracted is basalt, which is used primarily as roading metal in the area. Its exact date of opening is unknown but it has been monitored by the Waikato Valley Authority since 1985. Approximately 96,000 tonnes of basalt rock is extracted each year from this quarry, and this is regarded as being a medium to large size quarry. The quarry will supply aggregate to the wind farm at Te Uku, and this aggregate source will largely be depleted.

The Rukaunui Limestone Quarry is located in Rakaunui Road in the Kawhia catchment. It is of a smaller size than the Te Mata Quarry, with approximately 15,000 tonnes a year of limestone being extracted. The operator estimates that at the current rate of production the quarry has approximately 15 years of life. It is operated approximately 25 days of the year. The quarry is quite isolated and relies on local farmers' needs to keep it commercially viable.

### **Energy generation**

The main electricity generation alternatives in the catchment are from land-based wind farms and marine wave energy. Both alternatives have different environmental impacts and need to be managed appropriately. This is particularly important, given that the community has sent a clear message about the high value they place on the rural and open space look of the landscapes of Kawhia and Aotea.

A number of wind farms are now in operation across New Zealand, with the potential for further wind farms being located on the west coast of the country. The west coast of the Waikato may also be a potential area for electricity generation from wind and marine energy. Kawhia may be a possible location for servicing infrastructure for such ventures, which could have positive spin-offs for creating employment. Such ventures will need to ensure they do not impinge on, or detract from, the area's natural character, landscapes or heritage values.

The Waikato Regional Energy Strategy advocates trialling wave energy generation on the west coast of the North Island. Whilst the technology for wind farms has progressed significantly of late, technology for wave and tidal generation continues to be developed to satisfy environmental, social, cultural and economic requirements.

Central government recognises the importance of energy generation and transmission to ensure security of national supply and has released the Proposed National Policy Statement for Renewable Energy Generation and other targeted strategies and policy initiatives to provide guidance to local authorities. In considering any proposal, councils will need to assess the effects on all aspects of the environment.

Small experimental scale energy generation developments could occur without the need for significant investment in infrastructure. However, large scale commercial generation would require transmission assets (such as transmission lines and pylons) to link to the national grid.

## Tourism

Tourism operations in this area are limited and of a small scale. They include the Kawhia Harbour and Heritage Cruises and Aotea Horsetreks. Both Kawhia and Aotea provide choices for overnight accommodation, and backpackers' facilities are available in Kinohaku. Successful community events such as the Kawhia Kai Festival and the Kawhia Regatta attract domestic tourists into the community and boost opportunities for local industry and fundraising operations.

Given the historic heritage of Kawhia and Aotea, especially to those affiliated to the Tainui Waka, the natural beauty of the catchments and the geographical proximity to well established tourism attractions such as the Waitomo Caves, there is potential for further development of this industry. In particular, small scale, locally-owned tourist ventures would assist in providing employment opportunities for the local community. As noted previously, significant traffic increases on Te Papatapu Road, which connects to Waireinga (Bridal Veil) Falls and Raglan, could mean major road works would be needed.

## Fishing

Once a viable industry in Kawhia, current activity is limited to recreational fishing which supports the operation of two charter boats from Kawhia. The Ministry of Fisheries recently announced new restrictions in relation to set nets, trawling and drift netting which have been introduced in response to concerns about declining numbers of Hector's and Maui's dolphins. These new rules are unlikely to have any impact on the operation of fishing charter operations.

The future economic viability and productivity of the harbours are dependent on internal (health of the harbour and quality of the water) and external (management of the fish resource, such as fishing quota) factors.

## Aquaculture

A mussel farm has been in existence since 1983 in Aotea Harbour. The farm is approximately 3.75 ha in size and consent has been granted to extend this farm by another 3.75 ha, but this decision has been appealed in the Environment Court.

There is an oyster farm, approximately 2.8 ha in size, in Kawhia Harbour. This particular farm has a varied history of use, and has been abandoned on a number of occasions by previous owners. The oyster farm is one of the biggest employers in Kawhia and was granted consent in 2000.

