



PART B

PART B



TE WĀHANGA B

4 Integrated management

Policy 4.1 Integrated approach

An integrated approach to resource management will be adopted that:

- a) recognises the inter-connected nature of **natural and physical resources** (including spatially and temporally) and the benefits of aligning the decisions of relevant management agencies across boundaries;
- b) maximises the benefits and efficiencies of working together ;
- c) recognises the multiple values of natural and physical resources including **ecosystem services**;
- d) responds to the nature and values of the resource and the diversity of effects (including cumulative effects) that can occur;
- e) maximises opportunities to achieve multiple objectives;
- f) takes a long-term strategic approach which recognises the changing environment and changing resource use pressures and trends;
- g) applies consistent and best practice standards and processes to decision making; and
- h) establishes, where appropriate, a planning framework which sets clear limits and thresholds for resource use.

Implementation methods

4.1.1 Amendments to regional and district plans

Amendments to regional and district plans to give effect to this Regional Policy Statement shall be notified within two years of its operative date.

4.1.2 Land use change and intensification

Waikato Regional Council will work with territorial authorities to identify and manage the adverse effects of large-scale land use change or intensification, by taking account of:

- a) the potential to adversely affect the range of natural and physical resources, including effects occurring off site;
- b) the potential cumulative effects;
- c) opportunities to manage adverse effects in collaboration with territorial authorities, **tāngata whenua**, industry, landowners and other stakeholders; and
- d) options for managing adverse effects including:
 - i) regulatory and non-regulatory methods;
 - ii) education and advocacy; and
 - iii) use of economic instruments.

The relevant objectives are:

- 3.1 *Integrated management*
- 3.2 *Resource use and development*
- 3.3 *Decision making*
- 3.4 *Health and wellbeing of the Waikato River*
- 3.5 *Energy*
- 3.6 *Adapting to climate change*
- 3.7 *Coastal environment*
- 3.8 *Ecosystem services*
- 3.9 *Relationship of tāngata whenua with the environment*
- 3.10 *Sustainable and efficient use of resources*
- 3.11 *Air quality*
- 3.12 *Built environment*
- 3.13 *Mauri and health of marine waters*
- 3.14 *Mauri and values of fresh water bodies*
- 3.15 *Allocation and use of fresh water*
- 3.16 *Riparian areas and wetlands*
- 3.17 *Geothermal*
- 3.18 *Historic and cultural heritage*
- 3.19 *Ecological integrity and indigenous biodiversity*
- 3.20 *Outstanding natural features and landscapes*
- 3.21 *Amenity*
- 3.22 *Natural character*
- 3.23 *Public access*
- 3.24 *Natural hazards*
- 3.25 *Values of soil*
- 3.26 *High class soils*

4.1.3 Co-ordinated approach

Waikato Regional Council will seek opportunities to align its own activities, including the provision of works and services, regulation, education programmes and environmental initiatives, to maximise the benefits achieved.

4.1.4 Plans and strategies

In developing plans and strategies for the management of resources, Waikato Regional Council will

- a) adopt an appropriate scale of management;
- b) seek opportunities to promote positive environmental outcomes across a range of resources; and
- c) consider relevant industry guidelines and codes of practice that represent appropriate industry practice and management approaches.

4.1.5 Environmental management plans

Waikato Regional Council will collaborate with territorial authorities, tāngata whenua, industry and stakeholders to investigate the benefits of and options for developing property level environmental management plans to promote positive outcomes and manage the effects of rural land uses including farming.

Environmental management plans should identify:

- a) potential and actual adverse effects of the current land use;
- b) options/recommendations for addressing identified adverse effects;
- c) an implementation plan to address identified adverse effects;
- d) options and opportunities for environmental enhancement;
- e) recommended sustainable land management practices; and
- f) any monitoring required.

4.1.6 Advocacy and education

Waikato Regional Council will promote an integrated approach to resource management, including by:

- a) promoting sustainable land management practices;
- b) educating landowners/managers about the adverse effects of land use practices, including off-site and cumulative effects;
- c) promoting understanding of the values and benefits of resources in contributing to community wellbeing through providing ecosystem services;
- d) promoting understanding of the different ways in which resources are valued by people and communities;
- e) advocating for consistent application of best practices standards and processes, including best practice **tikanga** and **mātauranga Māori**;
- f) encouraging research to increase understanding of the effects of climate change on the Waikato region;
- g) making submissions on the long-term plans and annual plans of territorial authorities to seek the appropriate allocation of resources to give effect to the Regional Policy Statement; and
- h) advocating to central government agencies, tāngata whenua, and other stakeholders to assist implementation of the Regional Policy Statement.

4.1.7 Managing the coastal environment

Local authorities should:

- a) recognise and manage the **coastal environment** as an integrated unit; and
- b) recognise the special context of the coastal environment, including the recognition that it has particular values and issues that are of regional and national significance and that impact on the wellbeing of the Waikato region, including:

- i) its contribution to the regional and local economy;
- ii) its cultural values and association, including **historic heritage**;
- iii) its value as a **pātaka kai**;
- iv) its public nature;
- v) its **amenity values**, including its contribution to open space;
- vi) its dynamic and hazardous nature;
- vii) the difficulty in containing adverse effects due to its inter-connected nature;
- viii) its potential for renewable energy generation;
- ix) its ecological diversity and **indigenous biodiversity** values;
- x) the use of the **coastal marine area** as the receiving environment for land-based discharges of sediment and **contaminants** and its sensitivity to them; and
- xi) its potential for **mineral** resources.

4.1.8 Identifying extent of the coastal environment

In relation to the coastal environment:

- a) the Regional Policy Statement shall map the landward extent of the coastal environment at an indicative level;
- b) regional and district plans shall map or otherwise identify the landward extent of the **coastal environment** as the area:
 - i) identified in the indicative maps provided in Section 4A; or
 - ii) determined by further detailed investigation;
- c) any detailed investigation undertaken under b) above shall:
 - i) recognise and include assessment and consideration of all of the elements of the coastal environment (as defined in the Glossary);
 - ii) be undertaken by the relevant **local authority** using a collaborative approach under Policy 4.2 in recognition of the need to manage the coastal environment as an integrated unit;
- d) where a detailed investigation has been undertaken and the results of this investigation have been made operative through inclusion in the relevant regional and district plans, this area should take precedence over the relevant indicative area provided in Section 4A.
- e) regional and district plans shall contain provisions that:
 - i) address adverse effects of activities on the coastal environment, including cross-boundary and cumulative effects; and
 - ii) recognise the particular values and issues present in the coastal environment; and
 - iii) provide for integrated management and consistent provisions to give effect to the policy direction of the Regional Policy Statement for the coastal marine area and the adjoining land in the coastal environment.

4.1.9 Planning approach

Regional and district plans shall:

- a) ensure that cumulative adverse effects are managed;
- b) recognise the long timeframes at which natural physical processes operate (e.g. coastal erosion and accretion cycles) and adopt at least a 100-year planning timeframe to allow for changes in these processes, while acknowledging that a shorter timeframe typically applies when modelling Development Geothermal Systems;
- c) adopt a precautionary approach towards any proposed activity whose effects may be significant or irreversible but are as yet uncertain, unknown or little understood, including the use and management of coastal resources particularly vulnerable to effects from climate change; and

- d) recognise lag times between human actions and environmental results.

4.1.10 Economic instruments

Waikato Regional Council will investigate and implement options for using economic instruments in regional council planning documents where appropriate, to assist in the management of natural and physical resources. Options may include:

- a) offsets or financial contributions for adverse effects generated by consented activities;
- b) differential rates and remissions policies for managing land-based activities, particularly where a public good is provided by private interests;
- c) full-cost pricing to ensure negative externalities are borne by those responsible where possible;
- d) occupation charges for the use of public space; and
- e) tradable permits to assist in the efficient management of resources.

4.1.11 Offsite mitigation of adverse effects

Local authorities should consider the following priorities (not listed in order of importance) for restoration or enhancement as possible alternatives to onsite mitigation in situations where it is not appropriate or practical to mitigate the adverse effects of an activity on site:

- a) public access to and along the coastal marine area and land adjacent to the coast and inland water bodies;
- b) health and wellbeing of the Waikato River and its **catchment**;
- c) functioning and stability of natural physical processes (including by retirement of land along the coastal margin, retirement of steep land from production, and enhancement of riparian areas);
- d) indigenous biodiversity (including creation, restoration and enhancement of **wetlands** and corridors);
- e) degraded geothermal features/characteristics; and
- f) **natural character** of the coastal environment, wetlands, and lakes and rivers and their margins.

4.1.12 Other plans and strategies

Local authorities should, where appropriate, seek consistency with the objectives and policies of the Regional Policy Statement in other plans and strategies, including:

- a) asset management plans;
- b) long-term plans;
- c) regional pest management strategies;
- d) regional land transport plans;
- e) navigation safety and other bylaws;
- f) Waikato Regional Council zone management plans;
- g) civil defence and emergency management group plans;
- h) structure plans;
- i) growth strategies; and
- j) reserve management plans.

4.1.13 Incorporating effects of climate change

Local authorities should, and regional and district plans shall, recognise and provide for the projected effects of climate change, having particular regard to:

- a) historic long-term local climate data;
- b) projected increase in rainfall intensity, taking account of the most recent national guidance and assuming a minimum increase in temperature of 2.1°C by 2090 (relative to 1990 levels); and

- c) projected increase in sea level, taking into account the most recent national guidance and assuming a minimum increase in sea level of 0.8m by 2090 (relative to 1990 levels).

4.1.14 Monitoring and information gathering

Waikato Regional Council will:

- a) track changes in use of natural and physical resources to ensure early identification of land use and resource use trends that may result in adverse effects on the environment;
- b) develop and maintain processes and resources to enable the effects of activities, including cumulative effects, to be monitored;
- c) monitor the state of resources and ensure that an appropriate level of understanding is available and maintained to assist policy and management initiatives;
- d) identify relevant **ecosystem services** and assess their role and value to the region;
- e) identify and integrate **mātauranga Māori** indicators and measures as part of the information and monitoring regime;
- f) consider opportunities for communities to be involved in local monitoring programmes; and
- g) investigate the use of integrated spatial planning tools including to explore alternative long-term development options and associated trade-offs.

Explanation

Traditional approaches to resource management have sometimes failed to adequately recognise the inter-related nature of natural resources, and the different values ascribed to them. This policy seeks to address this and, in doing so, to achieve effective and efficient resource management and value for money for those funding different activities. It also seeks that we are not caught unprepared by sudden or cumulative changes either in the environment, or in the pressures and demands on resources.

Local authorities have many different, and sometimes competing, functions, including support for or involvement in the activities of others. There will often be opportunities to design activities so that the positive outcomes are maximised – for example, in providing and managing reserves, authorities can also promote positive indigenous biodiversity and natural character outcomes through the choice of appropriate species for planting. Land managers will often similarly have options to amend their practices to achieve positive environmental outcomes. It has been shown that adopting better environmental practices can often provide economic benefits also. Method 4.1.5 promotes property level management plans that identify area specific best practice and signals that these plans may be used in future regulatory regimes.

Stemming from recognition of the inter-related nature of resources is the recognition that the appropriate scale of management will be different depending on the resource or issue being managed. For example, attempting to manage water quality in one stretch of a river without addressing the causes of degradation will have limited success. The coastal environment is specifically identified as a management unit to be recognised. The definition of coastal environment in the Glossary represents a regional scale application of the coastal environment elements defined in the New Zealand Coastal Policy Statement 2010.

To achieve the best outcome for the Waikato region, it is necessary to ensure a level of consistency in resource management approaches. This will be achieved through the amendment of regional and district plans to give effect to this Regional Policy Statement and adoption of consistent approaches and bottom-lines, such as contained in Methods 4.1.9 and 4.1.13. Method 4.1.2 recognises that generally as the scale of

land use change or land use intensification increases, so does the potential for significant environmental effects. Such changes can be rapid and relatively localised, such as conversion of an area of forest to a pastoral farm, or they can be slower and cumulative, such as increasing use of fertiliser over time for farming generally or spreading rural-residential development. Method 4.1.2 is not intended to capture crop and harvest cycles or other seasonal or rotational farming practices.

Some activities will be deemed acceptable despite the fact that they will actually or potentially create adverse effects. This will usually occur when the positive effects the activity will generate are considered to outweigh the adverse effects. Methods 4.1.10 and 4.1.11 set out mechanisms by which adverse effects can be remedied or mitigated, including through offsite mitigation where this will result in a better outcome.

Policy 4.2 Collaborative approach

Waikato Regional Council will:

- a) recognise and provide for the unique role that territorial authorities have in the implementation of the provisions of the Waikato Regional Policy Statement; and
- b) encourage collaboration, participation and information sharing between resource management agencies, tāngata whenua and relevant stakeholders, particularly where there are shared or overlapping responsibilities or functions for issues or resources, and including when resources or issues cross boundaries.

Implementation methods

4.2.1 Co-ordinated approaches to resource management

Waikato Regional Council will collaborate with territorial authorities, tāngata whenua and other agencies with resource management responsibilities to ensure consistent and co-ordinated approaches to resource management planning, including by:

- a) working proactively with tāngata whenua and territorial authorities in the early stages of preparing resource management plans and strategies;
- b) providing advice on the intended implementation of regional council policy;
- c) facilitating regular liaison with tāngata whenua and other local authorities on resource management issues; and
- d) avoiding duplication in consent requirements.

4.2.2 Local authority implementation agreements

Waikato Regional Council and territorial authorities shall develop and agree implementation agreements that provide further detail as to how the local authorities will collaborate to effectively and efficiently implement the Waikato Regional Policy Statement. The agreement shall address at least the following:

- a) the timing of implementation;
- b) the sharing of resources to implement the Regional Policy Statement;

The relevant objectives are:

- 3.1 *Integrated management*
- 3.2 *Resource use and development*
- 3.3 *Decision making*
- 3.4 *Health and wellbeing of the Waikato River*
- 3.5 *Energy*
- 3.6 *Adapting to climate change*
- 3.7 *Coastal environment*
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- 3.9 *Relationship of tāngata whenua with the environment*
- 3.10 *Sustainable and efficient use of resources*
- 3.11 *Air quality*
- 3.12 *Built environment*
- 3.13 *Mauri and health of marine waters*
- 3.14 *Mauri and values of fresh water bodies*
- 3.15 *Allocation and use of fresh water*
- 3.16 *Riparian areas and wetlands*
- 3.17 *Geothermal*
- 3.18 *Historic and cultural heritage*
- 3.19 *Ecological integrity and indigenous biodiversity*
- 3.20 *Outstanding natural features and landscapes*
- 3.21 *Amenity*
- 3.22 *Natural character*
- 3.23 *Public access*
- 3.24 *Natural hazards*
- 3.25 *Values of soil*
- 3.26 *High class soils*

- c) respective implementation priorities; and
- d) the integration of functions and approaches in order to maximise efficiency to avoid duplication.

4.2.3 Recognition of interests

Local authorities should:

- a) ensure appropriate processes and opportunities are established and maintained to inform relevant agencies, including neighbouring local authorities, relevant **infrastructure** providers, tāngata whenua and other relevant stakeholders of any anticipated regional or district plan changes or reviews, growth strategies, structure plans, and land use or subdivision consent processes which may have an effect on the interests of these parties; and
- b) provide opportunities for meaningful involvement in such processes.

4.2.4 Consistent information systems

Local authorities should:

- a) ensure that, as far as practicable, information is collected, analysed and stored using methods and technologies that are consistent and compatible to enable easy sharing of such information;
- b) develop protocols as to how and when information will be shared; and
- c) consider developing shared information services.

4.2.5 Joint planning

Waikato Regional Council will investigate opportunities for joint initiatives (including across regional boundaries) particularly in relation to managing:

- a) the coastal environment;
- b) the Waikato River and its catchment;
- c) the Hauraki Gulf;
- d) geothermal resources;
- e) Lake Rotorua and its catchment;
- f) Kaimai-Mamaku catchments; and
- g) groundwater resources.

4.2.6 General cross-boundary issues

Waikato Regional Council will work with adjoining local authorities, tāngata whenua and other agencies, including central government to identify resource management issues that cross boundaries and to reach agreements and put in place mechanisms for managing issues that are identified.

4.2.7 Cross-boundary issues specific to Bay of Plenty Regional Council

Waikato Regional Council will liaise with the Bay of Plenty Regional Council to ensure:

- a) any regional plans for that part of the Rotorua Lake catchment within the Waikato region are consistent with the objectives set for the lake, particularly in relation to managing land use and nutrient discharge levels;
- b) consistent management across jurisdictional boundaries of the Kaimai-Mamaku Ranges and the geothermal resource in the Taupō volcanic zone, including through means such as memoranda of understanding; and
- c) integrated management and strategic planning of inter-regional transport networks and infrastructure.

4.2.8 Hauraki Gulf Forum

Waikato Regional Council will:

- a) actively participate in and contribute to the Hauraki Gulf Forum;

- b) advocate for the Hauraki Gulf Forum to play an active role in management, research, advocacy and education in relation to the Hauraki Gulf and its catchments; and
- c) liaise with relevant Forum partners and other stakeholders to investigate preparation of a spatial plan for the Hauraki Gulf.

4.2.9 Hazardous substances

Regional and district plans shall recognise and provide for the following division of responsibilities when developing provisions for the control of the use of land for the prevention or mitigation of any adverse effects of the storage, use, disposal or transportation of **hazardous substances**:

- a) Waikato Regional Council shall be responsible for developing objectives, policies, rules and other methods for land in the coastal marine area and the beds of lakes and rivers; and
- b) territorial authorities shall be responsible for developing objectives, policies, rules and other methods for all other land.

4.2.10 Natural hazards

For the purposes of avoiding or mitigating **natural hazards**, territorial authorities shall be responsible for the control of the use of land except for the following, which shall be the responsibility of the Waikato Regional Council:

- a) the control of the use of land in the coastal marine area and the beds of lakes and rivers; and
- b) the control of **structures** in primary hazard zones.

4.2.11 Indigenous biodiversity

In carrying out their resource management functions, local authorities shall maintain or enhance indigenous biodiversity. Territorial authorities shall be responsible for the control of the use of land to maintain indigenous biodiversity, excluding land in the coastal marine area and the beds of lakes and rivers, which shall be the responsibility of the Waikato Regional Council.

Explanation

Integrated resource management requires a holistic view that looks beyond organisational, spatial or administrative boundaries. For integrated management to be effective and efficient it requires a coherent and consistent approach and that agencies or organisations involved in resource management work together in a collaborative manner. This is because there is overlap in the functions of local authorities and also resources and issues that cross jurisdictional boundaries. Methods 4.2.1-5 set out principles and processes to guide collaboration between agencies. The process for managing environmental effects that cross boundaries is set out in Methods 4.2.6 and 4.2.7 as required by the Resource Management Act. Method 4.2.8 also addresses a particular resource (the Hauraki Gulf) that crosses jurisdictional boundaries.

Methods 4.2.9, 4.2.10 and 4.2.11 allocate the respective management responsibilities for hazardous substances, natural hazards and indigenous biodiversity as required by the Resource Management Act. Both regional and territorial authorities have functions under the Act in respect of these matters so clear delineation of responsibilities is necessary to avoid duplication and inconsistencies.

Policy 4.3 Tāngata whenua

Tāngata whenua are provided appropriate opportunities to express, maintain and enhance the relationship with their **rohe** through resource management and other local authority processes.

Implementation methods

4.3.1 Strategic partnerships with iwi authorities

Waikato Regional Council will seek to develop strategic and formal partnerships with **iwi authorities** which should include addressing the following:

- a) involvement in regional plan development and review;
- b) involvement in resource consent processes; and
- c) protocols for information sharing and transfer.

4.3.2 Tāngata whenua involvement

Local authorities should ensure that tāngata whenua have appropriate opportunities to be involved in relevant resource management processes, including:

- a) developing and implementing plans and strategies;
- b) developing and implementing monitoring and enhancement programmes;
- c) decision making; and
- d) by establishing formal arrangements such as joint management agreements or memoranda of understanding or co-management.

4.3.3 Kaitiakitanga

Local authorities should work with tāngata whenua to develop:

- a) an understanding of the application of **kaitiakitanga**;
- b) processes and protocols for providing for the practical expression of kaitiakitanga, which may include:
 - i) agreeing who should be consulted, when and how;
 - ii) establishing formal arrangements such as joint management agreements or memoranda of understanding;
 - iii) tāngata whenua representation on hearings and other council committees;
 - iv) support for preparation, implementation and review of **iwi** and **hapū** planning documents;
 - v) establishing an inventory of matters raised by tāngata whenua and best practice responses to reduce duplication of effort; and
- c) protocols for information sharing and transfer including of mātauranga Māori.

4.3.4 Use and enjoyment of resources

In developing relevant resource management processes, including regional and district plans, local authorities should provide for the wellbeing of tāngata whenua by enabling appropriate access to and use and enjoyment of their resources.

The relevant objectives are:

- 3.1 *Integrated management*
- 3.2 *Resource use and development*
- 3.3 *Decision making*
- 3.4 *Health and wellbeing of the Waikato River*
- 3.5 *Energy*
- 3.6 *Adapting to climate change*
- 3.7 *Coastal environment*
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- 3.22 *Natural character*
- 3.23 *Public access*
- 3.24 *Natural hazards*
- 3.25 *Values of soil*
- 3.26 *High class soils*

Explanation

Recognising and providing for the relationship of Māori and their culture and traditions with their ancestral land, water, sites, **wāhi tapu** and other **taonga** is a matter of national importance under the Resource Management Act. Ways of acknowledging and providing for this relationship are set out in Methods 4.3.1-3. Method 4.3.1 signals Waikato Regional Council's intent to continue to develop strategic partnerships with the iwi authorities of the region.

An important element of this relationship is the **kaitiaki** responsibilities of tāngata whenua. Section 7 of the Resource Management Act requires local authorities to have particular regard to kaitiakitanga. However, it is also important to be aware that tāngata whenua within the region will differ in how they want their kaitiaki role to be recognised. Method 4.3.3 provides for these differences.

Use and enjoyment of resources is integral to the principle of kaitiakitanga and the relationship tāngata whenua have with their resources. **Marae** and **papakāinga** are one form of development that may be sought on Māori land – this is addressed within Chapter 6.

Policy 4.4 Regionally significant industry and primary production

The management of natural and physical resources provides for the continued operation and development of **regionally significant industry** and **primary production** activities by:

- a) recognising the value and long term benefits of regionally significant industry to economic, social and cultural wellbeing;
- b) recognising the value and long term benefits of primary production activities which support regionally significant industry;
- c) ensuring the adverse effects of regionally significant industry and primary production are avoided, remedied or mitigated;
- d) co-ordinating infrastructure and service provision at a scale appropriate to the activities likely to be undertaken;
- e) maintaining and where appropriate enhancing access to natural and physical resources, while balancing the competing demand for these resources;
- f) avoiding or minimising the potential for reverse sensitivity; and
- g) promoting positive environmental outcomes.

The relevant objectives are:

- 3.1 *Integrated management*
- 3.2 *Resource use and development*
- 3.3 *Decision making*
- 3.5 *Energy*
- 3.7 *Coastal environment*
- 3.8 *Ecosystem services*
- 3.9 *Relationship of tāngata whenua with the environment*
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- 3.17 *Geothermal*
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- 3.26 *High class soils*

Implementation methods

4.4.1 Plan provisions

District and regional plans should provide for regionally significant industry and primary production by:

- a) identifying appropriate provisions, including zones, to enable the operation and development of regionally significant industry, which for new development is consistent with Policy 6.14 and Table 6-2;
- b) maintaining the life supporting capacity of soil to support primary production;
- c) maintaining and where appropriate enhancing access to natural and physical resources for regionally significant industry and primary production, while balancing the competing demand for these resources;

- d) recognising the potential for regionally significant industry and primary production activities to have adverse effects beyond its boundaries and the need to avoid or minimise the potential for **reverse sensitivity** effects;
- e) recognising the need to ensure regionally significant industry is supported by infrastructure networks of appropriate capacity;
- f) recognising the benefits of enabling the co-location of regionally significant industry to support efficient use of infrastructure, and minimise transportation requirements;
- g) recognising and balancing the competing demands for resources between regionally significant industry, primary production and other activities;
- h) ensuring the adverse effects of regionally significant industry and primary production are avoided, remedied or mitigated; and
- i) promoting positive environmental outcomes.

4.4.2 Collaboration

Local authorities, the NZ Transport Agency, other infrastructure and service providers, and industry organisations should collaborate in respect to the design, co-ordination and provision of infrastructure and services.

Explanation

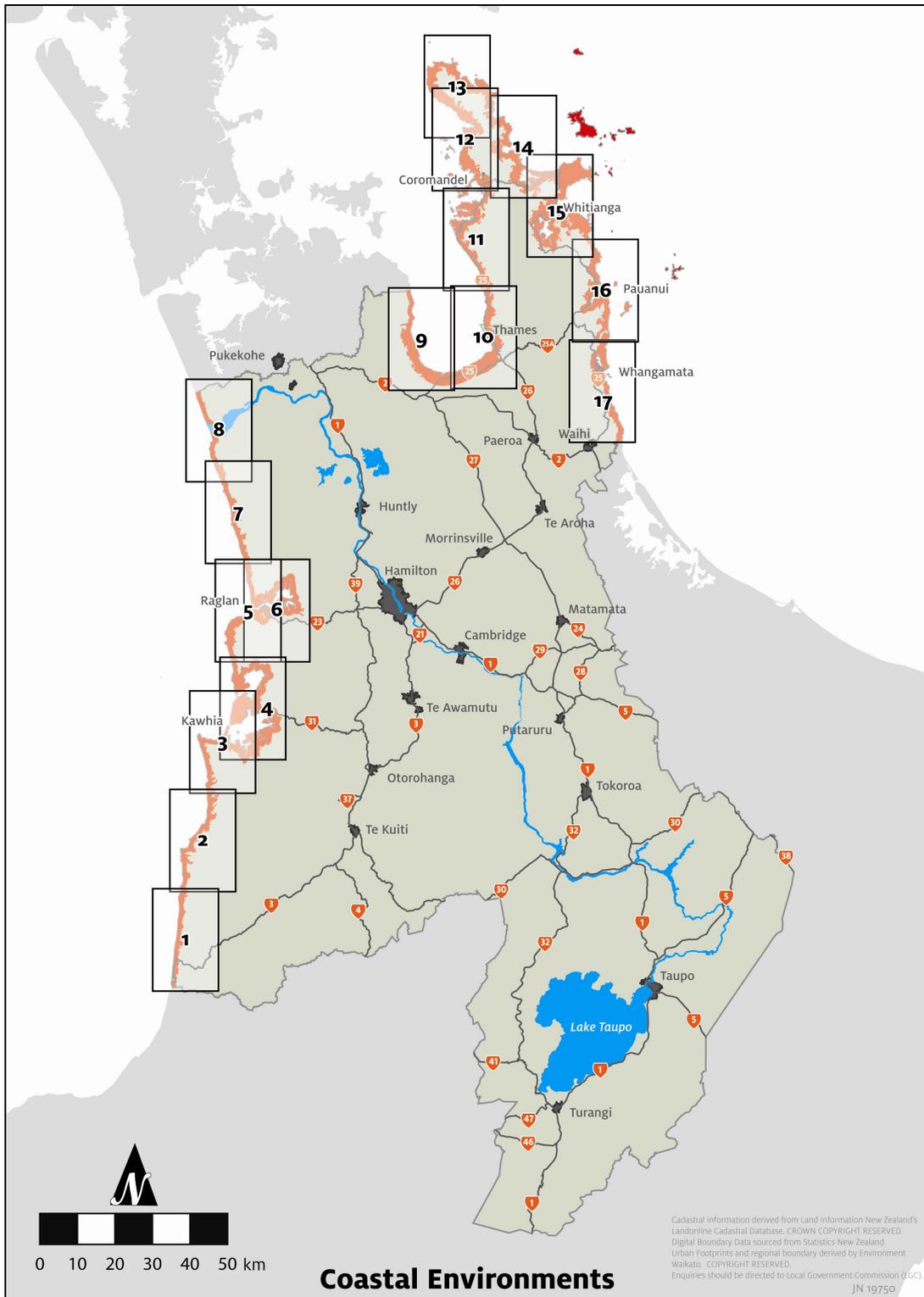
Policy 4.4 recognises the important role that regionally significant industry and primary production plays in contributing to the economic, social and cultural wellbeing of people and communities. Activities such as dairying, forestry and horticulture also have a direct relationship with the management and continued viability of rural activities. Some regionally significant industries also provide an anchor to support other industries and communities within rural and **urban** settings. The economic benefits contribute significantly to the vitality of settlements ranging in size from rural villages to Hamilton City. The policy will provide for an integrated approach to the management of resources such as water, energy and infrastructure which are essential to regionally significant industry and primary production activities. The policy also recognises that there is also the potential for regionally significant industry and primary production to generate adverse effects which need to be managed.

Method 4.4.1 sets out the matters that regional and district plans should have regard to in order to provide for regionally significant industry and primary production activities, while recognising there are competing demands on those resources that need to be balanced. Method 4.4.2 helps ensure that there is a co-ordinated approach to the provision of infrastructure and services for regionally significant industry.

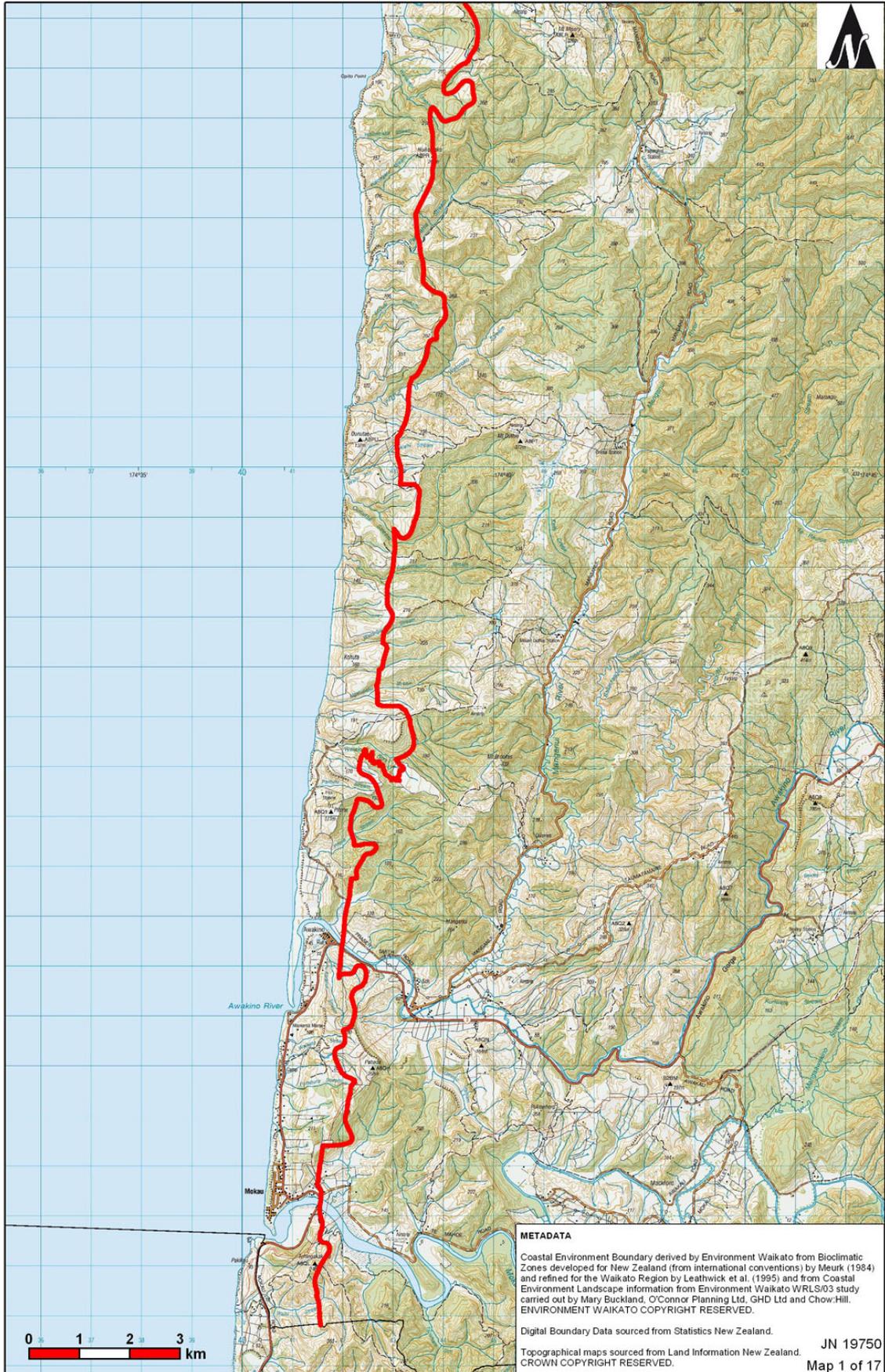
Policy 4.4 and its Methods must be considered in the context of other objectives, policies, and methods in the Regional Policy Statement including those which provide for the protection or allocation of natural resources and the management of the built environment.

4A Indicative coastal environment maps

Maps in this section show the indicative landward extent of the coastal environment which extends seaward from the mapped line out to 12 nautical miles offshore, and includes all offshore islands whether mapped or not.



Map 4-1: Overview of indicative coastal environment maps



Map 4-2: Coastal environment 1



Map 4-3: Coastal environment 2



Map 4-4: Coastal environment 3



Map 4-5: Coastal environment 4

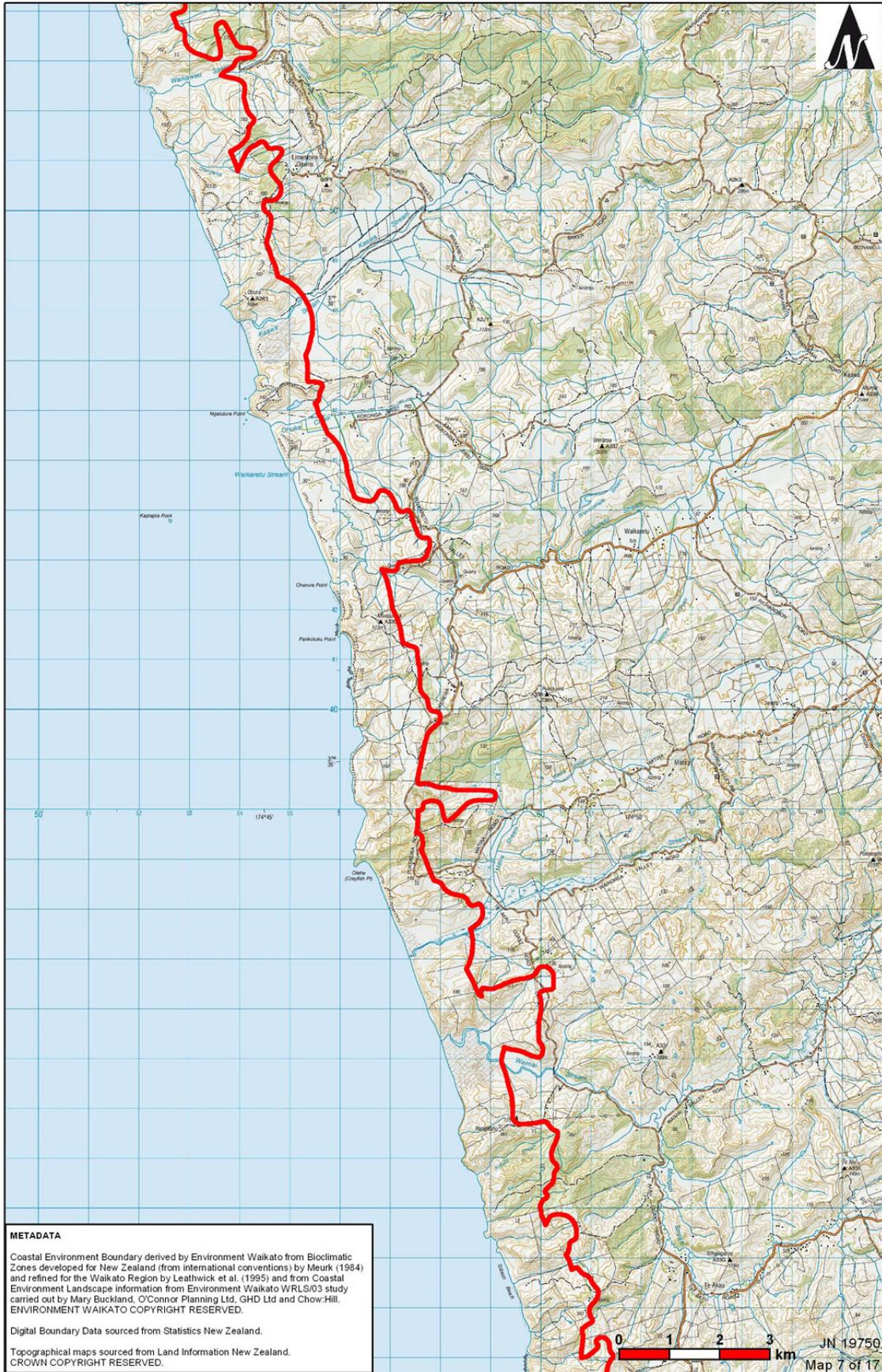


Map 4-6: Coastal environment 5



Map 4-7: Coastal environment 6

INTEGRATED MANAGEMENT



Map 4-8: Coastal environment 7



Map 4-9: Coastal environment 8



Map 4-10: Coastal environment 9



Map 4-11: Coastal environment 10



Map 4-12: Coastal environment 11



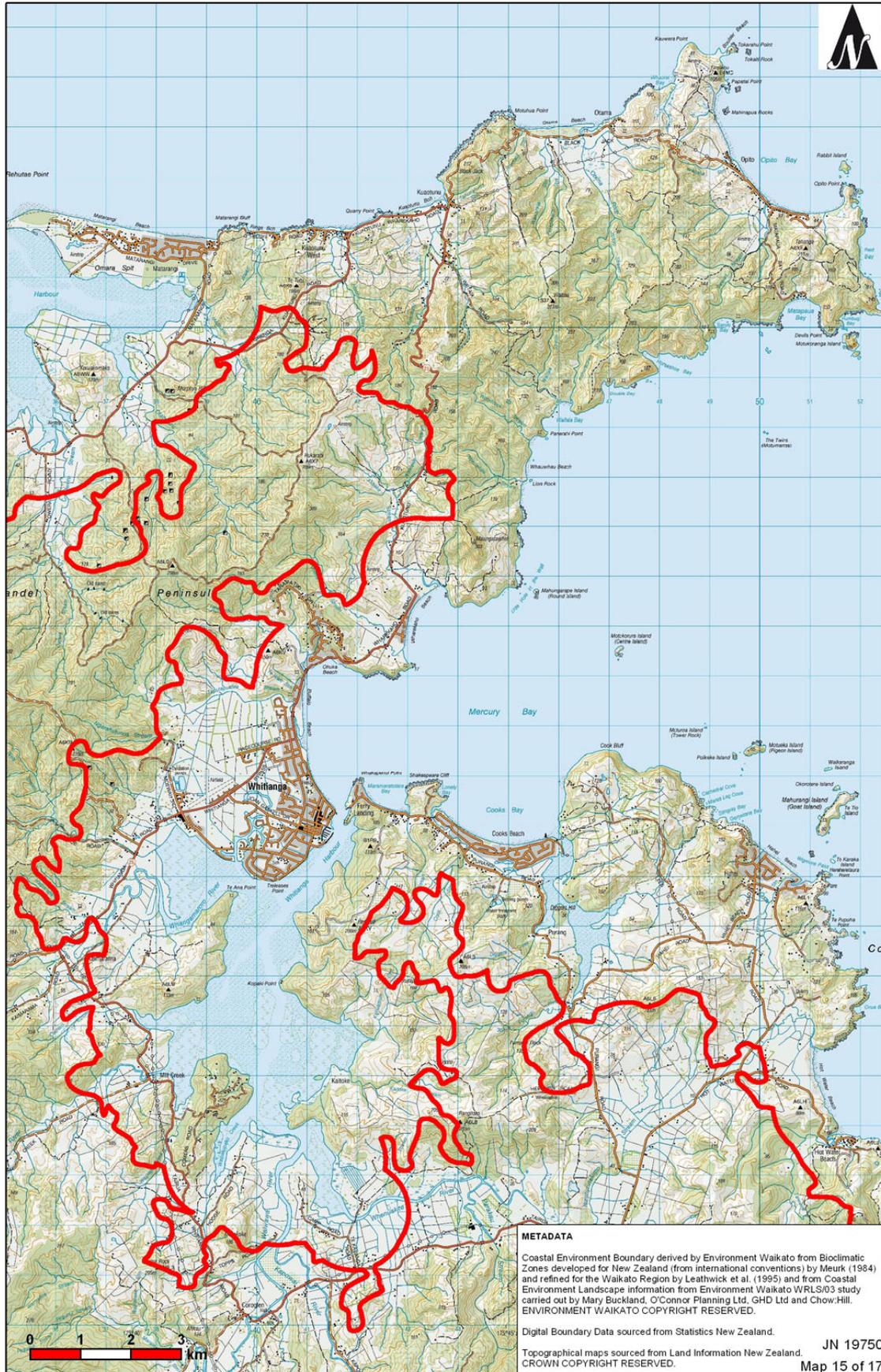
Map 4-13: Coastal environment 12



Map 4-14: Coastal environment 13



Map 4-15: Coastal environment 14



Map 4-16: Coastal environment 15



Map 4-17: Coastal environment 16



Map 4-18: Coastal environment 17

5 Air

Policy 5.1 Improve degraded air quality

Reduce the adverse effects on air quality caused by cumulative, diffuse, broad scale or multiple discharges from home heating appliances and transport, with particular emphasis on:

- a) discharges of **fine particulate matter**; and
- b) areas where there are unacceptable risks to human health and ecosystems.

The relevant objectives are:

- | | |
|------|--|
| 3.5 | Energy |
| 3.8 | Ecosystem services |
| 3.10 | Sustainable and efficient use of resources |
| 3.11 | Air quality |
| 3.21 | Amenity |

Implementation methods

5.1.1 Control discharges

Regional plans shall control discharges to air from **solid fuel home heating appliances** to avoid unacceptable risks to human health or ecosystems.

5.1.2 Determine unacceptable risk

In determining unacceptable risk to human health and ecosystems Waikato Regional Council will have regard to:

- a) National Environmental Standards for Air Quality;
- b) World Health Organisation Air Quality Guidelines;
- c) National Ambient Air Quality Guidelines;
- d) Regional Ambient Air Quality Guidelines; and
- e) other nationally or internationally accepted criteria.

5.1.3 Strategic approach

Waikato Regional Council will maintain an air quality monitoring program to identify air sheds that need improvement and will work with territorial authorities, tāngata whenua and other stakeholders to:

- a) identify potential gaps in how air quality issues are addressed;
- b) prioritise actions for improving air quality where it is degraded;
- c) identify implications for communities of addressing local air quality issues, including health, financial or other implications; and
- d) recognise local community needs and support community action.

5.1.4 Incentives for clean heating appliances and insulation

Waikato Regional Council will work with relevant agencies to deliver incentives to replace solid fuel home heating appliances that do not comply with Regulations 23 and 24 of the Resource Management (National Environmental Standard Relating to Certain Air Pollutants, Dioxins and Other Toxics) Regulations 2004, with clean heating appliances, and to improve housing insulation.

5.1.5 Education and advocacy

Waikato Regional Council will:

- a) use environmental education programmes to increase public awareness and to improve community understanding of:
 - i) the impacts and causes of poor air quality;
 - ii) the benefits of correct operation of solid fuel home heating appliances and the use of good quality (low moisture) wood ;
 - iii) the benefits of appropriate insulation;
 - iv) how to avoid or reduce adverse effects from outdoor open burning;

- v) the benefits of alternative modes of transport (including cycling and walking); and
 - vi) the benefits of low emission vehicles; and
- b) promote the inclusion of initiatives that minimise air emissions from land transport including in:
- i) the Waikato Regional Land Transport Plan, and
 - ii) urban growth strategies and structure plans.

5.1.6 Quality wood supply

Waikato Regional Council will encourage wood fuel suppliers to provide good quality (low moisture) wood fuel for domestic home heating.

5.1.7 Monitor trends in wood burner installations

Waikato Regional Council will work with territorial authorities to gather information about new wood burner installations and to monitor trends in the number and type of wood burners being installed.

Explanation

Concentrations of **fine particulate matter** are high at times during winter in some **urban** areas of the region. This type of pollution is mainly caused by solid fuel burners and open fires. However, concentrations of fine particulate matter may also be high at times along busy roads. Fine particulate matter can cause serious health problems and the public health risk is greater for sensitive or vulnerable population groups such as the elderly, children, and those who have pre-existing medical conditions.

In order to avoid unacceptable risks to human health and ecosystems from air discharges and ensure that the Waikato region is compliant with the National Environmental Standards for Air Quality it is necessary to reduce the discharge of fine particulate matter, particularly in urban areas. Unacceptable risk is defined by relevant national and international standards and guidelines.

The National Environmental Standards for Air Quality recognises air sheds are the basis for defining areas of degraded air quality and the control of discharges.

A combination of regulatory and non-regulatory methods is intended to be used to achieve the necessary reduction in emissions. Method 5.1.1 provides for the establishment of a control regime through the regional plan while Methods 5.1.3 - 5.1.7 identify non-regulatory mechanisms that are expected to promote changes in behaviour and consequently a reduction in the emissions of fine particulate matter.

Policy 5.2 Manage discharges to air

Manage discharges to air (other than from home heating or transport) to ensure any resulting degradation avoids unacceptable risks to human health, and is as low as reasonably achievable. In determining whether any degradation is as low as reasonably achievable, the following will be taken into account:

- a) existing air quality;
- b) the age of and ability to upgrade existing **infrastructure**;
- c) any alternative modes/methods of discharge;
- d) applicable emission control techniques;
- e) the extent to which it is possible to apply the best practicable option;
- f) the relative effects on the environment of the options;
- g) economic and social factors;
- h) managing discharges to air where there is high or good air quality;
- i) national environmental standards and guidelines for ambient air; and
- j) the duration of the discharge and whether the discharge is temporary or short-term.