Any further aquaculture development in the area would need to be located in the harbours as the open coast is too exposed and would damage the aquaculture equipment. The inter-tidal flats of Kawhia and Aotea Harbours also provide an ideal habitat for oyster farms as there is good tidal flushing. Following the aquaculture reforms of 2004, any further development of marine farming requires a plan change to set up an aquaculture management area

(AMA) prior to consent applications being considered. Central government has indicated its support for aquaculture and has established a planning fund to support the creation of new AMAs.

However, locating aquaculture in the harbours may create conflicts of use, especially given that the area is highly valued for its natural looking coastal environment. It is likely that the importance of preserving the look and feel of the natural landscape of the area and honouring Maori cultural values in terms of the mauri of the water will be key issues of concern that will need to be addressed.

If the local community was supportive of the development of aquaculture then Environment Waikato could consider preparing a plan change to set up new AMAs within one or both of the harbours. The economic viability and environmental sustainability of any such development would need to be investigated first. Funding for this work could be sought from the Aquaculture Planning Fund, which would help in reducing costs to Environment Waikato and, therefore, to regional ratepayers.

## Managing future growth and development

Current infrastructure can cater for small to medium scale development within the catchments, provided the effects of such development are managed appropriately. The community indicated that large-scale development within the area was not desirable. Furthermore, there are significant constraints to major growth within the Kawhia and Aotea catchments. These challenges include the cost of upgrading infrastructure, such as water supply and wastewater treatment, and the need to maintain landscape and natural character values, protect culturally sensitive areas and avoid natural hazards.

Due to the catchments' remoteness, initiatives for growth and development are likely to be intermittent and scattered. The community signalled its preference for directing growth to existing settlements and allowing some development provision outside those areas. The preferred development is for low density buildings that fit the existing character of the settlements and the landscape.

It is important for local authorities to provide positively for growth rather than reacting to the initiatives of particular developers in scattered locations. Greater certainty about where and how development can be accommodated would provide a more positive climate for reinforcing the existing community and avoiding conflict within the community over site-specific development proposals.

Through Shore Futures' community consultation, the following principles for growth are indicated.

- The preferred location for growth is in existing villages and around community halls and marae. This would reinforce the social and physical infrastructure already in existence and enhance the viability of these clusters.
- Any residential development needs to acknowledge and retain local character. This means that the design and layout of any new development should take into account the existing scale, position and style of nearby development and also take into account surroundings including terrain and vegetation.
- Landscape and ecological enhancement should be considered as part of any development.
- Development needs to avoid sensitive landscapes and hazard prone areas.
- Any papakainga development would need to facilitate cultural enhancement of existing marae.

Councils intend to implement these directions through district and regional plans and infrastructure funding decisions. Therefore, district and regional councils' plans and policy statements would need to:

- manage development in specific areas within existing settlements to be consistent with the character of those areas
- support through the review of district plans, the WRPS and WRP provisions for papakainga housing around existing marae
- provide for some development outside the settlements provided such development meets criteria related to landscape, natural character, hazards and cultural heritage
- manage development in hazard prone areas in areas of outstanding natural character and in areas with significant features and landscapes
- protect waahi tapu, wetlands and areas of significant indigenous vegetation from inappropriate development
- take account of amenity concerns such as building design and layout, avoidance of ridge line building, and planting measures to soften the impact of any development
- district plans, the WRPS and WRP need to ensure new activities in the area do not impinge on the natural character, landscape and heritage values

- district plans, the WRPS and WRP need to recognise and define coastal environments and make provisions that appropriately manage activities that reflect the uniqueness of this environment.

The Shore Futures project highlights the need to balance the opportunities for accommodating further growth and development with the capacity and limitations of infrastructure and environmental factors whilst reflecting the character and values of the community and the landscape.

While there are many significant constraints to avoid, the viability of the community is vulnerable to any further decline in population. Local government initiatives need to articulate and reinforce the strengths of the area. The beauty, heritage values, community spirit, and local character are all worthy of protection and enhancement. Inevitably some changes in regulation such as those controlling development in district and regional plans are an important component in retaining those strengths. Equally, local government and the community have roles to play in seeking ongoing funding of critical social and physical infrastructure such as local schools and State Highway 31 (from central government).

It is also important that the community continues to seize opportunities to engage with local and central government and major industries to find practical, long term solutions to secure the community's viability.

# 6. Recommended actions

## Introduction

This report is a non-statutory document, which means it has not been prepared as a requirement under law and does not have the power of legislation. Therefore, implementation of the recommendations in this report relies on various approaches. It is intended that the key recommendations will provide guidance in the LTCCP decision making process and be incorporated into district and regional plans and the Waikato Regional Policy Statement as they go through their review process. Any proposed changes to these plans will go through the statutory process outlined in the RMA including public consultation, submissions and hearings.

The information that has been gathered as part of the Shore Futures project will be used to contribute to the district plan reviews of Otorohanga, Waitomo and Waikato district councils as well as the review of the WRPS and the Waikato Regional Plan (WRP). Key elements of Shore Futures will also be incorporated into Environment Waikato's Sustainable Agriculture Strategy to appropriately manage the effects of land use in the catchments. In confirming the 2009-19 LTCCP, Environment Waikato has made provision to investigate the development of an integrated programme of river and catchment work across a west coast zone (from Port Waikato to Mokau). The development of such a programme may provide the means by which many of the recommended actions may be implemented. The diagram below illustrates some of the main inputs and considerations that were part of the Shore Futures process and the key ways in which the actions will be implemented.

This report has identified a number of areas where work can be undertaken to make progress towards these ambitions. These recommended actions are detailed in an implementation table that primarily focuses on what regional and district councils and other participating agencies have committed to progress. Implementation and ongoing opportunities for the community are also explored.

## Inputs and considerations



## Implementation for local government and Crown agencies

The table below outlines the key recommendations contained in the report and the organisation responsible. Some of these recommendations have already occurred or are part of ongoing work. This is also indicated in the table. Note that some policy directions and implementation actions will have gains across many areas.

# Key objectives identified by Shore Futures

Key objective		Recommended action	Lead agency/agencies	Support agency/agencies	Progress
<i>Heritage</i>					
Raise awareness of, identify and actively protect the heritage values of the area.	H1	Explore the opportunity to use historic names, such as for new roads.	District councils, iwi/Maori and community		
	H2	Raise awareness of the historic heritage of the area, such as through signage, published material and heritage events.	New Zealand Tourism Board, tourism agencies, district councils, iwi/Maori and community		
	H3	Support iwi/Maori authorities and/or community groups in securing funding to undertake assessment, protection and restoration works of sites identified in inventories.	District councils, regional and national funding agencies, iwi/Maori and community		
	H4	When reviewing the WRPS, regional plans and district plans, provide integrated management policies, rules and discovery protocols that provide protection of unknown sites upon accidental discovery.	New Zealand Historic Places Trust (NZHPT) and New Zealand Archaeological Association (NZAA)		
	H5	Review resource consent process to incorporate advisory footnotes on consents issued and develop consent checklists to indicate likelihood of discovery.	District councils	NZAA	
	H6	Maintain and build upon existing inventories to include industrial and agricultural heritage resources.	District councils and NZHPT	Community	
	H7	When reviewing the WRPS, regional plans and district plans, provide integrated management policies and rules that protect sites identified in inventories. Refine buffer zones around identified sites to reflect the level of accuracy of known sites.	Environment Waikato, district councils and NZHPT	Community	
	H8	Ensure listed sites are identified and relevant information is included on PIMs and LIMs	District councils and NZHPT		
	H9	Maintain and build upon existing inventories increasing coverage of the total number of sites and the accuracy of these sites.	District councils, NZHPT and NZAA	Community	
	H10	Maintain and build upon existing inventories, to include and increase coverage of waahi tapu sites.	iwi/Maori, district councils and NZHPT		
	H11	Develop and support initiatives for iwi/Maori to build iwi/Maori inventories, maps and iwi heritage management plans.	iwi/Maori, Environment Waikato, district councils and NZHPT		
	H12	Establish protocols and agreements for the use of iwi/Maori inventories, maps and iwi heritage management plans.	iwi/Maori, district councils and Environment Waikato	Relevant government agencies	
	H13	Support iwi/Maori authorities in securing funding for the development of iwi/Maori inventories, maps and iwi heritage management plans.	District councils and Environment Waikato	Regional and national funding agencies (such as Te Puni Kokiri)	
	H14	When reviewing the WRPS, regional plans and district plans, provide integrated management policies and rules that protect sites identified in iwi/Maori inventories, maps and iwi heritage management plans. Refine buffer zones around identified sites to reflect the level of accuracy of known sites.	iwi/Maori, Environment Waikato, district councils and NZHPT		
	H15	In conjunction with the local community, consider opportunities for the promotion of heritage and the development of heritage trails.	Environment Waikato, district councils and community		