The relevant objectives are:

- | | |
|------|---|
| 3.2 | <i>Resource use and development</i> |
| 3.8 | <i>Ecosystem services</i> |
| 3.10 | <i>Sustainable and efficient use of resources</i> |
| 3.11 | <i>Air quality</i> |
| 3.21 | <i>Amenity</i> |

Implementation methods

5.2.1 Control discharges to air

Regional plans shall control the adverse effects of discharges to air, including from:

- a) open burning in urban areas;
- b) the mobilisation of soil or dust;
- c) industrial and trade premises; and
- d) agrichemical application.

5.2.2 Determine unacceptable risk

In determining unacceptable risk to human health and ecosystems, Waikato Regional Council will have regard to:

- a) National Environmental Standard for Air Quality;
- b) World Health Organisation Air Quality Guidelines;
- c) National Ambient Air Quality Guidelines;
- d) Regional Ambient Air Quality Guidelines; and
- e) other nationally or internationally accepted criteria.

Explanation

Any discharge to air results in a level of degradation, therefore it is considered impractical and unreasonable to require that all degradation is avoided. This management approach allows for the continued use of the resource but expects that dischargers will demonstrate that the extent of degradation caused by their discharge is as low as reasonably achievable, and would not cause an unacceptable risk to human health or ecosystems.

Industry best practice may be useful in determining the best practicable option as required in 5.2 e).

While it is recognised that it is unreasonable to avoid all degradation of air quality, it is also not considered acceptable to allow a situation where, in areas of high or good air quality, continued degradation occurs down to the standards prescribed in the National Environmental Standards for Air Quality.

Policy 5.3 Manage adverse effects on amenity

Ensure discharges to air are managed so as to avoid, remedy or mitigate objectionable effects beyond the property boundary.

The relevant objectives are:
 3.2 Resource use and development
 3.3 Decision making
 3.11 Air quality
 3.21 Amenity

Implementation Methods

5.3.1 Control discharges

Regional plans shall control discharges to air to avoid, remedy or mitigate objectionable effects beyond the property boundary. In determining whether an objectionable effect has occurred, regard shall be had to the:

- a) frequency, intensity, offensiveness, duration and location of the incident; while
 - i) recognising the amenity usually associated with the area and land uses; and
 - ii) recognising the potential for **reverse sensitivity** effects.

5.3.2 Manage air amenity

Waikato Regional Council will work with territorial authorities to develop a joint process including:

- a) the division of responsibilities for responding to complaints about discharges to air; and
- b) for managing adverse effects on amenity resulting from discharges to air including those discharges to air that are incompatible with the surrounding land uses and character including issues of reverse sensitivity.

Explanation

The **amenity values** of air relate to how clean and fresh it is or is perceived to be. High amenity is associated with good visibility, low levels of dust and with people's ability to enjoy the environment. Amenity can be reduced when **contaminants** affect people's wellbeing, such as when dust or smoke reduces visibility or settles on surfaces, or when odour is considered objectionable.

Activities should not result in objectionable adverse effects beyond a property boundary. However in some circumstances, a lower amenity could be expected as a result of the routine activities associated with industrial or rural areas. Reverse sensitivity effects can also result from the inappropriate location of sensitive or incompatible activities, and the policies and methods in Chapter 6 seek to minimise this.

6 Built environment

Policy 6.1 Planned and co-ordinated subdivision, use and development

Subdivision, use and development of the **built environment**, including transport, occurs in a planned and co-ordinated manner which:

- a) has regard to the principles in section 6A;
- b) recognises and addresses potential cumulative effects of subdivision, use and development;
- c) is based on sufficient information to allow assessment of the potential long-term effects of subdivision, use and development; and
- d) has regard to the existing built environment.

Implementation methods

6.1.1 Regional plans, district plans and development planning mechanisms

Local authorities shall have regard to the principles in section 6A when preparing, reviewing or changing regional plans, district plans and development planning mechanisms such as structure plans, town plans and growth strategies.

6.1.2 Reverse sensitivity

Local authorities should have particular regard to the potential for **reverse sensitivity** when assessing resource consent applications, preparing, reviewing or changing district or regional plans and development planning mechanisms such as structure plans and growth strategies. In particular, consideration should be given to discouraging new **sensitive activities**, locating near existing and planned land uses or activities that could be subject to effects including the discharge of substances, odour, smoke, noise, light spill, or dust which could affect the health of people and / or lower the **amenity values** of the surrounding area.

6.1.3 Advocacy

Local authorities should advocate for the principles in section 6A with respect to development (including **infrastructure** development) proposals, private plan change proposals and the development of industry guidelines and manuals.

6.1.4 Development manuals and design codes

Territorial authorities should, as appropriate, ensure development manuals and design codes allow and encourage development which is consistent with the principles in section 6A.

6.1.5 District plan provisions for rural-residential development

Rural-residential development should be directed to areas identified in the district plan for rural-residential development. District plans shall ensure that rural-residential development is directed away from **natural hazard** areas, **regionally significant industry**, **high class soils**, **primary production** activities on those high class soils, electricity transmission, locations identified as likely renewable energy generation sites and from identified **significant mineral resources** (as identified through Method 6.8.1) and their identified access routes.

The relevant objectives are:

- 3.1 *Integrated management*
- 3.2 *Resource use and development*
- 3.3 *Decision making*
- 3.4 *Health and wellbeing of the Waikato River*
- 3.5 *Energy*
- 3.6 *Adapting to climate change*
- 3.8 *Ecosystem services*
- 3.9 *Relationship of tāngata whenua with the environment*
- 3.10 *Sustainable and efficient use of resources*
- 3.11 *Air quality*
- 3.12 *Built environment*
- 3.14 *Mauri and values of fresh water bodies*
- 3.16 *Riparian areas and wetlands*
- 3.18 *Historic and cultural heritage*
- 3.19 *Ecological integrity and indigenous biodiversity*
- 3.21 *Amenity*
- 3.22 *Natural character*
- 3.23 *Public access*
- 3.24 *Natural hazards*
- 3.25 *Values of soil*
- 3.26 *High class soils*

6.1.6 Growth strategies

In areas where significant growth is occurring or anticipated, territorial authorities should develop and maintain growth strategies which identify a spatial pattern of land use and infrastructure development and staging for at least a 30-year period. The use of integrated spatial planning tools, such as the Waikato Integrated Scenarios Explorer, should be considered to explore future development options and to integrate land use planning with infrastructure.

6.1.7 Urban development planning

Territorial authorities should ensure that before land is rezoned for **urban** development, urban development planning mechanisms such as structure plans and town plans are produced, which facilitate proactive decisions about the future location of urban development and allow the information in Implementation Method 6.1.8 to be considered.

6.1.8 Information to support new urban development and subdivision

District plan zoning for new urban development (and redevelopment where applicable), and subdivision and consent decisions for urban development, shall be supported by information which identifies, as appropriate to the scale and potential effects of development, the following:

- a) the type and location of land uses (including residential, industrial, commercial and recreational land uses, and community facilities where these can be anticipated) that will be permitted or provided for, and the density, staging and trigger requirements;
- b) the location, type, scale, funding and staging of infrastructure required to service the area;
- c) multi-modal transport links and connectivity, both within the area of new urban development, and to neighbouring areas and existing transport infrastructure; and how the safe and efficient functioning of existing and planned transport and other **regionally significant infrastructure** will be protected and enhanced;
- d) how existing values, and valued features of the area (including **amenity**, landscape, **natural character**, ecological and heritage values, **water bodies**, **high class soils** and significant view catchments) will be managed;
- e) potential natural hazards and how the related risks will be managed;
- f) potential issues arising from the storage, use, disposal and transport of **hazardous substances** in the area and any contaminated sites and describes how related risks will be managed;
- g) how stormwater will be managed having regard to a total catchment management approach and low impact design methods;
- h) any significant mineral resources (as identified through Method 6.8.1) in the area and any provisions (such as development staging) to allow their extraction where appropriate;
- i) how the relationship of **tāngata whenua** and their culture and traditions with their ancestral lands, water, sites, **wāhi tapu**, and other **taonga** has been recognised and provided for;
- j) anticipated water requirements necessary to support development and ensure the availability of volumes required, which may include identifying the available sources of water for water supply;
- k) how the design will achieve the efficient use of water;
- l) how any locations identified as likely renewable energy generation sites will be managed;
- m) the location of existing and planned renewable energy generation and consider how these areas and existing and planned urban development will be managed in relation to one another; and
- n) the location of any existing or planned electricity transmission network or national grid corridor and how development will be managed in relation to that network or

corridor, including how **sensitive activities** will be avoided in the national grid corridor.

6.1.9 Other party involvement

Where development planning mechanisms, such as structure plans and town plans, are being produced, territorial authorities, should ensure that Waikato Regional Council, neighbouring regional and territorial authorities, infrastructure providers, health authorities, tāngata whenua, industry organisations and affected land owners are provided the opportunity to have meaningful involvement in development planning.

6.1.10 Economic instruments

Territorial authorities should investigate and implement as appropriate, economic instruments which could help to direct rural-residential development to locations identified in the district plan for rural-residential development.

Explanation

To effectively address Issue 1.4 and to achieve Objective 3.12 it is very important that there is a planned and co-ordinated approach to developing the **built environment** which anticipates and addresses cumulative effects over the long term.

Section 6A includes a set of principles to guide future development of the built environment within the Waikato region. These principles are not absolutes and it is recognised that some developments will be able to support certain principles more than others. In some cases, certain principles may need to be traded off against others. It is important, however, that all principles are appropriately considered when councils are managing the built environment. The principles are supported by Methods 6.1.1, 6.1.2, 6.1.3 and 6.1.4.

Method 6.1.2 provides direction for managing reverse sensitivity. Reverse sensitivity is the vulnerability of a lawfully established activity to a new activity or land use. It arises when an established activity causes potential, actual or perceived adverse environmental effects on the new activity, to a point where action may be taken to restrict the operation or mitigate effects of the established activity.

Method 6.1.5 provides direction for managing rural-residential development. Rural-residential development in some cases has created effects such as reducing options for use of high class soils, increasing pressure on roading systems, increasing potential for natural hazards and creating tensions between existing rural land uses. In some areas, due to the extent of subdivision and the nature of the landscape, these effects are greater than in others. Demand for rural-residential development is particularly high near Hamilton, between Hamilton and Auckland, and many high amenity areas such as coastal areas, river margins and lake margins. There need to be stronger controls on rural-residential development in such areas. Where there is less demand, there are still potential effects of rural-residential development that should be managed, but a more flexible management regime may be appropriate.

Growth strategies are a recognised method to strategically plan for development, particularly in areas of high population growth (Method 6.1.6). They can be used to effectively plan for the integrated management of infrastructure with land use. At a smaller scale, methods such as structure plans and town plans are useful means of planning for urban development (Method 6.1.7).

Whether through such development planning mechanisms or through consent processes, it is important that decisions about new urban development are made on the basis of information that allows an assessment of the full effects of the development (Method 6.1.8). The information requirements will therefore vary greatly for different developments. Other methods under this policy also support a planned and comprehensive approach to development.

It is recognised that it is not appropriate to apply the same definition of 'planned' in all instances. For example, in the case of a specific subdivision proposal, it would be appropriate to apply a restricted definition incorporating only consented or designated infrastructure. However, where district plan changes, growth strategies or structure plans are being considered the term 'planned' covers infrastructure where funding has been allocated to provide for the infrastructure project and where such infrastructure is subject to consenting or designation processes.

Policy 6.2 Planning for development in the coastal environment

Development of the built environment in the **coastal environment** occurs in a way that:

- a) ensures sufficient development setbacks to protect coastal natural character, public access, **indigenous biodiversity**, natural physical processes, amenity and natural hazard mitigation functions of the coast;
- b) protects hydrological processes and natural functions of back dune areas;
- c) avoids the adverse effects of activities on areas with outstanding natural character, and outstanding natural features and landscapes;
- d) ensures that in areas other than those identified in (c) above, activities are appropriate in relation to the level of **natural character** or natural feature and landscape;
- e) has regard to local coastal character;
- f) allows for the potential effects of sea level rise, including allowing for sufficient coastal habitat inland migration opportunities;
- g) protects the valued characteristics of remaining undeveloped, or largely undeveloped coastal environments;
- h) ensures adequate water, stormwater and wastewater services will be provided for the development;
- i) avoids increasing **natural hazard risk** associated with coastal erosion and inundation;
- j) has regard to the potential effects of a tsunami event, and takes appropriate steps to avoid, remedy or mitigate that risk;
- k) avoids ribbon development along coastal margins;
- l) does not compromise the function or operation of existing or planned coastal infrastructure;
- m) provides for safe and efficient connectivity between activities occurring in the **coastal marine area** and associated land-based infrastructure;
- n) manages adverse effects to maintain or enhance water quality; and
- o) maintains and enhances public access.

The relevant objectives are:

- 3.1 *Integrated management*
- 3.2 *Resource use and development*
- 3.3 *Decision making*
- 3.5 *Energy*
- 3.6 *Adapting to climate change*
- 3.7 *Coastal environment*
- 3.8 *Ecosystem services*
- 3.12 *Built environment*
- 3.13 *Mauri and health of marine waters*
- 3.16 *Riparian areas and wetlands*
- 3.19 *Ecological integrity and indigenous biodiversity*
- 3.21 *Amenity*
- 3.22 *Natural character*
- 3.23 *Public access*
- 3.24 *Natural hazards*
- 3.25 *Values of soil*

Implementation methods

6.2.1 Planning for development in the coastal environment

Local authorities shall give effect to this policy through provisions in plans, and should give effect to the policy when developing growth strategies, structure plans and other development planning mechanisms.

6.2.2 Provisions for inland migration of habitats

Waikato Regional Council will collaborate with territorial authorities to:

- a) identify valued coastal habitats that may be affected by sea level rise, and
- b) identify where development controls should be established to allow inland migration of these habitats.

6.2.3 Coastal development setback (new development)

Regional and district plans shall require that, unless there is a functional need for it to be otherwise, new development along the coast be sufficient distance from the coastal edge to allow for the following:

- a) preserving natural character values;
- b) avoiding natural hazards;
- c) protecting the values associated with marine water quality;
- d) maintaining and enhancing public access to public areas;
- e) natural ecosystem functioning; and
- f) natural functioning of physical processes, including the ability of natural features such as **wetlands**, beaches and dunes, to migrate inland, and including the projected effects of climate change.

6.2.4 Coastal development setback (existing development)

Regional plans shall identify the circumstances when it is appropriate to require existing development along the coast to be relocated, and shall include provisions for this relocation, to be sufficient distance from the coastal edge to allow for the following:

- a) preserving natural character values;
- b) avoiding natural hazards;
- c) protecting the values associated with marine water quality;
- d) maintaining and enhancing public access to public areas; and
- e) natural functioning of physical processes, including the ability of natural features such as wetlands, beaches and dunes, to migrate inland, and including the projected effects of climate change.

Explanation

The coastal environment often has a range of values such as landscape, seascape and recreational opportunities that create a particular demand for development. Development can compromise the very values that attract people. The coastal environment often has sensitive and rare indigenous ecosystems. The dynamic and often unstable nature of the coastal margins creates a range of hazards to development, and coastal erosion and flooding risks are likely to increase in future with climate change. There can be particular infrastructure demands on coastal margins to link land and sea activities. The risk of effects on coastal values can be particularly high when populations swell during holiday periods. For reasons such as these, there needs to be particular attention to managing the coastal environment as demonstrated in Policy 6.2 and its methods.

As sea level rises, some coastal margin habitats such as salt marshes will cease to exist unless they can 'migrate' inland. Method 6.2.2 recognises that this effect can be minimised by appropriate land use planning.

Methods 6.2.3 and 6.2.4 recognise that setting back development from the coastal margin is a useful approach to managing the matters listed in Policy 6.2. While there will be fewer opportunities for setbacks with respect to existing development, there will be situations, such as during redevelopment, when existing development can be moved back from the coastal margin.

Policy 6.3 Co-ordinating growth and infrastructure

The relevant objectives are:
 3.2 *Resource use and development*
 3.3 *Decision making*
 3.5 *Energy*
 3.7 *Coastal environment*
 3.10 *Sustainable and efficient use of resources*
 3.12 *Built environment*

Management of the built environment ensures:

- a) the nature, timing and sequencing of new development is co-ordinated with the development, funding, implementation and operation of transport and other infrastructure, in order to:
 - i) optimise the efficient and affordable provision of both the development and the infrastructure;
 - ii) maintain or enhance the operational effectiveness, viability and safety of existing and planned infrastructure;
 - iii) protect investment in existing infrastructure; and
 - iv) ensure new development does not occur until provision for appropriate infrastructure necessary to service the development is in place;
- b) the spatial pattern of land use development, as it is likely to develop over at least a 30-year period, is understood sufficiently to inform reviews of the Regional Land Transport Plan. As a minimum, this will require the development and maintenance of growth strategies where strong population growth is anticipated;
- c) the efficient and effective functioning of infrastructure, including transport corridors, is maintained, and the ability to maintain and upgrade that infrastructure is retained; and
- d) a co-ordinated and integrated approach across regional and district boundaries and between agencies; and
- e) that where new infrastructure is provided by the private sector, it does not compromise the function of existing, or the planned provision of, infrastructure provided by central, regional and local government agencies.

Implementation methods

6.3.1 Plan provisions

Regional and district plans shall include provisions that provide for a long-term strategic approach to the integration of land use and infrastructure and that give effect to Policy 6.3, including by ensuring as appropriate that:

- a) roading patterns and design support the use of public transport;
- b) walking and cycling facilities are integrated with developments;
- c) the different transport modes are well connected;
- d) industry is located where there is good access to strategic transport networks and road, rail or freight hubs;
- e) development maintains and enhances the safe, efficient and effective use of existing infrastructure and can be integrated with future infrastructure needs where these can be determined;
- f) development does not add to existing road safety risks and where possible should reduce such risks;
- g) development does not unnecessarily prevent likely future network infrastructure improvements and upgrades;
- h) development patterns support the use of rail or sea for freight movement;
- i) provisions support the travel demand management components of the Regional Land Transport Plan; and
- j) development recognises the transport hierarchy and manages effects on the function of transport infrastructure.

6.3.2 Aligning infrastructure and land use planning

Territorial authorities should, in association with Waikato Regional Council, the NZ Transport Agency and other infrastructure providers, ensure infrastructure planning and land use planning initiatives are aligned, and should co-ordinate the provision of appropriate infrastructure and services for new development prior to development occurring.

6.3.3 Urban growth outside of growth strategy areas

District plans shall ensure that in areas not subject to a growth strategy, urban **development** is predominantly directed to existing urban areas and is contiguous with, and well connected to them.

6.3.4 Planning for land use and transport

Local authorities should ensure as appropriate, that growth strategies, structure plans, regional land transport plans and development manuals and design codes are consistent with the directions in Policy 6.3.

6.3.5 Transport planning

Waikato Regional Council will promote the integrated management of land use and transport through involvement with the management of national, regional, sub-regional and district transportation policies, actions and funding.

6.3.6 Future infrastructure changes and upgrades

Waikato Regional Council will work with territorial authorities, the NZ Transport Agency, other infrastructure providers and relevant developers to ensure that development does not unnecessarily prevent likely future infrastructure changes and upgrades.

6.3.7 Working with neighbouring regions

Local authorities should work with other local authorities in neighbouring regions to ensure the management of the built environment is co-ordinated and integrated through development of regional policy statements, regional and district plans, regional land transport plans, regional land transport programmes and relevant growth strategies.

6.3.8 Integrated Transport Assessments

Territorial authorities should ensure an **Integrated Transport Assessment** is prepared to support a structure plan, plan change or resource consent application where the development may result in additional major trip-generating activities.

6.3.9 Strategic planning for infrastructure within the coastal marine area and connections with land

To ensure integrated management of infrastructure in the coastal marine area, Waikato Regional Council will collaborate with territorial authorities, the NZ Transport Agency and other relevant stakeholders to investigate:

- a) establishing a strategic framework for the provision of infrastructure, including marinas, moorings, aquaculture, energy generation and transport routes within the coastal marine area with particular consideration to the connectivity with the necessary supporting land-based infrastructure; and
- b) identifying and protecting through regional and district plans any regionally significant routes and infrastructure in the coastal marine area, and necessary linkages with land-based infrastructure.

Explanation

Policy 6.3 is to ensure co-ordination between land use and infrastructure planning and development so that development can be appropriately serviced by infrastructure in a cost-effective manner, and so that land use change does not result in unplanned

effects on the functioning of it. The way in which the term 'planned' is to be applied is explained in the explanation to Policy 6.1.

The policy and its methods aim to ensure that the future spatial land use pattern is understood sufficiently to inform future investment in transport infrastructure. To do this, growth strategies will be needed in areas of strong population growth. Where there is no growth strategy (where population growth is not so strong), urban development should be directed to existing urban areas so that there is reasonable certainty that the settlement pattern will not significantly change over the 30-year period (Method 6.3.3).

The requirement in Method 6.3.1 for a long-term strategic approach recognises that councils need to think ahead and plan proactively for future land use change and infrastructure requirements. The method also identifies transport related outcomes that will help to ensure good integration between transport and development.

A range of other methods are identified for implementing the policy. The methods recognise that there are a range of planning mechanisms that can help to integrate land use with infrastructure (Methods 6.3.4 and 6.3.8). Methods 6.3.2, 6.3.5, 6.3.6 and 6.3.7 recognise that a range of agencies across different jurisdictions need to be involved to ensure integration.

Just as structure planning is needed for intensive development on land, there is a growing need for better planning and management of infrastructure in the coastal marine area. While territorial authorities develop land-based structure plans, Waikato Regional Council is responsible for the integrated management of infrastructure in the coastal marine area as signalled in Method 6.3.9.

Policy 6.4 Marae and papakāinga

To recognise the historical, cultural and social importance of **marae** and **papakāinga** and to provide for their ongoing use and development.

The relevant objectives are:
 3.2 *Resource use and development*
 3.9 *Relationship of tāngata whenua with the environment*
 3.12 *Built environment*

Implementation methods

6.4.1 Provision for marae and papakāinga

District plans shall make appropriate provision for development of marae and papakāinga.

6.4.2 Sustainability of marae and papakāinga

Territorial authorities should support the sustainable development, restoration or enhancement of marae and papakāinga, including by taking into account the need to address the following when preparing district plans:

- a) infrastructure and utilities requirements;
- b) social services, such as **kōhanga**, **kura** and **wānanga**, **urupā** and health services;
- c) associated customary activities; and
- d) the relationship of marae and papakāinga to the wider environment, **wāhi tapu** and sites of significance to Māori, including by management of important view shafts.

Explanation

Enabling people and communities to provide for their social, economic and cultural wellbeing is part of the purpose of the Resource Management Act; and recognising and providing for the relationship of Māori and their culture and traditions with their ancestral lands, water, sites, wāhi tapu and other **taonga** is a matter of national

importance. Marae are integral to Māori culture and traditions, as are papakāinga and other associated facilities. Tāngata whenua expect demand on marae and papakāinga around the region to increase as, for example, people increasingly look to return to their roots.

Marae can also provide services to the wider, non-Māori, community, for example as meeting places or civil defence bases. They are characteristic of the Waikato region, which is a reflection of historic settlement patterns and the significance of the region to Māori. Papakāinga need not be contiguous with the marae it supports and may be located on general land title.

It is important to the wellbeing of tāngata whenua to ensure the long-term sustainability of marae. This can be achieved by ensuring marae are supported by the necessary physical, social, cultural and environmental services.

Policy 6.5 Energy demand management

Development should minimise transport, energy demand and waste production, encourage beneficial re-use of waste materials, and promote the efficient use of energy.

The relevant objectives are:

- 3.2 Resource use and development*
- 3.5 Energy*
- 3.10 Sustainable and efficient use of resources*
- 3.12 Built environment*
- 3.15 Allocation and use of fresh water*

Implementation methods

6.5.1 District plan provisions

District plans should:

- a) encourage energy-efficient urban development, such as through promotion of energy-efficient urban form and design, energy-efficient buildings, innovative energy technologies and provision for multi-modal transport systems; and
- b) encourage the use of on-site and community-based renewable energy technologies.

6.5.2 Advocacy and education

Local authorities should advocate the directions of Policy 6.5 with respect to development proposals.

6.5.3 Development manuals and design codes

Territorial authorities should, as appropriate, ensure development manuals and design codes allow and encourage development which is consistent with Policy 6.5.

6.5.4 Managing travel demand

Waikato Regional Council will investigate a range of methods to reduce the demand for transport through its Regional Land Transport Plan.

6.5.5 Local transport strategies

Territorial authorities should consider developing local transport strategies for encouraging walking, cycling, use of public transport in urban areas and other demand management initiatives.

6.5.6 Public transport services

Waikato Regional Council will, through its Regional Public Transport Plan and Regional Land Transport Plan:

- a) investigate opportunities including through strategic planning for passenger transport corridors, to improve public transport services for established urban and rural-residential centres; and
- b) promote the benefits and uptake of public transport.

6.5.7 Waste minimisation

Waikato Regional Council will:

- a) work with territorial authorities, industry and community groups to facilitate and encourage initiatives for the minimisation and reuse of waste; and
- b) facilitate the collation and dissemination of regional waste data to support the identification of waste management priorities and trends.

Explanation

Policy 6.5 recognises that demand for energy is rising and that oil-based energy is becoming more expensive. There is likely to be an increasing need for development of new energy sources and new electricity transmission infrastructure. This will place more pressure on the resources of the region. Minimising energy demand and making more efficient use of the existing energy supplies is likely to be better for the environment and more cost effective than developing new supplies. Minimisation of waste production and re-use of waste materials is included in this policy as ways of reducing the energy used to produce goods.

The methods encourage local authorities to reduce energy demand through managing the built environment and transport systems, through sustainable waste management and through promoting efficient use of energy generally. Local authorities are also encouraged to promote local renewable energy technologies which can reduce our dependence on oil-based energy and reduce the need for new energy developments.

Policy 6.6 Significant infrastructure and energy resources

Management of the built environment ensures particular regard is given to:

- a) that the effectiveness and efficiency of existing and planned regionally significant infrastructure is protected;
- b) the benefits that can be gained from the development and use of regionally significant infrastructure and energy resources, recognising and providing for the particular benefits of **renewable electricity generation**, electricity transmission, and municipal water supply; and
- c) the locational and technical practicalities associated with renewable electricity generation and the technical and operational requirements of the electricity transmission network.

<i>The relevant objectives are:</i>	
3.2	<i>Resource use and development</i>
3.3	<i>Decision making</i>
3.5	<i>Energy</i>
3.10	<i>Sustainable and efficient use of resources</i>
3.12	<i>Built environment</i>
3.14	<i>Mauri and values of fresh water bodies</i>
3.15	<i>Allocation and use of fresh water</i>
3.17	<i>Geothermal</i>

Implementation methods

6.6.1 Plan provisions

Regional and district plans shall include provisions that give effect to Policy 6.6, and in particular, that management of the built environment:

- a) avoids, as far as practicable, adverse effects on the function of significant transport corridors as defined in Maps 6.1 and 6.1A (section 6B), and otherwise remedies or mitigates any adverse effects that cannot be practicably be avoided;
- b) avoids, as far as practicable, the adverse effects of ribbon development along the defined significant transport corridors, and otherwise remedies or mitigates any adverse effects that cannot practicably be avoided;
- c) avoids as far as practicable, the need for additional access points onto the defined significant transport corridors, and otherwise remedies or mitigates the

- adverse effects of any additional access points that cannot practicably be avoided;
- d) avoids as far as is practicable, the exacerbation of community severance caused by defined significant transport corridors, and otherwise remedies or mitigates the adverse effects of any exacerbated community severance that cannot practicably be avoided;
 - e) provides for renewable energy by having particular regard to:
 - i) the increasing requirement for electricity generation from renewable sources such as geothermal, **fresh water**, wind, solar, biomass and marine, and the need to maintain generation from existing renewable electricity generation activities;
 - ii) the need for electricity generation to locate where energy sources exist, and transmission infrastructure to connect these generation sites to the national grid or local distribution network;
 - iii) the logistical or technical practicalities associated with developing, upgrading, operating or maintaining renewable electricity generation, or electricity transmission activities;
 - iv) any residual environmental effects of renewable electricity generation activities which cannot be avoided, remedied or mitigated can be offset or compensated to benefit the affected community or the region; and
 - v) the benefits of renewable electricity generation activities including maintaining or increasing security of electricity supply.
 - f) provides for infrastructure in a manner that:
 - i) recognises that infrastructure development can adversely affect people and communities;
 - ii) enables the ongoing operation, maintenance, upgrading and development of municipal water supply infrastructure so as to provide for the justified and reasonably foreseeable needs of current and future generations; and
 - iii) does not result in land uses that adversely affect the effective and efficient operation of existing and planned regionally significant infrastructure.
 - g) considers how existing and planned renewable electricity generation activities and existing and planned urban development will be managed in relation to one another.

6.6.2 Transmission corridor management approach

Waikato Regional Council will work with territorial authorities and energy companies and in consultation with other relevant industry organisations, to develop a transmission corridor management approach which:

- a) recognises the benefits of the national electricity grid;
- b) identifies key transmission corridors in district plans, and:
 - i) protects the corridor and electricity transmission network from inappropriate activities (including “sensitive activities”, as defined in the National Policy Statement on Electricity Transmission); and
 - ii) manages the adverse effects (including reverse sensitivity effects) of subdivision, use and development on the operation, maintenance, upgrading and development of the electricity transmission network.
- c) identifies and addresses potential effects on people and communities and **natural and physical resources** from new transmission infrastructure;
- d) seeks opportunities for alignment with other infrastructure corridors;
- e) recognises that energy companies may be affected parties with respect to land use change, including subdivision and development; and
- f) seeks to manage the effects of third parties on the safe and efficient operation of the transmission network.

6.6.3 Collaboration

Waikato Regional Council will seek to collaborate with territorial authorities, KiwiRail and the NZ Transport Agency to ensure development protects the function of significant transport corridors as defined in Maps 6.1 and 6.1A in section 6B.

6.6.4 Regional Land Transport Plan

Waikato Regional Council will ensure the Regional Land Transport Plan includes provisions to support the protection of the function of significant transport corridors including through the development of a regional transport hierarchy which gives a consistent approach to be used by territorial authorities in their district plans.

6.6.5 Measures to avoid adverse effects

Local authorities should ensure that appropriate measures are implemented to avoid adverse effects of development of the built environment on the safe, efficient and effective operation of regionally significant infrastructure. With respect to electricity transmission corridors, development of the built environment should also take into account National Policy Statements, National Environmental Standards and Transmission Corridor Guidelines as relevant to the circumstances.

6.6.6 Resilience of regionally significant infrastructure

Infrastructure providers should develop ways to maintain and improve the resilience of regionally significant infrastructure, such as through back-up systems and protection from the risk of natural hazards.

Explanation

Regionally significant infrastructure and energy resources support the wellbeing of the regional community. Much of this infrastructure and energy is also very important for New Zealand as a whole, such as energy and transport infrastructure that connects areas to the north, east and south of the Waikato Region. It is therefore very important that development of the built environment does not compromise the functioning of this infrastructure. Methods 6.6.1, 6.6.3, 6.6.4 and 6.6.5 are provided for this purpose. Policy 6.6(a) is intended to ensure the ongoing efficiency and effectiveness of regionally significant infrastructure, but does not imply that all adverse effects on that infrastructure must be avoided in all cases. If the adverse effects of a built environment proposal cannot practicably be avoided, then Methods 6.6.1(a), (b), (c) and (d) do not imply that the selected site should always be considered unsuitable as it may be possible to remedy or mitigate the adverse effects of concern. Method 6.6.6 also seeks to protect regionally significant infrastructure from natural hazards.

The way in which the term 'planned' is to be applied is explained in the explanation to Policy 6.1.

The significant transport corridors identified in Maps 6.1 and 6.1A reflect the strategic corridors identified in the operative Regional Land Transport Plan 2015-2045, which classifies them as nationally, regionally and sub-regionally significant. Significant transport corridors are equivalent to national, regional and sub-regional significant transport corridors in the Regional Land Transport Plan.

New Zealand and the region will benefit from further development of infrastructure and energy resources. Methods are provided to support such development in a way that appropriately manages potential adverse effects. Many effects of new electricity transmission, for example, could be avoided by appropriate siting of this infrastructure. This can be achieved through developing a transmission corridor management approach as described in Method 6.6.2.

There is an increasing need for renewable energy, and renewable energy developments such as hydro-electric dams can be regionally significant. The potential

for development of renewable energy resources can be reduced due to development of the built environment. The methods ensure this is recognised in district and regional plans. Decisions about the future location of some developments (such as rural-residential development) should take into account the potential for locations to be used for future renewable energy developments.

Policy 6.7 Mangatawhiri and Mangatangi municipal water supply bodies

Protect the Mangatawhiri and Mangatangi municipal water supply bodies and associated infrastructure by:

- a) ensuring that any adverse effects on municipal water supply bodies from land uses and land management activities are avoided, remedied, or mitigated;
- b) recognising the primary purpose of the Mangatawhiri and Mangatangi municipal water supply bodies is for the supply of water for municipal needs; and
- c) providing for the ongoing operation, maintenance, upgrading and development of municipal water supply infrastructure so as to provide for the justified and reasonably foreseeable needs of current and future generations.

Implementation methods

6.7.1 Regional and district plans

Regional and district plans shall include provisions that give effect to Policy 6.7, through identification of the Mangatawhiri and Mangatangi water bodies as municipal supply water bodies, and through the development of appropriate planning frameworks to:

- a) control any **point source discharge of contaminants** into these water bodies;
- b) manage the adverse effects of land use activities on Mangatawhiri and Mangatangi municipal water supply bodies;
- c) control changes in land use, including the intensification of existing land uses, that may adversely affect the quality of the fresh water held in the **water body**; and
- d) recognise Mangatawhiri and Mangatangi municipal water supply bodies as regionally significant infrastructure.

Policy 6.8 Access to minerals

Management of development of the built environment appropriately recognises:

- a) the potential for impacts of subdivision, use and development on access to **mineral** resources;
- b) the need for mineral resources to be available for infrastructure and building developments;
- c) the potential benefits of further development of the region's minerals and providing for the continued operation of existing lawfully established mineral extraction activities;
- d) the need to manage the adverse effects of extraction, which may include avoiding mineral extraction, or certain types of mineral extraction, in some areas;
- e) the potential for land use development that is inconsistent with nearby mineral extraction activities; and
- f) that some mineral resources are considered taonga or traditional resources by tāngata whenua.

The relevant objectives are:

- 3.2 *Resource use and development*
- 3.3 *Decision making*
- 3.5 *Energy*
- 3.9 *Relationship of tāngata whenua with the environment*
- 3.10 *Sustainable and efficient use of resources*
- 3.12 *Built environment*

Implementation methods

6.8.1 Identification of mineral resources

Waikato Regional Council will work with territorial authorities, **iwi authorities**, relevant industry and other agencies to collate the identification and mapping of the location of significant mineral resources. This mapping will be made available to territorial authorities. In determining significance, regard will be had to at least the following:

- a) relative scarcity;
- b) contribution or potential contribution to national and regional economy;
- c) current and potential demand, and location with respect to demand;
- d) constraints on extraction including existing or planned settlement;
- e) quality and size of deposit;
- f) importance of the mineral resource to tāngata whenua; and
- g) importance to infrastructure development.

Until such time as significant mineral resources are identified in accordance with Method 6.8.1 the criteria set out above shall be used to determine the significance of any mineral resource at a specific location.

6.8.2 Plan provisions

District plans and regional plans:

- a) shall include provisions to protect, as appropriate, access to significant mineral resources identified pursuant to Implementation Method 6.8.1; and
- b) may identify areas where new mineral extraction activities are appropriate and areas where new mineral extraction activities should be avoided.

6.8.3 Managing effects of development on mineral resources

Regional and district plans shall manage the reverse sensitivity effects of development on identified significant mineral resources and mineral extraction activities by discouraging new sensitive activities from locating near identified significant mineral resources and mineral extraction activities.

6.8.4 Mineral haulage

Local authorities should work with the minerals industry and the NZ Transport Agency to identify suitable routes (road, rail or sea) for mineral movement, and to determine methods to manage development which may conflict with mineral haulage.

Explanation

Access to minerals means the ability to extract, process and transport existing and potential identified significant mineral resources. Policy 6.8 recognises the value of the region's mineral resources. Development can reduce the ability to access such resources. This can occur if areas where minerals are located are built over or, in some cases, where development occurs near potential extraction sites. It will not always be possible to keep all effects of extraction to within the property boundaries. Subdivision, use and development and extraction of mineral resources should be managed to avoid potential adverse effects.

Policy 6.8 and its Implementation Methods are not intended to imply that identified mineral resources should or will be extracted, but that the ability to do so should not be hampered by development that prevents reasonable and efficient access to those mineral resources either now or in the future. The suitability or otherwise of mineral extraction will also need to be considered in relation to other relevant provisions of the Regional Policy Statement.

Large areas of the region can contain minerals such as sand, aggregate and coal. It will not be possible to protect access to all of the region's minerals. The methods seek to identify the location of significant mineral resources in the region and then to protect

access to them as appropriate through district plan mechanisms (Methods 6.8.1 and 6.8.2). Method 6.8.4 recognises that access includes the ability to transport the mineral once it is extracted.

Policy 6.9 Information collection

The relevant objectives are:
 3.3 Decision making
 3.12 Built environment

Information will be collected on development and infrastructure trends and pressures in the Waikato region, so that these trends and pressures can be responded to appropriately and in a timely manner, through management of the built environment.

Implementation methods

6.9.1 Keeping records

Local authorities should keep records that will help to track and explain development and infrastructure trends. As a minimum, territorial authorities should keep, and make available to Waikato Regional Council, records on:

- a) locations, lot numbers and lot sizes of subdivision consents granted, categorised according to district plan zones;
- b) locations of building consents granted, categorised as residential and non-residential, and categorised according to district plan zones;
- c) locations of vacant residential (including rural-residential) and industrial allotments; and
- d) major infrastructure changes and upgrades, including with respect to water supply, wastewater and local roading.

6.9.2 Reporting on development and infrastructure trends

During its five-yearly policy effectiveness reporting (Section 35 Resource Management Act), Waikato Regional Council will, in consultation with territorial authorities, infrastructure providers and tāngata whenua, report on development and infrastructure trends and pressures (including ecological footprint, urban water use, energy use, waste generation).

6.9.3 Report on the Regional Land Transport Plan

During its three-yearly monitoring of the Regional Land Transport Plan, Waikato Regional Council will report on the strategic integration of transport and land use.

Explanation

Policy 6.9 recognises the importance of collecting relevant information on development and infrastructure trends and pressures. Such information is needed to ensure early notice of trends that may require a different policy response, to help forecast infrastructure needs, to support planning for growth and development and to understand the way policies and plans are working. Territorial authorities already collect useful information about development. To maintain a regional understanding of trends and pressures, the regional council needs to collate and regularly analyse this information. The methods ensure such information is collected and reported on in a way that helps to inform management of the built environment and the regional integration of land use and infrastructure.

Policy 6.10 Implementing the Coromandel Peninsula Blueprint

Growth in the Thames-Coromandel District should be managed in a way that:

- a) recognises that the Coromandel Peninsula Blueprint Framework for our Future (2009) provides for the management of future development in the Thames-Coromandel District. This should:
 - i) ensure that development:
 - ii) is in keeping with the landscape, indigenous biodiversity, natural character and heritage values of the Coromandel Peninsula;
 - iii) supports the efficient and effective use of infrastructure; and
 - iv) does not increase the risk from natural hazards; concentrated development through intensification and consolidation in these centres; and
 - v) focus future urban development (beyond the existing zoning and infrastructure provision) on the three identified main centres of Thames, Whitianga and Whangamata; and encourage
- b) recognises that future development including appropriately scaled development for other settlements/villages which is not provided for in the Coromandel Peninsula Blueprint, will be planned for and managed through a district plan review or plan change process.

The relevant objectives are:

- 3.1 *Integrated management*
- 3.2 *Resource use and development*
- 3.3 *Decision making*
- 3.6 *Adapting to climate change*
- 3.7 *Coastal environment*
- 3.12 *Built environment*
- 3.18 *Historic and cultural heritage*
- 3.19 *Ecological integrity and indigenous biodiversity*
- 3.21 *Amenity*
- 3.22 *Natural character*
- 3.24 *Natural hazards*

Implementation methods

6.10.1 District plan provisions

Thames-Coromandel District Council should

- a) include provisions in the Thames-Coromandel District Plan that give effect to Policy 6.10; and
- b) consider the inclusion of provisions in the Thames-Coromandel District Plan that provide for appropriately scaled development for settlements to cater for future growth and demand.

6.10.2 Spatial planning maps of district plan and regional plans

Thames-Coromandel District Council and Waikato Regional Council should provide spatial planning maps in their district plan and regional plans that give effect to Policy 6.10.

Explanation

The Coromandel Peninsula Blueprint Framework for our Future (Blueprint) is an important strategy for managing growth and development in the Thames-Coromandel District. It supports many of the objectives of the Regional Policy Statement. Key elements are referred to in the policy to provide a more robust legal framework for its implementation. Method 6.10.1 recognises that the Thames-Coromandel District Plan is the primary instrument for managing the effects of activities and planning for growth within the Thames-Coromandel district. The District Plan is also the primary instrument for implementing the Coromandel Peninsula Blueprint. In order to provide for future demand, alternative settlement patterns may need to be assessed and tested with the community. The Schedule 1 process of the RMA will be used. The District Plan or plan change process will enable further community consultation on the implementation of future settlement patterns. The Thames-Coromandel District Plan will then provide direction for the preparation and processing of resource consent applications.

Policy 6.11 Implementing Taupo District 2050

Growth in the Taupo District will be managed in a way that:

- a) recognises that Taupo District 2050 provides for the management of future growth, including by:
 - i) recognising the appropriateness of the urban growth areas as an important resource for providing for new urban land development and as the focus for future urban growth;
 - ii) ensuring patterns of future urban development are consistent with the strategic directions of Taupo District 2050, the identified urban growth areas, and any subsequently adopted structure plans;
 - iii) avoiding urban development in the rural environment outside of the identified urban growth areas to prevent a dispersed pattern of settlement and the resulting inefficiencies in managing resources;
 - iv) avoiding the cumulative effect that subdivision and consequent fragmented land ownership can have on the role of the urban growth areas in providing the supply of land for urban development;
 - v) ensuring that staging of development in the urban growth areas is efficient, consistent with and supported by adequate infrastructure; and
- b) ensures that urban development of an identified urban growth area occurs by way of a Taupo District 2050 structure plan process and associated plan change process.
- c) acknowledges that changes to the Taupo District Plan intended to implement Taupo District 2050 must be considered on their merits under the RMA.

The relevant objectives are:

- 3.1 *Integrated management*
- 3.2 *Resource use and development*
- 3.3 *Decision making*
- 3.10 *Sustainable and efficient use of resources*
- 3.12 *Built environment*

Implementation methods

6.11.1 District plan provisions

Taupo District Council shall seek to include provisions in the Taupo District Plan that give effect to Taupo District 2050.

6.11.2 Structure planning

Taupo District Council should develop structure plans to implement the Taupo District 2050 identified urban growth areas.

6.11.3 Co-ordinated approach

Waikato Regional Council will look for opportunities to align its own activities, including the provision of works and services, regulation, education programmes and environmental initiatives, with Taupo District 2050.

Explanation

Taupo District 2050 is an important strategy for managing the built environment in the Taupo District. It supports many of the objectives of the Regional Policy Statement. Policy 6.11 indicates support for the strategic directions set out in Taupo District 2050 while acknowledging that changes to the Taupo District Plan which seek to implement it are subject to their own RMA considerations. The supporting methods ensure that the Taupo District Plan, structure plans and Waikato Regional Council's own activities within Taupo District are aligned with the strategy.

Policy 6.12 Implementing Franklin District Growth Strategy

The relevant objectives are:

- 3.1 *Integrated management*
- 3.2 *Resource use and development*
- 3.3 *Decision making*
- 3.12 *Built environment*

The Franklin District Growth Strategy (2007) provides for the management of growth in the part of the Waikato and Hauraki Districts that was the former Franklin District. Growth should be managed in accordance with this Strategy. In particular:

- a) management of the built environment should be in accordance with the general visions and development directions described for the relevant towns and rural character areas in Sections 7 and 8, and Map 1.0 of the Franklin District Growth Strategy; and
- b) new industrial development should predominantly be located in the strategic industrial nodes in Table 6-3.

The Franklin District Growth Strategy applies until the Future Proof Growth Strategy and relevant district plans are amended.

Implementation methods

6.12.1 Managing growth

Waikato District Council and Hauraki District Council should ensure that growth in the part of their respective districts that was the Franklin District is managed in accordance with Policy 6.12.

6.12.2 Industrial land development

Within the former Franklin District area that is now part of Waikato District, new industrial development should predominantly be located in the strategic industrial nodes in Table 6-3.

6.12.3 Future growth strategy

Waikato Regional Council, Hamilton City Council, Waipa District Council and Waikato District Council should, in association with Future Proof, **iwi** representatives and the New Zealand Transport Agency, as soon as practicable and using a community and industry organisation consultation process, expand the Future Proof Growth Strategy to include the part of Waikato District that was the Franklin District.

Explanation

The Franklin District Growth Strategy was developed by the Franklin District Council in response to growth pressures in the district and provides guidance for managing growth. The Strategy represents a considerable investment for the community and is a well-considered and planned approach to growth that would support many of the development principles in this Regional Policy Statement. It is therefore important that the Strategy continues to guide development until it is replaced by a subsequent growth strategy.

Policy 6.13 Governance collaboration in the Future Proof area

The relevant objectives are:

- 3.1 *Integrated management*
- 3.2 *Resource use and development*
- 3.3 *Decision making*
- 3.12 *Built environment*

Waikato Regional Council, Hamilton City Council, Waipa District Council and Waikato District Council will work collaboratively with respect to growth management in the **Future Proof area**.

Implementation methods

6.13.1 Resourcing implementation

Waikato Regional Council, Hamilton City Council, Waipa District Council and Waikato District Council should ensure governance structures are in place, and adequate resources provided, to facilitate the implementation of the actions in the Future Proof Growth Strategy (2009).

6.13.2 Consultation

Consultation should occur between Waikato Regional Council, Hamilton City Council, Waipa District Council, Waikato District Council, tāngata whenua, the NZ Transport Agency and other infrastructure providers, with respect to initiatives that could affect the interests of these parties.

6.13.3 Implementation protocols

Waikato Regional Council, Hamilton City Council, Waipa District Council, Waikato District Council and tāngata whenua should agree to protocols which document how the Future Proof Growth Strategy (2009) is to be implemented.

Explanation

Policy 6.13 recognises that there needs to be a continued collaborative effort by the Future Proof partners (partner councils and tāngata whenua) in order to implement the Future Proof Strategy. The Strategy lists a range of implementation actions. These need to be supported by appropriate resources such as staff and financial allocations, and appropriate structures such as governance arrangements.

Method 6.13.1 is to ensure these matters are provided for. Method 6.13.2 anticipates that the partner councils may become involved in specific growth management matters which could affect the interests of one or more of the partners. In this case, consultation with the partners would seek to ensure partner interests are taken into account. Method 6.13.3 recognises that from time to time agreements between the partners may be appropriate to ensure growth management is consistent with the intentions of the Future Proof strategy.

Policy 6.14 Adopting Future Proof land use pattern

The relevant objectives are:

3.2 *Resource use and development*

3.3 *Decision making*

3.12 *Built environment*

Within the Future Proof area:

- a) new urban development within Hamilton City, Cambridge, Te Awamutu/Kihikihi, Pirongia, Huntly, Ngaruawahia, Raglan, Te Kauwhata, Meremere, Taupiri, Horotiu, Matangi, Gordonton, Rukuhia, Te Kowhai and Whatawhata shall occur within the Urban Limits indicated on Map 6.2 (section 6C);
- b) new residential (including rural-residential) development shall be managed in accordance with the timing and population for growth areas in Table 6-1 (section 6D);
- c) new industrial development should predominantly be located in the strategic industrial nodes in Table 6-2 (section 6D) and in accordance with the indicative timings in that table except where alternative land release and timing is demonstrated to meet the criteria in Method 6.14.3;
- d) other industrial development should only occur within the Urban Limits indicated on Map 6.2 (section 6C), unless there is a need for the industry to locate in the rural area in close proximity to the primary product source. Industrial development in urban areas other than the strategic industrial nodes in Table 6-2 (section 6D) shall be provided for as appropriate in district plans;
- e) new industrial development outside the strategic industrial nodes or outside the allocation limits set out in Table 6-2 shall not be of a scale or location where the development undermines the role of any strategic industrial node as set out in Table 6-2;
- f) new industrial development outside the strategic industrial nodes must avoid, remedy or mitigate adverse effects on the arterial function of the road network, and on other infrastructure;
- g) where alternative industrial and residential land release patterns are promoted through district plan and structure plan processes, justification shall be provided to demonstrate consistency with the principles of the Future Proof land use pattern; and
- h) where land is required for activities that require direct access to Hamilton Airport runways and where these activities cannot be accommodated within the industrial land allocation in Table 6-2, such activities may be provided for within other land adjacent to the runways, providing adverse effects on the arterial road network and other infrastructure are avoided, remedied or mitigated.

Implementation methods

6.14.1 District plan provisions

Hamilton City Council, Waipa District Council and Waikato District Council shall, in consultation with Waikato Regional Council, tāngata whenua and the NZ Transport Agency, review or prepare changes to their district plans and structure plans to identify locations and limits for future urban development, including future areas of major commercial and industrial development. The district plans shall ensure that urban development is located and managed in accordance with Policy 6.14.

6.14.2 Land release

Hamilton City Council, Waipa District Council and Waikato District Council shall ensure land is zoned and appropriately serviced in accordance with Policy 6.14, Tables 6-1, 6-2 and 6-3 in section 6D.

In relation to Table 6-1, where it is impractical to develop a particular **greenfield** area or part of a greenfield area, the equivalent population allocation in Table 6-1 may be

transferred to another greenfield area within urban limits, where it is demonstrated that the criteria in Method 6.14.3 can be met.

In relation to Table 6-2, the land area allocated in a particular stage for a Strategic Industrial Node may be increased by bringing forward a future allocation from a later stage in that node where it is demonstrated that the criteria in Method 6.14.3 can be met. The total allocation for any one node, across all stages, may also be increased where it is demonstrated that the criteria in Method 6.14.3 can be met.

6.14.3 Criteria for alternative land release

District plans and structure plans can only consider an alternative residential or industrial land release, or an alternative timing of that land release, than that indicated in Tables 6-1 and 6-2 in section 6D provided that:

- a) to do so will maintain or enhance the safe and efficient function of existing or planned infrastructure when compared to the release provided for within Tables 6-1 and 6-2;
- b) the total allocation identified in Table 6-2 for any one strategic industrial node should generally not be exceeded or an alternative timing of industrial land release allowed, unless justified through robust and comprehensive evidence (including but not limited to, planning, economic and infrastructural/servicing evidence);
- c) sufficient zoned land within the greenfield area or industrial node is available or could be made available in a timely and affordable manner; and making the land available will maintain the benefits of regionally significant committed infrastructure investments made to support other greenfield areas or industrial nodes; and
- d) the effects of the change are consistent with the development principles set out in Section 6A.

Explanation

Policy 6.14 limits urban development to the land use pattern and sequencing that has been established through the Future Proof process. New urban development can occur in centres that do not have urban limits (areas not listed in Policy 6.14a)), as long as it is consistent with Tables 6-1 and 6-2. Parts c) to h), along with Table 6-2, provide clear guidance on where industrial development should occur in the Future Proof area. This is very important to ensure integrated planning of industrial land use and infrastructure. Future industrial development should focus on the support and protection of identified industrial nodes.

Method 6.14.1 recognises that although the Strategy has determined a settlement pattern for the Future Proof area, the detail of urban limit lines and future commercial and industrial development locations down to property level need to be determined through district plan processes. The method also recognises that district plan provisions, such as rules, need to ensure development is managed in accordance with Policy 6.14.

Method 6.14.2 recognises that to achieve the Future Proof land use pattern, sufficient land needs to be zoned for development and that appropriate provisions need to be made for servicing this development.

Method 6.14.3 provides for some flexibility in the staged release of residential and industrial land while ensuring that the relevant growth management principles established in the Future Proof growth strategy are not compromised. The method provides an opportunity for district plans and structure plans to refine Table 6-2. The importance of Table 6-2 to the efficient integration of land use and infrastructure in the Future Proof sub-region is such that alternative land release is only expected to occur where comprehensive and robust evidence has been provided to satisfy the criteria in Method 6.14.3.

Map 6.2 provides an overview of urban limits in order to guide implementation of the settlement pattern at a district level. It is expected that district level planning mechanisms such as structure planning and district plan zoning will establish the urban limits at a property scale.

Policy 6.15 Density targets for Future Proof area

The relevant objectives are:
 3.2 *Resource use and development*
 3.3 *Decision making*
 3.10 *Sustainable efficient use of resources*
 3.12 *Built environment*

Hamilton City Council, Waipa District Council and Waikato District Council shall seek to achieve compact urban environments that support existing commercial centres, multi-modal transport options, and allow people to live, work and play within their local area. In doing so, development provisions shall seek to achieve over time the following average gross density targets:

Development type and location	Average gross density target
Hamilton Central Business District	50 households per hectare
Hamilton Intensification Areas	30 households per hectare
Hamilton Greenfield (Rototuna, Rotokauri, Ruakura Peacocke)	16 households per hectare
Greenfield development in Cambridge, Te Awamutu/Kihikihi, Huntly, Ngaruawahia, Raglan/Whaingaroa and Te Kauwhata	12 – 15 households per hectare
Greenfield development in Waikato District rural villages where sewerage is reticulated	8 – 10 households per hectare

Implementation methods

6.15.1 District plan provisions and other mechanisms

Hamilton City Council, Waipa District Council and Waikato District Council shall include provisions in their district plans and other mechanisms that seek to implement Policy 6.15.

6.15.2 Advocacy

Waikato Regional Council, Hamilton City Council, Waipa District Council and Waikato District Council should advocate for the matters in Policy 6.15 with respect to development proposals in the Future Proof area.

6.15.3 Hamilton infill target

Hamilton City Council should aim for at least 50 per cent of growth to be through infill and intensification of existing urban areas.

Explanation

Policy 6.15 seeks to ensure that over time, urban development will become more compact through the promotion of development density targets. This is to improve viability of public transport, walking and cycling, thereby reducing energy demand and reducing the need for future transport infrastructure development. Other benefits of this approach include reducing transport impacts on air quality, reducing carbon emissions, improving efficient use of water infrastructure, reducing urban sprawl onto high quality farm land and reducing other adverse effects of urban development, such as reverse sensitivity impacts on existing land uses and limitations on access to mineral resources. The methods are to ensure this policy is implemented through provisions in district plans and through advocacy with respect to development proposals.

Policy 6.16 Commercial development in the Future Proof area

Management of the built environment in the **Future Proof area** shall provide for varying levels of **commercial development** to meet the wider

community's social and economic needs, primarily through the encouragement and consolidation of such activities in existing commercial centres, and predominantly in those centres identified in Table 6-4 (section 6D). Commercial development is to be managed to:

The relevant objectives are:

- | | |
|------|---|
| 3.2 | <i>Resource use and development</i> |
| 3.3 | <i>Decision making</i> |
| 3.10 | <i>Sustainable efficient use of resources</i> |
| 3.12 | <i>Built environment</i> |

- a) support and sustain the vitality and viability of existing commercial centres identified in Table 6-4 (section 6D);
- b) support and sustain existing physical resources, and ensure the continuing ability to make efficient use of, and undertake long-term planning and management for the transport network, and other public and private infrastructure resources including community facilities;
- c) recognise, maintain and enhance the Hamilton Central Business District as the primary commercial, civic and social centre of the Future Proof area, by:
 - i) encouraging the greatest diversity, scale and intensity of activities in the Hamilton Central Business District;
 - ii) managing development within areas outside the Central Business District to avoid adverse effects on the function, vitality or amenity of the Central Business District beyond those effects ordinarily associated with trade competition on trade competitors; and
 - iii) encouraging and supporting the enhancement of amenity values, particularly in areas where pedestrian activity is concentrated.
- d) recognise that in addition to retail activity, the Hamilton Central Business District and town centres outside Hamilton are also centres of administration, office and civic activity. These activities will not occur to any significant extent in Hamilton outside the Central Business District in order to maintain and enhance the Hamilton Central Business District as the primary commercial, civic and social centre;
- e) recognise, maintain and enhance the function of sub-regional commercial centres by:
 - i) maintaining and enhancing their role as centres primarily for retail activity; and
 - ii) recognising that the sub-regional centres have limited non-retail economic and social activities;
- f) maintain industrially zoned land for industrial activities unless it is ancillary to those industrial activities, while also recognising that specific types of commercial development may be appropriately located in industrially zoned land; and
- g) ensure new commercial centres are only developed where they are consistent with a) to f) of this policy. New centres will avoid adverse effects, both individually and cumulatively on:
 - i) the distribution, function and infrastructure associated with those centres identified in Table 6-4 (section 6D);
 - ii) people and communities who rely on those centres identified in Table 6-4 (section 6D) for their social and economic wellbeing, and require ease of access to such centres by a variety of transport modes;
 - iii) the efficiency, safety and function of the transportation network; and
 - iv) the extent and character of industrial land and associated physical resources, including through the avoidance of reverse sensitivity effects.

Implementation methods

6.16.1 District plan provisions

Hamilton City Council, Waipa District Council and Waikato District Council district plans shall manage new commercial development in accordance with Policy 6.16.

6.16.2 Advocacy

Waikato Regional Council, Hamilton City Council, Waipa District Council and Waikato District Council should advocate for the directions in Policy 6.16 with respect to development proposals in the Future Proof area.

Explanation

The Future Proof growth strategy contains a number of principles that are relevant in terms of future commercial development, such as:

- support for existing commercial centres,
- encouragement of development to support existing infrastructure, and
- ensuring thriving town centres where people can “live, work, play and visit”.

Policy 6.16 supports these principles and assists with ensuring integrated planning of commercial land use and infrastructure for the sub-region. It is important that commercial development does not occur in locations where it will have unacceptable impacts on transport systems, on the functioning of existing commercial centres, and on areas specifically provided for industrial development. The policy supports the location of commercial development where it will be needed to service anticipated future population growth. The methods are to ensure the directions of Policy 6.16 are supported through district plans and advocacy.

Table 6.4 describes a commercial hierarchy for the Future Proof area. It identifies key centres where future commercial development is to be focused. The Hamilton Central Business District, sub-regional centres and town centres generally provide a focus for community activity and social interaction, enabling convenient access to a range of goods and services by a variety of transport modes. The city centre and towns are also centres of administration, office and civic activity and it is intended that they will remain so rather than having those activities dispersed. Accordingly, these activities will not occur to any significant extent in the sub-regional centres as these centres are to remain predominantly as retail centres.

Policy 6.16 requires the region's district and city councils to determine an appropriate range, location and scale of commercial development within their district in order to maintain and enhance the vitality and viability of relevant centres including the role of the Hamilton Central Business District as the primary commercial, civic and social centre of the Future Proof area. In doing so, councils will need to consider the potential for new development to result in adverse effects on the function, vitality and amenity of the Hamilton Central Business District.

Policy 6.17 Rural-residential development in Future Proof area

The relevant objectives are:

- 3.2 *Resource use and development*
- 3.3 *Decision making*
- 3.12 *Built environment*

Management of rural-residential development in the Future Proof area will recognise the particular pressure from, and address the adverse effects of, rural-residential development in parts of the sub-region, and particularly in areas within easy commuting distance of Hamilton and:

- a) the potential adverse effects (including cumulative effects) from the high demand for rural-residential development;

- b) the high potential for conflicts between rural-residential development and existing and planned infrastructure and land use activities;
- c) the additional demand for servicing and infrastructure created by rural-residential development;
- d) the potential for cross-territorial boundary effects with respect to rural-residential development; and
- e) has regard to the principles in section 6A.

Implementation methods

6.17.1 District plan provisions and growth strategies

Waipa District Council and Waikato District Council shall include provisions in district plans and growth strategies to give effect to Policy 6.17. This will include strictly limiting rural-residential development in the vicinity of Hamilton City.

6.17.2 Rural-residential development around Hamilton

Waipa District Council and Waikato District Council shall work with Hamilton City Council, and in association with Waikato Regional Council, tāngata whenua, the NZ Transport Agency and other infrastructure providers, to develop agreements about the nature of rural-residential development in the vicinity of Hamilton City, and ways to prevent adverse impacts on infrastructure that services Hamilton City and future city development.

6.17.3 Directing development to rural-residential zones

Waipa District Council and Waikato District Council should investigate, and shall consider adopting through district plans, provisions such as transferable development rights which will allow development to be directed to rural-residential zones identified in district plans.

Explanation

Policy 6.17 establishes a policy framework for managing development in the Waikato region, including the Future Proof area. Policy 6.17 recognises that there are particular pressures for rural-residential development in parts of the Future Proof area, particularly near Hamilton City. Methods 6.17.1 and 6.17.3 recognise that these pressures need to be managed through district plan provisions. Method 6.17.2 recognises that an individual agency's decisions about rural-residential development and infrastructure can impact on the interests of other agencies, and that a collaborative approach is needed to minimise conflicts. Not managing rural-residential development would undermine the objectives of Future Proof.

Policy 6.18 Monitoring development in Future Proof area

<i>The relevant objectives are:</i>	
3.3	<i>Decision making</i>
3.12	<i>Built environment</i>

Information will be collected on development and infrastructure trends and pressures in the Future Proof area, so that these trends and pressures can be responded to appropriately and in a timely manner, to support further reviews of the Future Proof Growth Strategy and to assess the need for changes to Policy 6.14.

Implementation methods

6.18.1 Reporting

Waikato Regional Council, Hamilton City Council, Waipa District Council and Waikato District Council should, in association with tāngata whenua and the NZ Transport Agency, prepare a report at least at five-yearly intervals, which:

- a) summarises monitoring results in accordance with Policy 6.9;

- b) assesses development (residential, industrial, commercial) pressures and trends, including population, household and business growth rates and property market behaviour, both within and external to the Future Proof area;
- c) reviews the densities of new development in relation to the targets in Policy 6.15;
- d) summarises transport trends including with respect to private transport, public transport, walking and cycling, and freight movement;
- e) assesses settlement patterns, pressures and trends; and
- f) makes recommendations with respect to Policy 6.19.

Explanation

Policy 6.9 establishes the need to collect and report information on development trends and pressures, which also applies to the Future Proof area. Policy 6.18 and Method 6.18.1 state further information requirements for the Future Proof area that are needed to help inform future revisions of the Future Proof Strategy and to provide information to support Policy 6.19.

Policy 6.19 Review of Future Proof map and tables

The relevant objectives are:

- 3.2 Resource use and development
- 3.3 Decision making
- 3.12 Built environment

Waikato Regional Council will consider the need to review Policy 6.14, including the extent, location and release of land for development as identified in the map and tables in section 6C and 6D, in consultation with Hamilton City Council, Waipa District Council and Waikato District Council, tāngata whenua and the NZ Transport Agency, if any of the following situations occur:

- a) the reporting required by Policy 6.18 and Method 6.18.1 recommends that a review is needed;
- b) household and population growth varies by more than 10% over 5 consecutive years from the household and population predictions in the Future Proof Growth Strategy;
- c) the Future Proof partners agree that insufficient land exists within the Urban Limits shown in Map 6.2 to cater for the growth anticipated within 10 years of the analysis; or
- d) the Future Proof partners agree that exceptional circumstances have arisen such that a review is necessary to achieve Objective 3.12 in the Future Proof area.

Implementation methods

6.19.1 Review of provisions

Waikato Regional Council, in conjunction with Hamilton City Council, Waipa District Council and Waikato District Council, and in consultation with tāngata whenua and the NZ Transport Agency, will assess the need for a review of Policy 6.14 at a minimum of five-yearly intervals.

Explanation

The map and tables in section 6C and 6D are based on certain assumptions about likely future development trends and requirements in the Future Proof area. Policy 6.19 and its method recognise that conditions could change such that the matters in Policy 6.14 need to be reviewed in order to ensure ongoing management of development in the Future Proof area remains appropriate.

6A Development principles

General development principles

New development should:

- a) support existing urban areas in preference to creating new ones;
- b) occur in a manner that provides clear delineation between urban areas and rural areas;
- c) make use of opportunities for urban intensification and redevelopment to minimise the need for urban development in greenfield areas;
- d) not compromise the safe, efficient and effective operation and use of existing and planned infrastructure, including transport infrastructure, and should allow for future infrastructure needs, including maintenance and upgrading, where these can be anticipated;
- e) connect well with existing and planned development and infrastructure;
- f) identify water requirements necessary to support development and ensure the availability of the volumes required;
- g) be planned and designed to achieve the efficient use of water;
- h) be directed away from identified significant mineral resources and their access routes, natural hazard areas, energy and transmission corridors, locations identified as likely renewable energy generation sites and their associated energy resources, **regionally significant industry**, high class soils, and primary production activities on those high class soils;
- i) promote compact urban form, design and location to:
 - i) minimise energy and carbon use;
 - ii) minimise the need for private motor vehicle use;
 - iii) maximise opportunities to support and take advantage of public transport in particular by encouraging employment activities in locations that are or can in the future be served efficiently by public transport;
 - iv) encourage walking, cycling and multi-modal transport connections; and
 - v) maximise opportunities for people to live, work and play within their local area;
- j) maintain or enhance landscape values and provide for the protection of historic and cultural heritage;
- k) promote positive indigenous biodiversity outcomes and protect significant indigenous vegetation and significant habitats of indigenous fauna. Development which can enhance ecological integrity, such as by improving the maintenance, enhancement or development of ecological corridors, should be encouraged;
- l) maintain and enhance public access to and along the coastal marine area, lakes, and rivers;
- m) avoid as far as practicable adverse effects on natural hydrological characteristics and processes (including aquifer recharge and flooding patterns), soil stability, water quality and aquatic ecosystems including through methods such as low impact urban design and development (LIUDD);
- n) adopt sustainable design technologies, such as the incorporation of energy-efficient (including passive solar) design, low-energy street lighting, rain gardens, renewable energy technologies, rainwater harvesting and grey water recycling techniques where appropriate;
- o) not result in incompatible adjacent land uses (including those that may result in reverse sensitivity effects), such as industry, rural activities and existing or planned infrastructure;
- p) be appropriate with respect to projected effects of climate change and be designed to allow adaptation to these changes;

- q) consider effects on the unique tāngata whenua relationships, values, aspirations, roles and responsibilities with respect to an area. Where appropriate, opportunities to visually recognise tāngata whenua connections within an area should be considered;
- r) support the Vision and Strategy for the Waikato River in the Waikato River catchment;
- s) encourage waste minimisation and efficient use of resources (such as through resource-efficient design and construction methods); and
- t) recognise and maintain or enhance ecosystem services.

Principles specific to rural-residential development

As well as being subject to the general development principles, new rural-residential development should:

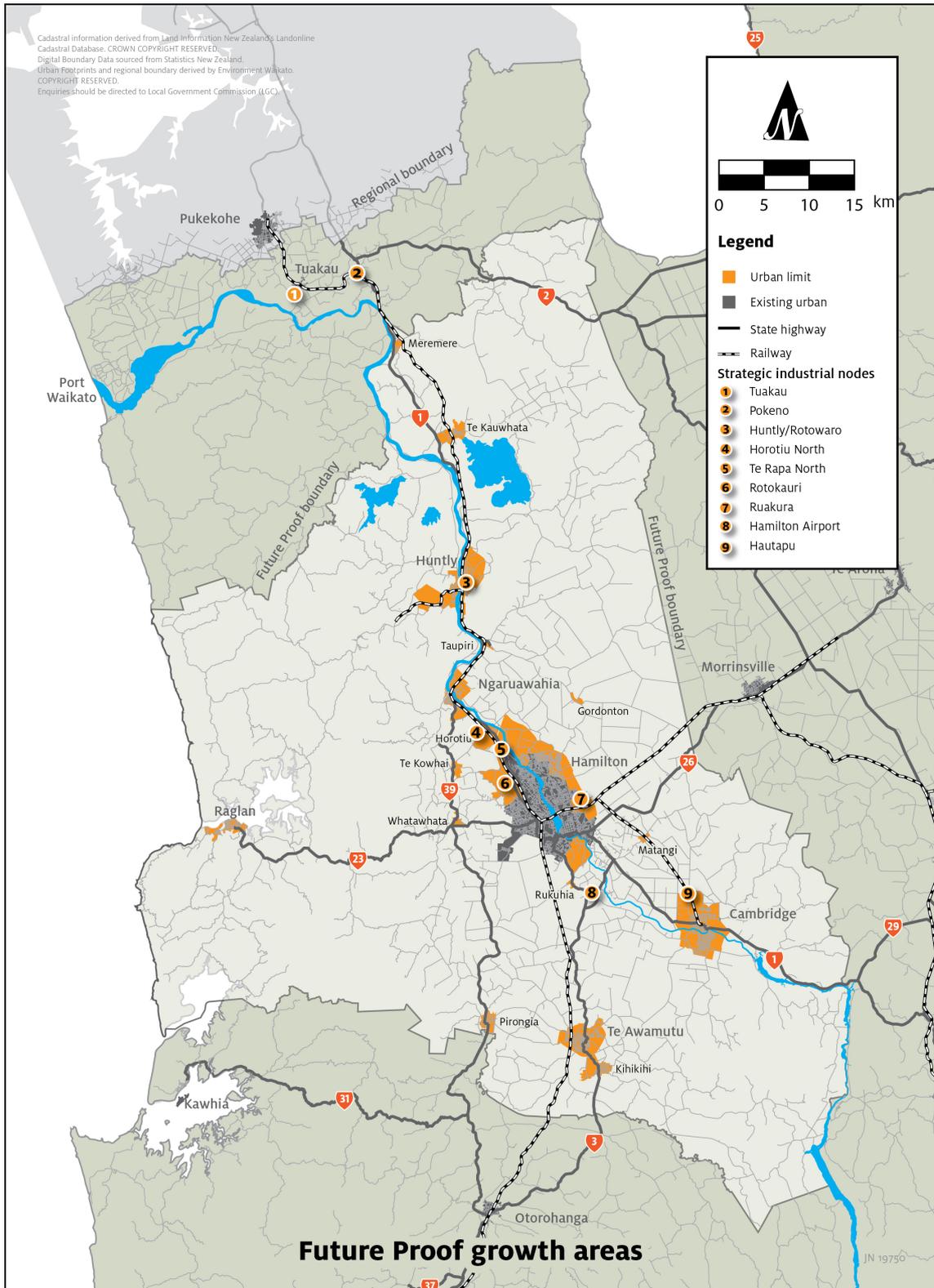
- a) be more strongly controlled where demand is high;
- b) not conflict with foreseeable long-term needs for expansion of existing urban centres;
- c) avoid open landscapes largely free of urban and rural-residential development;
- d) avoid ribbon development and, where practicable, the need for additional access points and upgrades, along significant transport corridors and other arterial routes;
- e) recognise the advantages of reducing fuel consumption by locating near employment centres or near current or likely future public transport routes;
- f) minimise visual effects and effects on rural character such as through locating development within appropriate topography and through landscaping;
- g) be capable of being serviced by onsite water and wastewater services unless services are to be reticulated; and
- h) be recognised as a potential method for protecting sensitive areas such as small water bodies, gully-systems and areas of indigenous biodiversity.

6B Significant transport infrastructure maps



Map 6-1: Significant transport corridors

6C Future Proof map (indicative only)



Map 6-2: Future Proof indicative urban limits

6D Future Proof tables

Table 6-1: Future Proof residential growth allocation and staging 2006-2061

Growth areas	Residential population ¹			
	2006	2021	2041	2061
Hamilton existing urban	119400	136400	161100	187900
Hamilton Greenfield (Rototuna, Rotokauri, Ruakura and Peacockes)	15000	37000	60000	60000
Future Hamilton Greenfield			3000	29700
Hamilton City Total	134400	173400	224100	277600
Cambridge	13225	17500	23200	25145
Te Awamutu / Kihikihi	12625	15900	20100	21565
Huntly	6915	8940	10925	12275
Ngaruawahia	5120	8340	12375	15875
Raglan and Whaingaroa	3220	4340	5025	5200
Te Kauwhata	1020	3430	5825	7675
Waipa Rural Villages	2350	3300	4290	5330
Waikato Rural Villages	6725	9050	12400	15775
Waipa Rural	15500	18800	19410	21460
Waikato Rural	22400	24800	27350	29800
Future Proof sub-regional total	223500	287800	365000	437700
Sub-regional split by settlement type				
City	134400	173400	224100	277600
Towns	42125	58450	77450	87735
Rural Villages	9075	12350	16690	21105
Rural	37900	43600	46760	51260
Sub-regional split – proportion of total population				
City	60%	61%	61%	63%
Towns	19%	20%	21%	20%
Rural Villages	4%	4%	5%	5%
Rural	17%	15%	13%	12%

¹ The above population figures in any given location do not take account of growth associated with marae and papakāinga development. Consequently, actual population figures may exceed the above figures in some areas.

Table 6-2: Future Proof industrial land allocation

Strategic Industrial Nodes located in Central Future Proof area (based on gross developable area) ¹	Industrial land allocation and staging (ha)			Total Allocation
				2010 to 2061 (ha)
	2010 to 2021	2021 to 2041	2041 to 2061	
Rotokauri	85	90	90	265
Ruakura	80	115 ²	210 ²	405
Te Rapa North	14	46	25	85
Horotiu	56	84	10	150
Hamilton Airport	74	50	0	124
Huntly and Rotowaro	8	8	7	23
Hautapu	20	30	46	96
TOTAL HA	337	423	388	1148

¹ Gross Developable Area includes land for building footprint, parking, landscaping, open space, bulk and location requirements and land for infrastructure including roads, stormwater and wastewater facilities.

²Development beyond the 2021 period is subject to completion of the Waikato Expressway.

Explanation

At the time of hearing submissions on the Proposed Waikato Regional Policy Statement, there was approximately 879ha of zoned industrial land that was vacant within the central Future Proof area. The strategic nodes identified in Table 6-2 include a mixture of existing zoned land and land identified as future industrial land, subject to district planning processes.

The land identified in Table 6-2 for the Rotokauri, Horotiu, Huntly and Rotowaro industrial nodes are the vacant gross developable land areas remaining within the zoning of the Proposed Hamilton District Plan (Rotokauri Structure Plan), and Operative Waikato District Plan (Horotiu Industrial Park, Huntly Industrial Zone).

Horotiu

The staging and timing of land associated with Horotiu is consistent with the rules contained within the Operative Waikato District Plan (2011).

Hamilton Airport

The land identified in Table 6-2 for the Airport Node is the land zoned for industrial and mixed industrial/business development in the Proposed Waipa District Plan.

The node is currently affected by infrastructure constraints, particularly in the surrounding transport network. The Southern Links project will address some of the transport capacity issues but is currently a long term solution. Infrastructure solutions which are consistent with, and work towards a long term infrastructure pattern will be required to enable development in advance of the construction of Southern Links.

Te Rapa North

The Te Rapa North Industrial Node includes land that was transferred into the Hamilton City Council boundary in July 2011. Together with the continued operation of the Te Rapa Dairy Factory and its associated infrastructure the Node provides the opportunity to enable the development of a cluster of dairy related industrial activities of at least regional significance. The land allocations for the post 2021 and 2041 period provide the opportunity to reinforce the significance and benefits of these activities by providing additional land to enable their expansion around the Te Rapa Dairy Factory.

Depending upon the rate of uptake, it is possible that the release of the later stages of land might need to occur earlier.

Ruakura

The Ruakura Industrial Node is part of an 820ha parcel of land that has been identified by Hamilton City for future urban growth, known as the R1 growth cell.

The 405ha identified in Table 6-2 comprises the Ruakura inland port and logistics zone (approximately 195ha) and general industrial land (approximately 210ha) to be advanced through a district plan structure planning process and subsequent Resource Management Act First Schedule process. The staging and timing identified in Table 6-2 provides for Stage 1 of the inland port and logistics zone, and up to 30 hectares of general industrial development to 2021. The Ruakura Structure plan is linked to the development of the Hamilton section of the Waikato Expressway. Further development after 2021, beyond the initial 80ha identified for the 2010-2021 period, should not occur until the Hamilton section of the Waikato Expressway is completed and connected to the Ruakura land in a manner that does not undermine the efficient functioning and safety of the transport network, or another infrastructure solution has been demonstrated to satisfy the relevant criteria for alternative land release in Method 6.14.3.

Hautapu

The land identified for the Hautapu Industrial Node is the land specified in the Waipa 2050 Growth Strategy (2009).

Table 6-3: Industrial land allocation in the North Waikato

Strategic Industrial Nodes located in the North Waikato (based on gross developable area) ¹	Industrial land allocation and staging (ha)			Total Allocation 2010 to 2061 (ha)
	2010 to 2021	2021 to 2041	2041 to 2061	
Tuakau	116	0	0	116
Pokeno	92	0	0	92
TOTAL HA	208	0	0	208

¹gross Developable Area includes land for building footprint, parking, landscaping, open space, bulk and location requirements and land for infrastructure including roads, stormwater and wastewater facilities.

Explanation

The land identified in Table 6-3 for the Tuakau and Pokeno Strategic Industrial Nodes represents the zoned and vacant industrial land provided for within the Waikato District Plan at each location.

Table 6-4: Future Proof hierarchy of major commercial centres

Functional type	Location	Function description
Regional and City centre	Hamilton Central Business District	The primary centre in the region for commercial, civic and social activity.
Primary sub-regional centres	Te Rapa North Commercial Centre*	A significant integrated retail centre in the region, with relatively limited provision of non-retail economic and social activity.
Secondary sub-regional centre	Chartwell	An integrated retail centre in the sub-region, with limited provision of non-retail economic and social activity.
Town centres	Cambridge Te Awamutu Huntly Ngaruawahia Raglan Te Kauwhata	Retail, administration, office and civic centres providing most commercial and servicing needs, together with non-retail economic and social activity, to their urban and rural hinterland.

*being the centre focused on and incorporating The Base shopping centre and generally comprising the block bordered by Te Rapa Road, Avalon Drive, Te Kowhai Road East and the Railway.

After 1 November 2010, Waikato District expanded to include other commercial areas from Franklin District including Tuakau and Pokeno. These have not been included in Table 6.4 as it only relates to commercial areas within the Future Proof area, which exclude the former Franklin District.

7 Coastal marine area

Policy 7.1 Interests in the coastal marine area

The **coastal marine area** is recognised as generally being public space and its efficient use is ensured by allocating space to activities in a way that:

- a) recognises the Crown's interest in the coastal marine area;
- b) recognises conflicting uses;
- c) provides for **protected customary rights**; and
- d) provides for ecosystem values as well as people's social, economic and cultural aspirations.

Implementation methods

7.1.1 Allocation of space within the coastal marine area

The regional coastal plan shall establish criteria to determine the appropriateness of different activities within the coastal marine area and where necessary identify areas that are appropriate for different purposes or activities including areas to be protected from development. Particular regard will be had to:

- a) opportunities for recreational access across a range of experiences;
- b) opportunities for electricity generation from renewable sources;
- c) opportunities for the development of aquaculture;
- d) the functional necessity for activities to locate in the coastal marine area;
- e) avoiding the effects of **natural hazards**;
- f) the public benefits of the use of natural resources and from any development in public space;
- g) changes projected as a result of climate change;
- h) avoiding sprawling and sporadic development;
- i) economic, cultural and social uses of the coastal marine area; and
- j) linking activities taking place in the marine area to land-based **infrastructure** necessary for its support; and
- k) avoiding adverse effects, including cumulative effects on:
 - i) areas of significance to **tāngata whenua**;
 - ii) open space and **amenity values**;
 - iii) public access;
 - iv) existing/future marine transport corridors;
 - v) marine water quality;
 - vi) **indigenous biodiversity** values;
 - vii) **natural character** and landscape values; and
 - viii) physical coastal processes (hydrodynamic and sediment dynamics).

7.1.2 Crown's interest in the coastal marine area

The regional coastal plan shall include provisions that ensure that regard is had to any available alternative and to the applicant's reasons for making the proposed application

The relevant objectives are:

- 3.1 *Integrated management*
- 3.2 *Resource use and development*
- 3.3 *Decision making*
- 3.5 *Energy*
- 3.6 *Adapting to climate change*
- 3.7 *Coastal environment*
- 3.8 *Ecosystem services*
- 3.9 *Relationship of tāngata whenua with the environment*
- 3.10 *Sustainable and efficient use of resources*
- 3.12 *Built environment*
- 3.13 *Mauri and health of marine waters*
- 3.18 *Historic and cultural heritage*
- 3.19 *Ecological integrity and indigenous biodiversity*
- 3.20 *Outstanding natural features and landscapes*
- 3.21 *Amenity*
- 3.22 *Natural character*
- 3.23 *Public access*
- 3.24 *Natural hazards*

when making decisions on any applications for coastal permits in relation to the **common marine and coastal area** for:

- a) reclamations;
- b) the removal of sand, shingle, shell or other natural materials for commercial purposes; and
- c) the rights to occupy such land.

7.1.3 Occupation charging in the coastal marine area

In changing the regional coastal plan, or preparing a proposed regional coastal plan, Waikato Regional Council shall consider whether or not a charging regime for occupation within the common marine and coastal area should be included.

7.1.4 Aquaculture strategy

Waikato Regional Council will develop an aquaculture strategy in consultation with relevant stakeholders to recognise the existing and future contribution of aquaculture to the region. This will form part of the wider Coastal Marine Strategy in Method 7.1.5.

7.1.5 Coastal marine strategy

Waikato Regional Council will develop a coastal marine strategy for the coastal marine area. The purpose of the strategy is to optimise the opportunities provided by **ecosystem services** for regional economic, social, cultural and environmental wellbeing and help direct appropriate infrastructure needs and growth opportunities.

The marine strategy will:

- a) build on existing information;
- b) be developed in collaboration with territorial authorities, tāngata whenua, industry, and other key stakeholders;
- c) identify areas using techniques such as spatial plans for economic use, including aquaculture, infrastructure (including environmental), biodiversity protection and amenity;
- d) identify marine pressures resulting from marine or land-based activities;
- e) identify key economic and environmental opportunities and steps to assist those opportunities;
- f) identify mechanisms and actions for implementation of the coastal marine strategy; and
- g) inform changes to regional plans including the Regional Coastal Plan.

Explanation

Policy 7.1 recognises that the coastal marine area is largely public space but supports a wide range of public and private uses that may result in conflict. Methods 7.1.1 and 7.1.2 provide a framework for making decisions on how and where activities may establish or be carried out. This will allow all interests, values, uses, and costs and benefits from development of the coastal marine area to be taken into account when determining appropriate and inappropriate locations for and types of activities. Adverse effects to be considered include those on specific uses of the coastal marine area, as well as effects on enjoyment that people derive from the landscape and effects on values to tāngata whenua, for example on lines of sight to sites of significance. The framework also allows the management of this area to achieve other policies, for example identification of marine habitats as significant natural areas.

Method 7.1.3 makes it clear that Waikato Regional Council intends to consider a charging regime for occupation of space within the coastal marine area.

The marine area is experiencing increasing use and competing interests for the same resource. The underpinning ecosystem services that provide for successful long-term use of the marine resource are also under increasing pressure. Methods 7.1.4 and

7.1.5 signal the desire to see strategic and holistic management of the region's coastal marine area.

Policy 7.2 Marine water quality

Discharges to marine waters shall be managed to maintain or enhance the **mauri** and health of marine water and to protect ecosystem, amenity, and tāngata whenua values.

Implementation methods

7.2.1 Marine water types

Regional plans shall:

- a) identify types of marine waters based on their capacity to assimilate discharges, including areas of degraded water quality, and establish water quality standards for each type;
- b) include provisions for each of the marine water types to ensure water quality is maintained at or above standards where it is high, or is improved to meet the minimum standards where it is degraded, with demonstrable progress by 2030;
- c) ensure that after **reasonable mixing**, manmade discharges to the coastal marine area do not result in breaches of the water quality standards or loss of local values; and
- d) require the smallest area for mixing necessary to achieve the required water quality whilst minimising adverse effects on the life supporting capacity of water within the mixing area.

The relevant objectives are:

- | | |
|------|--|
| 3.1 | <i>Integrated management</i> |
| 3.2 | <i>Resource use and development</i> |
| 3.3 | <i>Decision making</i> |
| 3.7 | <i>Coastal environment</i> |
| 3.8 | <i>Ecosystem services</i> |
| 3.9 | <i>Relationship of tāngata whenua with the environment</i> |
| 3.13 | <i>Mauri and health of marine waters</i> |
| 3.19 | <i>Ecological integrity and indigenous biodiversity</i> |
| 3.21 | <i>Amenity</i> |
| 3.22 | <i>Natural character</i> |

7.2.2 Activities affecting water quality

Regional plans shall:

- a) control riparian activities including tracking and earthworks, removal of riparian vegetation and access to the coastal marine area by **stock**;
- b) control activities in or near the coastal marine area to ensure that harmful aquatic organisms with the potential to adversely affect the **coastal environment** are not released or spread;
- c) consider alternative land-based opportunities for discharges;
- d) control activities so as not to result in a significant increase in sedimentation; and
- e) manage discharges to avoid significant adverse effects on ecosystems and habitats.

7.2.3 Promotion of initiatives to improve water quality

Local authorities should promote and support initiatives to improve marine water quality (including diffuse discharges and discharges of stormwater and wastewater) such that adverse effects on marine water quality are lessened. These could include:

- a) information dissemination and education;
- b) protection or enhancement of existing, or creation, re-creation or restoration of new appropriately vegetated riparian and **wetland** areas;
- c) creation of esplanade reserves and/or strips, or similar, where this would have a positive effect on marine water quality; and
- d) development and implementation of best practice guidelines and industry standards.

7.2.4 Information gathering

Waikato Regional Council will establish a programme of information gathering to:

- a) set baselines for marine water quality;

- b) determine the causes of marine water quality degradation; and
- c) assess the limits of marine waters for assimilating discharges.

Explanation

The coastal marine area is valued for its ecosystems and biodiversity and for a range of uses including recreation and commercial opportunities. Water quality is high in some areas but in others the quality reflects that the sea is also a receiving environment for sediment and contaminants from both diffuse and point source discharges. Policy 7.2 recognises that water quality needs to be managed if the values are to be protected. Our scientific knowledge of the capacity of marine waters to assimilate discharges is limited. For this reason careful management is promoted through Methods 7.2.1 and 7.2.2, and information gathering is addressed through Method 7.2.4.

Management of water quality requires information on current quality and the setting of standards against which effects of discharges can be assessed and trends in quality monitored. Method 7.2.1 indicates that Waikato Regional Council will identify water types which recognise the different physical characteristics of different areas, for example open coastal waters versus enclosed harbours, and use standards appropriate to each type in order to maintain values. The process of establishing standards will be in conjunction with that of establishing standards for fresh water bodies, recognising that rivers and streams flowing into the coastal marine area are the main source of contaminants and sediment. Method 7.2.2 ensures that regional plans will manage the effects of activities in or near the coastal marine area that have the potential to affect water quality in marine waters.

Although management of water quality is a regional council function, Method 7.2.3 signals an expectation that territorial authorities should consider marine water quality when managing land use activities that ultimately have the potential to affect the receiving environment.

8 Fresh water bodies

Policy 8.1 Approach to identifying fresh water body values and managing fresh water bodies

Waikato Regional Council will facilitate a process that will involve regional communities, to identify values and establish subsequent **fresh water** objectives, limits and targets for fresh water bodies. The value setting process will:

- a) provide for variability in **catchment** management response;
- b) assist in ensuring that adverse effects of activities on the identified values of water bodies are managed in an integrated manner;
- c) determine any outstanding fresh water bodies and significant values of **wetlands**; and
- d) recognise that where a freshwater body is currently used for the purposes of **renewable electricity generation** or domestic or municipal supply, those uses are recognised as being values associated with that **water body**.

The relevant objectives are:

- 3.1 *Integrated management*
- 3.2 *Resource use and development*
- 3.3 *Decision making*
- 3.4 *Health and wellbeing of the Waikato River*
- 3.5 *Energy*
- 3.8 *Ecosystem services*
- 3.9 *Relationship of tāngata whenua with the environment*
- 3.10 *Sustainable and efficient use of resources*
- 3.13 *Mauri and health of marine waters*
- 3.14 *Mauri and values of fresh water bodies*
- 3.15 *Allocation and use of fresh water*
- 3.16 *Riparian areas and wetlands*
- 3.19 *Ecological integrity and indigenous biodiversity*
- 3.21 *Amenity*
- 3.22 *Natural character*
- 3.23 *Public access*

Implementation methods

8.1.1 Integrated catchment management of water resources

Regional plans shall adopt a catchment-based approach to ensure the integrated management of water resources, including the management of:

- a) the allocation and use of water;
- b) flow regimes;
- c) quantity and quality of groundwater;
- d) quantity and quality of surface water;
- e) quality of marine waters; and
- f) land and water interactions, including the impacts of land use activities.

8.1.2 Identify fresh water body values

Waikato Regional Council will facilitate a process that involves **tāngata whenua**, stakeholders, industry organisations and regional communities to identify values for freshwater bodies, including economic, environmental, social and cultural values.

8.1.3 Recognise values, and establish fresh water objectives, limits and targets

Regional plans shall:

- a) recognise identified values and establish fresh water objectives based on the identified values;
- b) establish limits and targets based on the identified values and freshwater objectives, including for minimum and allocable flows, lake levels, wetland levels, and **contaminant** discharges; and

- c) in relation to the Waikato River catchment, incorporate in their entirety the values, objectives, limits and targets identified in the Vision and Strategy for the Waikato River.

8.1.4 Matters to be considered when identifying values

Waikato Regional Council will ensure that the following matters are considered as part of the value setting process for fresh water bodies:

- a) the values identified in the Vision and Strategy for the Waikato River catchment;
- b) the Objectives of the Regional Policy Statement, with particular regard given to Objectives 3.14 and 3.15;
- c) **natural character** and natural function, including flow regime variability;
- d) the hydraulic gradient and physical form of water bodies that support hydro electricity generation values;
- e) health and functioning of **indigenous biodiversity**, ecosystems and habitats;
- f) human relationships with fresh water including:
 - i) the cultural and traditional relationship of tāngata whenua with fresh water;
 - ii) the availability of water, and the suitability of the **fresh water body**, for the purposes of meeting existing and reasonably justified and foreseeable future **domestic or municipal supply** requirements;
 - iii) harvesting of aquatic food species and **mahinga kai** that is safe to eat;
 - iv) recreation values including swimming; and
 - v) the use of water for food production;
- g) the life supporting capacity of fresh water bodies;
- h) the ability of people and communities to provide for their social, economic and cultural wellbeing and for their health and safety;
- i) adverse cumulative effects of land use activities on fresh water bodies;
- j) the existence and purpose of modified or artificial water bodies, including those in section 8A;
- k) existence of lawfully established **infrastructure**, including dams;
- l) that effect will be given to the provisions of national policy statements;
- m) the need for local authorities to meet their general responsibilities under other relevant legislation; and
- n) lawfully consented discharges and takes.

8.1.5 Manage adverse effects to meet identified limits and targets

Waikato Regional Council will manage the adverse effects of activities to meet the limits and targets identified for those fresh water bodies.

8.1.6 Tāngata whenua involvement

Waikato Regional Council will work with tāngata whenua to develop systems and processes to:

- a) adequately involve tāngata whenua in the management and decision making regarding fresh water bodies and associated ecosystems;
- b) identify values and interests in fresh water bodies and associated ecosystems; and
- c) develop monitoring programmes, including **mātauranga Māori**, to monitor the achievement of identified values of fresh water bodies.