# Recommended actions

Key objective		Recommended action	Lead agency/agencies	Support agency/agencies	Progress
<b>Natural environment</b> Maintain current fresh and harbour water quality within the catchment.	N1	Monitor and review the stock exclusion rule in the WRP to determine effectiveness of the rule.	Environment Waikato	District councils	
	N2	Continue monitoring of water quality (both harbour water and fresh water) to assist in improving understanding of the causes of decline in water quality.	Environment Waikato	District councils and community	
	N3	Avoid wastewater discharges to water through monitoring septic tank compliance rules and appropriate rules in each council's planning documents.	District councils and Environment Waikato		
	N4	Provide environmental education and appropriate infrastructure so that contamination of stormwater is avoided.	District councils and Environment Waikato	Community	
	N5	Work with land owners to manage erosion.	Land owners and Environment Waikato	Community	
	N6	Work with land owners to protect wetlands through fencing and appropriate water-level management.	Environment Waikato and land owners		
	N7	Raise awareness of the Clean Streams programme and work with land owners and industry to increase uptake of the programme.	Environment Waikato	Federated Farmers and Fonterra	
	N8	Undertake environmental education and provide information to support best practice farm management.	Environment Waikato	Federated Farmers	Ongoing
	N9	If water monitoring indicates, review the WRPS to support controls around nutrient run-off to protect the quality of fresh and harbour water.	Environment Waikato		
	N10	Encourage the uptake of central government initiatives that assist in preventing soil erosion and vegetation clearance.	Environment Waikato	District councils and community	
	N11	Undertake harbour and catchment management plans for key streams, estuaries and embayments.	Environment Waikato		

Key objective	Recommended action	Lead agency/agencies	Support agency/agencies	Progress	
Protect biodiversity values within the catchments.	N12	Investigate financial incentives in order to assist land owners to retain significant areas of indigenous vegetation.	District councils and Environment Waikato		
	N13	Assess the effectiveness of the regional approach to land and soil management, particularly around sensitive locations such as waterways and harbours.	Environment Waikato		
	N14	Work with land owners to protect wetlands and areas of significant indigenous vegetation from inappropriate development.	Environment Waikato, district councils and land owners		
	N15	Through environmental education and information provision promote the use of covenants on private land to protect biodiversity values.	Environment Waikato and district councils		
	N16	Control invasive weeds in the harbours, in particular spartina and saltwater paspalum.	Environment Waikato and DOC		
	N17	When reviewing the WRPS, regional plans and district plans, ensure appropriate provisions (including criteria to assess signs of natural areas) are provided to protect and maintain biodiversity values.	Environment Waikato and district councils		
	N18	Undertake a biodiversity prioritisation project for the Waikato region to assist with providing more detailed information on the significant natural areas within the catchments.	Environment Waikato	Ongoing, to be completed by 2011	
	N19	When reviewing the WRPS, provide for the coordination and prioritisation of biodiversity management at a regional level.	Environment Waikato		
	N20	Consider subdivision incentives to improve or enhance biodiversity.	District councils		
	N21	Provide targeted information to land owners and the community on the benefits of biodiversity and how it can be maintained and enhanced.	Environment Waikato and district councils		
	N22	Acknowledge voluntary actions by land owners to protect biodiversity values on private properties using QEII covenants, and encourage further voluntary protection by considering providing rates relief for covenanted land.	District councils and Environment Waikato		
	N23	When reviewing the WRPS, regional plans and district plans, make provision for the use of education and incentives as methods to achieve biodiversity objectives.	Environment Waikato and district councils		
	N24	Explore opportunities for developing a biodiversity fund for the Kawhia and Aotea catchments which assists private land owners to protect indigenous vegetation and areas of high biodiversity values.	Environment Waikato		
	N25	When reviewing the WRPS, regional plans and district plans, implement provisions for the protection of outstanding landscape and high natural character from inappropriate development.	Environment Waikato and district councils		
	N26	Continue to support land owners to protect outstanding landscapes and high natural character.	Environment Waikato and Federated Farmers	District councils	
	Protect outstanding landscapes and high natural character areas from inappropriate development.				