8.1.7 Stakeholder involvement

Waikato Regional Council will take a collaborative approach to investigating and implementing future fresh water body management approaches. This will include:

- a) providing for the early and meaningful involvement of stakeholders;

- b) involving stakeholders in the process of identifying catchment based values and establishing freshwater objectives, limits and targets;
- c) involving stakeholders in the process of identifying costs and benefits of any proposed regulatory management options which may include assessment of the impacts of the scale and rate of change required to achieve potential limits and subsequent targets; and
- d) working with stakeholders for the development and delivery of non-regulatory policy options including primary industry initiatives, third party audited self management and education programmes.

8.1.8 Information gathering

To assist in decision making for the future management of fresh water bodies Waikato Regional Council will:

- a) investigate, monitor and review information to assess the effects of sedimentation, nutrients and other contaminants on water quality, aquatic life and ecosystems including in estuarine environments and slow-flushing shallow coastal water such as the Firth of Thames;
- b) investigate and collate information about activities and land use practices that will make a positive difference to fresh water body values;
- c) regularly review land use trends within catchments with high value water bodies;
- d) investigate and collate information about the current and potential risks and threats to water bodies including those posed by cumulative adverse effects or significant land use changes; and
- e) undertake research to support management of water bodies, including but not limited to, determining **minimum flows, allocable flows, sustainable yields**, actual water use, water flow rates and the effects of reduced flows/levels, especially in relation to areas of high use/demand.

Explanation

Policy 8.1 sets out the overall approach for managing fresh water bodies. The approach centres on identifying the current and desired values and freshwater objectives of all water bodies in the region. The values and freshwater objectives attributed to water bodies are to be identified through a community based process. Once values and freshwater objectives are determined the management of fresh water bodies will focus on the establishment of limits and targets. There may be differences across the region in fresh water body limits and targets, depending on the particular uses and relationships humans have with fresh water, or from natural variation in vegetation, soil type or topography.

The regional plan will set numerical and narrative water quality and quantity limits and targets for each fresh water body. It is possible that limits and targets will differ in some areas, and that all principles or criteria to guide decision making will be needed in order to resolve tradeoffs in establishing limits and targets related to the range of ecological and human relationship and use values. The regional plan will then manage the adverse effects on the fresh water bodies to achieve the identified limits and targets.

The management of fresh water bodies is most effectively undertaken at a catchment or sub-catchment level. This approach recognises the inter-connected nature of ground and surface water and land use, and is considered a more effective approach of managing the cumulative effects of activities and discharges on fresh water body values.

Method 8.1.4 identifies matters to be considered when undertaking the value setting process. The matters identified provide a starting point to be considered further through the value setting process. It is important that ultimately the values attributed to a water body will be determined through a community based process, however that process must recognise the need to give effect to national policy statements and the need for

local authorities to meet their general responsibilities under other relevant legislation. The list of matters in 8.1.4 is not intended to be exhaustive, and other matters may be relevant to the value identification process.

When determining the values of those water bodies that have been expressly modified by dams built for municipal supply or hydro electricity generation, the purposes for which they were created need to be carefully assessed and provided for. Other values that may be determined in association with those water bodies will need to be cognisant of the purpose of these dams.

The management of fresh water bodies attracts the interest and involvement of many sectors of the community. Method 8.1.6 recognises the special relationship that tāngata whenua have with water resources and identifies the particular ways in which council intends to involve tāngata whenua in managing the resource. Method 8.1.7 states that for the management of fresh water bodies and their catchments, Waikato Regional Council will take a collaborative approach, specifically involving key sectors of the community and those likely to be most affected by changes in the management of the resource.

Method 8.1.8 identifies specific investigations that would provide important information for the future management of fresh water bodies.

Policy 8.2 Outstanding fresh water bodies and significant values of wetlands

Ensure that the outstanding values of a fresh water body that result in that water body being identified as an outstanding fresh water body, and the significant values of wetlands, are protected and where appropriate enhanced.

Implementation methods

8.2.1 Identify outstanding fresh water bodies and the significant values of wetlands

Waikato Regional Council, through a values setting process, shall identify outstanding fresh water bodies and significant values of wetlands. The process to inform the identification of outstanding freshwater bodies and the significant values of wetlands will include consideration of the values of those fresh water bodies and wetlands that are in section 8B and the uses and associated values of those freshwater bodies that are in section 8A.

8.2.2 Managing outstanding fresh water bodies and the significant values of wetlands

Regional plans shall provide for:

- a) the protection, and where appropriate enhancement, of the values of outstanding fresh water bodies and the significant values of wetlands and, except as provided for in paragraph (ad), priority shall be given to the values which resulted in the water body being identified as outstanding or significant values of wetlands;
- b) the achievement of limits and targets established under Method 8.1.3
- c) the management of the effects on these water bodies and wetlands from:
 - i) direct discharges to these fresh water bodies;
 - ii) takes and uses of water;

<i>The relevant objectives are:</i>	
3.1	<i>Integrated management</i>
3.2	<i>Resource use and development</i>
3.3	<i>Decision making</i>
3.4	<i>Health and wellbeing of the Waikato River</i>
3.8	<i>Ecosystem services</i>
3.9	<i>Relationship of tāngata whenua with the environment</i>
3.14	<i>Mauri and values of fresh water bodies</i>
3.15	<i>Allocation and use of fresh water</i>
3.16	<i>Riparian areas and wetlands</i>
3.19	<i>Ecological integrity and indigenous biodiversity</i>
3.21	<i>Amenity</i>
3.22	<i>Natural character</i>
3.23	<i>Public access</i>

- iii) the damming and diversion of water (including off-line dams and/or the diversion of flood waters);
 - iv) changes in land use (including intensification of existing land uses) within the catchment of the fresh water body; and
 - v) existing land use where this may compromise the values of the fresh water bodies;
- d) the management of fresh water bodies listed in section 8A for the purpose for which they were modified, including the ongoing operation and maintenance of associated infrastructure.

Explanation

Policy 8.2 recognises that some fresh water bodies can have values that contribute to the water body being identified as outstanding, and in the case of wetlands can have values that are determined as being significant. The policy intent is to protect the outstanding water bodies and the significant values of wetlands from being degraded and to provide for future enhancement of these valued water bodies and wetlands.

Method 8.2.1 directs the Waikato Regional Council to undertake a process to identify outstanding fresh water bodies and the significant values of wetlands. The determination of whether a water body is outstanding will, include consideration of the values of those water bodies stated in section 8B and 8A and is likely to include other fresh water bodies, such as natural state water bodies and water bodies valued for their water quality, naturalness and flow regimes. In defining outstanding water bodies it will be important to take into consideration previous commitments to the community such as regional plan protection of water quality in Lake Taupō. The determination of outstanding freshwater bodies will be based on an assessment of the values derived from water use and also from values associated with the life-supporting capacity of water and associated ecosystems.

The previous Waikato Regional Policy Statement was made operative in 2000 and provided an objective of net improvement of water quality across the region and the protection of the quality of outstanding fresh water bodies. Where robust data exists, this will be used to benchmark the state of those fresh water bodies identified as outstanding.

Provision is made in Method 8.2.2, that once outstanding water bodies and significant values of wetlands have been determined, regional plans will manage the effects of activities to ensure that the values of outstanding fresh water bodies and significant values of wetlands are protected or enhanced.

However, where the water bodies identified in section 8A (including water bodies that have been expressly formed by dams built for municipal supply or hydro-electricity generation) are identified as outstanding freshwater bodies, the protection and enhancement of the values which resulted in the water body being identified as outstanding will not be prioritised over the ongoing use of those freshwater bodies for municipal supply or hydroelectricity generation purposes in the event of conflict, but will be considered in the management of those water bodies. Nothing in Method 8.2.2 is to be interpreted as creating any inconsistency with the Vision and Strategy and in particular, the objective to restore and protect the health and wellbeing of the Waikato River.

Policy 8.3 All fresh water bodies

Manage the effects of activities to maintain or enhance the identified values of fresh water bodies and coastal water including by:

- a) reducing:
 - i) sediment in fresh water bodies and coastal water (including bank instability) that is derived from human based activities;
 - ii) accelerated sedimentation of estuaries;
 - iii) microbial and nutrient contamination;
 - iv) other identified contaminants; and
- b) Where appropriate, protection and enhancement of:
 - i) **riparian** and **wetland** habitat;
 - ii) instream habitat diversity;
 - iii) indigenous biodiversity; and
- c) providing for migratory patterns of indigenous freshwater species up and down rivers and streams and to the **coastal marine area** where practicable; and
- d) avoiding:
 - i) physical modification of fresh water bodies where practicable; and
 - ii) inappropriate development in flood plains; and
- e) managing:
 - i) groundwater and surface water flow/level regimes, including flow regime variability;
 - ii) linkages between groundwater and surface water; and
 - iii) pest and weed species where they contribute to fresh water body and coastal water degradation.

<i>The relevant objectives are:</i>	
3.1	<i>Integrated management</i>
3.2	<i>Resource use and development</i>
3.3	<i>Decision making</i>
3.4	<i>Health and wellbeing of the Waikato River</i>
3.5	<i>Energy</i>
3.8	<i>Ecosystem services</i>
3.9	<i>Relationship of tāngata whenua with the environment</i>
3.13	<i>Mauri and health of marine waters</i>
3.14	<i>Mauri and values of fresh water bodies</i>
3.15	<i>Allocation and use of fresh water</i>
3.16	<i>Riparian areas and wetlands</i>
3.19	<i>Ecological integrity and indigenous biodiversity</i>
3.21	<i>Amenity</i>
3.22	<i>Natural character</i>
3.23	<i>Public access</i>

Implementation methods

8.3.1 Point source discharges

Regional plans shall control **point source discharges** of **contaminants** into fresh water bodies and coastal water, or onto or into land where the contaminant may reach water, in a way that:

- a) seeks to achieve the fresh water objectives, and meets the limits and targets for the water body;
- b) considers relating the activity status of any rules to the quality and values of the receiving fresh water body and coastal water;
- c) provides for land-based mitigation of the effects of contaminants prior to their discharge to fresh water bodies and coastal water;
- d) provides for mitigation or offsetting of adverse effects where effects cannot be avoided or remedied; and
- e) does not reduce the allocation potential of the fresh water body for water takes.

8.3.2 Activities in riparian areas

Regional plans shall manage the adverse effects of activities in riparian areas, including tracking and earthworks, removal of riparian vegetation and access to the beds and banks of fresh water bodies by vehicles and **stock** to ensure:

- a) reduced sedimentation of fresh water bodies (including bank instability) and estuaries that is derived from human based activities;

- b) reduced microbial contamination of fresh water bodies; and
- c) that water body objectives are achieved, including by meeting the limits and targets in regional plans.

8.3.3 Non-point source discharges

Waikato Regional Council will manage the adverse effects of land use and activities on fresh water bodies and coastal water from **non-point source discharges** of nutrients and other contaminants where such discharges result in, or are likely to result in, the loss of values of a water body in a way that:

- a) achieves the fresh water objectives, and meets the limits and, targets for the fresh water body and coastal water;
- b) works with industry and other stakeholders to ensure appropriate information on good practice land use is available;
- c) controls the adverse effects of increases in land use intensity that involve the discharge of contaminants (including nutrients) to fresh water bodies and coastal water;
- d) introduces controls on contaminant discharges; and
- e) provides for mitigation or offsetting of adverse effects only where effects cannot be avoided or remedied.

8.3.4 Establish allocation baselines

Regional plans shall establish:

- a) minimum and allocable flows in rivers; and
- b) sustainable yields from groundwater resources.

8.3.5 Maintain and enhance lake and wetland water levels

Regional plans shall identify lakes and wetlands requiring water level protection and:

- a) specify the bed and water levels (excluding hydro electricity reservoirs) required to achieve the fresh water objectives, and meet the limits and targets for those lakes and wetlands; and
- b) manage the adverse effect of activities to protect lake and wetland water levels and natural hydrological functioning.

8.3.6 Management of degraded fresh water bodies

Regional plans shall provide for the improvement of degraded fresh water bodies where they have been degraded as a result of human activities to the point of being over allocated.

8.3.7 Management of lakes

Waikato Regional Council will collaborate with territorial authorities, tāngata whenua and other stakeholders to:

- a) identify lakes that are, or could potentially become degraded;
- b) ascertain the likely causes of this degradation; and
- c) investigate and recommend options, including regional or district plan changes, to maintain or enhance the values of the lakes.

8.3.8 Natural functioning and ecological health of fresh water bodies and coastal water

Regional and district plans shall ensure that the natural functioning and ecological health of fresh water bodies and coastal water is maintained and where appropriate enhanced, including by:

- a) controlling water abstraction;
- b) recognising the inter-connectedness of ground and surface waters, and between surface fresh water bodies;

- c) controlling extraction activities, including sand and gravel extraction;
- d) controlling **structures** in or on the banks or beds of fresh water bodies and coastal water;
- e) where practicable avoiding the modification of fresh water bodies including the piping, excavation, infilling, widening or straightening of the fresh water body;
- f) controlling the damming and diverting of water including off line dams and the diversion of flood waters;
- g) addressing adverse effects including effects on **natural character**, habitat quality, **mauri** and migration of indigenous species; and
- h) providing for appropriate development setbacks from fresh water bodies.

8.3.9 Industry self-management

Waikato Regional Council will, with primary industry, investigate the role and ability of industry self-management to achieve any required reduction in non-point source discharges of contaminants.

8.3.10 Effects of subdivision, use and development

Territorial authorities should, in accordance with their statutory responsibilities, manage the effects of subdivision, use and development either by statutory or non-statutory means, including through district plans, development and subdivision guidelines and structure plan by considering the following:

- a) the availability of water, including by encouraging water conservation measures;
- b) avoid, remedy or mitigate the adverse effects of the sealing of known aquifer recharge areas
- c) development and design that minimises the potential for contaminants to enter fresh water bodies and coastal water;
- d) managing flows into stormwater networks including through the adoption of low impact design;
- e) providing for the creation and protection of esplanade reserves and/or strips and riparian habitat, including appropriately vegetated riparian margins where this will have a positive effect on a fresh water body and on its ecological, amenity and recreational values;
- f) the promotion of best practice stormwater management for **urban** areas, including the need for stormwater catchment plans for **greenfield** urban development;
- g) managing contaminant loadings (including sediment) entering stormwater networks;
- h) minimising stormwater entering wastewater networks; and
- i) addressing adverse effects on the migration of indigenous species.

8.3.11 Advocacy and education

Waikato Regional Council will:

- a) encourage adoption of land-based mitigation of stormwater, including the use of wetlands;
- b) promote awareness of the effects of stormwater systems and discharges on water quality, habitat quality and connectivity;
- c) promote low-impact design options;
- d) provide information on the value of fresh water bodies and the **ecosystem services** they provide;
- e) encourage the replacement of onsite wastewater disposal with reticulated wastewater systems where applicable;
- f) encourage retention, enhancement and extension of riparian vegetation and wetlands;
- g) promote awareness of relevant regional and district plan provisions;
- h) promote awareness of soil erosion issues;
- i) encourage adoption of sustainable land management practices;

- j) provide information to territorial authorities to assist in managing land use activities which may adversely affect flow regimes and the availability of water;
- k) promote awareness of the effects of introduction and potential spread of plant and animal pests that affect water resources; and
- l) encourage the regular inspection of communities serviced by onsite wastewater systems, such as in villages and concentrated rural-residential areas, to identify and address any surfacing of effluent from onsite wastewater systems.

Consideration will be given to collaborating with territorial authorities, tāngata whenua, industry and other stakeholders to undertake the above where it is assessed that this may provide a more effective or efficient outcome.

Explanation

There are a range of activities and discharges that can be generally improved across the region and which will result in improving the quality of the region's fresh water bodies. Policy 8.3 applies to all fresh water bodies and coastal water across the region and seeks to maintain or enhance the identified values of all fresh water bodies and coastal water. It sets direction as to the key adverse effects to be managed and the types of activities that are currently known to adversely affect fresh water bodies and coastal water.

Discharges to fresh water bodies and coastal water can generally be divided into two types: point source (such as direct discharges from industry or wastewater treatment plants) and non-point source discharges (such as agricultural or stormwater run-off). Methods 8.3.1, 8.3.2 and 8.3.3 target these discharges.

Method 8.3.1 provides direction to the regional plan and guidance to the resource user on the principles and matters to be considered in controlling point source discharges. Method 8.3.1d) requires the regional plan to provide a policy framework for those instances where it is impossible for effects to be avoided or remediated. In these instances the provision for mitigation and offsetting are an effective means to reduce the impact of unavoidable adverse effects, and to enable a degree of counterbalancing or compensation in order to manage effects of activities in an integrated manner.

Method 8.3.2 seeks to achieve improvements in fresh water body and coastal water values by reducing the adverse effects from land use activities near fresh water bodies and coastal water. This method identifies the discharge of sediment and microbial contamination as of specific concern. Activities known to produce sediment and microbes that have a high risk of entering fresh water bodies include tracking and earthworks, the removal of riparian vegetation and access to the beds and banks of water bodies by vehicles and stock.

Method 8.3.3 sets out the manner in which non-point source discharges, including the adverse effects from intensive **primary production**, will be managed. Primary production industries are those that rely on the productive capacity of the soil resource (with or without inputs such as fertiliser or irrigation), or water to grow their products, for example farming, forestry, aquaculture and horticulture. The method signals that nutrient discharges will be controlled where they are undermining the limits, targets and values of a fresh water body. This recognises that discharges of nutrients may not compromise the limits, targets and values of all fresh water bodies and coastal water but will affect some. In the case of lakes (in particular peat lakes), this type of discharge warrants further investigation and, if then found to be appropriate, control (Method 8.3.7).

Method 8.3.4 directs regional plans to establish and set minimum and allocable flows in rivers and sustainable yields in groundwater resources. Setting bed and water levels in lakes and wetlands is necessary to ensure the maintenance and enhancement of lakes and wetlands (Method 8.3.5). Provision in regional plans will be made to control

activities to protect flows, levels and yields, for example drainage near lakes and wetlands.

Method 8.3.8 seeks to ensure the natural functioning and the ecological health of fresh water bodies throughout the region. This approach focuses on managing those activities that may have adverse effects on the form and natural functioning of a fresh water body.

A major cause of non-point source discharges is agricultural land use. Method 8.3.9 recognises that the industry can play a significant role in reducing non-point source discharges from agriculture and as such Waikato Regional Council will support them in developing methods for industry self-management of these discharges.

Territorial authorities should have regard to the effects of activities on fresh water bodies and coastal water when managing subdivision, use and development. Method 8.3.10 sets out a list of matters to be considered through relevant planning and management documents.

Education and advocacy will play a role in ensuring that all sectors of the community are aware of the effects of their activities on fresh water bodies and coastal water and what steps they can take to reduce their adverse effects. Method 8.3.11 sets out the particular areas where Waikato Regional Council feels it can achieve improvements in fresh water bodies by increasing community awareness.

Policy 8.4 Catchment-based intervention

Identify catchments, including Waikato River and Lake Taupō, that require specific intervention to address the adverse effects of activities and land use changes. In identifying catchments that require intervention, and in undertaking that intervention the following will be considered:

- a) national or legislative direction;
- b) the identified values of the fresh water bodies;
- c) tāngata whenua values;
- d) the degree of improvement in water quality able to be attained by changes to land use practices and discharge practices;
- e) existence and ongoing operation of significant renewable electricity generation activities;
- f) the degree and purpose of intervention or modification that has already occurred along the fresh water body;
- g) the availability of water to meet the existing and reasonably justified and foreseeable future domestic and municipal water supply requirements;
- h) the existence of regionally significant industry;
- i) the potential to address more than one environmental issue through the intervention;
- j) the vulnerability and values of the whole catchment and its receiving environment (including the coastal marine area);
- k) the consequences of inaction and delay; and
- l) the social and economic benefits and costs to the community.

<i>The relevant objectives are:</i>	
3.1	<i>Integrated management</i>
3.2	<i>Resource use and development</i>
3.3	<i>Decision making</i>
3.4	<i>Health and wellbeing of the Waikato River</i>
3.8	<i>Ecosystem services</i>
3.9	<i>Relationship of tāngata whenua with the environment</i>
3.13	<i>Mauri and health of marine waters</i>
3.14	<i>Mauri and values of fresh water bodies</i>
3.15	<i>Allocation and use of fresh water</i>
3.16	<i>Riparian areas and wetlands</i>
3.19	<i>Ecological integrity and indigenous biodiversity</i>
3.21	<i>Amenity</i>
3.22	<i>Natural character</i>
3.23	<i>Public access</i>

Implementation methods

8.4.1 Identify catchments for specific intervention

Waikato Regional Council will identify catchments that require specific intervention to address the adverse effects of activities and land use changes on the health of fresh water bodies. This assessment will be based on the matters in Policy 8.4 when determining a priority order for catchment intervention. The relative priority of catchments and the inclusion of additional catchments requiring intervention will be reviewed at regular intervals using the consultative process.

For the purposes of Policy 8.4, the catchments of the Waikato River and Lake Taupō have been identified as priority catchments that require intervention (refer to section 8C) to address the adverse effects of activities and land use changes on water bodies.

8.4.2 Process for determining catchment management approach

Waikato Regional Council, working with stakeholders, tāngata whenua and other groups and individuals in local communities, taking into account local information, will develop management approaches to achieve desired outcomes in catchments identified as requiring intervention including by:

- a) defining measurable interim and long-term desired targets for the receiving water body;
- b) analysing the change in management required;
- c) assessing which potential policy instruments are technically feasible;
- d) researching changes in land management and land use practices that would be effective in addressing the cause of adverse effects;
- e) working with stakeholders, tāngata whenua and other groups and individuals in local communities taking into account local information, in order to understand implications to them of, and their likely response to, potential policy instruments;
- f) taking into account the result of work undertaken between Waikato Regional Council and industry groups;
- g) working with tāngata whenua, territorial authorities, other agencies to agree changes to roles and responsibilities if appropriate;
- h) identifying, in consultation with stakeholders, the implications for communities (including financial implications) of the scale and rate of change required; and
- i) determining whether further scientific monitoring and investigation is required as issues are identified in catchments.

8.4.3 Nutrient-sensitive fresh water bodies

Where nutrients pose a significant threat to water bodies in priority catchments, Waikato Regional Council will manage adverse effects of land use activities on receiving water bodies (including the coastal water) by:

- a) developing mechanisms for the control of adverse effects of land use including through the regional plans and industry self management; and
- b) working with primary production industry representatives to develop and implement policy instruments.

8.4.4 Work with primary industry

Waikato Regional Council will work with primary industry groups to investigate options to meet the interim and long-term desired outcomes for an identified catchment, including to:

- a) develop methods for property-scale delivery of advice, including advice in relation to the practical (financial and environmental) options for meeting environmental limits; and

- b) promote land management practices that may assist in achieving the desired fresh water body values.

Explanation

The most effective and efficient method of improving the values of fresh water bodies is to take a catchment management approach. Waikato Regional Council will identify catchments that require specific intervention in order to successfully address the particular issues of fresh water bodies. In some instances the catchment identification will occur at the same time as the value setting process and in other instances they will occur separately. Policy 8.4 seeks to give resource users certainty about the approach Waikato Regional Council will use, and the factors it will consider, in determining those catchments that require specific intervention. The relative priority of these catchments will be confirmed following consultation with the community (Method 8.4.1). In the first instance, the catchments of Lake Taupō and the Waikato River have been identified as catchments requiring specific intervention. Lake Taupō limits and methods are set out in a specific chapter in the regional plan.

Method 8.4.3 gives direction on how Waikato Regional Council will approach the management of fresh water bodies that are particularly sensitive to elevated nutrient concentrations.

Method 8.4.4 recognises that working with landowners and industry groups to develop options to meet the desired outcomes in identified catchments will be increasingly important.

Policy 8.5 Waikato River catchment

Recognise Te Ture Whaimana o Te Awa o Waikato – the Vision and Strategy for the Waikato River – as the primary direction-setting document for the Waikato River and develop an integrated, holistic and co-ordinated approach to implementation.

Implementation methods

8.5.1 Regional and district plans

Regional and district plans shall:

- a) recognise the Vision and Strategy for the Waikato River as the primary direction-setting document for the Waikato River and its catchment; and
- b) ensure activities within the Waikato River catchment (refer to Map 8.2) are controlled with respect to any adverse effects on the health and wellbeing of the Waikato River, including activities which:
- i) result in the destabilisation of the beds and banks of waterbodies;
 - ii) result in discharges of contaminants to water bodies;
 - iii) result in adverse effects on significant sites, fisheries, flora and fauna;
 - iv) result in a loss of public access; and
 - v) adversely affect the cultural association of Waikato-Tainui, Ngāti Tūwharetoa, Te Arawa River Iwi, Maniapoto and Raukawa with the Waikato River.

The relevant objectives are:

- 3.1 *Integrated management*
- 3.2 *Resource use and development*
- 3.3 *Decision making*
- 3.4 *Health and wellbeing of the Waikato River*
- 3.8 *Ecosystem services*
- 3.9 *Relationship of tāngata whenua with the environment*
- 3.13 *Mauri and health of marine waters*
- 3.14 *Mauri and values of fresh water bodies*
- 3.15 *Allocation and use of fresh water*
- 3.16 *Riparian areas and wetlands*
- 3.19 *Ecological integrity and indigenous biodiversity*
- 3.21 *Amenity*
- 3.22 *Natural character*
- 3.23 *Public access*

8.5.2 Joint management approach

Waikato Regional Council, in partnership with Waikato-Tainui, Ngāti Tūwharetoa, Te Arawa River Iwi, Maniapoto and Raukawa, will:

- a) provide for Joint Management Agreements and Integrated River Plans to be developed and agreed;
- b) establish monitoring programmes, which shall incorporate mātauranga Māori, to determine and monitor the health status of the Waikato River;
- c) work with the Waikato River Authority to ensure targets are established for improving the health and wellbeing of the Waikato River; and
- d) develop and implement a programme of action to achieve those targets, including recommendations for changes to regional and district plans.

8.5.3 Education and advocacy

Waikato Regional Council will collaborate with the Waikato River Authority to:

- a) promote and foster Te Ture Whaimana o Te Awa o Waikato (Waikato River Vision and Strategy) and the regional community's knowledge and understanding of the health and wellbeing of the Waikato River;
- b) develop and share information on rivers and the effects and management of activities within their catchments;
- c) encourage and foster a 'whole of river' approach to the restoration and protection of the Waikato River;
- d) promote the restoration and enhancement of indigenous riparian vegetation and wetlands within the Waikato River catchment; and
- e) promote the development and adoption of best practice methods including mātauranga Māori within the Waikato River catchment to restore and protect the health and wellbeing of the Waikato River.

Explanation

The Waikato-Tainui Raupatu Claims (Waikato River) Settlement Act 2010 (the Act) gave effect to the 2009 deed of settlement in respect of the **raupatu** claims of Waikato-Tainui over the Waikato River. The Ngāti Tuwharetoa, Raukawa and Te Arawa River Iwi Waikato River Act 2010 (the upper River Act) gives effect to the co-management deeds entered into between the Crown and Ngāti Tūwharetoa, Raukawa and Te Arawa River Iwi. The Crown and each **iwi** have agreed to the establishment and participation of each iwi in a co-governance framework for the Waikato River.

The Act establishes Te Ture Whaimana o Te Awa o Waikato – the Vision and Strategy for the Waikato River – as the primary direction-setting document for the management of the River. Section 11 of the Act deems the Vision and Strategy in its entirety to be part of the Regional Policy Statement without the need for public consultation. The Regional Policy Statement cannot be inconsistent with the Vision and Strategy. Policy 8.5 reflects this and the subsequent methods outline how Waikato Regional Council will respond to the directions of the Act and the Vision and Strategy.

The Act also establishes the Waikato River Authority. One of its roles is to review the Vision and Strategy, including for the purpose of considering whether targets or methods should be developed to achieve the overarching purpose of the Settlement. Where targets are developed under Method 8.5.2, these will be consistent with any targets included in the Vision and Strategy by the Waikato River Authority.

The identification of the Waikato River catchment for specific policy intervention assists in ensuring that the health and wellbeing of the Waikato River is restored and protected.

The Nga Wai o Maniapoto (Waipa River) Act 2012 has as its purpose the restoration and maintenance of the quality and integrity of the waters that flow into and form part of the Waipa River, which is a principal tributary of the Waikato River. This Act contains mechanisms whereby the scope of the Vision and Strategy is extended to apply to the entire Waipa River.

Policy 8.6 Allocating fresh water

Manage the increasing demand and competition for water through the setting of allocation limits, efficient allocation within those limits, and other regional plan mechanisms which achieve identified freshwater objectives and:

- a) maintain and enhance the mauri of fresh water bodies;
- b) retain sufficient water in water bodies to safeguard their life-supporting capacity and avoid any further degradation of water quality;
- c) enable the existing and reasonably justified foreseeable domestic or municipal needs of people and communities and an individual's reasonable animal drinking water requirements to be met (with discretion to consider additional allocations for those particular uses in fully and over-allocated catchments);
- d) avoid any reduction in the generation of electricity from renewable electricity generation activities, including the Waikato Hydro Scheme; and
- e) recognise that lawfully existing water takes (including those for **regionally significant industry** and primary production activities supporting that industry) contribute to social, economic and cultural wellbeing and that significant investment relies on the continuation of those takes.

The relevant objectives are:

- 3.1 *Integrated management*
- 3.2 *Resource use and development*
- 3.3 *Decision making*
- 3.4 *Health and wellbeing of the Waikato River*
- 3.5 *Energy*
- 3.6 *Adapting to climate change*
- 3.8 *Ecosystem services*
- 3.9 *Relationship of tāngata whenua with the environment*
- 3.10 *Sustainable and efficient use of resources*
- 3.13 *Mauri and health of marine waters*
- 3.14 *Mauri and values of fresh water bodies*
- 3.15 *Allocation and use of fresh water*
- 3.16 *Riparian areas and wetlands*
- 3.19 *Ecological integrity and indigenous biodiversity*
- 3.21 *Amenity*
- 3.22 *Natural character*

Implementation methods

8.6.1 Manage allocation of fresh water

Regional plans shall implement Policy 8.6 including by establishing:

- a) **minimum flow** limits and **allocable flow** limits for surface water bodies and how surface water takes will be managed within those limits;
- b) **sustainable yield** limits for groundwater systems and how groundwater takes will be managed within those limits, having regard to any connections between groundwater and surface water and the need to manage connected systems in an integrated manner;
- c) methods to avoid any new over-allocation and phase out over-allocation of surface water and groundwater resources as soon as is practicable, via appropriate voluntary and regulatory methods. These methods may include ceasing new allocations, reviewing consents to achieve efficiency gains, rostering users, encouraging the sharing of water through catchment groups or voluntary agreements between users, promoting alternative sources of water, promoting water harvesting and water augmentation, reassessing the sustainable yield or allocable flow and shared reductions of existing takes (including permitted takes) and shared reductions across the catchment (taking into account relative efficient use of the water taken) of all industrial, commercial and agricultural takes (excluding renewable electricity generation takes and water taken for human drinking purposes or human sanitation purposes) where necessary either by consent review, when consents expire or via appropriate **water management plan** provisions;
- d) methods that:
 - i) allow the exceedance of allocable flow limits by new takes of domestic and municipal water supply, and animal drinking water takes provided those takes are reasonable and justified; and

- ii) ensure that any resulting over-allocation is phased out as soon as is practicable but by no later than 31 December 2030.
- e) methods that provide for the replacement of lawfully existing takes (including those for regionally significant industry and primary production activities that support that industry) provided that they are reasonable and justified;
- f) methods to manage the adverse effects of the take and use of fresh water; including the damming and diversion of water and off-stream water storage;
- g) how restrictions will be applied during water shortages; and
- h) in catchments where authorised water takes exceed the allocation limit an activity status hierarchy for the taking and use of water as follows:
 - i) replacement takes for existing domestic or municipal supply (where a water management plan is provided and the quantum of take is not increased);
 - ii) water harvesting takes, when flows in the river are higher than the median flow and the take is not located within the Waikato River catchment upstream of the Karapiro dam;
 - iii) an individual's reasonable drinking water and animal drinking water needs; replacement of previously authorised takes; and new takes for domestic or municipal supply (where a water management plan is provided); and
 - iv) all other activities.

Explanation

Policy 8.6 recognises that as the competing and increasing demand for fresh water increases there may not be sufficient fresh water to provide for the demand from the full range of instream and abstractive uses.

Whilst the use of fresh water is important to all sectors of the regional community and the national economy, Policy 8.6 recognises that water should not be taken or used to the extent that it compromises the mauri or life supporting capacity of fresh water.

This policy sets the framework to enable the establishment of a favourable status for fresh water takes for domestic and municipal supply and animals, and existing takes.

The policy framework for municipal water supplies is intended to encourage provisions that require new "wet industries" (consumers of large amounts of water) to be accounted for and their requirements justified through municipal applications. However, the policy framework is not intended to afford favourable status to new rural-based irrigation schemes that may otherwise seek to connect to municipal supply schemes to gain the benefits of municipal supply status.

This policy also recognises the importance of maintaining the generation of electricity from renewable electricity generation activities. A cornerstone of the region's water allocation regime is the setting of an allocable flow at Karapiro (which provides for abstractions from the middle and upper Waikato Catchment above Karapiro). The Waikato Hydro Scheme, a long-established existing activity, utilises the water remaining in the Waikato River in a non-consumptive way after all abstractions within the allocable flow have been taken.

Method 8.6.1 sets out some of the matters that regional plans should contain to implement Policy 8.6.

Policy 8.7 Efficient use of fresh water

Ensure that the allocated water resource is used efficiently.

Implementation Methods

8.7.1 Manage the use of fresh water

Regional plans shall ensure allocated surface water flows and sustainable groundwater yields are used efficiently, including by:

- a) ensuring the volume allocated for any take and use of fresh water is reasonable and justifiable with regard to its intended use;
- b) requiring a water management plan to be included as part of any resource consent application for domestic or municipal supply water takes;
- c) promoting shared use of fresh water, including through voluntary water management groups;
- d) promoting the adoption of water conservation and demand management measures;
- e) providing for the temporary or permanent transfer of (in whole or in part) a groundwater or surface water take where this does not adversely affect other abstractions or uses; and
- f) providing for water harvesting and water storage.

The relevant objectives are:

- 3.1 *Integrated management*
- 3.2 *Resource use and development*
- 3.3 *Decision making*
- 3.4 *Health and wellbeing of the Waikato River*
- 3.5 *Energy*
- 3.6 *Adapting to climate change*
- 3.8 *Ecosystem services*
- 3.9 *Relationship of tāngata whenua with the environment*
- 3.10 *Sustainable and efficient use of resources*
- 3.15 *Allocation and use of fresh water*

8.7.2 Water conservation

Waikato Regional Council will promote, and where appropriate require, a range of water conservation practices and demand management measures, including the use of:

- a) water saving devices;
- b) water metering;
- c) water recycling;
- d) water demand management plans;
- e) water efficient technology; and
- f) leak detection and loss monitoring technologies.

Explanation

Water is a finite resource. Consequently, the efficient use of fresh water is an important resource management issue. Regional plans will establish what fresh water is available for use by determining the allocable flow and sustainable yields for fresh water bodies (Method 8.3.4).

Policy 8.7 and associated methods require that fresh water determined to be available for allocation to users is used efficiently. This process will be predominantly undertaken through controls in the Regional Plan as per Method 8.7.1. Method 8.7.2 recognises that the promotion of water conservation and demand management measures and their adoption by municipal supply authorities and water users will be increasingly important as both the demand and competition for water increases. The requirement by Waikato Regional Council for parties to undertake water conservation measures will need to be assessed on a case by case basis, taking into account the full set of circumstances that will lead to efficiency gains, including **local authority** functions under other legislation, and whether other parties are better placed to make decisions on water conservation methods.

8A Modified fresh water bodies

Table 8-1 Fresh water bodies – hydro electric generation

Waikato River, main stem from Tāupo Gates to Karapiro Dam (including hydro reservoirs) with Lake Tāupo utilised as a reservoir to store water for hydro-electricity generation purposes.

Table 8-2 Fresh water bodies – domestic and municipal water supply bodies

Mangatawhiri water supply dam
Mangatangi water supply dam

8B Freshwater bodies and wetlands that have high water quality

Table 8-3: Freshwater bodies with high water quality – ecological health (inferred from water quality measurements)

	Dissolved oxygen (% of saturation)	pH	Turbidity (NTU)	Total ammonia (mgN/m ³)	Temperature (°C)	Total nitrogen (mg/m ³)	Total phosphorous (mg/m ³)
Hikutaia (at Old Maratoto Rd)	95	7.0	1.5	10	13.6	160	12
Hinemaiaia (at SH1)	101	7.4	1.0	5	11.7	130	38
Kauaeranga (at Smiths cableway)	99	7.0	1.1	5 (5)	14.5	100	3
Kuratau (at Lake Taupō)	101	7.4	1.1	5	12.4	550	16
Tauranga – Taupō (at Te Kono slackline)	101	7.3	0.7	5	10.1	90	20
Tongariro (at Turangi)	101	7.5	0.8	2	10.0	75	18
Waihaha (at SH32)	102	7.2	0.5	5	10.3	170	26
Waikato, upper (between Taupō Gates & Waipapa tailrace)	102	7.4	0.8	5	15.9	160	17
Waitahanui (at Blake Rd)	99	7.4	0.6	5	10.7	360	53
Waiwawa (at SH25 Coroglen)	102	7.1	1.4	5	15.1	110	5

Table 8-3 includes ten rivers with the best water quality (centred on the year 2000) for supporting ecological health (median water quality during 1998-2002). The monitoring site listed in the left hand column is the downstream extent of the fresh water body.

Table 8-4: Freshwater bodies – contact recreation purposes

	Horizontal clarity (m)	<i>E. coli</i> (cfu/100mL)
Hinemaiaia (at SH1)	2.6	21
Kuratau (at Lake Taupō)	No data	38
Pueto (at Broadlands Rd)	1.8	30
Tauranga – Taupō (at Te Kono slackline)	3.8	No data
Tongariro (at Turangi)	2.9	No data
Waihaha (at SH32)	5.2	9
Waihou (at Whites Rd)	6.0	41
Waikato, upper (between Taupō Gates and Waipapa tailrace)	3.2	5
Waitahanui (at Blake Rd)	3.7	50
Whanganui (at Lake Taupō)	No data	28

Table 8-4 includes ten rivers with the best water quality (centred on the year 2000) for swimming and other water-based recreation (median water quality during 1998-2002). The monitoring site listed in the left hand column is the downstream extent of the fresh water body.

Table 8-5: Lakes with high water quality, based on condition and vulnerability

Category One Lakes – high condition, low vulnerability			
Lake	Lake SPI Score (%)	Regional Ranking	Other information
Rotopounamu	71%	2 equal	
Upper Tama	Naturally unvegetated	2 equal	Considered to be close to pristine
Lower Tama	Naturally unvegetated	2 equal	Considered to be close to pristine
Blue Lake	Naturally unvegetated	5	Considered to be close to pristine
Koraha	Unknown	8 equal	Known to have submerged plants but not yet surveyed for Lake SPI
Emerald Lakes	Naturally unvegetated	10 equal	
Category Two Lakes – high condition, high vulnerability			
Lake	Lake SPI Score (%)	Regional Ranking	Other information
Taupō	36%	1	
Maratoto	Naturally unvegetated	6 equal	TP 29 mg m ⁻³ , TN 1400 mg m ⁻³ , Chla 32 mg m ⁻³ (waters of Waikato 2010)
Harihari	45%	8 equal	
Taharoa	35%	10 equal	
Rotoaira	23%	12	
Rotopiko (Serpentine)	89% (max 3 lakes)	15	
Otamatearoa	31%	16 equal	
Ngahewa	29%	19 equal	
Parangi	22%	24 equal	

Category One Lakes – high condition, low vulnerability: These lakes have water quality that is close to pristine for their type. They are generally remotely located and have a high percentage of native vegetation cover in the catchment. They are located

on Crown-owned reserve land and are not expected to be subject to changes in catchment land use in the foreseeable future.

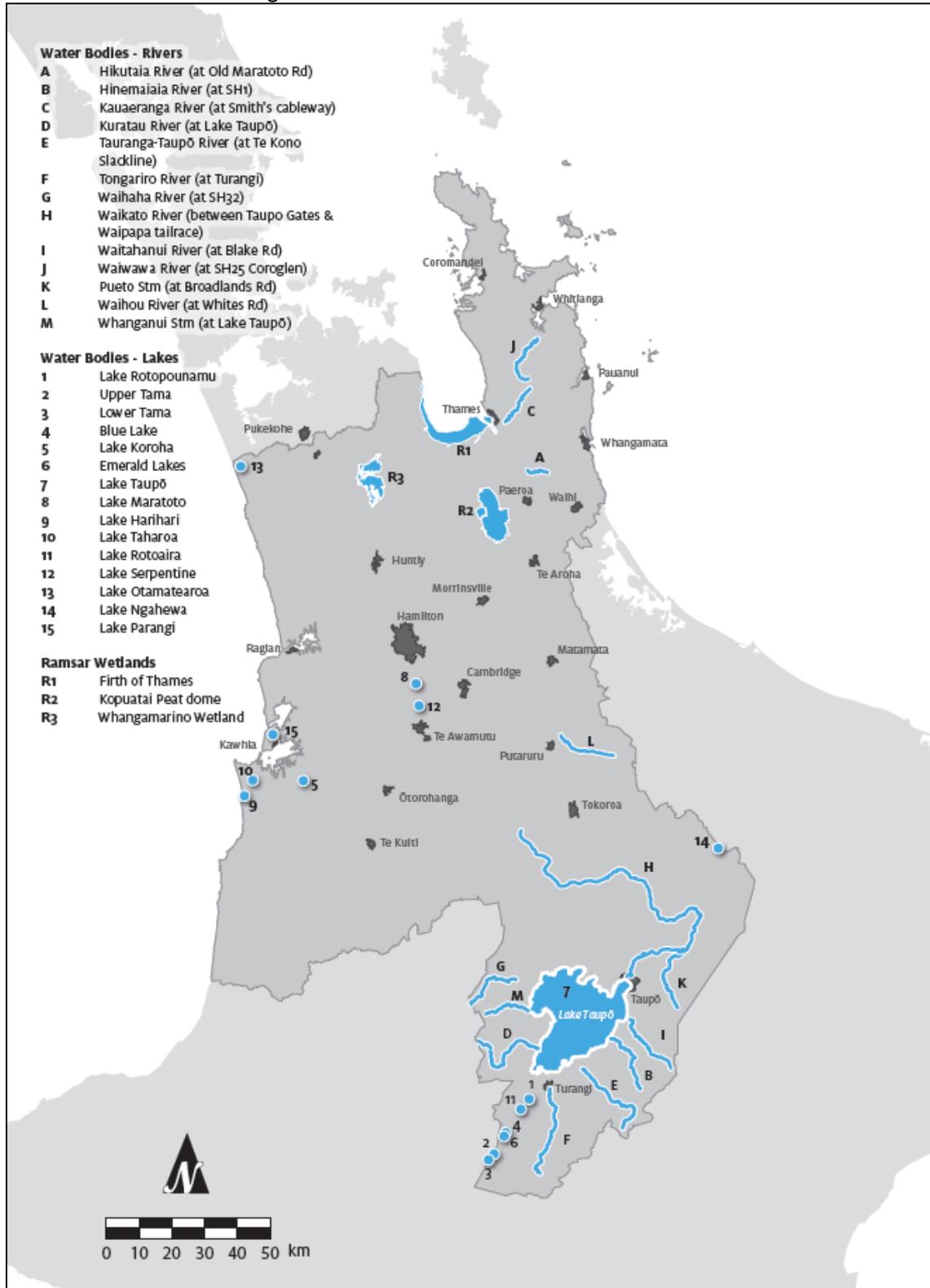
Category Two Lakes – high condition, high vulnerability: These lakes tend to have water quality that has been impacted in some way by either catchment land use and/or introduced plants and/or animals. However, they make up a very small group of lakes that retain a relatively clear water, macrophyte-dominated state. Due to a variety of existing or potential stressors they are considered to be very vulnerable to a change in state from clear water and vegetated to one that is algal-dominated and devoid of submerged macrophytes.