# Recommended actions

Key objective		Recommended action	Lead agency/agencies	Support agency/agencies	Progress
<p><b>Development and infrastructure</b></p> <p>Ensure that development occurs in a manner that does not degrade outstanding landscape, high natural character, water quality, biodiversity and heritage values.</p>	D1	When reviewing the WRPS, regional plans and district plans, provide appropriate protection of cultural values, outstanding landscape, high natural character, water quality, biodiversity and heritage values.	Environment Waikato and district councils		
	D2	When reviewing the WRPS and district plans, manage development in hazard areas.	Environment Waikato and district councils		
	D3	Continue monitoring of wastewater disposal consent conditions.	Environment Waikato		Ongoing
	D4	When reviewing the WRPS, make provision for the creation of a coastal zone.	Environment Waikato		
	D5	When reviewing the WRPS, regional plans and district plans, ensure that stormwater and wastewater disposal does not degrade fresh or harbour water quality.	Environment Waikato and district councils		
	D6	Ensure that residential development achieves low impact stormwater design.	Environment Waikato and district councils		
	D7	Undertake targeted education with the community on ways of avoiding stormwater contamination.	District councils and Environment Waikato		
	D8	When reviewing district plans, promote development in existing settlements, consistent with the character of those areas.	District councils		
	D9	When reviewing the WRPS and district plans, support papakainga housing around existing marae.	District councils and Environment Waikato		
	D10	When reviewing the WRPS and district plans, provide for some development outside existing settlements, provided such development meets appropriate criteria such as building design and layout, avoidance of building on significant ridgelines and planting measures to soften the impact of any development.	District councils and Environment Waikato		
	D11	When reviewing the WRPS, regional plans and district plans, ensure that social, economic and cultural wellbeings are matters or consideration in development applications as well as environmental well-beings.	Environment Waikato and district councils		
	D12	Advocate to central government on behalf of the community for provision of key social services.	District councils, Environment Waikato, Ministry of Health, Ministry of Social Development and Ministry of Education		
	D13	Advocate to central government on behalf of the community to retain state highway networks within the area.	Environment Waikato, district councils and community		

## Implementation and opportunities for the community

The community has a vital role in the implementation of Shore Futures. There are practical actions that the community can take in order to enhance the natural environment. For example, community members can assist land owners with riparian planting and weed control. Community members can also form beach care groups to help with dune planting and preserving the natural character of the coastal environment.

There are also a number of ongoing opportunities to continue to advocate for changes that communities want to see in their area by participating in planning processes. While Shore Futures is a non-statutory process, the district plan and regional plan reviews of the councils involved provide communities with a chance to give feedback and ensure that their wishes are met and the values they hold dear are protected. The review of the WRPS also provides the community with another opportunity to make sure that the recommendations of Shore Futures are incorporated into the region's key policy document.

It is important that the community continues to seize opportunities to engage with local and central government and major industries to find practical, long term solutions to secure the community's viability.

Agriculture has a long history in the catchments and the current form of land use is compatible (and with has minimal impact on) the environment. Retaining the quality of these resources underpins the continued success of this industry and provides for ongoing agricultural opportunities.

There are a number of ongoing opportunities for communities to explore innovative business ventures that take advantage of and promote the natural environment to visitors to the area. Regional and district councils can encourage economic opportunities within the catchments. Such activities would not need to be undertaken at a large scale. Rather, they could be developed over time and be done at a level that is manageable.