Table 8-6: Wetlands identified as being of international importance

Firth of Thames (Map 8-1 R1)
Kopuatai Peat Dome (Map 8-1 R2)
Whangamarino (Map 8-1 R3)

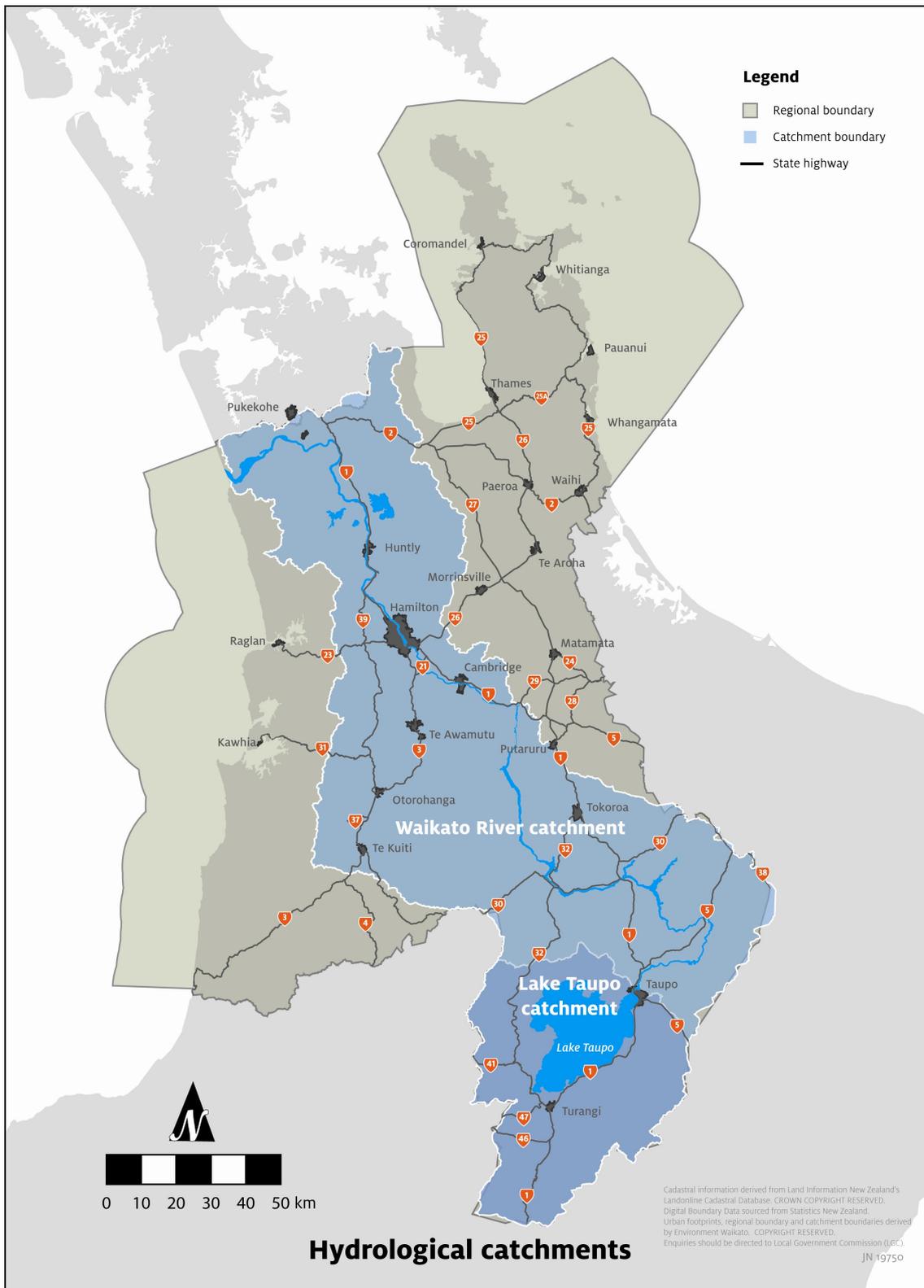
8B Map of fresh water bodies and wetlands

Fresh water bodies and wetlands to be included in the identification of outstanding freshwater bodies and significant values of wetlands as stated in Method 8.2.1



Map 8-1: Fresh water bodies and wetlands to be considered by Method 8.2.1

8C Priority catchments map



Map 8-2: Identified catchments for intervention (Policy 8.4)

9 Geothermal

In relation to **indigenous biodiversity** within Development or Limited Development Geothermal Systems Chapter 11 does not apply to flora and fauna forming part of geothermal features as these are subject to Chapter 9. Chapter 11 does apply to other types of indigenous biodiversity in such systems.

Policy 9.1 Sustainable management of the Regional Geothermal Resource

Sustainably manage the **Regional Geothermal Resource** in a way that provides for multiple uses and the extent and variety of the region's geothermal features including by:

The relevant objectives are:

- 3.1 *Integrated management*
- 3.2 *Resource use and development*
- 3.3 *Decision making*
- 3.5 *Energy*
- 3.10 *Sustainable and efficient use of resources*
- 3.12 *Built environment*
- 3.17 *Geothermal*

- a) classifying geothermal systems for management based upon:
 - i) system size;
 - ii) the vulnerability of **Significant Geothermal Features** to extractive uses; and
 - iii) existing uses;
- b) managing the effects of development and use of land and non-geothermal water on the Regional Geothermal Resource; and
- c) allocating some of the Regional Geothermal Resource for protection and some for take, use and discharge.

Implementation methods

9.1.1 Classification of geothermal systems

Regional plans shall classify geothermal systems as follows:

- a) Development Geothermal Systems are **large geothermal systems** where development of geothermal resources will be enabled because there is no evidence of a flow of subsurface geothermal fluid to or from a system described in b), c) or d) below prior to or under development conditions, and:
 - i) the system contains few geothermal features that are moderately to highly vulnerable;
 - ii) existing geothermal features are significantly impaired by lawfully established large-scale takes; or
 - iii) the system is already subject to large-scale energy use and development;
- b) Limited Development Geothermal Systems are large geothermal systems where there are Significant Geothermal Features that could be adversely affected by large-scale development but where smaller-scale uses are unlikely to adversely affect those features;
- c) Protected Geothermal Systems are large geothermal systems where particular care must be taken to ensure that any use of the geothermal resource is sustainable and has no adverse effect on significant natural **geothermal characteristics** because either:
 - i) the system supports a substantial number of geothermal features that are moderately to highly vulnerable to the extraction of fluid;
 - ii) the system is largely or wholly within a National Park or a World Heritage Area; or
 - iii) there is evidence of a flow of subsurface geothermal fluid to or from a system described in c) i) and c) ii) above;
- d) Research Geothermal Systems are all other large geothermal systems, including:

- i) where there is insufficient information to identify them as Development, Limited Development, Protected Geothermal Systems or Small Geothermal Systems;
 - ii) any large geothermal systems undiscovered at 23 August 2003; or
 - iii) any part of the Regional Geothermal Resource that has not been identified as Development, Limited Development, Protected or Small Geothermal Systems; and
- e) Small Geothermal Systems are those that meet the Glossary definition of **Small Geothermal System**.

9.1.2 Identification of Protected Geothermal Systems

Regional plans shall identify the following systems as Protected Geothermal Systems:

- a) Horomatangi;
- b) Orakeikorako;
- c) Te Kopia;
- d) Tongariro; and
- e) Waikite-Waiotapu-Waimangu.

9.1.3 Mapping of Large Geothermal Systems

Regional plans shall map the boundaries of all known Large Geothermal Systems.

9.1.4 Define large-scale takes

Regional plans shall define thresholds over which a take of **geothermal water** or energy is considered to be large-scale for each type of geothermal system.

9.1.5 Conserving geothermal energy and water

Regional plans shall promote the efficient use of **geothermal energy** and water including by:

- a) preferring the use of energy- and water-efficient technologies; and
- b) promoting the use of down-hole heat-exchangers and group-heating schemes over ad hoc extraction for individual use.

9.1.6 Remediation and mitigation

Regional plans shall ensure that the potential for adverse effects arising from takes, uses or discharges of geothermal energy and water is recognised and addressed, including through:

- a) appropriate resource consent conditions;
- b) the use of bonds;
- c) provision for site remediation;
- d) abandonment of wells; or
- e) removal of building and **structures** including surface pipework.

9.1.7 Use of land and non-geothermal water within geothermal systems

Regional and district plans shall ensure that:

- a) the development and uses of non-geothermal water; and
- b) new development and uses of land

within and adjacent to all geothermal systems are compatible with the purpose for which each **geothermal system** is classified.

9.1.8 Growth management strategies

Waikato Regional Council will promote the preparation of growth management strategies, structure plans or similar mechanisms to identify and address potential effects on geothermal resources.

9.1.9 Environmental education and community groups

Waikato Regional Council will use environmental education programmes to increase public understanding and awareness of the rarity and vulnerability of geothermal features (including ecosystems) and assist in the establishment of community groups in geothermal areas with significant indigenous vegetation and significant habitats of indigenous fauna (as defined in section 11A) to maintain or protect their natural geothermal characteristics or remedy and mitigate existing adverse effects on them.

9.1.10 Assist landowners and occupiers

Waikato Regional Council will encourage and assist landowners and occupiers with geothermal features on their land to protect those features where appropriate and to modify land management practices to accommodate changes in geothermal energy and fluid outflows to ensure the protection of new areas of heated ground and other new surface geothermal features where appropriate.

9.1.11 Research and monitoring

Waikato Regional Council will:

- a) facilitate investigation, research and monitoring of the characteristics of geothermal systems;
- b) ensure that high-quality data, research and monitoring of the Regional Geothermal Resource and of the effects of its use, commensurate with the scale of any activity, are, where appropriate, independently peer reviewed and made publicly available having regard to cultural sensitivity and the protection of commercially sensitive information; and
- c) encourage and provide for the collation and dissemination of data and information about the undisturbed state of characteristics and the effects of development and use of geothermal systems.

9.1.12 Information requirements

Regional plans shall:

- a) require relevant information relating to the use and development of geothermal resources and of the effects of their use and development be lodged with Waikato Regional Council;
- b) require publicly available System Management Plans and regular monitoring and reporting of the effects of exercising consents for large-scale takes in Development Geothermal Systems;
- c) require information commensurate with the scale of the activity for all proposed activities affecting geothermal resources;
- d) require that System Management Plans associated with large scale applications are independently peer reviewed; and
- e) require an assessment of effects for small-scale applications, relative to the threats to features and other users from the consumptive or non-consumptive use.

Explanation

Sustainable management of the Regional Geothermal Resource will only be possible by considering the resource in its entirety and managing each geothermal system in a way that collectively achieves the objective for the management of the resource as a whole. To ensure the resource is allocated, protected and used appropriately, it is recognised that a range of uses including energy extraction, low impact use, research and protection of geothermal features should be provided for. Management directions

for geothermal systems are determined in a way that will ensure that different demands on the resource can be satisfied as appropriate.

The Regional Geothermal Resource can be divided naturally into discrete units or systems. There is a clear distinction between the region's large and small geothermal systems (see map 9.1 in section 9A). The large systems are all found in the Taupō volcanic zone, the triangular-shaped active volcanic zone stretching from an apex at Mt Ruapehu out to White Island and beyond. They cover a large area, and contain large volumes of heated rock and geothermal fluid of temperatures of up to 350°C. The small systems are scattered throughout the region, including in the Taupō volcanic zone, are small in area and volume of water discharged, and generally produce water of less than 100°C. What constitutes a 'large-scale take' within different systems will be different, depending on the characteristics of each system.

The re-classification of any system that is identified in the Waikato Regional Plan or any newly-discovered system can be undertaken through a plan change on the presentation of new information supporting such a change. Protected Geothermal Systems are specifically identified in order to confer an additional level of protection by restricting the ability to request such a change. This recognises that these systems are highly valued by the national and regional communities.

It is important to manage both geothermal and non-geothermal uses of resources in a complementary manner to achieve integrated management of the Regional Geothermal Resource. Development and use of land and water other than the take, use and discharge of geothermal energy and water can adversely affect the characteristics, and the use and development, of the Regional Geothermal Resource. In most situations, non-statutory strategies and studies inform the direction and content of district plans and, as such, are important mechanisms for ensuring land uses are compatible with the purpose for which geothermal systems have been classified.

There are a range of land uses or uses of non-geothermal water that are incompatible with the use, development or protection of the Regional Geothermal Resource. Activities undertaken within or in proximity to geothermal systems should be compatible with the management regime applying to those systems in this Regional Policy Statement and the Waikato Regional Plan.

The more knowledge and information that is available about each geothermal system and the effects of its use, the better the ability to manage and respond to potential and existing beneficial and adverse effects.

Information about the Regional Geothermal Resource is widespread and not all in the public domain. Integrated management of the Regional Geothermal Resource is difficult without access to relevant, up to date, high quality information about the resource and the effects of its use. Information is obtained at considerable cost during exploration of the geothermal resource and is commercially sensitive. Waikato Regional Council will use the means identified above to actively collect information about the Regional Geothermal Resource and make such information publicly available unless considered inappropriate for reasons of cultural or commercial sensitivity.

Refer also to methods under Policy 4.1 in Chapter 4 in relation to offsetting environmental effects.

Policy 9.2 Significant Geothermal Features

Recognise that some **geothermal features** are significant and provide the appropriate level of protection for these features within different geothermal systems.

Implementation methods

<i>The relevant objectives are:</i>	
3.2	<i>Resource use and development</i>
3.3	<i>Decision making</i>
3.17	<i>Geothermal</i>
3.18	<i>Historic and cultural heritage</i>
3.19	<i>Ecological integrity and indigenous biodiversity</i>
3.21	<i>Amenity</i>

9.2.1 Significant Geothermal Features within Protected, Research and Small Geothermal Systems

Regional and district plans shall:

- a) recognise that geothermal features located within Protected, Research and Small Geothermal Systems that meet the description of one or more of the **geothermal feature** types listed in section 9B are deemed to be Significant Geothermal Features;
- b) ensure adverse effects on Significant Geothermal Features within Protected Geothermal Systems from take, use or discharge of geothermal energy and water are avoided;
- c) ensure adverse effects on Significant Geothermal Features within Research Geothermal Systems only occur as a result of research activities and that such effects are remedied if they cannot be practically avoided;
- d) ensure significant adverse effects on Significant Geothermal Features within Small and Research Geothermal Systems from take, use or discharge of geothermal energy and water are avoided; and
- e) ensure adverse effects on Significant Geothermal Features within Protected, Research and Small Geothermal Systems from the development and uses of non-geothermal water and the new development and uses of land are avoided with the exception of the existing effects from the operation of the Waikato River system for hydroelectric generation.

9.2.2 Significant Geothermal Features within Development and Limited Development Geothermal Systems

Regional plans shall list and map those features within Development and Limited Development Geothermal Systems that are Significant Geothermal Features.

9.2.3 Managing effects on Significant Geothermal Features within Development and Limited Development Geothermal Systems

Regional and district plans shall ensure:

- a) significant adverse effects on Significant Geothermal Features in Development Geothermal Systems from take, use or discharge of geothermal energy and water are remedied or mitigated;
- b) significant adverse effects on Significant Geothermal Features in Limited Development Geothermal Systems from take, use or discharge of geothermal energy and water are avoided;
- c) consent holders are required to remedy or mitigate any unintended significant adverse effects on Significant Geothermal Features in Limited Development Geothermal Systems occurring as a result of the exercise of a consent for take, use or discharge of geothermal energy and water;
- d) a comprehensive monitoring programme is associated with resource consents for the large-scale take, use or discharge of geothermal energy and water to detect significant adverse effects on Significant Geothermal Features (taking into account the naturally dynamic nature of such features); and

- e) adverse effects on Significant Geothermal Features in Development and Limited Development Geothermal Systems from development and uses of non-geothermal water and new development, and uses of land are avoided with the exception of existing effects from the operation of the Waikato River system for hydroelectric generation.

9.2.4 Mitigation of adverse effects

Regional and district plans shall ensure appropriate remediation or mitigation of adverse effects on Significant Geothermal Features, including through 'like for like' restoration or enhancement of degraded systems or features, or protection from potential adverse effects, within any geothermal system, including in the Bay of Plenty.

9.2.5 Waikato Regional Council works

Waikato Regional Council will ensure that any works it undertakes, promotes, or funds do not damage or threaten Significant Geothermal Features.

Explanation

Many valued geothermal features are highly vulnerable to geothermal system development or to other uses of land and water. Already most of the region's geothermal features have been lost or degraded. Maintenance of the variety of characteristics of the Regional Geothermal Resource requires the identification of the significant characteristics. For each of these characteristics, consideration needs to be given to the frequency of occurrence, the ability to recover from impacts, and the capacity to adapt to a changing situation.

It is recognised that in some circumstances such as the operation and maintenance of existing **infrastructure**, adverse effects on Significant Geothermal Features may occur. It is not the intention to prevent such operation and maintenance, or re-consenting of infrastructure, by virtue of proximity to Significant Geothermal Features. Rather the policy intent is to minimise adverse effects from such activities where it is possible to do so. New activities should be designed and located so that there is little chance of adverse effects on Significant Geothermal Features in the future.

Recognising that some degradation will occur in Development Geothermal Systems as a result of the take, use or discharge of geothermal energy and water, offsite remediation and mitigation will be provided for. This may address existing degradation and/or protection from potential adverse effects in similar types of geothermal features (as listed in section 9B) in the same or another geothermal system to an extent commensurate with the adverse effect being caused ('like for like' mitigation).

Measures may include but are not limited to:

- obtaining formal protection or public ownership of the land surrounding and including the feature or features;
- removal or control of exotic plants from the feature and its margins, and replacement with appropriate indigenous vegetation;
- control of animal pests;
- exclusion of **stock**;
- removal of rubbish, unconsented structures and excessive debris;
- removal and re-channelling of erosional outwash from roads and paths;
- blocking artificial drainage or channelling of a feature or its outflow;
- reinstatement of the local water table;
- providing interpretive signs describing the nature and value of the feature; and
- in rarer cases, the temporary augmentation or channelling of flow in order to regenerate damaged sinter or to re-establish a natural flow regime.

Actions to achieve geothermal ‘like for like’ remediation or mitigation do not involve creating a new feature, artificially altering the natural area of a geothermal feature or the flow of energy, fluid or **minerals** to it except in the limited case described above. Destruction of a feature or extinction of flow to it cannot be mitigated by creation of a feature elsewhere, but by an appropriately extensive programme of remediation, mitigation, or protection of a similar feature or features elsewhere. Where no feature of the same type as that being adversely affected is reasonably available for remediation, mitigation, or protection, a feature of a similar type may be substituted.

Destruction of features of one type will not necessarily be mitigated by the remediation or mitigation of existing adverse effects and protection from potential adverse effects to characteristics of a feature of a different type. For example, the destruction of geysers is not mitigated by remediation or mitigation of existing adverse effects and protection from potential adverse effects on steaming land. Steam features are relatively common to exploited geothermal systems, whereas geysers and associated hot chloride springs are rarer, and are normally the first features affected. Hence, geysers, chloride springs, and their ecosystems are becoming increasingly rare. Remediation of some surface characteristics affected by heat and fluid extraction may occur to an extent once the extraction stops. Ecosystems may be revitalised over the course of years or decades if fluid flows to them are re-established. However, it is unlikely that complete remediation will occur, even if the ‘natural state’ is known, because of the irreversibility of some effects.

Refer also to methods under Policy 4.1 in Chapter 4 in relation to offsetting environmental effects.

Policy 9.3 Development Geothermal Systems

Development Geothermal Systems shall be managed in a way that enables large-scale use and development of geothermal energy and water and:

- a) promotes efficient use of the geothermal resource;
- b) recognises and allows for controlled depletion of energy so as to provide for the energy needs of current and future generations;
- c) takes an integrated management approach, including through:
 - i) the development of a System Management Plan for each Development Geothermal System;
 - ii) establishing a peer review panel for the purpose of assisting the consent authority to manage the system; and
 - iii) the development and imposition of appropriate resource consent conditions;
- d) requires reinjection/injection of the geothermal water from large-scale takes remaining after use;
- e) provides for small and medium-scale use and development that is not inconsistent with any approved system management plan; and
- f) avoids, remedies, or mitigates adverse effects on other **natural and physical resources** including overlying structures.

<i>The relevant objectives are:</i>	
3.1	<i>Integrated management</i>
3.2	<i>Resource use and development</i>
3.3	<i>Decision making</i>
3.4	<i>Health and wellbeing of the Waikato River</i>
3.5	<i>Energy</i>
3.8	<i>Ecosystem services</i>
3.10	<i>Sustainable and efficient use of resources</i>
3.12	<i>Built environment</i>
3.17	<i>Geothermal</i>

Implementation methods

9.3.1 Large-scale takes and use

For large-scale takes and use of geothermal energy and water from Development Geothermal Systems, regional plans shall:

- a) require preparation of a System Management Plan for each system prior to any use which, with reference to Policies 9.1, 9.2, 9.3 and 9.8, defines the objectives for the management of the system and provides for, as appropriate:
 - i) operational flexibility and adaptive management including provision for subsequent uses;
 - ii) reservoir modelling and subsidence modelling;
 - iii) a mechanism(s) to ensure coordination and promote co-operation between all consent holders for large-scale takes;
 - iv) research, monitoring and reporting;
 - v) non-statutory review of the System Management Plan if in the opinion of the consent holders and the Waikato Regional Council, such amendments are minor; and
 - vi) identification of anticipated significant adverse effects on Significant Geothermal Features and the remediation or mitigation to be undertaken, which may include 'like for like' remediation or mitigation in any geothermal system, including in the Bay of Plenty;
- b) recognise that the geothermal water remaining after use should be reinjected/injected;
- c) manage controlled depletion, including through modelling assessments, to determine appropriately stepped production; and
- d) require preparation of a Discharge Strategy, which shall form part of the System Management Plan, which shall consider the following matters as relevant:
 - i) disposal of waste water;
 - ii) return of geothermal water to that system;
 - iii) facilitation of further extraction of energy from the system;
 - iv) any likely benefits to or adverse effects on the system or its productive capacity;
 - v) the need for adaptive management and flexibility over time;
 - vi) the benefits, costs and adverse effects of the Discharge Strategy;
 - vii) remedying or mitigating significant adverse effects on Significant Geothermal Features;
 - viii) avoiding, remedying or mitigating contamination of surface and ground waters;
 - ix) the need to avoid or mitigate potential differential subsidence, particularly in the built environment;
 - x) the need to remedy or mitigate the adverse effects of subsidence, particularly in the built environment; and
 - xi) the risks associated with hydrothermal eruption, particularly in the built environment, and the need for any specific measures for safeguards to reduce or otherwise mitigate those risks.

9.3.2 Small- and medium-scale takes and use

Regional plans shall ensure small- and medium-scale takes and use of geothermal energy and water from Development Geothermal Systems are not inconsistent with any approved system management plan.

9.3.3 Peer review panel

Waikato Regional Council will establish a peer review panel of independent experts and **tāngata whenua** for each Development Geothermal System which will:

- a) assess the commencement, ongoing exercise and effects of resource consents against achieving the objectives of the system management plan, and the continued use and application of the system management plan;
- b) make recommendations for updating and reviewing the system management plan and changes to resource consents that are operative within that system; and

- c) report to Waikato Regional Council on a) and b), with findings being publicly available.

Explanation

The intention is to enable large-scale efficient and sustainable take, use and discharge of geothermal energy and water in Development Geothermal Systems, recognising that this will result in the depletion of the energy in the system (i.e. mining of the heat). The appropriate degree of efficiency and the rate of depletion will be determined through resource consent processes.

Each Development Geothermal System needs to be managed in an integrated manner including in the circumstances where there is more than one consent holder for the large-scale take, use and discharge of geothermal energy and water. This is to be achieved by the use of the management techniques set out in Policy 9.3 c). There will also be uses, other than large-scale takes, such as smaller takes and non-extractive uses, which are provided for as long as they are not inconsistent with any approved System Management Plan.

A range of benefits, costs and adverse effects need to be considered when determining the manner in which geothermal water is reinjected/injected as part of any large-scale use and development. Due to the uniqueness of every geothermal system, it is necessary to allow flexibility to determine the optimal discharge strategy for any particular Development Geothermal System having regard to all relevant matters.

The policy recognises that it is not possible to avoid all adverse effects on Significant Geothermal Features when large-scale takes, uses and discharges of geothermal energy and water are allowed in Development Geothermal Systems. Accordingly, it is appropriate that where extractive uses cause significant adverse effects on Significant Geothermal Features these effects should be addressed by remediation or mitigation within the Regional Geothermal Resource. This may include remediation or mitigation of existing adverse effects and/or protection from potential adverse effects in similar types of surface features (as listed in section 9B) in the same or other geothermal system to an extent commensurate with the adverse effect being caused ('like for like' mitigation).

Past takes, use, and discharge of geothermal energy in the Wairakei-Tauhara and Ohaaki geothermal systems have caused adverse effects on overlying structures and other natural and physical resources, including land subsidence, hydrothermal eruptions, and increases in concentrations of geothermal contaminants in the Waikato River. The potential for adverse effects on non-geothermal natural and physical resources to result from large-scale take, use, and discharge of geothermal energy and water is therefore recognised, and any such effects are required to be avoided, remedied or mitigated so that the cost of those adverse effects falls on those who cause them.

Policy 9.4 Limited Development Geothermal Systems

Limited Development Geothermal Systems shall be managed in a way that:

- a) allows sustainable and efficient use and development of geothermal resources;
- b) avoids, remedies or mitigates significant adverse effects from take, use or discharge of geothermal energy and water on non-geothermal natural and physical resources, including overlying structures; and

<i>The relevant objectives are:</i>	
3.2	<i>Resource use and development</i>
3.3	<i>Decision making</i>
3.4	<i>Health and wellbeing of the Waikato River</i>
3.5	<i>Energy</i>
3.8	<i>Ecosystem services</i>
3.10	<i>Sustainable and efficient use of resources</i>
3.12	<i>Built environment</i>
3.17	<i>Geothermal</i>

- c) requires consent holders to remedy or mitigate any unintended significant effects occurring as a result of the exercise of a consent.

Implementation methods

9.4.1 Takes, discharges and other activities in Limited Development Geothermal Systems

Within Limited Development Geothermal Systems regional and district plans shall:

- a) ensure that existing takes of geothermal energy and water and associated discharges are provided for, providing there are no significant cumulative adverse effects;
- b) provide for takes and discharges of geothermal energy and water undertaken for scientific investigation or remediation or mitigation of existing adverse effects;
- c) ensure that any unintended significant adverse effects on Significant Geothermal Features occurring as a result of the exercise of a consent are remedied or mitigated;
- d) provide for and encourage the reinjection/injection of taken geothermal water in order to minimise adverse effects on fresh water bodies and targeted to limit adverse effects such as subsidence and land instability; and
- e) seek remediation of past adverse effects in Limited Development Geothermal Systems as mitigation for adverse effects in Development Geothermal Systems.

Explanation

Efficient and effective management of Limited Development Geothermal Systems is provided for by allowing managed takes and encouraging efficiency of use.

Take, use and discharge of geothermal energy and water are to be carefully managed to avoid significant adverse effects on Significant Geothermal Features. If any unintended significant adverse effects subsequently emerge, the consent holder is required to remedy or mitigate those effects.

There is potential for significant adverse environmental effects on other natural and physical resources including overlying structures to result from take, use, and discharge of geothermal energy and water. While there is currently little in the way of overlying development in the Limited Geothermal Development Systems, and hence the risks are low, there is a need to ensure that significant adverse effects are avoided, remedied or mitigated, and that the cost of those adverse effects falls on those who cause them.

Policy 9.5 Protected Geothermal Systems

Protected Geothermal Systems shall be managed in a way that:

- a) protects Significant Geothermal Features from adverse effects, including by maintaining the natural stocks and flows of geothermal energy and water including the flow of deep geothermal water to the surface; and
- b) encourages the protection of other geothermal features where they are valued for amenity, cultural or scientific reasons.

<i>The relevant objectives are:</i>	
3.3	<i>Decision making</i>
3.4	<i>Health and wellbeing of the Waikato River</i>
3.5	<i>Energy</i>
3.8	<i>Ecosystem services</i>
3.10	<i>Sustainable and efficient use of resources</i>
3.17	<i>Geothermal</i>

Implementation methods

9.5.1 Takes, discharges and other activities in Protected Geothermal Systems

Regional and district plans shall, within Protected Geothermal Systems:

- a) allow the continuation of legally established, existing takes of geothermal energy or water and associated discharges, providing there are no significant adverse effects;
- b) prevent new takes of geothermal water and associated discharges;
- c) provide for limited new takes of geothermal energy;
- d) provide for takes and discharges undertaken for scientific investigation or the remediation or mitigation of existing adverse effects;
- e) regulate activities (other than takes and discharges of geothermal energy and water) in a manner that avoids any adverse effects on the sustainability of each geothermal system as a whole; and
- f) recognise the value of all geothermal features and where appropriate provide for their protection or remediation.

Explanation

Some large geothermal systems are identified as Protected Geothermal Systems. Within a protection framework they allow for scientific research, and for existing lawful uses that have not demonstrated any actual, potential, or cumulative adverse effects on Significant Geothermal Features. This status moves current and future users towards productively-efficient technology such as down-hole heat exchangers.

Adverse effects on Significant Geothermal Features in Protected Geothermal Systems are to be avoided. This includes adverse effects arising from take, use and discharge of geothermal energy and water. In addition, the protection of all geothermal features that are valued for amenity, cultural or scientific reasons is encouraged.

Policy 9.6 Research Geothermal Systems

Protect the geothermal characteristics of Research Geothermal Systems from long-term adverse effects by maintaining the natural stocks and flows of geothermal energy and water including the flow of deep geothermal water to the surface.

<i>The relevant objectives are:</i>	
3.2	<i>Resource use and development</i>
3.3	<i>Decision making</i>
3.4	<i>Health and wellbeing of the Waikato River</i>
3.5	<i>Energy</i>
3.8	<i>Ecosystem services</i>
3.10	<i>Sustainable and efficient use of resources</i>
3.17	<i>Geothermal</i>

Implementation methods

9.6.1 Takes and discharges in Research Geothermal Systems

Regional plans shall, in Research Geothermal Systems:

- a) allow the continuation of legally established, existing takes of geothermal energy or water and associated discharges, providing there are no significant adverse effects;
- b) prevent new large-scale takes of geothermal water and associated discharges except as provided for in clause e) below;
- c) provide for limited new small- and medium-scale takes of geothermal energy and water where it can be demonstrated that they will not adversely affect the stocks and flow of geothermal energy and water;
- d) provide for takes and discharges undertaken for the remediation or mitigation of existing adverse effects; and
- e) provide for takes and discharges undertaken for scientific investigation, including for:
 - i) determining whether or not the system is connected to another;
 - ii) delineating the resistivity, hydrological and other boundaries of the system;
 - iii) determining other characteristics of the system such as heat and mass outflow, and gas and water chemistry; or
 - iv) identifying, mapping, or describing geothermal features and their characteristics within the system.

Explanation

Large systems about which not enough is known to define them as Development, Limited Development, or Protected Geothermal Systems are defined as Research Geothermal Systems. In these systems small uses and research are provided for. Any undiscovered large systems or parts of the Regional Geothermal Resource outside the mapped large system boundaries in the Waikato Regional Plan that do not meet the definition of a **Small Geothermal System** or that have not been shown to the satisfaction of the Waikato Regional Council to be strongly hydrologically connected to known Development Geothermal Systems will also fall automatically into this category. Classification as a Research Geothermal System is intended to be temporary, pending reclassification as a Development, Limited Development or Protected Geothermal System. Until enough is known to reclassify these systems, it is appropriate to adopt a precautionary approach and protect the geothermal characteristics.

Investigations that would be likely to have significant adverse effects on the characteristics of the system, Significant Geothermal Features and flowing geothermal features, and other natural and physical resources are not provided for. It is expected that any takes of geothermal fluid for research purposes (including well drilling and testing) will be of limited duration, for example, days or weeks rather than years. In this context, acceptable research includes but is not limited to matters listed in Matter 9.6.1 e).

Research requirements and existing uses in Research Geothermal Systems are recognised, and a move is signalled for current and future users towards productively-efficient technology such as down-hole heat exchangers. Some limited new extractive uses will be considered on a case-by-case basis. These measures avoid significant adverse effects on geothermal systems with particularly highly valued natural characteristics. The policy also ensures that in Research Geothermal Systems the natural geothermal characteristics are protected from adverse effects. It allows for scientific research, and for existing lawful uses that have not demonstrated any actual, potential, or cumulative adverse effects on Significant Geothermal Features, but discourages uses that involve extraction or discharge of water.

Policy 9.7 Small Geothermal Systems

Small Geothermal Systems shall be managed in a way that allows sustainable and efficient use and development.

Implementation methods

9.7.1 Takes, discharges and other uses in Small Geothermal Systems

Regional and district plans shall, within Small Geothermal Systems:

- a) provide for the continuation of existing small-scale takes of geothermal energy or fluid and associated discharges, providing there are no cumulative adverse effects;
- b) control the establishment of new takes of geothermal energy or fluid and associated discharges;
- c) provide for takes and discharges undertaken for scientific investigation or remediation or mitigation of existing adverse effects; and
- d) control other activities in a manner that enables assessment of whether significant adverse effects are avoided.

<i>The relevant objectives are:</i>	
3.2	<i>Resource use and development</i>
3.3	<i>Decision making</i>
3.4	<i>Health and wellbeing of the Waikato River</i>
3.5	<i>Energy</i>
3.8	<i>Ecosystem services</i>
3.10	<i>Sustainable and efficient use of resources</i>
3.17	<i>Geothermal</i>

Explanation

The efficient and effective management of Small Geothermal Systems is provided for by allowing small takes and encouraging efficiency of use. Extractive uses that could

produce adverse effects on Significant Geothermal Features are regulated. The natural geothermal characteristics are to be protected from significant adverse effects arising from the take, use, and discharge of geothermal energy and fluid, while enabling productively efficient uses, appropriate to the size of the resource, that do not damage Significant Geothermal Features.

Policy 9.8 Geothermal characteristics valued by tāngata whenua

Recognise and provide for the **ahi kā (mana whenua)** relationship of tāngata whenua and their role as **kaitiaki** with the characteristics of particular **geothermal systems**, fields and **geothermal features**. Ensure that tāngata whenua identify specific resource management matters of traditional and contemporary cultural significance.

The relevant objectives are:

- 3.2 *Resource use and development*
- 3.3 *Decision making*
- 3.9 *Relationship of tāngata whenua with the environment*
- 3.17 *Geothermal*
- 3.18 *Historic and cultural heritage*

Implementation methods

9.8.1 Characteristics of the Regional Geothermal Resource significant to tāngata whenua

Waikato Regional Council will, in consultation with tāngata whenua:

- a) identify the characteristics of the Regional Geothermal Resource significant to tāngata whenua;
- b) identify threats to these characteristics; and
- c) provide strategies for avoiding, remedying, or mitigating these threats.

9.8.2 Hapū and iwi geothermal management plans

Local authorities should support, and where appropriate facilitate, the development of **hapū** and **iwi** geothermal management plans.

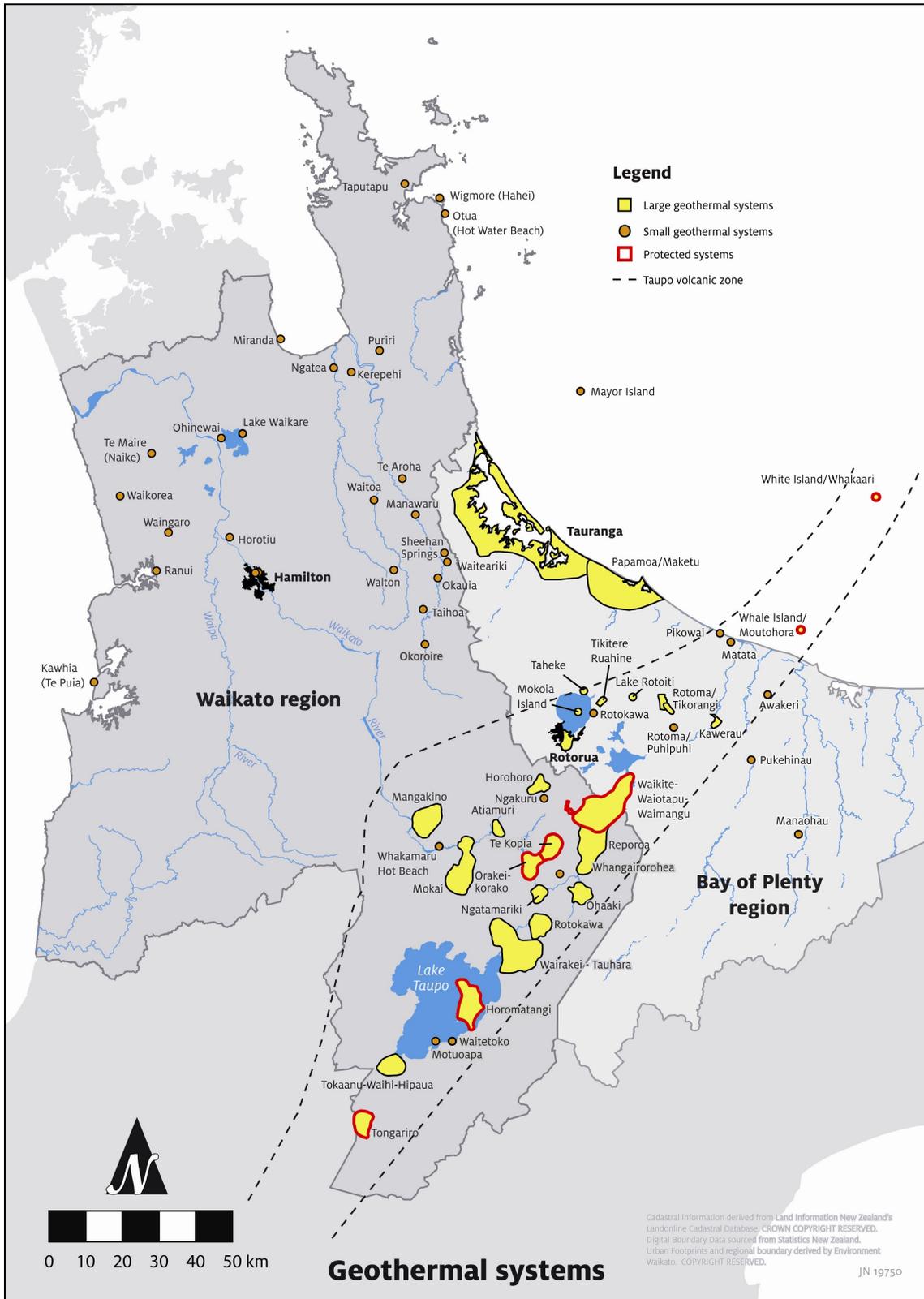
9.8.3 Statutory documents

Regional and district plans shall ensure that the **geothermal characteristics** valued by tāngata whenua are recognised and provided for.

Explanation

Māori have a special relationship with geothermal resources and consider them as **taonga**. This places an obligation on tāngata whenua as kaitiaki to ensure that geothermal resources are maintained and handed on to future generations in a healthy condition. Tāngata whenua with particular interest in geothermal resources include people from Waikato-Tainui, Ngāti Tūwharetoa, Raukawa, Te Arawa, and Hauraki.

9A Geothermal systems



Map 9-1: Geothermal systems

9B Significant Geothermal Feature types

Table 9-1: Significant Geothermal Feature types

Feature type	Definition
Geyser	Any naturally-occurring geothermal spring that occasionally or frequently erupts producing an intermittent or continuous discharge by the evolution of a phase dominated by steam or other gases, vigorous enough to eject forcefully liquid water by surging, boiling, throwing, splashing, or jetting it into the air above a static water level or vent opening. This includes hot water geysers, perpetual spouters, soda geysers, and crypto-geysers. The area of a geyser comprises that of the spring basin and the area covered (perhaps intermittently) by surface water composed of the undiluted discharge from the geyser, and by any sinter deposits created by that discharge.
Spring vigorously depositing sinter	Any naturally-occurring geothermal spring that vigorously deposits sinter on surfaces covered by its outflow, or any submerged geothermal spring that would be likely to vigorously deposit sinter if it were no longer submerged. The area of a spring vigorously depositing sinter comprises that of the spring basin, together with the area covered by any surface water composed of the undiluted outflow from the pool and any sinter deposits created by that outflow.
Recent sinter	Any sinter body that has received natural sinter deposition since 1900. This includes carbonate sinters (travertine). The area of a recent sinter body consists of that of all inter-connected sinter in a single occurrence and the land formations underlying it, and any naturally occurring geothermal spring that flows over the sinter body.
Geothermal habitat on heated ground or cooled acid ground	Any area of terrestrial habitat of thermotolerant indigenous species on current or formerly geothermally heated ground.
Habitat dependent on geothermally-altered atmosphere	Any area of terrestrial habitat of indigenous thermotolerant species that is tolerant of, or dependent on geothermal alteration of, atmospheric conditions.
Mud geyser	Any naturally-occurring geothermally heated mud pool that occasionally or frequently erupts. The eruption produces an intermittent or continuous discharge caused by the evolution of a phase dominated by steam or other gases. This must be vigorous enough to forcefully raise liquid mud by surging, boiling, throwing, splashing, or jetting it into the air above a static water level. This includes mud volcanoes exhibiting this behaviour. The area covered by a mud geyser includes the mud pool, its banks, and any mud formations built up by the ejection of mud from the pool.
Molten sulphur-producing spring	A hot spring whose water supply passes through elemental sulphur bearing rock at a temperature sufficiently high to melt the sulphur (119°C) and bring it to the surface.

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Feature type	Definition
Superheated fumarole	Any naturally-occurring vent, including those found underwater, whose main discharge consists of steam and other gases of geothermal origin with a temperature greater than the local boiling temperature of water. The area of a fumarole consists of the vent, any surface accumulating mineral deposits derived from its gases, and any ecosystems dependent on the heat and fluid flowing from the vent.
Mud pool	Any naturally-occurring basin of turbid water or mud heated (or recently heated) by geothermal processes. The area of a mud pool comprises that of the pool itself, its banks, and any mud formations built up by the ejection of mud from the pool.
Geothermally-influenced aquatic habitat	Any area of naturally-occurring seasonal or permanent aquatic habitat of thermotolerant, thermophilic, or extremophilic indigenous species in a water body or part thereof influenced by natural geothermal input, or in a geothermally-influenced water body.
Geothermally-influenced water body	<p>Any naturally-occurring wetland, lake, pool, or stream, or portion thereof (including the bed and banks), whose chemical or temperature profile is significantly influenced by natural geothermal input and which is either:</p> <ul style="list-style-type: none"> • a standing water body of greater than 30 m² surface area, or • a flowing water body longer than 100 metres and with a flow greater than 0.1 m³/sec <p>in which natural geothermal input has caused the water to have:</p> <ul style="list-style-type: none"> • a temperature of greater than 30°C, or • a chloride concentration of greater than 120 g/m³, or • a sulphate concentration of greater than 60 g/m³, or • geothermal mineral deposition, <p>measured at least 7 days after a significant rainfall event.</p> <p>In large or poorly mixed water bodies, only those portions which meet the above conditions are included in this definition.</p>
Hydrothermal eruption crater	Any naturally-occurring crater produced by the explosive boiling of geothermal water without the direct involvement of near-surface magma, and by the consequent ejection of material derived from the rock matrix. The area of a hydrothermal eruption crater comprises that of the crater, its sides, and the ejecta deposited around the crater.
Culturally significant feature	Any geothermal surface feature, whether artificial, natural, or modified that is deemed significant following consideration of the criteria for determining significance of cultural heritage resources in section 10A of the Regional Policy Statement.

Table 9-1 lists Significant Geothermal Feature types. There are other Geothermal Features in the region that have not been included as significant. These include but are not limited to:

- fumaroles producing steam of less than 100°C;
- heated or steaming ground;
- geothermally altered ground;
- collapse pits;
- geothermal springs or seeps; and
- ancient sinter.

10 Heritage

Policy 10.1 Managing historic and cultural heritage

Provide for the collaborative, consistent and integrated management of **historic and cultural heritage** resources. Improve understanding, information sharing and cooperative planning to manage or protect heritage resources across the region.

Implementation methods

10.1.1 Regional heritage forum

Waikato Regional Council will facilitate the establishment of a Regional Heritage Forum with representatives of territorial authorities, **tāngata whenua**, Heritage New Zealand and other stakeholders (including landowner representatives) to develop and assess options for a framework for the management of historic and cultural heritage through a centralised heritage inventory.

10.1.2 Regional heritage inventory

The Regional Heritage Forum will facilitate the development of, and access to, an inventory of areas and places of historic and cultural heritage (Regional Heritage Inventory). This inventory will:

- a) collate and update existing inventories;
- b) include agency registrations and other items, objects, sites and places of cultural or historic interest;
- c) include the spatial identification of sites and link to detailed information about those sites;
- d) be used to monitor the condition and extent of heritage resources over time; and
- e) have regard to the conservation principles contained within the International Council on Monuments and Sites (ICOMOS), New Zealand Charter for the Conservation of Places of Cultural Heritage Value when preparing regional and district plans.

10.1.3 Identification and assessment

The Regional Heritage Inventory shall identify known sites, **structures**, areas, landscapes or places of historic or cultural heritage that require protection from inappropriate subdivision, use and development for inclusion in relevant regional or district plans. In doing so regard shall be had to the Heritage New Zealand register of historic places, historic areas and waahi tapu areas. The criteria provided in section 10A shall form the basis of any new assessment of historic and cultural heritage.

Explanation

Under the Resource Management Act, the protection of historic and cultural heritage from inappropriate use, subdivision and development is a matter of national importance. Historic and cultural heritage resources include those of importance for both cultural and historic reasons and could include sites, buildings, areas or landscapes.

As a region we are hampered in our management of heritage resources by a lack of common understanding on what heritage resources exist and what state they are in. There is also variation in how heritage resources are identified and managed. Good knowledge across the region is an important first step in effective integrated management of historic and cultural heritage. Method 10.1.3 targets improving

The relevant objectives are:

- 3.2 *Resource use and development*
- 3.3 *Decision making*
- 3.4 *Health and wellbeing of the Waikato River*
- 3.7 *Coastal environment*
- 3.9 *Relationship of tāngata whenua with the environment*
- 3.18 *Historic and cultural heritage*
- 3.21 *Amenity*

knowledge of the region's heritage through the identification of heritage resources in a consistent manner for future assessments.

The methods encourage the sharing of information, facilitate relationship building and ensure a co-ordinated multi-agency approach in dealing with specific common issues.

Policy 10.2 Relationship of Māori to taonga

Recognise and provide for the relationship of tāngata whenua and their culture and traditions with their ancestral lands, water, sites, **wāhi tapu** and other **taonga**.

The relevant objectives are:

- 3.2 *Resource use and development*
- 3.3 *Decision making*
- 3.4 *Health and wellbeing of the Waikato River*
- 3.9 *Relationship of tāngata whenua with the environment*
- 3.18 *Historic and cultural heritage*

Implementation methods

10.2.1 Sensitive information

Waikato Regional Council will facilitate a process to assist tāngata whenua in developing and implementing systems to protect sensitive information whilst enabling landowners and local authorities to access information as appropriate.

10.2.2 Identification of taonga

Waikato Regional Council will encourage tāngata whenua to identify (using the criteria provided in section 10A) those areas, places, landscapes and resources of significance, including those with significant spiritual or cultural historic heritage values, and:

- a) appropriate protocols for the use of or access to them;
- b) opportunities to recognise or reflect the kōrero (stories), names, events, whakataukāki (proverbs) and beliefs associated with them;
- c) opportunities to restore and enhance the relationship tāngata whenua have with them;
- d) any priorities for restoration and enhancement; and
- e) areas that should be monitored and the indicators to be used (**mātauranga Māori**) to measure the state of:
 - i) places, areas, sites or landscapes with significant spiritual or cultural historic heritage value;
 - ii) water bodies managed for cultural purposes;
 - iii) **pātaka kai**; and
 - iv) access requirements.

10.2.3 Maintaining or enhancing tāngata whenua relationships with their rohe

Local authorities should work with tāngata whenua to identify opportunities to maintain or enhance their relationship with their rohe through recognition, protection, maintenance or enhancement of Māori cultural landscapes and should provide for these within regional and district plans. This may include:

- a) the use of traditional place names;
- b) protection, enhancement and restoration of **mauri**;
- c) the use of appropriate plant species;
- d) appropriate access (use and enjoyment) for tāngata whenua; and
- e) incorporation of traditional or sympathetic design elements.

10.2.4 Information and advocacy

Waikato Regional Council will:

- a) undertake and support programmes and the provision of information that promotes awareness of Māori culture and heritage; and
- b) ensure that sites and resources of significance to Māori are added to the Regional Heritage Inventory where it is appropriate for this information to be made publicly available.

Explanation

Recognising and providing for the relationship of Māori and their culture and traditions with their ancestral lands, water, sites, wāhi tapu and other taonga, is a matter of national importance under the Resource Management Act.

It is expected that recognition will be given to the particular significance and meaning that taonga (including areas, places, landscapes and resources) can have to tāngata whenua through their historical and ongoing associations with an area.

The relationship of tāngata whenua with their rohe should be maintained or enhanced through the protection, maintenance or enhancement of Māori cultural landscapes. Māori cultural landscapes are less about the physical appearance of the land and more about the associations of tāngata whenua with the land, particularly within their rohe.

To Māori the physical landscape is inseparable from **tūpuna**, events, occupations and cultural practices. These dimensions are critical to cultural identity and sense of place. There are a number of practical measures by which tāngata whenua's relationship with an area can be recognised and, thereby, maintained or restored. This may range from using appropriate Māori names for roads or places; or using appropriate species when landscaping to restore (at least the appearance of) an area used traditionally for food or materials gathering; or, protecting the values of landscapes that span large areas like foothills, or traditional migration routes.

Policy 10.3 Effects of development on historic and cultural heritage

The relevant objectives are:

- 3.2 *Resource use and development*
- 3.3 *Decision making*
- 3.18 *Historic and cultural heritage*

Manage subdivision, use and development to give recognition to historic and cultural heritage and to integrate it with development where appropriate.

Implementation methods

10.3.1 Protect historic and cultural heritage from inappropriate subdivision use and development

Regional and district plans shall provide for the protection of historic and cultural heritage from inappropriate subdivision, use and development. Mechanisms may include:

- a) heritage alert layers;
- b) **accidental discovery protocols**;
- c) **cultural value assessments** and/or **cultural impact assessments**;
- d) conservation and open space covenants;
- e) **heritage orders**;
- f) financial and other incentives; and
- g) bonds and conditions of consent.

10.3.2 Inappropriate subdivision, use and development

In determining whether an activity is inappropriate, regional and district plans shall require that regard is given to:

HERITAGE

- a) the character and degree of modification, damage, loss or destruction of heritage qualities;
- b) the duration and frequency of effect;
- c) the magnitude or scale of any effect on heritage qualities;
- d) the opportunities available to remedy or mitigate pre-existing or potential adverse effects on heritage qualities;
- e) the probability of damage to immediate or adjacent heritage qualities;
- f) the degree to which unique or special materials and/or craftsmanship are retained;
- g) whether the activity will lead to cumulative adverse effects on historic and cultural heritage;
- h) whether the relationships between distinct elements of a historic place, site or area will be maintained;
- i) whether the relationships between sites or areas of historic and cultural heritage to other sites or areas of historic and cultural heritage will be maintained;
- j) the irreversibility of adverse effects on heritage values including:
 - i) the loss of unique or rare features;
 - ii) opportunities for remediation;
 - iii) the costs and technical feasibility of remediation or mitigation;
 - iv) the relocation of heritage away from its original site or context;
 - v) the loss of value or integrity of historic places, sites or areas through lack of appropriate maintenance and management; and
 - vi) a significant reduction in the value of the historical, cultural and spiritual associations with historic and cultural heritage resources which are held by tāngata whenua and the wider community; and
- k) the resilience of heritage qualities or places to change including:
 - i) the ability of the feature to assimilate change; and
 - ii) the vulnerability of the feature to external effects;
- l) effects on the surroundings associated with significant heritage places and areas; and
- m) the requirement to retain the operational function of nationally and regionally significant transport **infrastructure**.

Explanation

Appropriate subdivision, use and development respects historic and cultural heritage values and can add value to and protect the heritage resources. Planning for the development and use of a historic resource therefore must be done with full understanding of its value. In addition, destruction of or damage to heritage resources needs to be avoided.

Policy 10.3 is not intended to prevent change to historic and cultural heritage but rather to ensure that change is carefully considered.

Collectively, this policy and its methods provide direction on the importance and nature of appropriate use of historic and cultural heritage and specify the framework for addressing the requirement to protect historic and cultural heritage from inappropriate subdivision, use and development.

10A Historic and cultural heritage assessment criteria

Table 10-1: Historic and cultural heritage assessment criteria

When assessing historic and cultural heritage, regard shall be given to the Heritage New Zealand register of historic places, historic areas and wāhi tapu areas and the following:

Archaeological qualities	
Information	The potential of the place or area to define or expand knowledge of earlier human occupation, activities or events through investigation using archaeological methods.
Research	The potential of the place or area to provide evidence to address archaeological research questions.
Recognition or Protection	The place or area is registered by Heritage New Zealand for its archaeological values, or is recorded by the New Zealand Archaeological Association Site Recording Scheme, or is an 'archaeological site' as defined by the Heritage New Zealand Pouhere Taonga Act 2014.
Architectural Qualities	
Style or type	The style of the building or structure is representative of a significant development period in the region or the nation. The building or structure is associated with a significant activity (for example institutional, industrial, commercial or transportation).
Design	The building or structure has distinctive or special attributes of an aesthetic or functional nature. These may include massing, proportion, materials, detail, fenestration, ornamentation, artwork, functional layout, landmark status or symbolic value.
Construction	The building or structure uses unique or uncommon building materials, or demonstrates an innovative method of construction, or is an early example of the use of a particular building technique.
Designer or Builder	The building or structure's architect, designer, engineer or builder was a notable practitioner or made a significant contribution to the region or nation.
Cultural Qualities	
Sentiment	The place or area is important as a focus of spiritual, political, national or other cultural sentiment.
Identity	The place or area is a context for community identity or sense of place, and provides evidence of cultural or historical continuity.
Amenity or Education	The place or area has symbolic or commemorative significance to people who use or have used it, or to the descendants of such people. The interpretative capacity of the place or area and its potential to increase understanding of past lifestyles or events.
Historic Qualities	
Associative Value	The place or area has a direct association with, or relationship to, a person, group, institution, event or activity that is of historical significance to Waikato or the nation.
Historical Pattern	The place or area is associated with broad patterns of local or national history, including development and settlement patterns, early or important transportation routes, social or economic trends and activities.
Scientific Qualities	
Information	The potential for the place or area to contribute information about an historic figure, event, phase or activity.
Potential – Scientific Research	The degree to which the place or area may contribute further information and the importance of the data involved, its rarity, quality or representativeness.
Technological Qualities	
Technical Achievement	The place or area shows a high degree of creative or technical achievement at a particular time or is associated with scientific or technical innovations or achievements.

Table 10-2: Māori culture and traditions assessment criteria

<i>Mauri</i>	Ko te mauri me te mana o te wāhi, te taonga rānei, e ngākaunuitia ana e te Māori. The mauri (for example life force) and mana (for example prestige) of the place or resource holds special significance to Māori.
<i>Wāhi tapu</i>	Ko tērā wāhi, taonga rānei he wāhi tapu, arā, he tino whakahirahira ki ngā tikanga, ki ngā puri mahara, ki te taha wairua hoki o te Māori. The place or resource is a wāhi tapu of special, cultural, historic and or spiritual importance to Māori.
<i>Kōrero-o-mua historical</i>	Ko tērā wāhi e ngākaunuitia ana e te Māori ki roto i ōna kōrero-o-mua me ōna tikanga. The place has special historical and cultural significance to Māori.
<i>Rawa tūturu customary resources</i>	He wāhi tērā e kawea ai ngā rawa tūturu a te Māori. The place provides important customary resources for Māori.
<i>Hiahiatanga tūturu customary needs</i>	He wāhi tērā e pupuru nei i ngā tikanga ahurea, wairua hoki o te Māori. The place or resource is a venue or repository for Māori cultural practices and spiritual values.
<i>Whakaaronui o te wa contemporary esteem</i>	He wāhi rongonui tērā ki ngā Māori, arā, he wāhi whakaahuru, he wāhi whakawaihanga, he wāhi tuku mātauranga rānei . The place has special amenity, architectural or educational significance to Māori.

Explanation of terms:

Hiahiatanga tūturu means those parts of the landscape that are important for the exercise of **tikanga** – the principles and practices to maintain the **mauri** of parts of the natural world. This might be a place where a particular ritual is performed or a particular feature that is noted for its ability to identify the boundaries of ancestral tribal lands that is acknowledged in **iwi** or **hapū** oratory.

Kōrero-o-mua refer to places that are important due to particular historical and traditional associations (in pre-European history).

Rawa tūturu means the cultural value of places that provide, or once provided, important customary resources to tāngata whenua. Customary resources might include food and materials necessary to sustain life in pre-European and post-European times.

Whakaaronui o te wa refers to the contemporary relationships tāngata whenua have with Māori heritage places. Appreciation of features for their beauty, pleasantness, and aesthetic values is important to tāngata whenua. Recreational values attributed to features are also important to tāngata whenua as they illustrate the relationship that individuals and groups can have with the environment.

11 Indigenous biodiversity

Scope and application of Chapter 11

Policy 11.1 and its associated methods apply to all **indigenous biodiversity** across the region, with the exception of Method 11.1.3 which does not apply to significant indigenous biodiversity.

Policy 11.2 and associated methods apply specifically to significant indigenous biodiversity.

Notwithstanding the above, Chapter 11 does not apply to indigenous biodiversity that forms part of geothermal features within Development Geothermal Systems or Limited Development Geothermal Systems (these are subject to Chapter 9).

Policy 11.1 Maintain or enhance indigenous biodiversity

Promote positive indigenous biodiversity outcomes to maintain the **full range of ecosystem types** and maintain or enhance their spatial extent as necessary to achieve healthy ecological functioning of ecosystems, with a particular focus on:

- a) working towards achieving **no net loss** of indigenous biodiversity at a regional scale;
- b) the continued functioning of ecological processes;
- c) the re-creation and restoration of habitats and connectivity between habitats;
- d) supporting (buffering and/or linking) ecosystems, habitats and areas identified as significant indigenous vegetation and significant habitats of indigenous fauna;
- e) providing **ecosystem services**;
- f) the health and wellbeing of the Waikato River and its **catchment**;
- g) contribution to **natural character** and **amenity values**;
- h) **tāngata whenua** relationships with indigenous biodiversity including their holistic view of ecosystems and the environment;
- i) managing the density, range and viability of indigenous flora and fauna; and
- j) the consideration and application of biodiversity **offsets**.

The relevant objectives are:

- | | |
|------|--|
| 3.1 | <i>Integrated management</i> |
| 3.2 | <i>Resource use and development</i> |
| 3.4 | <i>Health and wellbeing of the Waikato River</i> |
| 3.7 | <i>Coastal environment</i> |
| 3.8 | <i>Ecosystem services</i> |
| 3.9 | <i>Relationship of tāngata whenua with the environment</i> |
| 3.12 | <i>Built environment</i> |
| 3.14 | <i>Mauri and values of fresh water bodies</i> |
| 3.16 | <i>Riparian areas and wetlands</i> |
| 3.19 | <i>Ecological integrity and indigenous biodiversity</i> |
| 3.21 | <i>Amenity</i> |
| 3.22 | <i>Natural character</i> |

Implementation methods

11.1.1 Maintain or enhance indigenous biodiversity

Regional and district plans shall maintain or enhance indigenous biodiversity, including by:

- a) providing for positive indigenous biodiversity outcomes when managing activities including subdivision and land use change;
- b) having regard to any local indigenous biodiversity strategies developed under Method 11.1.11; and
- c) creating buffers, linkages and corridors to protect and support indigenous biodiversity values, including esplanade reserves and esplanade strips to maintain and enhance indigenous biodiversity values.

11.1.2 Adverse effects on indigenous biodiversity

Regional and district plans shall recognise that adverse effects on indigenous biodiversity within terrestrial, freshwater and coastal environments are cumulative and may include:

- a) fragmentation and isolation of indigenous ecosystems and habitats;
- b) reduction in the extent and quality of indigenous ecosystems and habitats;
- c) loss of corridors or connections linking indigenous ecosystems and habitat fragments or between ecosystems and habitats;
- d) the loss of **ecological sequences**;
- e) loss or disruption to migratory pathways in water, land or air;
- f) effects of changes to hydrological flows, water levels, and water quality on ecosystems;
- g) loss of buffering of indigenous ecosystems;
- h) loss of ecosystem services;
- i) loss, damage or disruption to ecological processes, functions and ecological integrity;
- j) changes resulting in an increased threat from animal and plant pests;
- k) effects which contribute to a cumulative loss or degradation of indigenous habitats and ecosystems;
- l) noise, visual and physical disturbance on indigenous species, particularly within the **coastal environment**; and
- m) loss of habitat that supports or provides a key life-cycle function for indigenous species listed as 'Threatened' or 'At Risk' in the New Zealand Threat Classification System lists.

11.1.3 Avoidance, remediation, mitigation and offsetting (for indigenous biodiversity that is not significant)

Regional and district plans:

- a) for non-significant indigenous vegetation and non-significant habitats of indigenous fauna (excluding activities pursuant to 11.1.4):
 - i) shall require that where loss or degradation of indigenous biodiversity is authorised adverse effects are avoided, remedied or mitigated (whether by onsite or offsite methods).
 - ii) should promote biodiversity offsets as a means to achieve no net loss of indigenous biodiversity where significant residual adverse effects are unable to be avoided, remedied or mitigated.
 - iii) when considering remediation, mitigation or offsetting, methods may include the following:
 - i. replacing the indigenous biodiversity that has been lost or degraded;
 - i. replacing like-for-like habitats or ecosystems (including being of at least equivalent size or ecological value);
 - ii. the legal and physical protection of existing habitat;
 - iii. the re-creation of habitat; or
 - iv. replacing habitats or ecosystems with indigenous biodiversity of greater ecological value.
- b) for significant indigenous vegetation and significant habitats of indigenous fauna Method 11.2.2 applies.

11.1.4 Recognition of activities having minor adverse effects on indigenous biodiversity

Regional and district plans should include permitted activities where they will have minor adverse effects in relation to the maintenance or protection of indigenous biodiversity. They may include:

- a) the maintenance, operation and upgrading of lawfully established **infrastructure**, regionally significant infrastructure and lawfully established activities using **natural and physical resources** of regional or national importance;
- b) existing lawfully established uses of land where the effects of such land use remain the same or similar in character, intensity and scale;
- c) activities undertaken for the purpose of maintenance or enhancement of indigenous biodiversity;
- d) the collection of material for maintaining traditional Māori cultural practices; and
- e) actions necessary to avoid loss of life, injury or serious damage to property.

11.1.5 Information gathering

Waikato Regional Council will:

- a) collect, analyse and make available the following information for each district and for the region as a whole:
 - i) extent of the remaining indigenous habitat and ecosystems;
 - ii) extent of indigenous habitat and ecosystem loss (from 1840 baseline);
 - iii) ecosystem health and condition; and
 - iv) indigenous biodiversity trends, including in relation to no net loss;
- b) facilitate the establishment of baselines and indicators for ecosystem health and condition; and
- c) utilise monitoring information to track progress, monitor policy and plan effectiveness and inform review of regulatory and non-regulatory methods.

11.1.6 Biodiversity inventory

Waikato Regional Council will collaborate with territorial authorities, tāngata whenua and other stakeholders, to establish and maintain a biodiversity inventory for use in advocacy, education, information provision, policy development and decision making.

11.1.7 Threatened species information

Local authorities should liaise with the Department of Conservation and other relevant agencies to ensure location and distribution data for species listed as 'Threatened' or 'At Risk' in the New Zealand Threat Classification System lists are available when preparing and implementing regional or district plans.

11.1.8 Plan development

Local authorities should consider (including when developing regional and district plans):

- a) offering incentives for indigenous biodiversity enhancements or protection; and
- b) using financial contributions and other economic instruments to maintain or enhance indigenous biodiversity.

11.1.9 Pest management

When preparing any Regional Pest Management Strategy and prioritising pest management activities, Waikato Regional Council will have regard to indigenous biodiversity values, including any areas of significant indigenous vegetation and significant habitats of indigenous fauna, and any local indigenous biodiversity strategies.

11.1.10 Funding and assistance

When preparing long-term plans and annual plans, local authorities should ensure that appropriate funding is provided for the protection and enhancement of indigenous biodiversity. This could include provision for:

- a) developing and implementing complementary biodiversity advocacy and protection programmes (including the development of on-site biodiversity plans) focused on landowner liaison and community partnership;

- b) the promotion of voluntary legal protection, restoration or enhancement of indigenous biodiversity, including through the operation of contestable funds, incentives, rates relief and grants;
- c) land acquisition; and
- d) biodiversity restoration and enhancement on public land such as local purpose reserves.

11.1.11 Local indigenous biodiversity strategies

Waikato Regional Council will assist territorial authorities to develop local indigenous biodiversity strategies. These strategies will be developed at a district scale and will:

- a) use the information produced under Methods 11.1.5 and 11.2.1;
- b) establish indigenous biodiversity targets to enable local authorities to prioritise resourcing, track progress and monitor effectiveness in achieving indigenous biodiversity objectives;
- c) identify:
 - i) opportunities and priorities for re-creating habitat;
 - ii) opportunities and priorities for restoring, enhancing or re-creating buffers, linkages and corridors; and
 - iii) important threats to indigenous biodiversity;
- d) identify areas or sites:
 - i) of indigenous biodiversity value;
 - ii) that may require protection; and
 - iii) that may require enhancement;
- e) involve working with tāngata whenua, affected landowners and resource managers, and other key stakeholders; and
- f) assist in determining the regulatory and non-regulatory framework, including how territorial authorities will contribute to working towards achieving no net loss at a regional scale to maintain or enhance indigenous biodiversity.

Local authorities should have regard to these strategies when considering the most appropriate combination of regulatory and non-regulatory methods for each district.

Explanation

Policy 11.1 guides Waikato Regional Council and territorial authorities to maintain indigenous biodiversity wherever it occurs. An important component of the policy direction is to work towards no net loss for all indigenous biodiversity at a regional scale. The policy is also important where ecosystems have been depleted and fragmented, such as coastal and lowland ecosystems, and where maintaining indigenous biodiversity in the long term requires enhancement and restoration. The Policy will be implemented through a combination of both regulatory and non-regulatory mechanisms. This provides the flexibility to manage the varying local contexts and take into account the positive effects that some activities may have on indigenous biodiversity. Examples of this include positive effects from riparian planting.

Method 11.1.1 recognises that there is a range of mechanisms by which regional and district plans can maintain or enhance indigenous biodiversity when managing the effects of activities. Such mechanisms can provide the flexibility to cope with varying local situations or locally specific types of activities, such as within the cycles of plantation forestry.

Method 11.1.2 provides guidance on adverse effects to be avoided, remedied, mitigated and offset when managing the effects of activities.

No net loss of indigenous biodiversity is to be achieved at a regional scale and does not create a no adverse effects regime. Some activities may result in a loss of indigenous biodiversity; however this will be countered by other regulatory and non-regulatory methods that result in positive indigenous biodiversity outcomes. For non-

significant indigenous biodiversity Method 11.1.3 seeks that district and regional plans avoid, remedy or mitigate adverse effects first, before promoting offsetting. Method 11.1.3 provides a more flexible approach to offsetting and no net loss than Method 11.2.2 which applies to areas of significant indigenous biodiversity.

Method 11.1.4 provides a list of activities that may be provided for as permitted activities in regional and district plans where their effects are minor.

Methods 11.1.5 to 11.1.11 provide a range of non-regulatory approaches intended to allow councils to work collaboratively and strategically to identify opportunities and priorities for enhancement and restoration activities, and to ensure that they have appropriate funding mechanisms, incentives and information to achieve positive indigenous biodiversity outcomes. Method 11.1.5 recognises that ecosystem health is an integral component of ecosystem functioning, and that establishing appropriate methodology and baseline data will enable this to be monitored.

Method 11.1.11 helps determine the most appropriate mix of regulatory and non-regulatory methods to address biodiversity management for each district. This method will help to clarify how a no net loss approach should be applied within the broader strategic picture of district-wide indigenous biodiversity maintenance and enhancement. The Method is also important for determining how each district can contribute to no net loss at a regional scale.

Policy 11.2 Protect significant indigenous vegetation and significant habitats of indigenous fauna

The relevant objectives are:

- 3.1 *Integrated management*
- 3.19 *Ecological integrity and indigenous biodiversity*

Significant indigenous vegetation and the significant habitats of indigenous fauna shall be protected by ensuring the characteristics that contribute to its significance are not adversely affected to the extent that the significance of the vegetation or habitat is reduced.

Implementation methods

11.2.1 Identify areas of significant indigenous vegetation and significant habitats of indigenous fauna

For the purposes of identifying areas of significant indigenous vegetation and significant habitats of indigenous fauna, Waikato Regional Council will identify areas of significant indigenous vegetation and significant habitats of indigenous fauna at the regional scale (significant natural areas) and make this information available to territorial authorities.

11.2.2 Protect areas of significant indigenous vegetation and significant habitats of indigenous fauna

Regional and district plans shall (excluding activities pursuant to 11.1.4):

- a) protect areas of significant indigenous vegetation and significant habitats of indigenous fauna;
- b) require that activities avoid the loss or degradation of areas of significant indigenous vegetation and significant habitats of indigenous fauna in preference to remediation or mitigation;
- c) require that any unavoidable adverse effects on areas of significant indigenous vegetation and significant habitats of indigenous fauna are remedied or mitigated;
- d) where any adverse effects are unable to be avoided, remedied or mitigated in accordance with (b) and (c), more than minor residual adverse effects shall be offset to achieve no net loss; and

- e) ensure that remediation, mitigation or offsetting as a first priority relates to the indigenous biodiversity that has been lost or degraded (whether by on-site or off-site methods). Methods may include the following:
 - i) replace like-for-like habitats or ecosystems (including being of at least equivalent size or ecological value);
 - ii) involve the re-creation of habitat;
 - iii) develop or enhance areas of alternative habitat supporting similar ecology/significance; or
 - iv) involve the legal and physical protection of existing habitat;
- f) recognise that remediation, mitigation and offsetting may not be appropriate where the indigenous biodiversity is rare, at risk, threatened or irreplaceable; and
- g) have regard to the functional necessity of activities being located in or near areas of significant indigenous vegetation and significant habitats of indigenous fauna where no reasonably practicable alternative location exists.

11.2.3 Assess significance

Where regional and district plans require an assessment of significant indigenous vegetation and the significant habitats of indigenous fauna that have not been identified by Waikato Regional Council as part of Method 11.2.1, the criteria in section 11A shall be used. The identification of the characteristics of any area will be undertaken prior to any modification of the area or site and will inform the decision-making process as to whether the proposed activity or modification is appropriate. The characteristics that have contributed to an area being significant should also be communicated to the relevant landowners and kept on record by the **local authority**.

11.2.4 Identify threats to areas of significant indigenous vegetation and significant habitats of indigenous fauna

Waikato Regional Council will identify important threats to those areas identified in Method 11.2.1 and work with relevant agencies and landowners to facilitate the management of these threats.

Explanation

Policy 11.2 addresses the requirements of s6(c) of the Resource Management Act to protect areas of **significant indigenous vegetation and significant habitat of indigenous fauna** in terrestrial, freshwater, coastal and marine environments. The policy and methods recognise that protection of these areas requires that the areas and the characteristics that deem them to be significant are identified, that identification should be carried out in a consistent manner across the region, and that protection will be achieved through both regulatory and non-regulatory methods. Protection of significant sites need not prevent their use where activities will not materially compromise the characteristics or values which deemed the site significant. The enhancement of ecosystem types as identified in Policy 11.1 also applies to significant indigenous vegetation and significant habitats of indigenous fauna in Policy 11.2.

The intention is for areas of significant indigenous vegetation and significant habitat of indigenous fauna to be identified either at a regional scale by Waikato Regional Council (significant natural areas project), or as a consequence of managing activities through regional and district plans (Method 11.2.2). It is important that regional and district plan provisions provide for the identification of additional areas, including those not identified in Method 11.2.1 which are difficult to detect at the regional scale due to limitations in technology. A diagram in section 11B summarises the respective roles and responsibilities. The identification of significant indigenous vegetation and significant habitats of indigenous fauna by the Regional Council has been undertaken in accordance with 11A and Table 11-1 criteria, through district-scale vegetation mapping, assessment and review of sites, fauna and vegetation studies, scientific research, primarily as a desktop analysis to which varying degrees of confidence are assigned. Before information is included in regional or district plans further verification and

validation may be required to confirm whether the identified areas meet the criteria for significance in section 11A.

Method 11.2.2 reflects a more directive approach to achieving no net loss for areas of significant indigenous biodiversity than Method 11.1.3. This is consistent with s6(c) of the Resource Management Act which requires protection of such biodiversity. The Method seeks avoidance of adverse effects as the most effective means of protecting areas of significant indigenous vegetation and significant habitat of indigenous fauna. It recognises that some loss of or damage to those areas may be unavoidable and in those cases remediation and mitigation is required. Where adverse effects remain after avoidance, remediation and mitigation then more than minor adverse effects are required to be offset. Any loss can be documented and tracked to assist with monitoring the state of the resource.

When applying Method 11.2.2, the expectation is that proposals should reasonably demonstrate that no net loss has been achieved using methodology that is appropriate and commensurate to the scale and intensity of the adverse effects. The application of biodiversity offsetting will be determined on a case by case basis through the decision-making processes.

Method 11.2.2(g) requires that plans shall have regard to the necessity for certain activities to locate in areas of significant indigenous biodiversity where the presence of another resource leads to a functional need for the activity to locate there. Clause (g) does not provide activities with an exemption from the other clauses within Method 11.2.2, it is another matter to be considered through the decision-making process as appropriate.

Method 11.2.3 requires use of the criteria in section 11A to achieve consistency across the region when assessing significance. An area will be considered significant if it meets one or more of the eleven criteria in section 11A.

During the process of identifying areas of significant indigenous vegetation and significant habitat of indigenous fauna, Waikato Regional Council will have the opportunity to identify general threats to the biodiversity at those sites. This information will not be a detailed threat analysis of every site, but Method 11.2.4 signals that the information will be provided to relevant agencies and landowners so that it can be used to direct management of these sites. Information should be managed so that it does not compromise the protection of populations of threatened species.

Map 11C has been inserted as a result of Environment Court decision *Opoutere Ratepayers and Residents Association v Waikato Regional Council* [2015] NZEnvC 126, which found, after rigorous testing through the Environment Court hearing process, that the area shown is a significant natural ecosystem and site of biological importance. The area identified in Map 11C should not be considered as being of greater significance or importance than other areas in the region that have been identified through the process set out under Policy 11.2 and the associated methods.

Policy 11.3 Collaborative management

Maintaining and enhancing indigenous biodiversity shall be promoted in an integrated and efficient manner including by working collaboratively with landowners, resource managers, tāngata whenua and other stakeholders.

Implementation methods

11.3.1 Working with tāngata whenua

Local authorities should recognise tāngata whenua relationships with indigenous biodiversity. This could include involving tāngata whenua

The relevant objectives are:

- 3.2 *Resource use and development*
- 3.3 *Decision making*
- 3.4 *Health and wellbeing of the Waikato River*
- 3.9 *Relationship of tāngata whenua with the environment*
- 3.19 *Ecological integrity and indigenous biodiversity*

when identifying opportunities for re-creating habitat and providing opportunities for tāngata whenua involvement in implementing local indigenous biodiversity strategies.

11.3.2 Education and advocacy

Waikato Regional Council will:

- a) work with resource managers and industry to encourage the adoption of best practice biodiversity management practices (including the recognition of local indigenous biodiversity strategies) into their management/operational plans;
- b) advocate to relevant agencies and landowners the use and requirements of other legislation (such as the Wildlife Act 1953 and the need for permits to destroy or disturb protected wildlife, Conservation Act 1987, Fisheries Act 1983, Biosecurity Act 1993) or available funding mechanisms to protect or restore areas of indigenous habitats and biodiversity; and
- c) work with territorial authorities, landowners, tāngata whenua and other relevant stakeholders to promote positive indigenous biodiversity outcomes and improve understanding of the importance and benefits of improved indigenous biodiversity.

Explanation

Policy 11.3 recognises the importance of engaging with landowners, resource managers, tāngata whenua and other key stakeholders when seeking positive biodiversity outcomes through Policies 11.1, 11.2 and 11.4. The collaborative approach is relevant to both plan preparation and implementation, as well as when carrying out other work programmes. It is intended that a collaborative approach will facilitate identification of opportunities for involvement and ways to empower tāngata whenua and resource managers to improve their knowledge of indigenous biodiversity and to promote successful maintenance and restoration practices.

Policy 11.4 Safeguard coastal/marine ecosystems

Protect indigenous biodiversity in the **coastal environment** by:

- a) avoiding adverse effects on:
 - i) indigenous **taxa** listed as 'Threatened' or 'At Risk' in the New Zealand Threat Classification System lists or taxa² listed as threatened by the International Union of Nature and Natural Resources;
 - ii) habitats of indigenous species where the species are listed as Threatened or At Risk, are at the limit of their natural range, or are naturally rare;
 - iii) areas containing nationally significant examples of indigenous community types;
 - iv) indigenous ecosystems and vegetation types that are threatened in the coastal environment, or are naturally rare; and
 - v) areas set aside for full or partial protection of indigenous biological diversity under legislation³.
- b) maintaining or enhancing:
 - i) areas used by marine mammals and wading/coastal birds including breeding, feeding, roosting and haul-out sites (areas where marine mammals come ashore);

The relevant objectives are:

- 3.1 *Integrated management*
- 3.3 *Decision making*
- 3.7 *Coastal environment*
- 3.16 *Riparian areas and wetlands*
- 3.19 *Ecological integrity and indigenous biodiversity*
- 3.21 *Amenity*
- 3.22 *Natural character*

² Taxa refers to named biological classification units assigned to individuals or sets of species (e.g. species, subspecies, genus) and examples of indigenous taxa listed as Threatened or At Risk within the Waikato Region include Maui's Dolphin, Bryde's Whale and Archey's Frog (nationally critical), Moehau Stag beetle and Kokako (nationally endangered), NZ Falcon and Long-tailed bat (nationally vulnerable), and North Island Brown Kiwi (serious decline),

³ Including, for example, the West Coast North Island Marine Mammal Sanctuary.

- ii) whitebait spawning areas and shellfish beds;
- iii) habitats, corridors and routes important for preserving the abundance and diversity of indigenous and migratory species;
- iv) indigenous habitats and ecosystems that are unique to the coastal environment and vulnerable to modification and the impacts of climate change, including estuaries, lagoons, coastal **wetlands**, dunelands, rocky reef systems, seagrass and saltmarsh;
- vi) habitats of indigenous species that are important for recreational, commercial, traditional or cultural purposes; and
- vii) areas of predominately indigenous vegetation in the coastal environment.

Implementation methods

11.4.1 Regional and district plans

Regional and district plans shall:

- a) protect marine habitat in the **coastal marine area** that has been identified as an area of significant indigenous biodiversity in Method 11.2.1; and
- b) control the adverse effects, including cumulative effects, of activities within the coastal environment to protect and enhance indigenous biodiversity so as to give effect to Policy 11.4.

11.4.2 Marine protected areas

Waikato Regional Council will support and advocate for a network of marine protected areas that is comprehensive and represents the region's marine habitats and ecosystems.

Explanation

Policy 11.4 specifically identifies values and characteristics of coastal and marine ecosystems because, in addition to the intrinsic values of the habitats and the biodiversity present, these ecosystems are receiving environments for sediment and **contaminants** arising from the use and management of land. Policy 11.4 recognises the critical importance of indigenous taxa that are identified as Threatened or At Risk in the New Zealand Threat Classification System, along with their habitats. Threatened taxa include those that are nationally critical, nationally endangered or nationally vulnerable. At Risk taxa include those that are declining, recovering, relict or naturally uncommon. There are a number of Threatened or At Risk taxa in the Waikato Region (see Footnote 1 to Policy 11.4(a)(i)) and of those, Maui's dolphin is one of the most important as it is facing potential extinction.

Policy 11.4 is a sub-set of the broader policy directions of Policy 11.1 and, as such, the methods to implement Policy 11.1 may also apply to Policy 11.4. It is intended that areas of significant indigenous biodiversity within the coastal environment are identified within those addressed by Policy 11.2, and Methods 11.4.1 and 11.4.2 identify that link as well as recognising the benefits of protecting representative marine habitats and ecosystems in a marine areas network. Method 11.4.1 also provides for a regulatory approach to maintain other indigenous biodiversity in the coastal environment.

11A Criteria for determining significance of indigenous biodiversity

The following criteria are to be used to identify areas of significant indigenous biodiversity and their characteristics as they exist at the time the criteria are being applied. Criteria may be specific to a habitat type including water, land or airspace or be more inclusive to address connectivity, or movement of species across habitat types.

To be identified as significant an area needs to meet one or more of the criteria identified in the table below.

Areas of significant indigenous biodiversity shall not include areas that have been created and subsequently maintained for or in connection with:

- artificial **structures** (unless they have been created specifically or primarily for the purpose of protecting or enhancing biodiversity); or
- beach nourishment and coastal planting (unless they have been created specifically or primarily for the purpose of protecting or enhancing biodiversity).

Table 11-1: Criteria for determining significance of indigenous biodiversity

Previously assessed site	
1.	It is indigenous vegetation or habitat for indigenous fauna that is currently, or is recommended to be, set aside by statute or covenant or by the Nature Heritage Fund, or Ngā Whenua Rāhui committees, or the Queen Elizabeth the Second National Trust Board of Directors, specifically for the protection of biodiversity, and meets at least one of criteria 3-11.
Ecological values	
2	In the Coastal Marine Area, it is indigenous vegetation or habitat for indigenous fauna that has reduced in extent or degraded due to historic or present anthropogenic activity to a level where the ecological sustainability of the ecosystem is threatened.
3.	It is vegetation or habitat that is currently habitat for indigenous species or associations of indigenous species that are: <ul style="list-style-type: none"> • classed as threatened or at risk, or • endemic to the Waikato region, or • at the limit of their natural range.
4.	It is indigenous vegetation, habitat or ecosystem type that is under-represented (20% or less of its known or likely original extent remaining) in an Ecological District, or Ecological Region, or nationally.
5.	It is indigenous vegetation or habitat that is, and prior to human settlement was, nationally uncommon such as geothermal, chenier plain, or karst ecosystems, hydrothermal vents or cold seeps.
6.	It is wetland habitat for indigenous plant communities and/or indigenous fauna communities (excluding exotic rush/pasture communities) that has not been created and subsequently maintained for or in connection with: <ul style="list-style-type: none"> • waste treatment; • wastewater renovation; • hydro electric power lakes (excluding Lake Taupō); • water storage for irrigation; or • water supply storage; unless in those instances they meet the criteria in Whaley et al. (1995).
7.	It is an area of indigenous vegetation or naturally occurring habitat that is large relative to other examples in the Waikato region of similar habitat types, and which contains all or almost all indigenous species typical of that habitat type. Note this criterion is not intended to select the largest example only in the Waikato region of any habitat type.
8.	It is aquatic habitat (excluding artificial water bodies, except for those created for the maintenance and enhancement of biodiversity or as mitigation as part of a consented activity) that is within a stream, river, lake, groundwater system, wetland, intertidal mudflat or estuary, or any other part of the coastal marine area and their margins, that is critical to the self sustainability of an indigenous species within a catchment of the Waikato region, or within the coastal marine area. In this context “critical” means essential for a specific component of the life cycle and includes breeding and spawning grounds, juvenile nursery areas, important feeding areas and migratory and dispersal pathways of an indigenous species. This includes areas that maintain connectivity between habitats.
9.	It is an area of indigenous vegetation or habitat that is a healthy and representative example of its type because: <ul style="list-style-type: none"> • its structure, composition, and ecological processes are largely intact; and • if protected from the adverse effects of plant and animal pests and of adjacent land and water use (e.g. stock, discharges, erosion, sediment disturbance), can maintain its ecological sustainability over time.
10.	It is an area of indigenous vegetation or habitat that forms part of an ecological sequence , that is either not common in the Waikato region or an ecological district, or is an exceptional, representative example of its type.
Role in protecting ecologically significant area	
11.	It is an area of indigenous vegetation or habitat for indigenous species (which habitat is either naturally occurring or has been established as a mitigation measure) that forms, either on its own or in combination with other similar areas, an ecological buffer, linkage or corridor and which is necessary to protect any site identified as significant under criteria 1-10 from external adverse effects.

11B Significant indigenous biodiversity roles and responsibilities

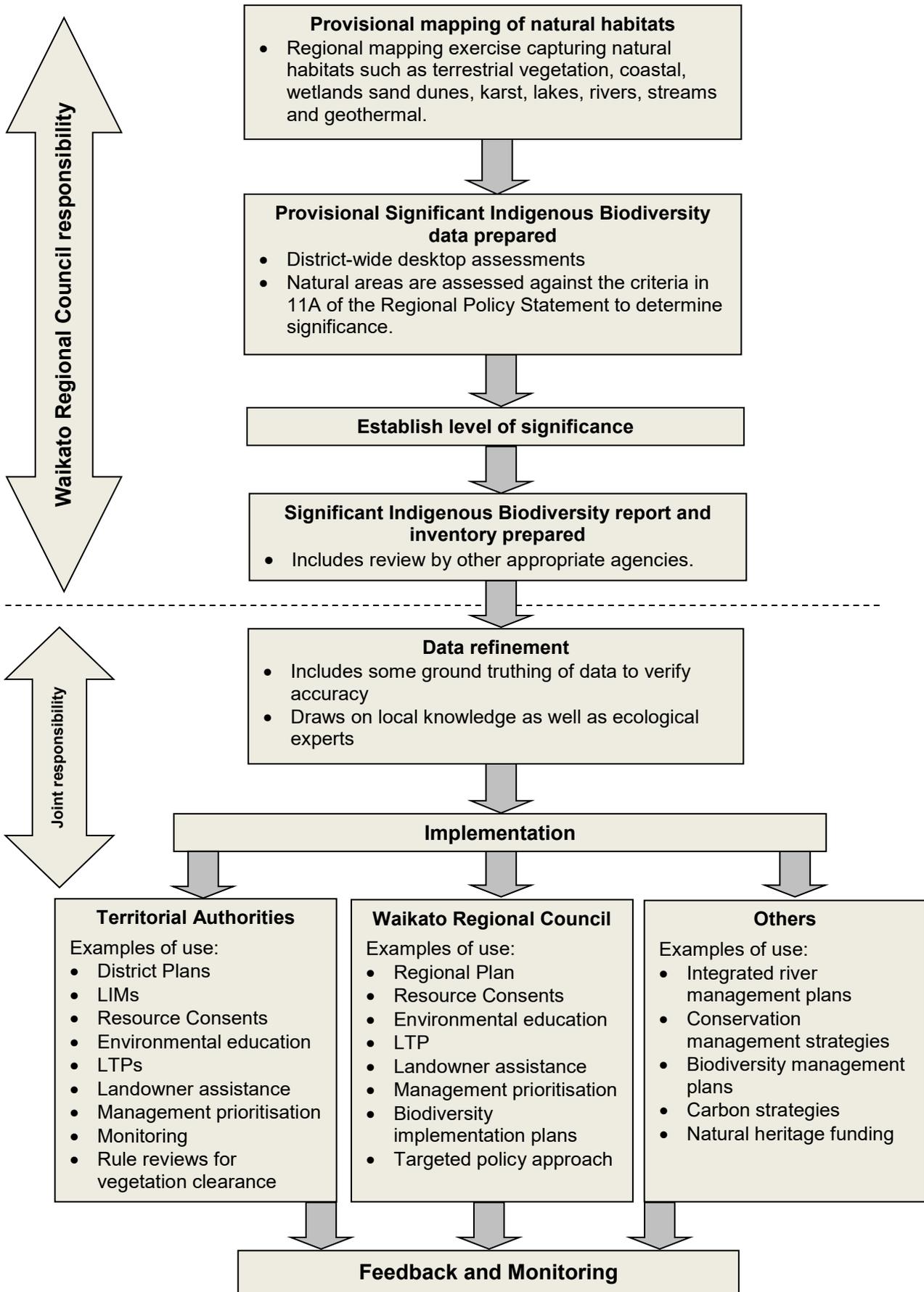
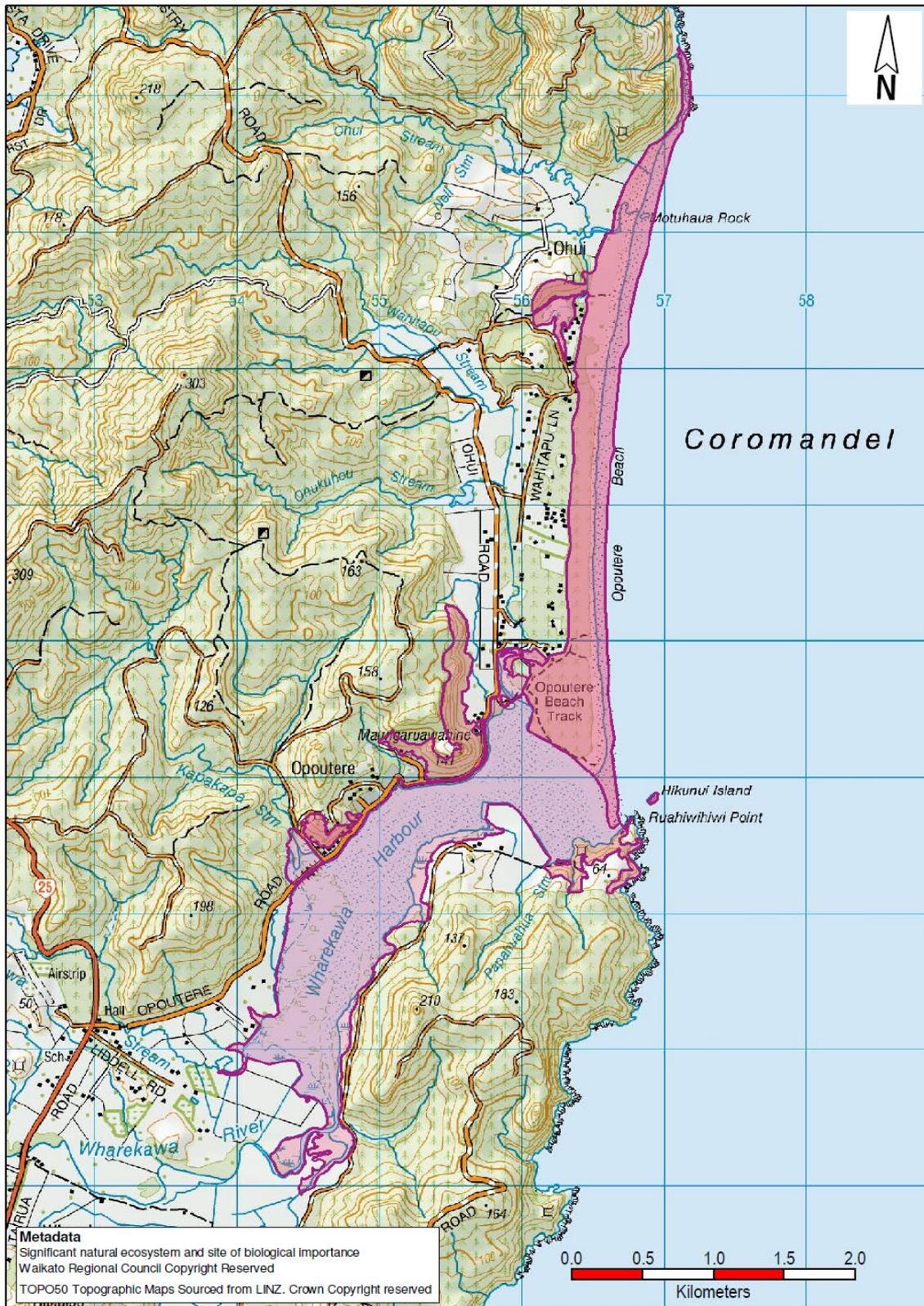


Figure 11: Significant indigenous biodiversity roles and responsibilities

11C Opoutere and Wharekawa Harbour – Area of significant indigenous vegetation and significant habitats of indigenous fauna



Map 11-1 Opoutere and Wharekawa Harbour

Map 11-1 has been inserted as a result of Environment Court decision *Opoutere Ratepayers and Residents Association v Waikato Regional Council* [2015] NZEnvC 126, which found, after rigorous testing through the Environment Court hearing process, that the area shown is a significant natural ecosystem and site of biological importance.

12 Landscape (including seascape), natural character and amenity

Policy 12.1 Outstanding natural features and landscapes

Identified values and characteristics of outstanding natural features and landscapes (including seascapes) of regional or district significance are protected from adverse effects, including cumulative effects, arising from inappropriate subdivision, use and development.

The relevant objectives are:

3.3 *Decision making*

3.9 *Relationship of tāngata whenua with the environment*

3.20 *Outstanding natural features and landscapes*

3.21 *Amenity*

Implementation methods

12.1.1 Protect values of outstanding natural features and landscapes

Regional and district plans shall:

- a) identify and provide for the protection of the values and characteristics of outstanding natural features and landscapes from inappropriate subdivision, use and development, including those of regional significance identified in section 12A (Table 12-1) by:
 - i) avoiding adverse effects of activities on the values and characteristics of outstanding natural features and landscapes in the coastal environment; and
 - ii) outside of the coastal environment, avoiding adverse effects of activities on the values and characteristics of outstanding natural features and landscapes, and if avoidance is not possible remedy or mitigate the adverse effects.

12.1.2 Identify outstanding natural features and landscapes of significance at a district level

Waikato Regional Council will encourage territorial authorities to undertake a district-wide assessment of outstanding natural features and landscapes of district significance. The approach summarised in section 12B (Table 12-2) should be used as the basis of any new assessment.