Cultural tourism is also a growing industry, and iwi/Maori may want to explore opportunities for guided tours of the area and/or marae visits or stays which could showcase cultural arts and activities. Any development of tourism ventures, whether marae-based or not, would need supporting infrastructure such as accommodation and hospitality to be developed, in order to ensure the ongoing success of such ventures.

There are opportunities for the community to establish a local tourism agency that works to promote Kawhia and Aotea to a wider audience within the region and connects with other tourism agencies. This could be achieved with the assistance of district councils and other tourism agencies.

## Implementation and opportunities for iwi/Maori

It is important to recognise Maori as tangata whenua of the land and, in so doing, recognise their unique relationship with the land, water, taonga and sites of significance. It was hoped that the Shore Futures process would assist iwi to incorporate more of their knowledge and world views into the project in order to provide greater protection of Maori values. While this remains a work in progress for other projects, it is important that iwi/Maori, councils and the wider community continue to develop and enhance relationships in a forum of understanding and openness so that all concerns are heard and addressed.

In particular, the participating agencies will continue to work with iwi/Maori to assist them to incorporate Maori values into district and regional plans. The agencies involved in Shore Futures engaged with iwi in the area in a number of ways, and these agencies will continue to work with iwi/Maori to build upon the existing relationships. It is important, therefore, that opportunities to engage with councils and government agencies are undertaken in such a way that is sympathetic to and aware of the demands and capacity of iwi/Maori so that greater hardships are not inadvertently created.

It is acknowledged that while initial efforts and resources were committed to engage independently and specifically with iwi/Maori as part of the Shore Futures project, this is an area of work where little progress was achieved. Input from iwi/Maori became dependent on representation of individuals on the Community Reference Group and through the relationships established by individuals on the project team. This is an area in which all councils are committed to progressing. For example, Otorohanga District Council is actively developing protocols for ongoing consultation with iwi authorities and there is a commitment from Waitomo and Waikato district councils to use and adapt these protocols and learn from their experience. Environment Waikato is also engaging with iwi through the

Waikato Regional Policy Statement review and is developing a procedure for incorporating iwi management plans into RMA planning documents.

Adequate protection of sites of significance to Maori is an area of work that still needs to be developed and realised so that sites are identified and recorded, and appropriate protocols and protection can be provided to these sites and this information.

Iwi/Maori have a unique role in being able to create and achieve economic viability to benefit their people, which will also benefit the wider community. Opportunities for iwi/Maori to achieve economic viability and success need to be recognised and realised.

## 7. Conclusion

The Kawhia and Aotea catchments and harbours are high quality environments which underpin the agricultural and marine economy of the area and contribute to community wellbeing. Future development is important but should not detract from the naturalness of the area, or degrade historic sites, the harbours, or water and soil in the catchments.

The Preferred Shore Futures Report is a strategic guide – not a formal council plan. The Shore Futures objectives will be achieved through incorporation into formal council plans and budgets and by the activities of the agencies and the community. Some ongoing collaboration with communities will still be required to determine solutions that work at the local level.



Photo: Lens\_Flare.

## 8. Supporting documents

A number of technical reports have been produced throughout the Shore Futures process. These reports helped to shape the implementation actions for Shore Futures and identified new information that was not previously available. The following documents are available to the public.

West Coast Natural Character and Landscape Assessment (Kawhia and Aotea catchments) Report. Prepared by Golder and Associates, December 2008. Commissioned by Environment Waikato, Waikato, Waitomo and Otorohanga District Councils and Department of Conservation.

Otorohanga District Council: Coastal setbacks – Coastal development setback recommendations for the Otorohanga District. Prepared by Jim Dahm (Eco Nomos Ltd) and Bronwen Gibberd (4D Environmental Ltd), draft as at May 2009. Commissioned by Otorohanga District Council.

Kawhia-Aotea Heritage Assessment. Prepared by Lynette Williams, September 2008. Commissioned by Environment Waikato.

Heritage Framework: Kawhia and Aotea Catchments. Prepared by Wendy Turvey, OPUS Consultants Limited, August 2008. Commissioned by Otorohanga District Council.

## 9. Endnotes

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# 10. Appendices – maps