12.1.3 Values of outstanding natural features and landscapes to tāngata whenua

Waikato Regional Council will work with tāngata whenua to confirm the values of significance to **tāngata whenua** of the outstanding natural features and landscapes included in section 12A (Table 12-1) and ensure these are recognised in regional and district plans.

Explanation

Protecting outstanding natural features and landscapes from inappropriate subdivision, use and development is a matter of national importance under the Resource Management Act. Those areas assessed as being regionally outstanding are identified in section 12A (Table 12-1) (except for seascapes) along with their particular values and characteristics, and these will be protected through regional and district plans. It is expected that further areas will be identified by territorial authorities at a district level and will similarly be protected through regional and district plans. For consistency, there is benefit in using the same approach used to identify the outstanding areas at a regional scale for future assessments. The approach also allows for the identification and protection of seascapes, consistent with directions of the NZCPS, through regional and district plans.

Section 12B outlines the approach that should be followed when assessing landscapes. It includes a definition of 'landscape' and 'feature', the attributes and typical factors to be considered, the assessment process, and the specific threshold tests for 'outstanding natural features and landscapes'.

The outstanding natural features and landscapes included in section 12A (Table 12-1) were identified without the benefit of consultation with tāngata whenua, relying on information readily available at the time of assessment. Tāngata whenua values are one of the values to be assessed in accordance with the approach summarised in section 12B (Table 12-2) and it is intended that the council will work with tāngata whenua to check the values identified for completeness and correctness.

The focus of the policy and approach to assessing landscapes is on the values and characteristics of the outstanding natural features and landscapes (including seascapes) rather than on the features or landscapes themselves. This recognises that landscapes evolve over time however the values and characteristics must be protected to ensure the natural features and landscapes remain outstanding.

Policy 12.2 Preserve natural character

Ensure that activities within the **coastal environment**, **wetlands**, and lakes and rivers and their margins are appropriate in relation to the level of **natural character** and:

The relevant objectives are:
 3.4 *Health and wellbeing of the Waikato River*
 3.7 *Coastal environment*
 3.22 *Natural character*

- a) where natural character is pristine or outstanding, activities should avoid adverse effects on natural character;
- b) where natural elements/influences are dominant, activities should avoid significant adverse effects and avoid, remedy or mitigate other adverse effects on natural character;
- c) where man-made elements/influences are dominant, it may be appropriate that activities result in further adverse effects on natural character, though opportunities to remedy or mitigate adverse effects should still be considered;
- d) promote the enhancement, restoration, and rehabilitation of the natural character of the coastal environment, wetlands and lakes and rivers and their margins; and
- e) regard is given to the functional necessity of activities being located in or near the coastal environment, wetlands, lakes, or rivers and their margins where no reasonably practicable alternative locations exist.

Implementation methods

12.2.1 District and regional plans

Regional and district plans shall:

- a) recognise that different levels of natural character exist within the **coastal environment** and inland **water bodies** and their margins;
- b) map or otherwise identify areas of high and outstanding natural character in the coastal environment using the criteria in section 12C (Table 12-3);
- c) ensure activities are appropriate with respect to the level of natural character, including particularly those activities that:
 - i) alter the natural appearance and functioning of beach and dune systems, or wetlands, lakes or rivers (and their margins);
 - ii) damage or remove areas of **indigenous** vegetation;
 - iii) introduce man-made elements/**structures** where none were previously present or obvious; or
 - iv) introduce man-made elements/structures into a modified area which results in a significant change to natural character; and

- d) have particular regard to the following:
- i) protecting the special values of inland water bodies, estuaries and bays, beaches and dune systems, including the unique physical processes that occur within and between them;
 - ii) safeguarding the life-supporting capacity of **fresh water** aquatic, coastal and marine ecosystems;
 - iii) maintaining or enhancing indigenous **biodiversity** and the functioning of ecosystems;
 - iv) location, design and form of the man-made elements/structures and any mitigation measures necessary or proposed;
 - v) protecting natural functioning of physical processes over a 100-year timeframe;
 - vi) protecting geological features;
 - vii) protecting surf breaks of national significance for surfing;
 - viii) the need to locate **renewable electricity generation** activities where the renewable energy resource is available; and
 - ix) the logistical or technical practicalities associated with developing, upgrading, operating or maintaining the renewable electricity generation activity.

12.2.2 Enhance natural character where compromised

Local authorities should identify opportunities to enhance, restore or rehabilitate the natural character of the coastal environment, wetlands, and lakes and rivers and their margins where it has been compromised, including when undertaking works and services or preparing or reviewing growth strategies, structure plans, or regional and district plans. In particular, opportunities to achieve the following should be considered:

- a) the removal of derelict or unnecessary structures;
- b) restoration or enhancement of natural elements;
- c) enhancement of water quality;
- d) modification of existing development to be less intrusive; and
- e) de-reclamation of redundant reclaimed land.

Explanation

Preserving the natural character of the coastal environment, wetlands and lakes and rivers and their margins is a matter of national importance under the Resource Management Act. This will be achieved by directing development to areas where natural character is already compromised. This recognises that the intent of the legislation is not to preserve natural character everywhere, and that the higher the level of modification, the more appropriate development will be in a given situation. In the coastal environment Policy 12.2 must give effect to Policy 13 of the NZCPS. This means that despite the use of 'should' in Policy 12.2, in the coastal environment, the direction in Policy 13 of the NZCPS must be followed.

Many of our coastal and **riparian areas** have been modified so it is intended that modification not be allowed in those few places where the natural character is unmodified (that is, pristine). In areas that are highly modified, there may be opportunities for local authorities to achieve the enhancement of natural character, such as when undertaking works and services or authorising activities and using simple measures such as planting appropriate native species as part of landscaping activities.

Criteria are provided in 12C (Table 12-3) to guide plans in identifying areas of high and outstanding natural character in the coastal environment. The criteria provide consistency and give effect to Policy 13 of the NZCPS.

Policy 12.3 Maintain and enhance areas of amenity value

Areas of **amenity value** are identified, and those values are maintained and enhanced. These may include:

- a) areas within the coastal environment and along inland water bodies;
- b) scenic, scientific, recreational or historic areas;
- c) areas of spiritual or cultural significance;
- d) other landscapes or seascapes or natural features; and
- e) areas adjacent to outstanding natural landscapes and features that are visible from a road or other public place.

The relevant objectives are:

3.7 Coastal environment

3.9 Relationship of tāngata whenua with the environment

3.18 Historic and cultural heritage

3.21 Amenity

3.23 Public access

Implementation methods

12.3.1 Maintain and enhance areas of amenity value

Regional and district plans shall ensure that:

- a) areas of amenity value to regional or district communities are:
 - i) identified using accepted criteria and methodologies; and
 - ii) appropriately recognised;
- b) the qualities and characteristics for which they are valued are maintained or enhanced;
- c) subdivision, use and development is managed to avoid, remedy or mitigate adverse effects on the identified values of areas of amenity value; and
- d) when recognising and providing for areas of **amenity value**, consideration shall be given to the changing and evolving nature of land management practices that means the visual amenity values may also change.

12.3.2 Amenity value of the coastal environment

Regional and district plans shall ensure that the amenity values of the coastal environment are maintained or enhanced, including by:

- a) recognising the contribution that open space makes to amenity values and providing appropriate protection to areas of open space;
- b) maintaining or enhancing natural sites or areas of particular value for outdoor recreation;
- c) employing suitable development setbacks to avoid a sense of encroachment or domination of built form, particularly on areas of public open space and along the coastal edge;
- d) avoiding forms and location of development that effectively privatise the coastal edge and which discourage or prevent public access to and use of the coast;
- e) recognising that some areas derive their particular character and amenity value from a predominance of structures, modifications or activities, and providing for their appropriate management;
- f) ensuring the removal of derelict or unnecessary structures within the **coastal marine area**;
- g) encouraging appropriate design of new structures and other development to enhance existing amenity values;
- h) maximising the public benefits to be derived from developments;
- i) ensuring public access to public areas is enhanced where practicable; and
- j) recognising the role of esplanade reserves and strips in contributing to public open space needs.

12.3.3 Enhance public values in the coastal environment

Local authorities should seek to incorporate the enhancement of public amenity values, including when undertaking works and services or preparing or reviewing growth strategies, structure plans, or regional and district plans.

Explanation

Local authorities must have particular regard to the maintenance and enhancement of amenity values under the Resource Management Act. Some areas will be particularly valued by communities for their amenity, and it is appropriate to provide for the maintenance or enhancement of the amenity values of these areas to protect communities' sense of place, appreciation and enjoyment.

Local authorities should also recognise that amenity values often exist due to the existing and historical management and development of land use in a particular location or landscape. For example, rural landscapes often derive their amenity value from the presence of productive land use such as pastoral farming, and associated structures such as hay barns. These landscapes are not always static, and may continue to change and evolve as a result of changing management practices. Policy 12.3 is not intended to ensure that the landscapes remain static, but to ensure the values attributed to these types of landscapes are maintained or enhanced, even through change.

The coastal environment is particularly valued by our communities for its amenity values, including its open spaces, and local authorities should ensure that these values are recognised when planning for development and processing resource consents. Individuals' amenity values are also relevant under the RMA and should be assessed on a case-by-case basis through resource consent processes.

Policy 12.4 Maintain and enhance public access

Public access to and along the coastal marine area, lakes, and rivers will be maintained and enhanced by:

- a) providing direction about where and when additional access should be established;
- b) ensuring that subdivision, use and development do not constrain the ability of the land/water edge to adjust over time in response to natural processes, including the effects of climate change; and
- c) ensuring subdivision, use and development do not result in inappropriate loss of existing public access.

The relevant objectives are:

- 3.4 *Health and wellbeing of the Waikato River*
- 3.6 *Adapting to climate change*
- 3.7 *Coastal environment*
- 3.9 *Relationship of tāngata whenua with the environment*
- 3.16 *Riparian areas and wetlands*
- 3.21 *Amenity*
- 3.23 *Public access*

Implementation methods

12.4.1 Regional and district plans

Regional and district plans shall:

- a) provide for the enhancement of public access to and along the coastal marine area, lakes, and rivers by:
 - i) identifying areas where it is appropriate; or
 - ii) establishing criteria to enable assessment through resource consent processes of when it would be appropriate; and
 - iii) including provisions to ensure it occurs in appropriate circumstances and locations;
- b) recognise that activities which result in:

- i) lowering of the beach face and loss of a high-tide beach, either immediately or over time; and
- ii) loss (either in whole or in part) of existing lawful public access to and along the coastal marine area, including to beach areas from adjacent land; are inappropriate in terms of effects on public access to and along the coastal marine area;
- c) require that where subdivision, use or development requires a restriction on public access they should provide for, or contribute to, the provision or enhancement of public access elsewhere; and
- d) avoid adverse effects of activities on access to, use and enjoyment of surf breaks of national significance for surfing.

12.4.2 Enhance public access

Local authorities should enhance public access to and along the coastal marine area, wetlands, and lakes and rivers and their margins, including through negotiation of access arrangements with landowners/managers. In determining priorities, local authorities should consider whether:

- a) suitable alternative access is already available;
- b) the access would link other existing accessible areas;
- c) the area to be accessed has particular cultural, amenity or other values; or
- d) the access would improve the range of access opportunities, including allowing access to less mobile members of the community.

Explanation

Policy 12.4 recognises that maintaining and enhancing public access to and along the coastal marine area, lakes and rivers is a matter of national importance. Maintaining and enhancing access requires both identifying where new access is required, and ensuring that existing and future access is not lost as a direct result of development or, in the coastal environment, from development that constrains movement of dry beach areas landward as a result of erosion or sea level rise. This will be achieved through regional and district plans and other mechanisms such as direct negotiation or purchase.

Policy 12.5 Appropriate restrictions on public access

Public access to and along the coastal marine area, lakes, and rivers will only be restricted where necessary:

- a) to protect areas of significant indigenous vegetation and/or significant habitats of indigenous fauna;
- b) to protect tāngata whenua values;
- c) to protect public health or safety;
- d) to ensure a level of security consistent with the purpose of a resource consent;
- e) to avoid conflicts with activities of landowners or occupiers;
- f) to protect the stability of banks or dunes;
- g) to protect historic heritage;
- h) for temporary activities or special events;
- i) for defence purposes in accordance with the Defence Act 1990; or
- j) in other exceptional circumstances sufficient to justify the restriction, notwithstanding the national importance of maintaining that access.

The relevant objectives are:
 3.7 Coastal environment
 3.9 Relationship of tāngata whenua with the environment
 3.19 Ecological integrity and indigenous biodiversity
 3.23 Public access
 3.25 Values of soil

Implementation methods

12.5.1 Restrictions on public access

Regional and district plans shall identify the circumstances when it is appropriate to restrict public access to and along the coastal marine area, lakes, and rivers and provide for alternative routes, where practicable, in the coastal environment, in accordance with Policy 12.5.

12.5.2 Regional plan restrictions on vehicle use in the coastal environment

Regional plans shall ensure inappropriate vehicle use in sensitive areas of the coastal environment, including the foreshore, beaches and dunes is avoided, in order to protect:

- a) the stability of dunes (including through damage to sand-binding dune vegetation), or other geological systems and processes;
- b) indigenous vegetation;
- c) shellfish beds;
- d) habitat important to threatened or at risk species and ecological corridors connecting such areas;
- e) areas important to migratory species, and to vulnerable stages of indigenous species;
- f) people's safety and enjoyment of the coast;
- g) damage to historic heritage;
- h) damage to habitats of fisheries resources of significance to customary, commercial or recreational users; and
- i) damage to sites of significance to tāngata whenua.

12.5.3 Other mechanisms for restricting vehicle use in the coastal environment

Local authorities should:

- a) collaborate with tāngata whenua, the Department of Conservation, NZ Police and other agencies and stakeholders to identify and address issues arising from the use of vehicles in sensitive areas of the coastal environment, including the foreshore, beaches and dunes; and
- b) consider the appropriateness of imposing restrictions on vehicle use using mechanisms such as:
 - i) district plan rules regarding accessways and roading; and
 - ii) local or regional bylaws.

Explanation

Maintaining public access to and along the coastal marine area, lakes and rivers is a matter of national importance under the Resource Management Act, and access should be maintained unless there are exceptional reasons for restricting it. There will be instances or locations where it is appropriate to restrict access for the reasons set out in Policy 12.5. In some locations access may be controlled by other legislation or statutory authorities. The methods recognise that in addition to identifying when public access generally should be restricted, it is appropriate that vehicle use is specifically restricted in some locations because of the adverse effects that may arise from use of vehicles in the coastal environment. Managing the use of vehicles in coastal areas requires a multi-agency approach.

12A Outstanding natural features and landscapes

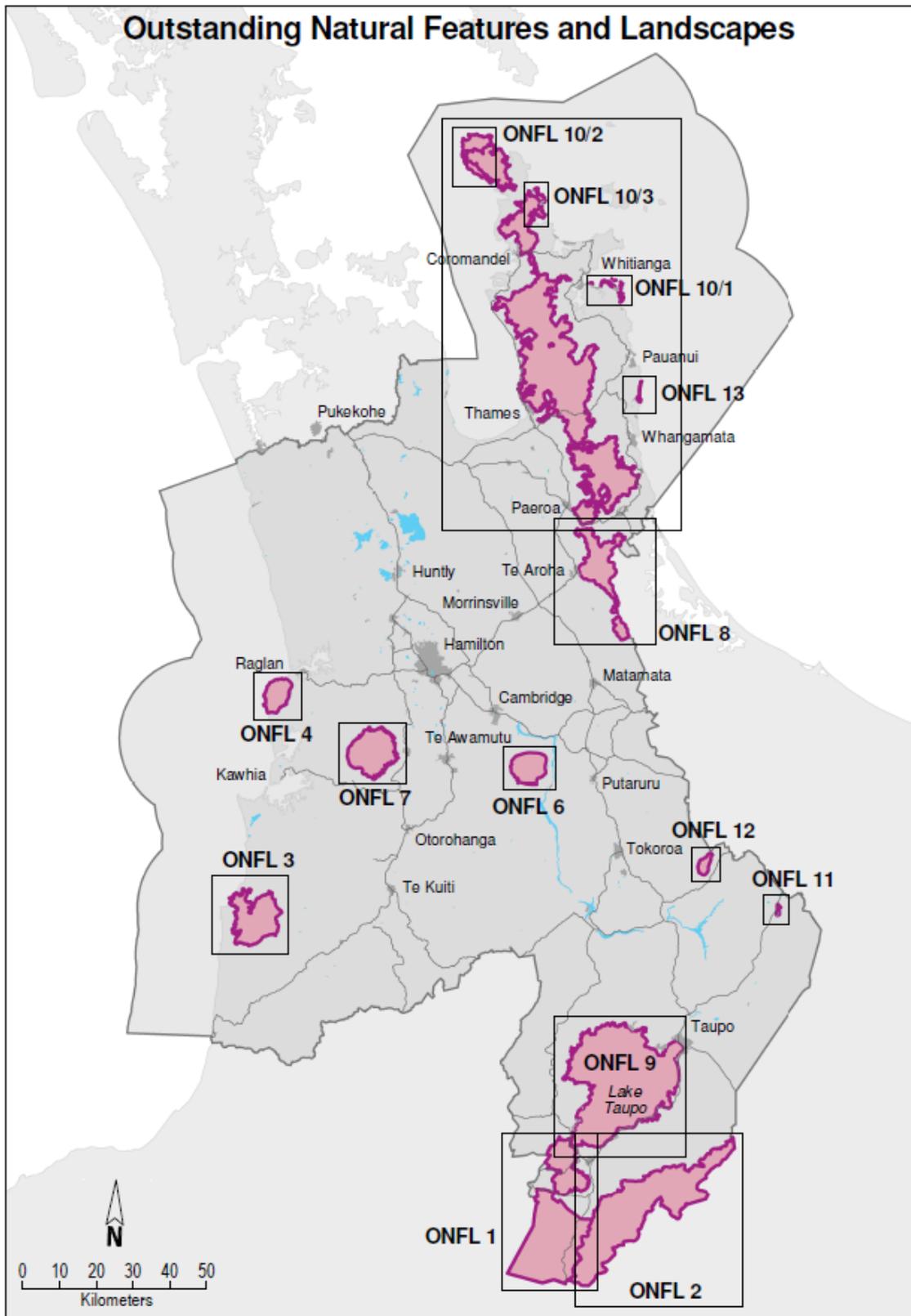
Table 12-1: Outstanding natural features and landscapes (ONFL) of regional significance

ONFL	Characteristics / Values
Tongariro National Park, Lake Rotoaira, Mt Pihanga, & Kakaramea-Tihia Massif (ONFL 1)	<p>Visual and scenic characteristics, particularly volcanic landscape, highly memorable and natural.</p> <p>Ecological/scientific/recreational/heritage values; significance to tāngata whenua and to population in general.</p>
Kaimanawa Mountains (ONFL 2)	<p>Non volcanic sedimentary range. Landscape is expressive of the forces that made it.</p> <p>Recreational, including remote recreational tramping experiences. Significance to tāngata whenua – food source for Māori. Solid covering of good indigenous forest. Wild and remote.</p>
Northern Herangi Range (ONFL 3)	<p>Rugged peaked landforms largely bush covered. High natural character.</p> <p>Recreational values including tramping, hunting and fishing. Remote.</p>
Mount Karioi (ONFL 4)	<p>Distinctive volcanic cone shape, location close to the coast, good quality indigenous vegetation.</p> <p>Cliffs and headlands along the coastal edge. Tramping tracks and botanical values.</p>
Coromandel Range and Moehau Range (ONFL 5)	<p>Massive volcanic landform. Forms the distinctive backbone to the whole peninsula – peaks, pinnacles and rocks. Bush on the tops.</p> <p>Significance to tāngata whenua – pā sites. Remote and wild. High natural character in places. Historic values of early settlement, gold mining and logging.</p>
Mount Maungatautari (ONFL 6)	<p>Distinctive volcanic cone – distinct feature in the area. Ecological island established around bush at the top. High natural character.</p> <p>Significance to tāngata whenua – Māori settlements used to be on the slopes. Historic/early Pākehā settlers.</p>
Mount Pirongia (ONFL 7)	<p>Distinctive volcano shape. Seen from much of the central portion of the Waikato region. Consists of a number of peaks. High natural character.</p> <p>Significance to tāngata whenua and historic values. Was the centre for the Māori wars and a military base. Recreational values including tramping, walking, botany and bird watching.</p>
Kaimai Range (north of Ngatamahinerua) (ONFL 8)	<p>Volcanic origin – Te Aroha. Highest point. Distinctive peaked landform, its elevation, extensive bush.</p> <p>Significance to tāngata whenua – many pā and marae sites. Wild and remote on the higher slopes. Good quality bush.</p>

LANDSCAPE

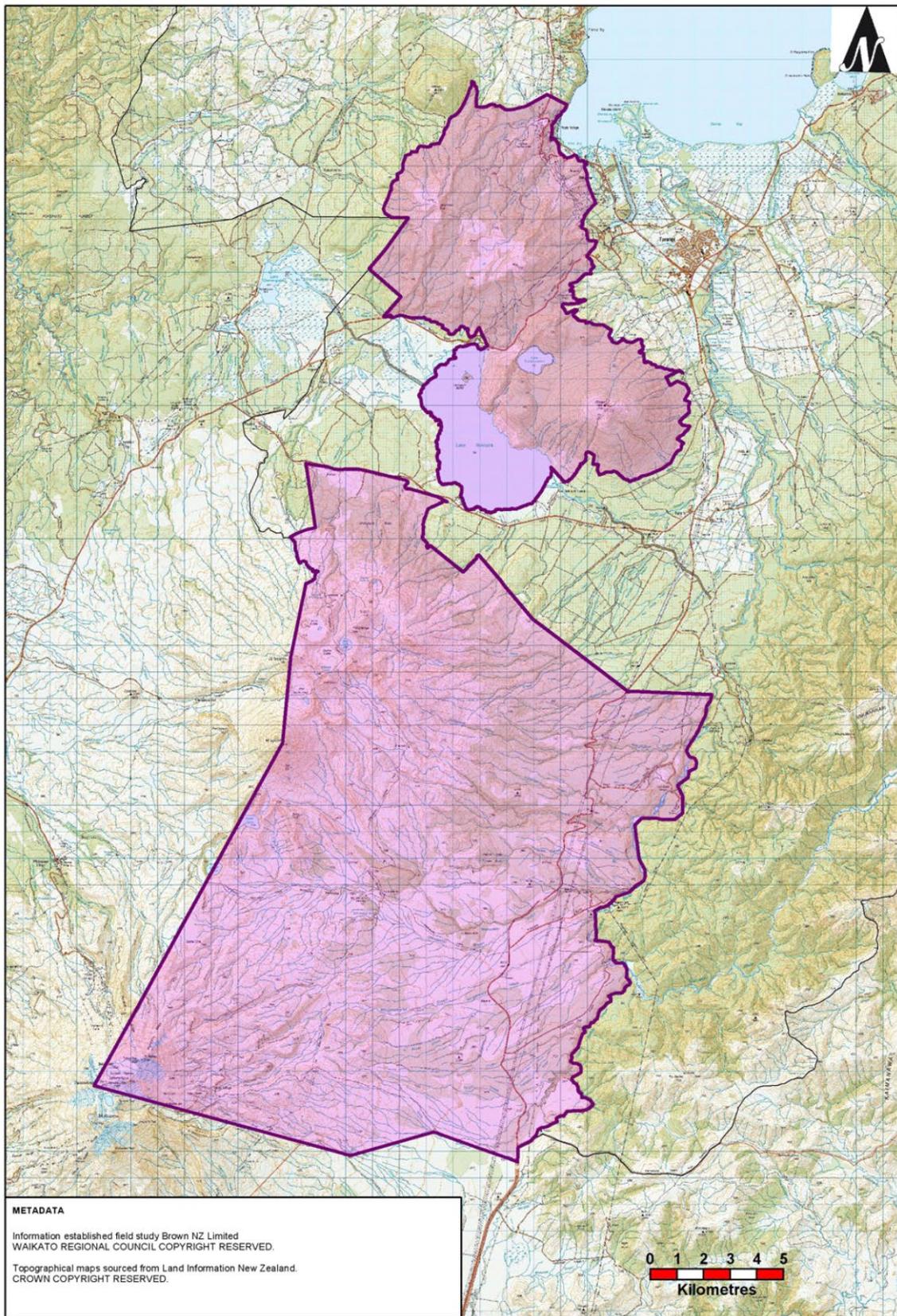
ONFL	Characteristics / Values
<p>Lake Taupō (ONFL 9)</p>	<p>Expansive area of water, memorable and vivid, natural character. Forms the foreground to Tongariro National Park viewed from the north.</p> <p>Significance to tāngata whenua. Recreational values including trout fishing, water skiing and boating.</p>
<p>Coastal areas of Coromandel – Cathedral Cove, Shakespeare Cliff and coastline south of Hahei (ONFL 10/1)</p>	<p>Dramatic white cliffs, pinnacles, arches and blowholes. White silica beaches. Cliffs rise to 100m in places. Islands off the coast. Dramatic and memorable. High natural character along coastal edge.</p> <p>Significance to tāngata whenua – footpaths along coast and pa sites. Recreational values including beaches and swimming, fishing and boating.</p>
<p>Coastal areas of Coromandel – northern tip of the Coromandel peninsula and western slopes of Moehau Range out to coast (ONFL 10/2)</p>	<p>Combination of pasture and bush running out to cliffs and bays. Dramatic and vivid with distinctive coastal features. Steep slopes between native forest above and coastal edge. Pōhutukawa along coastline.</p> <p>Botanical interest in the indigenous forest. Historic and Māori. Pā sites on headlands – battles between Māori tribes.</p>
<p>Coastal areas of Coromandel – Tuatēawa (ONFL 10/3)</p>	<p>Combination of dramatic coastal edge, stony beaches, and rock reefs, backed by steep slopes with a large number of pohutukawa. High natural character.</p> <p>Significance to tāngata whenua. Recreational values including fishing. Coastline views.</p>
<p>Waiotapu Geothermal Area & Lake Ngakoro (ONFL11)</p>	<p>Dramatic, aesthetically appealing and intact geothermal features. New Zealand's largest area of surface thermal activity. Features include geysers, multi-coloured silica terraces, steaming pools, vents and mud / sulphur craters. The geothermal features, together with surrounding landforms and bush, descend to meet Lake Ngakoro. Highly significant tourist destination.</p>
<p>Horohoro Escarpment (ONFL12)</p>	<p>Highly distinctive line of cliffs, interspersed with native bush. Frames and defines the northern edge of the Whirinaki Valley. Demarcates the southern edge of Mamaku Plateau and Horohoro (rhyolite) dome. Dramatic, perhaps unique, profile is very clearly exposed to SH30. Significance to tāngata whenua.</p>
<p>Opoutere Beach (ONFL 13)</p>	<p>An expansive, undeveloped, ocean beach, and dune system, backed by a forested Department of Conservation Reserve, comprised primarily of maritime pine and regenerating native vegetation. Ohui, its northern end, is marked by the striking Ohui Bluffs, Ohui Stream and Motohaua Rock. Its southern end culminates in a distal spit and the mouth of the Wharekawa Harbour, off shore from which sits the sculptural Hikinui Island and, on the southern side of which is, Ruahiwihiwi Headland. Opoutere Beach is important from a recreational standpoint – for swimming, walking, surfing and the like. The beach, particularly the northern (Ohui) and southern (distal spit) ends of it, and the Wharekawa Harbour, are also very important ecologically as a habitat for NZ dotterel, the variable oystercatcher and other indigenous fauna and flora.</p>

The following maps are at a regional scale and are indicative only. They should be used as the basis for district level ONFL identification.



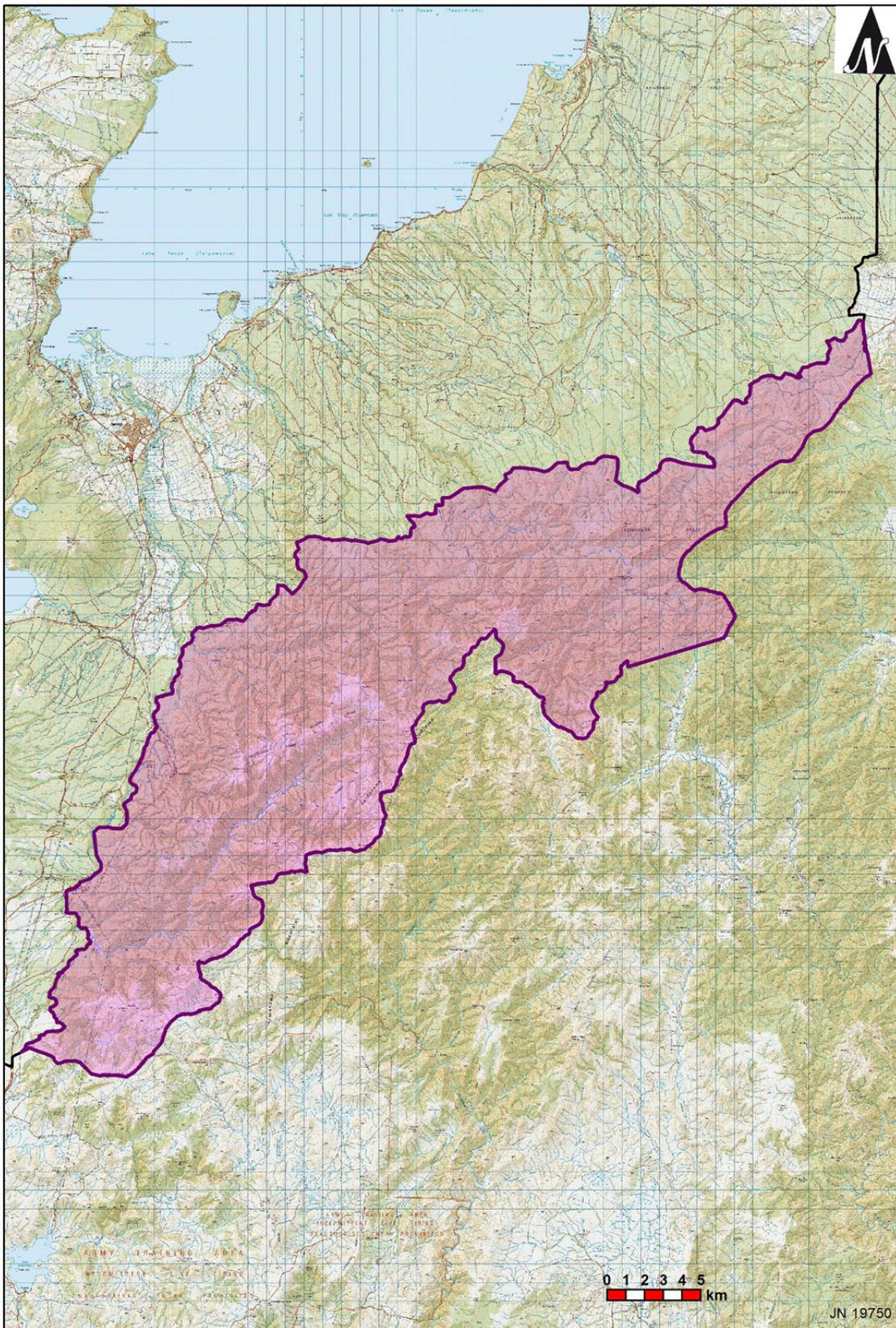
Map 12-1: Overview of outstanding natural features and landscapes (ONFL) maps

LANDSCAPE

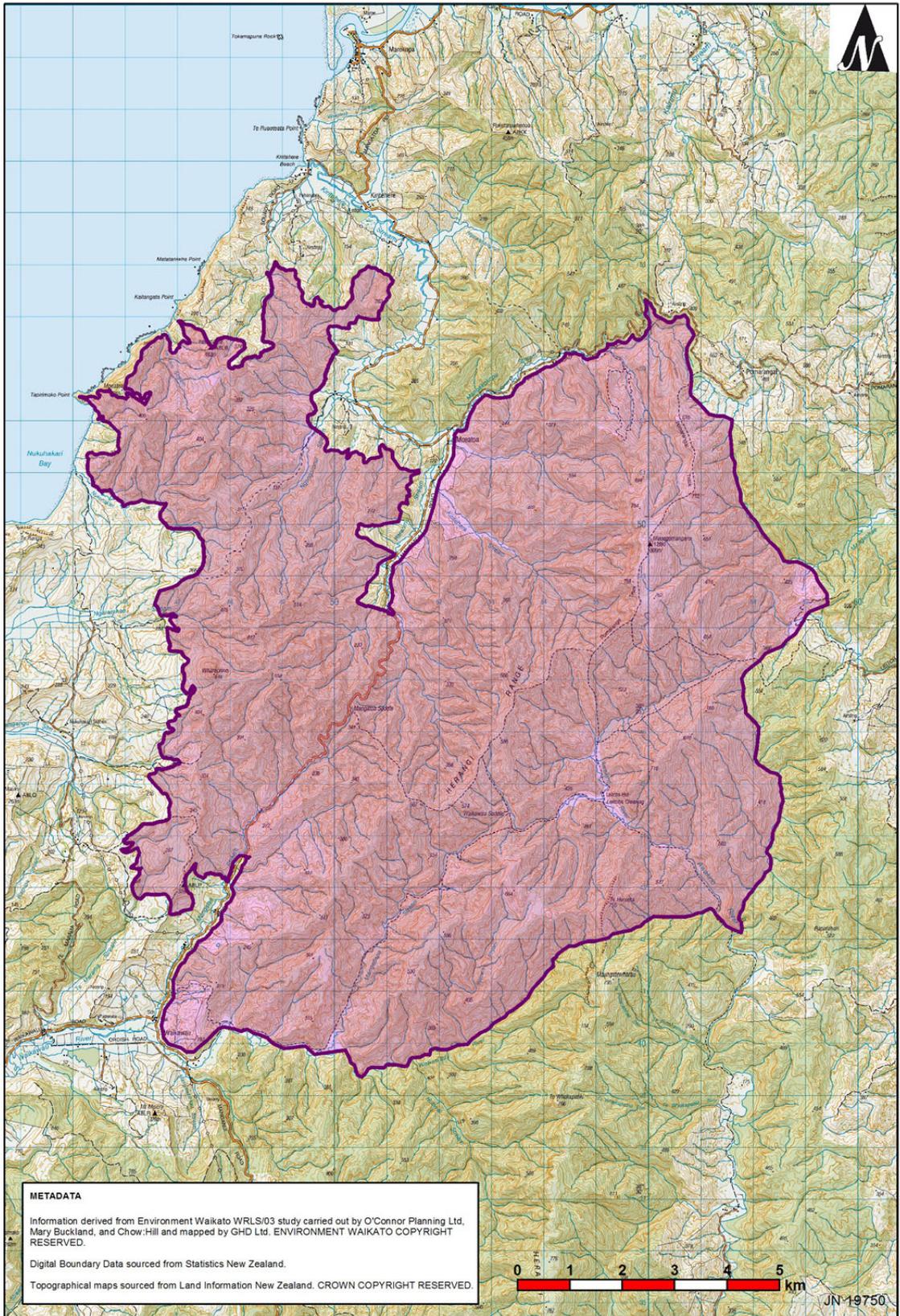


Map 12-2: ONFL 1 – Tongariro National Park

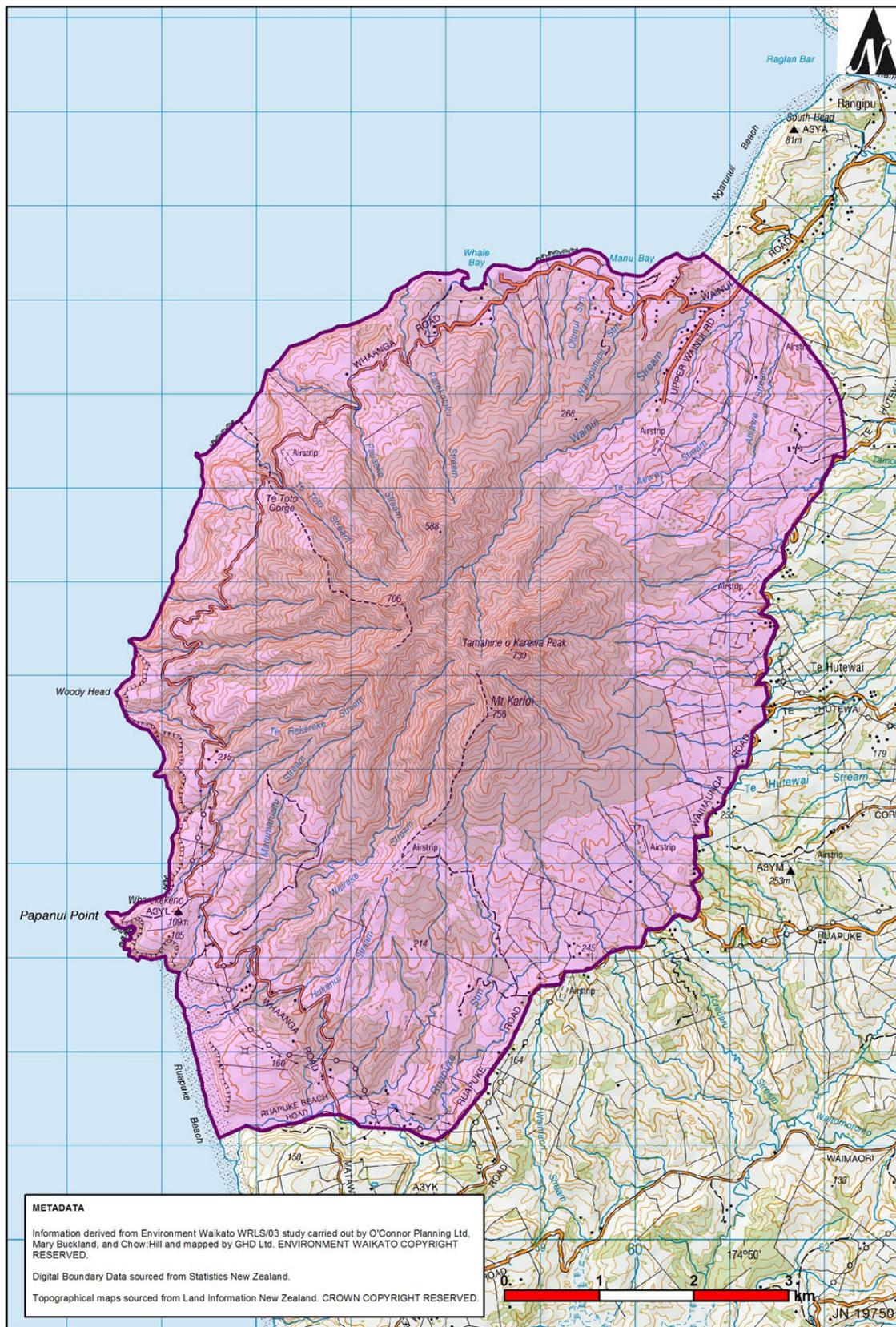
LANDSCAPE



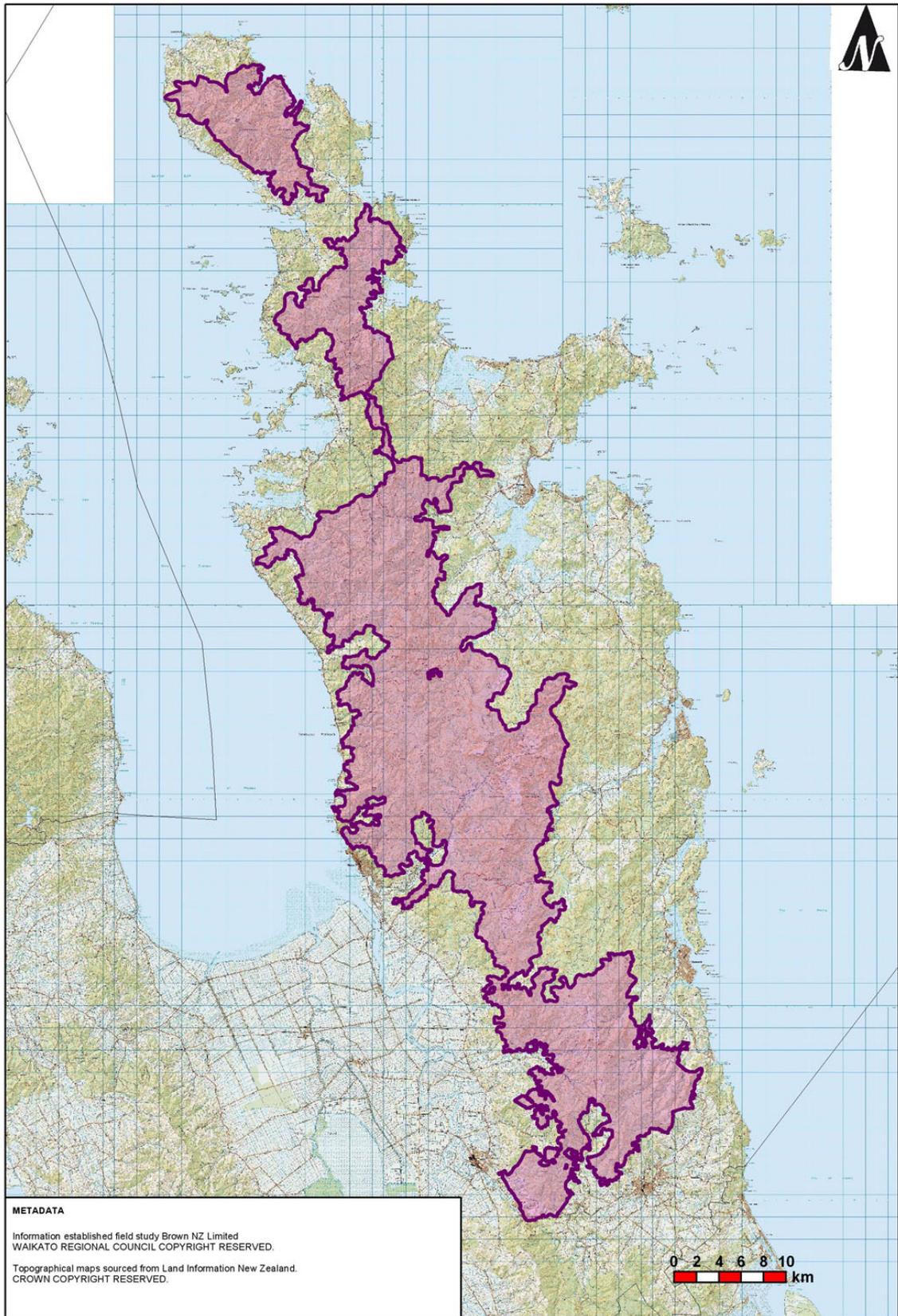
Map 12-3: ONFL 2 – Kaimanawa Mountains



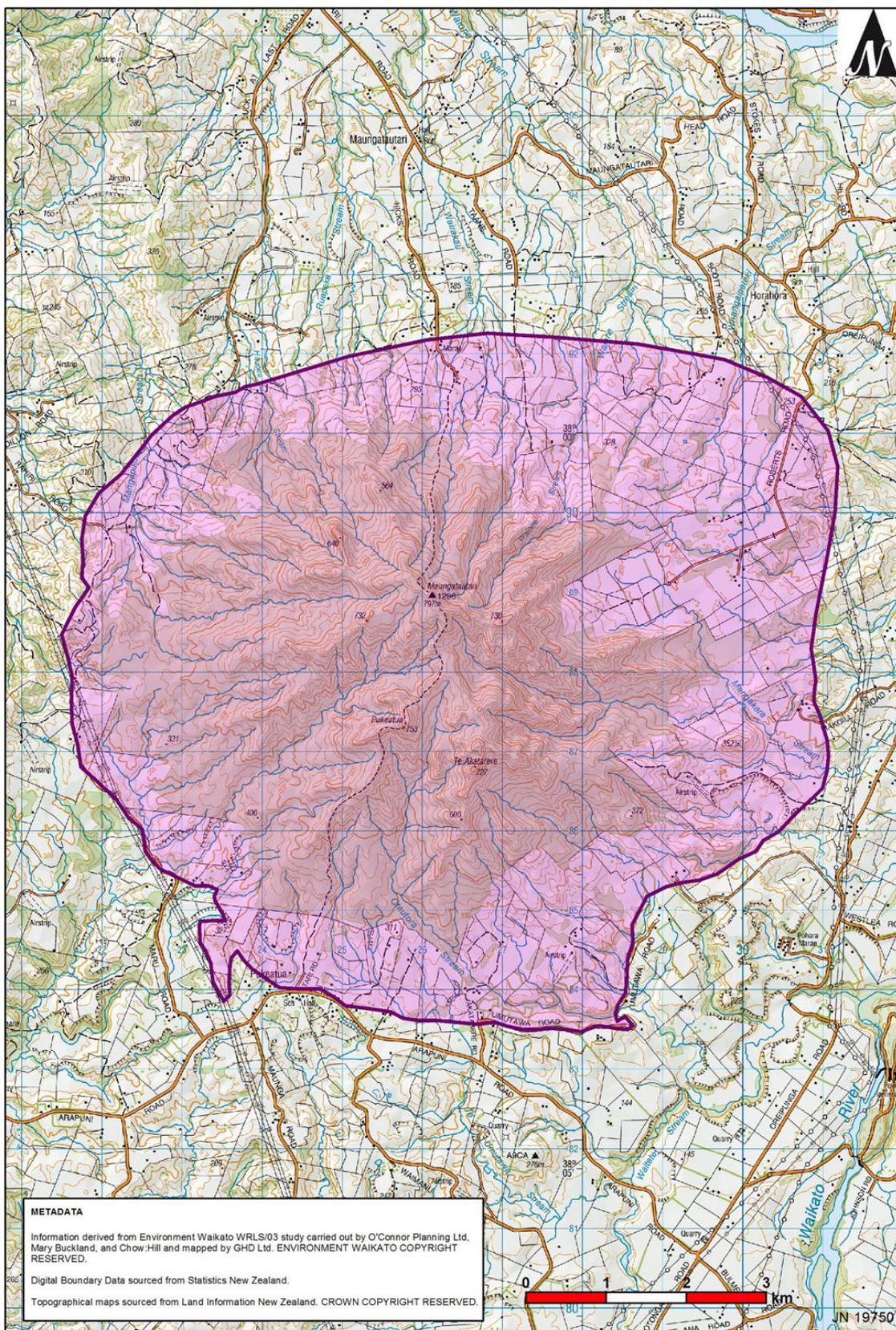
Map 12-4: ONFL 3 – Northern Herangi Range



Map 12-5: ONFL 4 – Mount Karioi

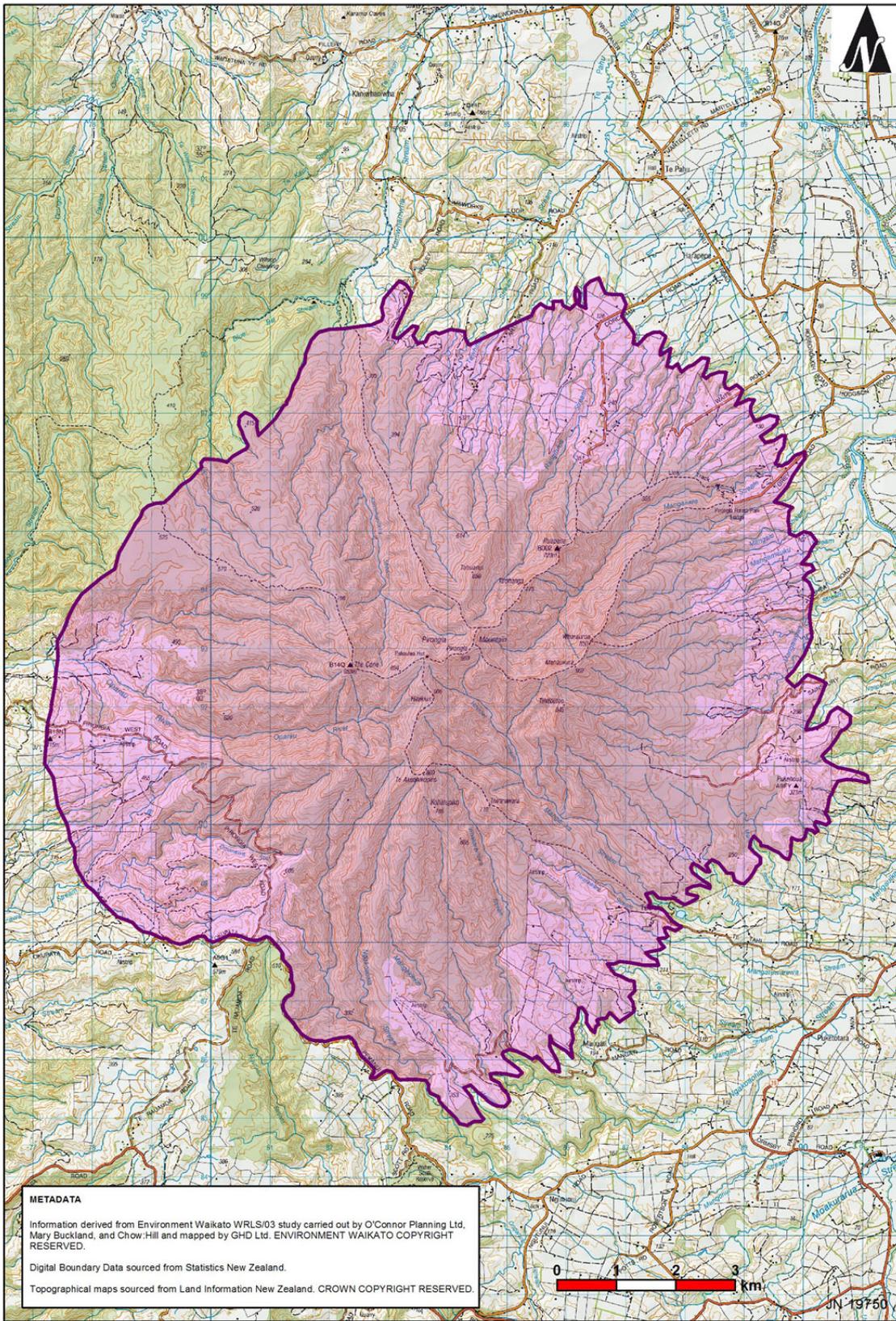


Map 12-6: ONFL 5 – Coromandel Range and Moehau Range

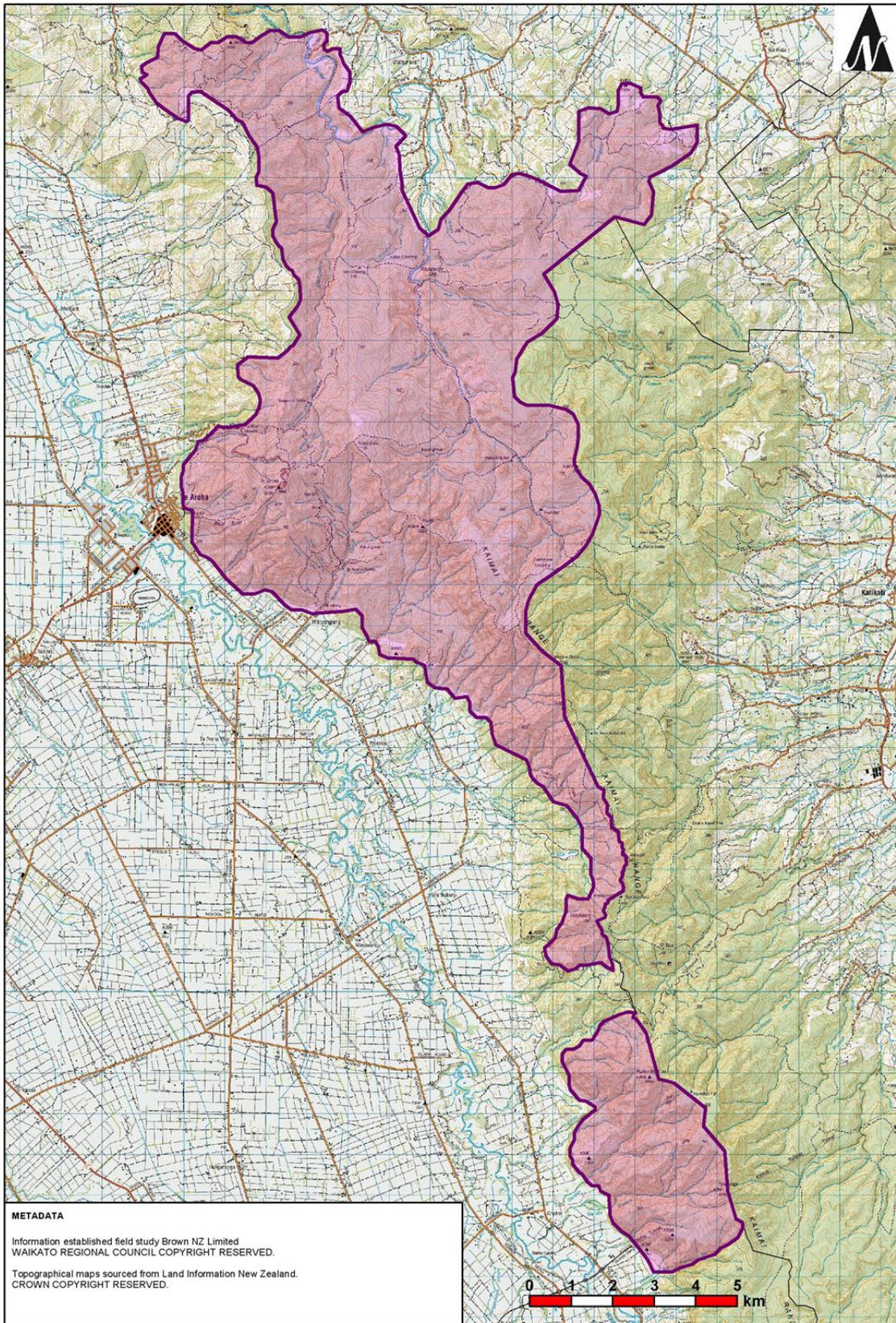


Map 12-7: ONFL 6 – Mount Maungatautari

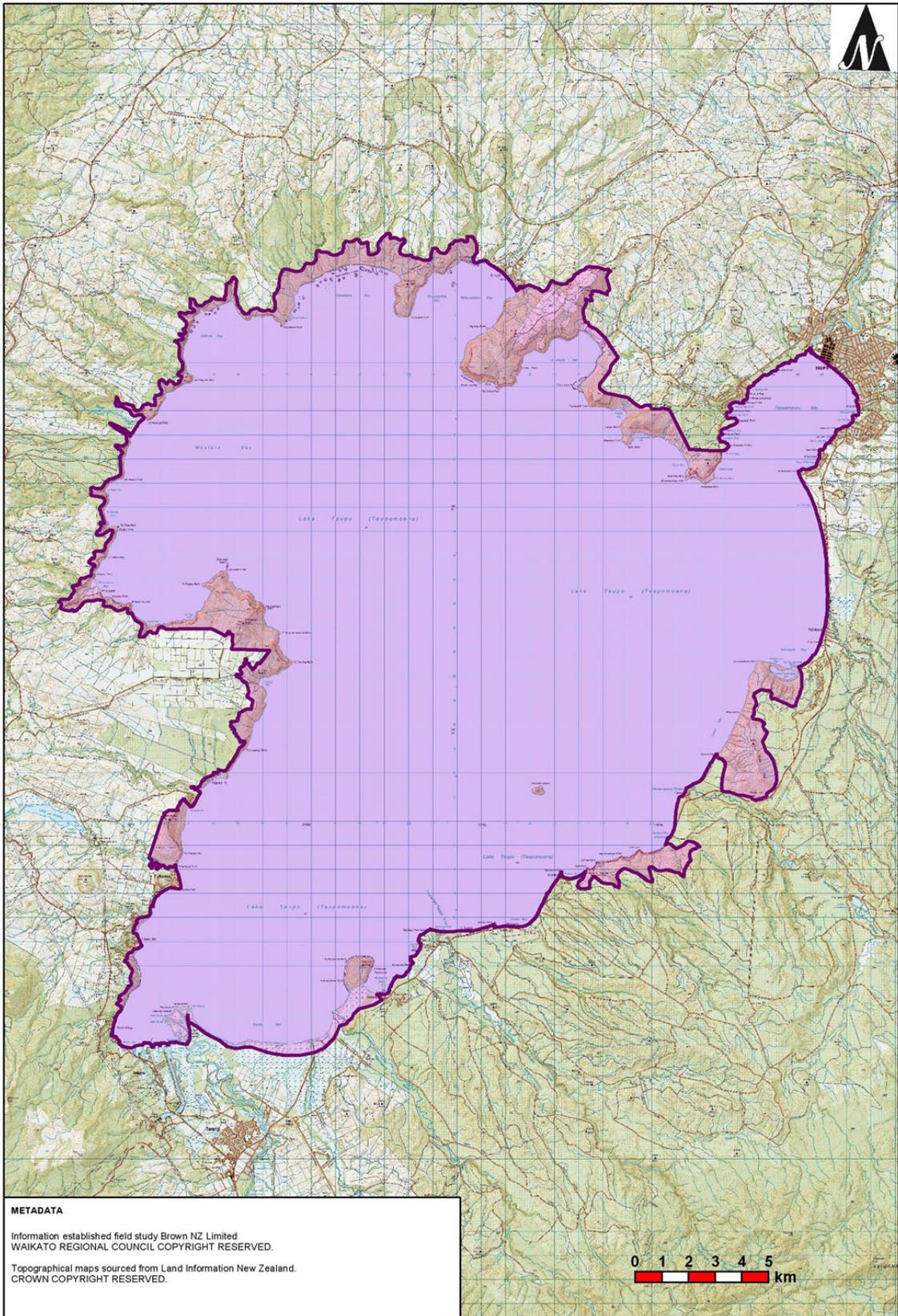
LANDSCAPE



Map 12-8: ONFL 7 – Mount Pirongia



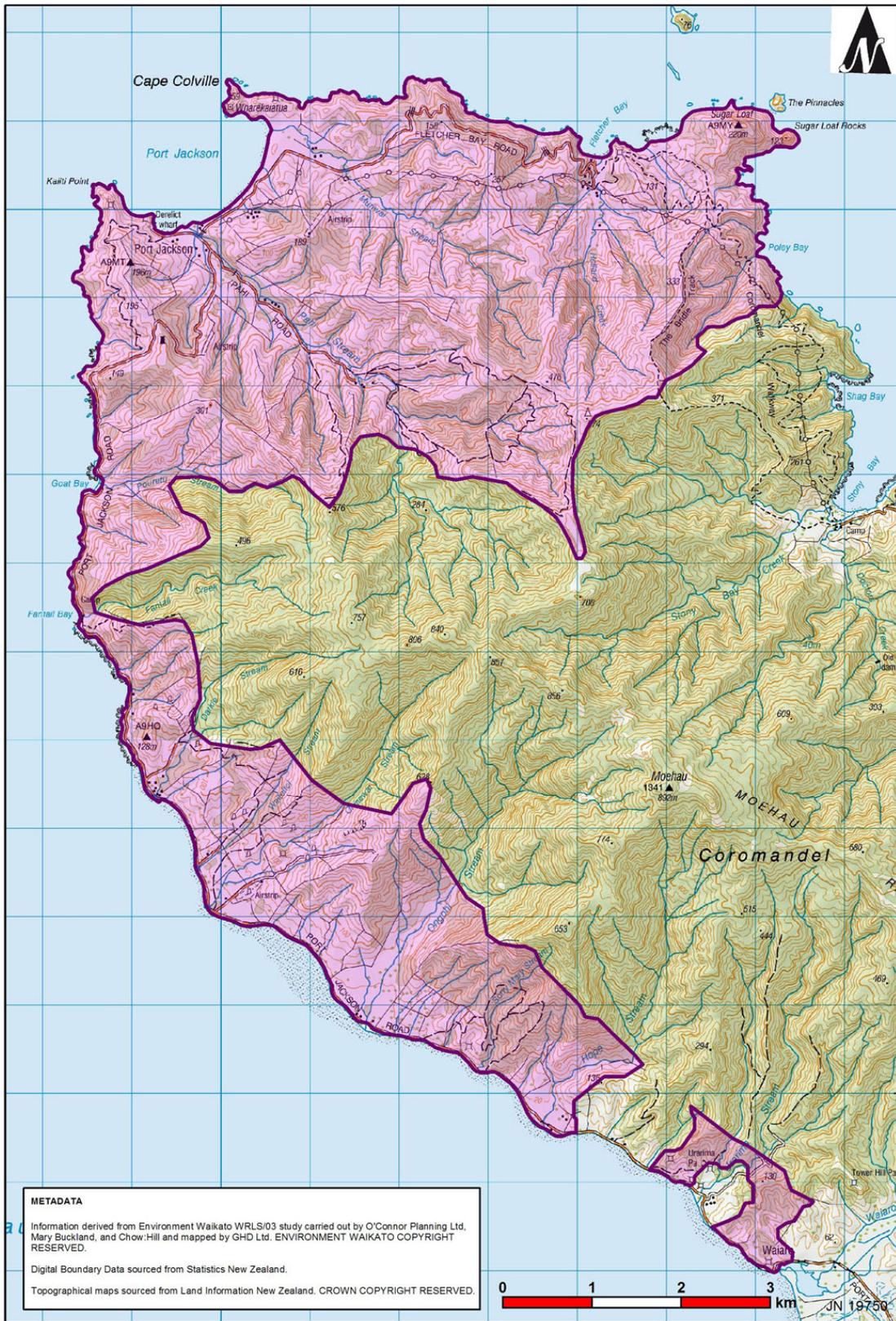
Map 12-9: ONFL 8 – Kaimai Range (north of Ngatamahinerua)



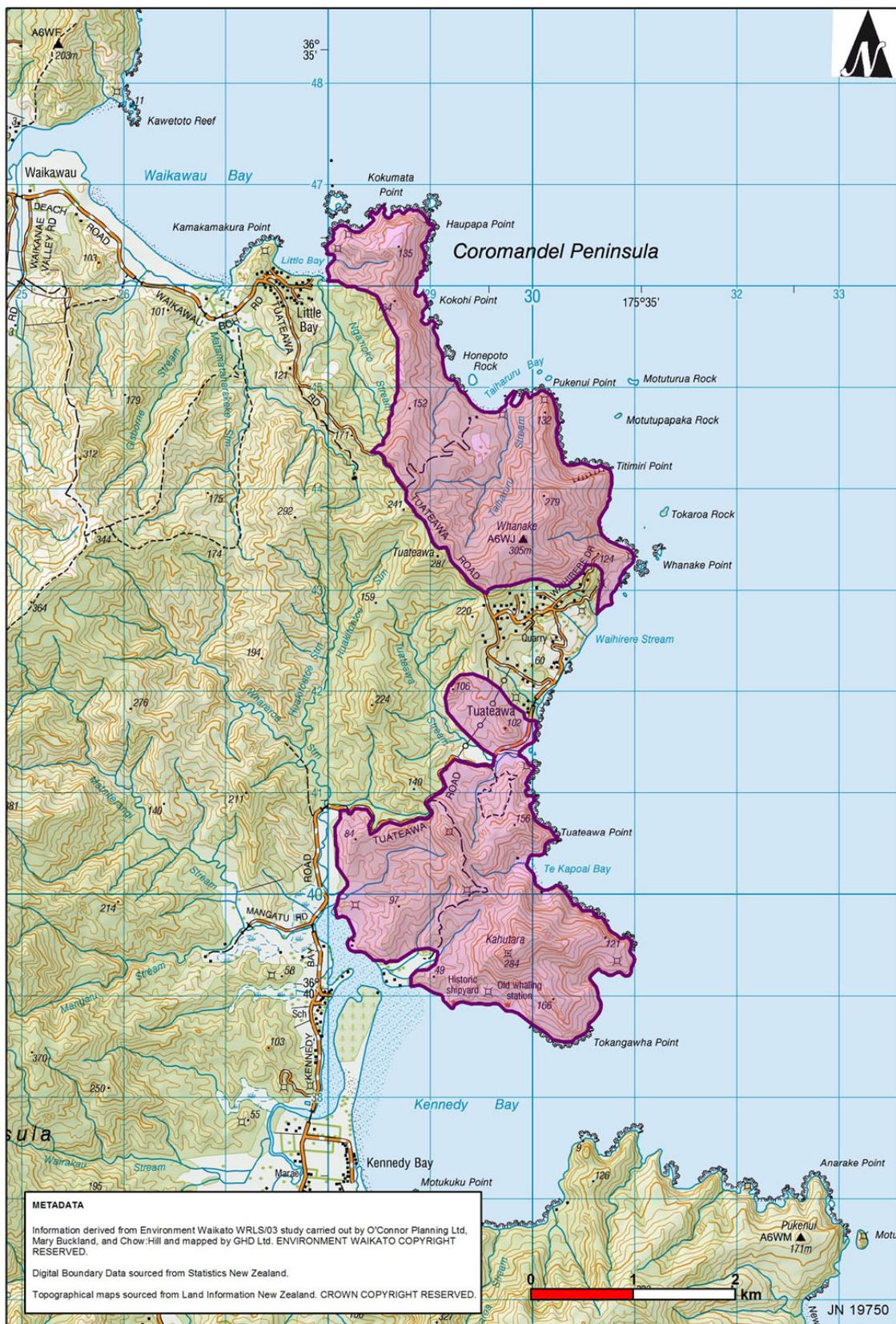
Map 12-10: ONFL 9 – Lake Taupō



Map 12-11: ONFL 10/1 – Cathedral Cove, Shakespeare Cliff and coastline south of Hahei

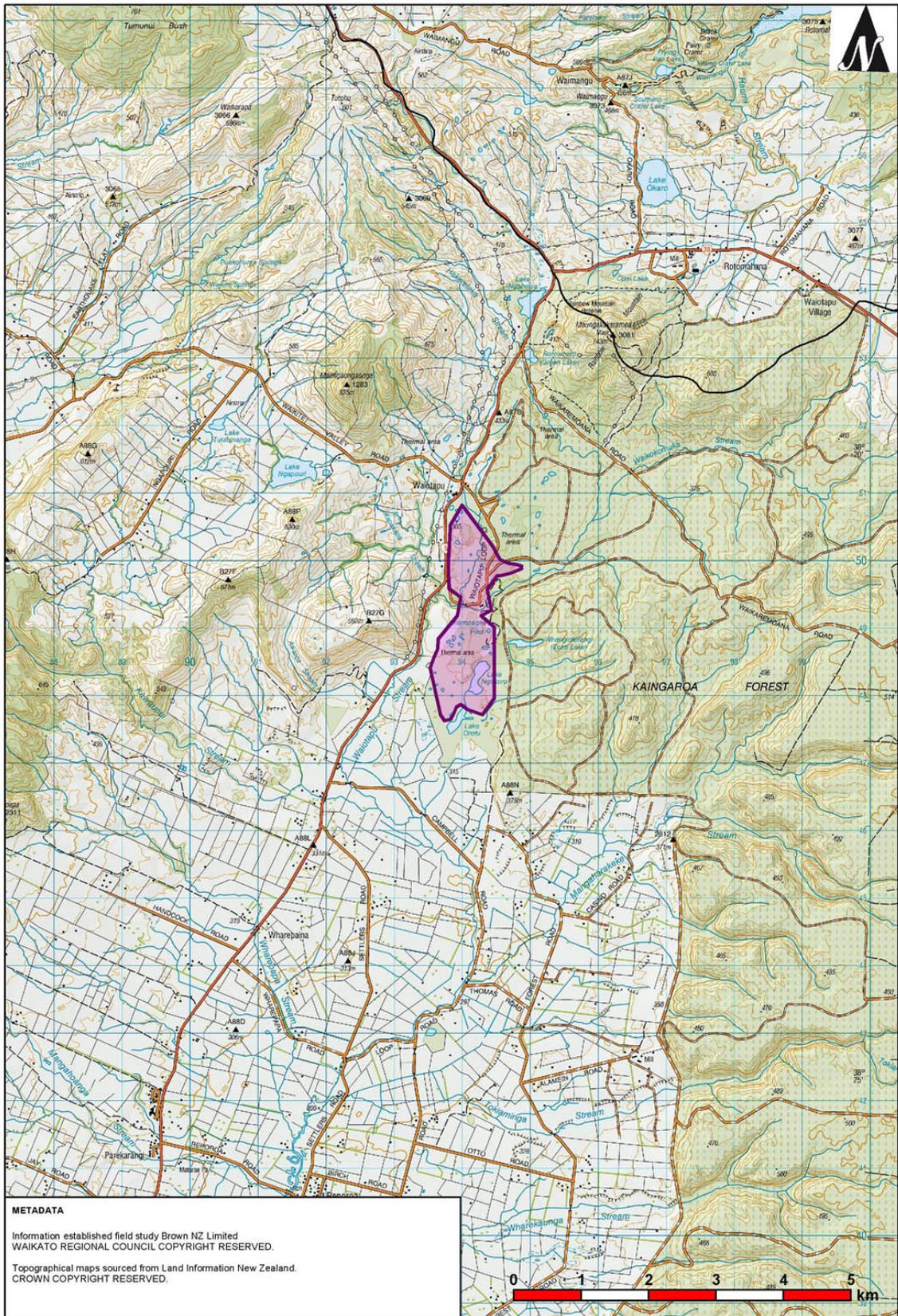


Map 12-12: ONFL 10/2 – Northern tip of Coromandel Peninsula and western slopes of Moehau Range out to coast



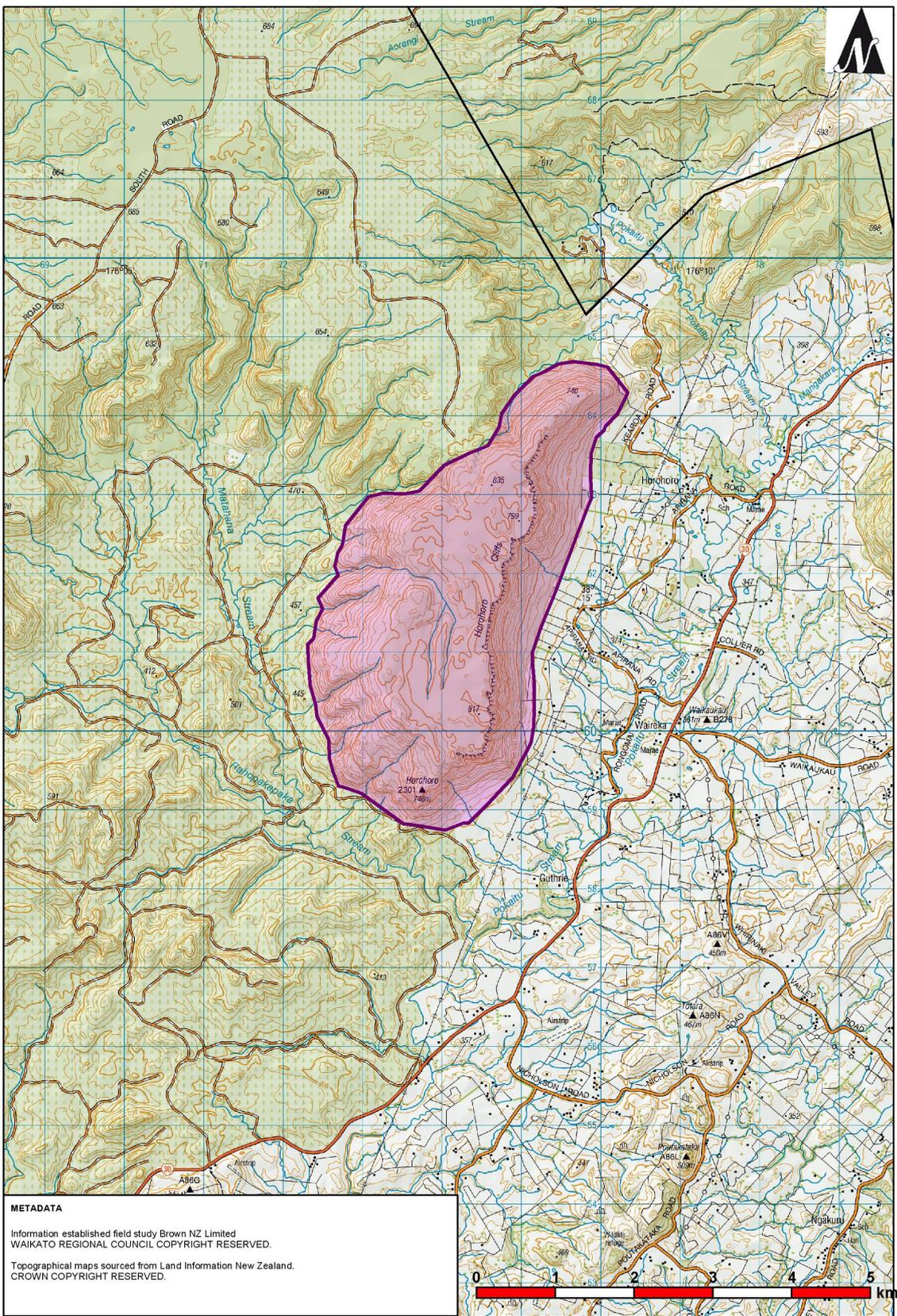
Map 12-13: ONFL 10/3 – Tuataewa

LANDSCAPE



Map 12-14: ONFL 11 – Waiotapu Geothermal Area & Lake Ngakoro

LANDSCAPE



Map 12-15: ONFL 12 – Horohoro Escarpment



Map 12-16: ONFL 13 – Opoutere Beach

12B Landscape assessment approach

The following section outlines the approach to be followed in assessing landscapes. Such an approach should be applied to the identification of 'outstanding natural features and landscapes' and also to 'seascapes' or landscapes with other specific amenity value.

In applying the approach continuing refinements in best practice, for instance as a result of future research or professional guides, should be taken into consideration.

Definition of 'Landscape' and 'Feature'

'Landscape is the cumulative expression of natural and cultural features, patterns and processes in a geographical area, including human perceptions and associations' (New Zealand Institute of Landscape Architects Best Practice Note 10.1, November 2010). A feature is a discrete part of a landscape.

By way of further explanation:

- Landscape is a distinct geographical area;
- Landscape involves both the physical attributes of the area and people's appreciation of such attributes; and
- Landscape appreciation entails scientific understanding, aesthetic perceptions, and people's associations with an area.

Assessing Landscapes

Landscape assessment entails the following stages:

1. **Analyse** the landscape's qualities taking into account its physical, aesthetic and associative attributes. Table 12-2 lists factors to be taken into consideration. The list is not exhaustive (other factors may be relevant depending on the qualities of specific places) and different factors may have greater or lesser relevance in different locations.
2. **Delineate the extent** of each landscape (typically defined by natural or human boundaries).
3. Make an **overall appraisal** of the landscape's character and significance based on the analysis described above. The appraisal should be more than a description of components, but rather how the components act together as a whole.
4. **Explain** the appraisal of each landscape (or feature) with reasons. The explanation needs to be sufficient in itself to justify the assessment's conclusions.

Outstanding Natural Features and Landscape Threshold Tests

A further stage is required to identify outstanding natural features and landscapes, which must be both 'natural' and pass an 'outstanding' threshold.

- 'Outstanding' means 'conspicuous, eminent, excellent, remarkable'.
- 'Natural' means a landscape predominantly characterised by natural elements and processes (for example landform, natural vegetation and/or water). 'Natural' can include managed rural landscapes (including pastoral landscapes) where natural elements and processes are dominant.

Table 12-2: Typical factors to consider when assessing landscapes

Attributes	Typical factors
Physical Attributes	<p>Natural - the characteristics of intactness, health and significance of natural landscape features including:</p> <ul style="list-style-type: none"> • Geology, geomorphology, and resultant topography • Hydrology (hydrological features and processes) • Soil and natural vegetation • Ecology (the health and significance of ecological attributes) <p>Human ('Cultural') - the characteristics of human features, any inherent cultural significance, and the manner in which they relate to the underlying natural setting including:</p> <ul style="list-style-type: none"> • Land use • Human vegetation patterns • Buildings, structures and settlements • Road networks <p>Human or cultural factors are relevant to landscape assessment in general. However, for assessment of outstanding natural features and landscapes the focus will be on natural areas where such human factors are recessive or absent.</p>
Aesthetic Attributes (perceptual, sensory, experiential)	<p>Visual and aesthetic characteristics including:</p> <ul style="list-style-type: none"> • Expressiveness – the manner in which biophysical features (including landforms, water-bodies and natural vegetation) express natural processes and patterns • Legibility (in the sense of way-finding and orientation) – the role of landscapes and features as landmarks, boundaries, areas with a distinctive character (taking the 3D sequential experience into account) • Picturesqueness / Composition (including such attributes as the presence of water, contrast of shadow and light, perspective depth, focal-points, the mix of openness and enclosure, and the overall composition of landscape elements) • Coherence (the manner in which different elements relate to each other including the intactness of natural landscapes and the extent to which human elements and patterns reflect the natural structure of the landscape) <p>Account should be taken of attributes that may be only occasionally or seasonally present (such as wildlife or snow), and the effects of movement (wind, waves) i.e. the 'transient factors'</p>
Associative Attributes	<p>Values or meanings associated with a landscape including such matters as:</p> <ul style="list-style-type: none"> • Naturalness associations (such as 'wilderness' values) • 'Sense of place' the manner in which landscapes convey a distinctive local character (cultural or natural) • Historical associations (where relevant to appreciation of the landscape) • Tāngata whenua associations (where relevant to appreciation of the landscape) • Recreational uses based fundamentally on landscape qualities • Emblematic attributes (for instance where a feature has been adopted as an icon for a community)

12C Natural character of the coastal environment: assessment criteria

Table 12-3: Natural character assessment criteria

The following criteria are to be used as the basis for identifying areas of high and outstanding natural character within the coastal environment.

BIO-PHYSICAL CHARACTERISTICS:
Land Forms (Geology / Geomorphology): reflecting the degree to which the natural terrain, headlands, coastal slopes, reefs, shoals, dunes, beaches and other natural geomorphic 'systems' remain intact.
Vegetation Cover & Type(s): reflecting both the physical extent of 'native' vegetation cover and the indigenous content and integrity of that cover: a higher proportion of endemic vegetation cover – e.g. from salt marsh to mature coastal / podocarp forest – connotes greater naturalness; conversely a preponderance of production forestry, horticultural planting or other 'exotic' vegetation are associated with a modified / developed environment. Similarly, the greater presence and proportion of the coastal environment that is covered by native species the greater its naturalness.
Sea / Estuarine Water Bodies: the greater the presence of the sea and/or estuarine water bodies, and the more intact and unmodified those marine bodies are – including their inter-tidal margins / edges – the more 'natural' a coastal environment is likely to be.
Land Uses / Activities / Structures: reflecting the degree to which human activities, structures, buildings, development and land / bush clearance impose their own values on the coastal environment and modify it: the greater that effect, the less natural a coastal environment will be.
Habitat Value: the greater the ecological / habitat value of any coastal environment, the more likely that the related presence of wildlife (e.g. gannets, seals, penguins) will evoke a strong sense of naturalness.
Natural Processes: the clear presence of tidal activity, estuarine flows, vegetative succession, natural (not man-induced) erosion, the greater the feeling that the coastal environment it still largely shaped by natural systems; conversely, man-made structures, developments and activities – such as culverts and coastal defences – are likely to diminish such values.
PERCEPTUAL VALUES:
Wildness / Remoteness: reflecting the degree to which the coastal environment is perceived as being remote from urban / suburban New Zealand and imbued with qualities that make it seem wild and / or connoting 'wilderness'.
Experiential Attributes: related to the sounds, smells and the appreciation of other sensory attributes that contribute to the feeling of being at the seaside, within an area dominated by natural elements and processes.
Context / Setting: reflecting the qualities of, and degree of interaction with, other parts of the coastline and the degree to which that interaction enhances or compromises the naturalness of the more immediate coastal environment.
Transient / Dynamic Attributes: related to seasonal / daily change, weather patterns, the motion of water, surf breaks, waterfalls, tidal flows, the presence of wildlife and the degree to which such exposure enhances the relative naturalness of the coastal environment.
Night-time Values: reflecting the extent to which lights, noise, perceived activities and exposure to the sky's star-field affect the perceived naturalness of the coastal environment.
OVERALL ASSESSMENT:
Overall Evaluation of Natural Character Values: Outstanding / High / Less than High

13 Natural hazards

Policy 13.1 Natural hazard risk management approach

Natural hazard risks are managed using an integrated and holistic approach that:

- a) ensures the risk from **natural hazards** does not exceed an acceptable level;
- b) protects health and safety;
- c) avoids the creation of new intolerable risk;
- d) Reduces intolerable risk to tolerable or acceptable levels;
- e) enhances community resilience;
- f) is aligned with civil defence approaches;
- g) prefers the use of natural features over man-made **structures** as defences against natural hazards;
- h) recognises natural systems and takes a 'whole of system' approach; and
- i) seeks to use the best available information/best practice.

The relevant objectives are:

- | | |
|------|-------------------------------------|
| 3.1 | <i>Integrated management</i> |
| 3.2 | <i>Resource use and development</i> |
| 3.3 | <i>Decision making</i> |
| 3.6 | <i>Adapting to climate change</i> |
| 3.12 | <i>Built environment</i> |
| 3.16 | <i>Riparian areas and wetlands</i> |
| 3.21 | <i>Amenity</i> |
| 3.22 | <i>Natural character</i> |
| 3.24 | <i>Natural hazards</i> |

Implementation methods

13.1.1 Risk management framework

Regional and district plans shall incorporate a risk-based approach into the management of subdivision, use and development in relation to natural hazards. This should be in accordance with relevant standards, strategies and plans, and ensure that:

- a) new development is managed so that natural hazard risks do not exceed acceptable levels;
- b) intolerable risk is reduced to tolerable or acceptable levels
- c) the creation of new intolerable risk is avoided;
- d) any intolerable risk as a result of existing use and development is as low as reasonably achievable; and
- e) where intolerable risk remains, the risks will be managed until an acceptable level is achieved.

13.1.2 Define primary hazard zones

Waikato Regional Council will identify **primary hazard zones** in consultation with key stakeholders including but not limited to territorial authorities, **tāngata whenua**, **infrastructure** providers, and affected communities and these shall be recognised and provided for in regional and district plans.

13.1.3 Assess natural hazard risk to communities

Waikato Regional Council will collaborate with territorial authorities, tāngata whenua and other agencies to undertake assessments of coastal and other communities at risk or potentially at risk from natural hazards, and develop long-term strategies for these communities. The strategies will, as a minimum:

- a) include recommendations for any hazard zones that should be applied, including primary hazard zones;
- b) identify risks to the community and existing infrastructure from natural hazards; and

- c) identify options for reducing the risks to the community to an acceptable level and the relative benefits and costs of those options, including taking into account any effects on:
 - i) public access;
 - ii) **amenity values**; or
 - iii) **natural character** (including natural physical processes, **indigenous biodiversity**, landscape and water quality).

13.1.4 Regional natural hazards forum

Waikato Regional Council will establish and co-ordinate a regional natural hazards forum to promote organisational integration and information sharing across jurisdictional and plan boundaries.

13.1.5 Information, education and advocacy

Waikato Regional Council will:

- a) collaborate with:
 - i) territorial authorities to support the collection and analysis of natural hazard risk information;
 - ii) territorial authorities, the Ministry of Civil Defence and Emergency Management, the Waikato Civil Defence and Emergency Management Group and other agencies to develop and implement public education and awareness programmes on natural hazards and their associated risks;
 - iii) agencies involved in the property market, including insurance companies, lending agencies and real estate agencies to promote understanding and awareness of natural hazard risk to properties; and
 - iv) research organisations; and
- b) store all natural hazard risk information that is available and relevant to the Waikato region, and share this information with territorial authorities and other relevant stakeholders; and
- c) advocate for:
 - i) a proactive approach to natural hazard identification in district and regional plans;
 - ii) the use of best practice approaches, including **mātauranga Māori**, to natural hazard identification and management of the associated risks; and
 - iii) a strategic approach to development (including redevelopment) that seeks that any increase in risk from natural hazards (including **residual risk**) is minimised.

Explanation

The Resource Management Act, Local Government Act, Building Act and Civil Defence and Emergency Management Act are all relevant to the management of natural hazard risks. This can lead to uncertainty as local authorities have roles under each Act; however, each Act has a different focus. The management of natural hazard risks within the region should be consistent and should be aligned with civil defence approaches. The respective roles of regional and territorial authorities should be clear to avoid duplication of effort and uncertainty (covered in Chapter 4). This includes functions in relation to natural hazards information for which it is intended the regional council will take a central role through supporting the territorial authorities and centrally storing all relevant information. It is not expected that the regional council will be responsible for assessing or providing natural hazards information at an individual property scale.

There will be situations where the existing risk to life, property or the environment from natural hazards is considered to be intolerable (primary hazard zones). This could be because the risk is considered real within the short term, or because the potential consequences are significant due to the scale or vulnerability of the people, property or

the environment at risk. It is not feasible to set region-wide standards for the identification of these areas due to the variability of the region, including the physical environment, and economic, social and cultural factors. It is expected that these areas will be identified on a case-by-case basis, including through the community assessments under Method 13.1.3 and the management of these areas will be tailored to the local situation.

A strategic approach should be taken to natural hazards that avoids the need and demand for ad hoc responses to natural hazard events and recognises that natural hazards are essentially natural events which only really pose a problem when people or development are put at risk. It seeks that assessments are undertaken that consider the appropriate scale (for example, whole community, **catchment** or beach), and take into account the full range of effects and values, not just risks to people and property. Typical responses to natural hazards have involved attempts to structurally protect property. These responses often result in adverse effects that are borne by other property owners or the wider community. This policy and methods seek to ensure that where such decisions are made, they are made after full consideration of the relative costs and benefits.

The central concept of the management of natural hazards is the identification and management of activities based on the level of risk to which they are exposed. Avoidance or mitigation of natural hazards is based on risk (the likelihood and consequences of a hazard). Rare events with potentially catastrophic outcomes may have the same level of risk as frequent but low-impact events. Ideally, the risk of both extremes should be managed so as not to exceed an acceptable level. Method 13.1.3 directs regional and district plans to take a risk-based approach to natural hazard management and that the risk to people, the community, property and the environment does not exceed acceptable levels or risk is reduced to tolerable levels. It is expected that district plans will further define what is acceptable and tolerable risk in their community and for particular land uses. For example, residential development in a high risk flood zone is likely to exceed acceptable levels of risk due to the risk to life and property given the nature of the land use; however the risk to other types of development in the same area, for example farming, may be acceptable. Intolerable risk is where the risk to people, property or the environment cannot be justified.

Assessment of risk should be in accordance with relevant standards and plans including as relevant:

- a) NZS9401:2008 (Flood Risk Management – A Process Standard);
- b) the Waikato Civil Defence and Emergency Management Group Plan; and
- c) ISO 31000: 2009 (Risk Management).

The diagram below provides clarification of the structure of the natural hazard issues, objectives, policies and methods.



Policy 13.2 Manage activities to reduce the risks from natural hazards

Subdivision, use and development are managed to reduce the risks from natural hazards to an acceptable or tolerable level including by:

The relevant objectives are:

- 3.1 *Integrated management*
- 3.2 *Resource use and development*
- 3.3 *Decision making*
- 3.6 *Adapting to climate change*
- 3.7 *Coastal environment*
- 3.24 *Natural hazards*

- a) ensuring risk is assessed for proposed activities on land subject to natural hazards;
- b) reducing the risks associated with existing use and development where these risks are intolerable;
- c) avoiding intolerable risk in any new use or development in areas subject to natural hazards;
- d) minimising any increase in vulnerability due to **residual risk**;
- e) avoiding the need or demand for new structural protection works; and
- f) discouraging hard protection structures and promoting the use of alternatives to them, including natural defences in the coastal environment.

Implementation methods

13.2.1 Control of subdivision within areas of intolerable risk

District plans shall control subdivision to avoid creating demand for new structures within identified **high risk flood zones** and identified primary hazard zones, and areas at high risk of coastal hazard.

13.2.2 Identification of areas of coastal hazard risk and high risk flood zones

District plans shall identify the location of areas:

- a) potentially affected by coastal hazards, prioritising the identification of those areas at high risk; and
- b) affected by high risk flood hazard.

13.2.3 Control of structures within primary hazard zones

Regional plans shall control any use or development of structures within identified primary hazard zones to reduce the risk from natural hazards to an acceptable level over time.

13.2.4 Floodplain management

Regional plans shall:

- a) control activities that divert or discharge flood water, including the importation of cleanfill into floodplains, in order to avoid or mitigate adverse effects of flooding and erosion; and
- b) ensure that an integrated catchment approach to flood management is adopted.

13.2.5 Control of use and development (high risk flood zones and areas of high coastal hazard risk)

Regional and district plans shall ensure that use and development within high risk flood zones and areas of high coastal hazard risk is appropriate, including by avoiding the placement of structures or development where these would be vulnerable to a natural hazard event or would place a community at intolerable risk. These include:

- a) habitable structures;

- b) significant community infrastructure such as hospitals and emergency services; and
- c) **lifeline utilities.**

13.2.6 Control of development within a floodplain or coastal hazard area

Regional and district plans shall ensure that:

- a) Subdivision, use and development can only occur in a floodplain with an annual exceedance probability of 1% (where the floodplain does not match the definition of being a High Risk Flood Zone) or in an identified potential coastal hazard area (not being a High Risk Coastal Hazard) area where:
 - i) appropriate assessment of the risks has been undertaken and these risks will not exceed acceptable levels;
 - ii) appropriate assessment of the likely effects has been undertaken, including the effects of any new structure or fill on the diversion of overland flows or any consequential increased runoff volumes;
 - iii) the creation of a new, or exacerbation of an existing hazard, including those off site, and any adverse effects are avoided, remedied or mitigated;
 - iv) any adverse effects of a 1% **annual exceedance probability** flood event on habitable buildings are avoided or mitigated;
 - v) has been designed and located to minimise the level of coastal hazard risk over its intended lifetime; and
 - vi) any **hazardous substance** stored as part of the development, or during the construction, or found on or near to the site, will not create a hazard; or
- b) it is essential infrastructure, and:
 - i) it cannot be located elsewhere; or
 - ii) it will not increase the risk of or from natural hazard.

13.2.7 Control of subdivision, use and development (residual risk zones)

District plans shall identify **residual risk zones** and shall control subdivision, use and development within these zones so that **residual risk** is minimised. In doing so, particular regard shall be had to:

- a) the level of service provided by the structural defences;
- b) the physical, environmental and financial sustainability of the structural defences over a period of at least 100 years;
- c) the impact caused by an **overwhelming** or a structural failure of protection works; and
- d) a reduction in the ability of a community to respond to and recover from a natural hazard event.

13.2.8 Control of subdivision, use and development for other natural hazards and associated risk

Regional and district plans shall control subdivision, use and development outside primary hazard zones, high risk flood zones, floodplains and residual risk zones to ensure:

- a) they do not create or exacerbate natural hazard risks elsewhere;
- b) they are appropriate by considering:
 - i) the likelihood that defensive structures or works will be required to protect the activity from the effects of natural hazards;
 - ii) the vulnerability of the activity to the effects of natural hazards;
 - iii) the potential for adverse effects on the wider local and/or regional community; and

- iv) whether or not the development is consistent with a growth strategy or structure plan; and
- c) the role of natural features to avoid or mitigate natural hazards should be recognised and maintained or enhanced.

Explanation

The intention is to reduce the risks to the regional community from natural hazards, recognising that different tools and approaches are required and appropriate in different situations – for example, for **greenfield** sites versus developed sites, for areas facing immediate risk versus those facing medium- to long-term risk, or depending on the particular natural hazard(s) faced in an area. This approach recognises that avoiding risk everywhere is impractical and seeks instead to ensure that development is appropriate with respect to the level of risk faced and the relative vulnerability of different activities. It also recognises that natural hazards are essentially natural events which only pose a hazard because development has occurred within their range and it will generally always be easier and cheaper to avoid development in these areas than manage the risk afterwards. This is especially true given the expected effects of climate change which will change the frequency, intensity and occurrence of weather- and sea level-related natural hazards.

Because existing lawfully established activities have some protection under the Resource Management Act (section 10), there are limitations on how territorial authorities can manage existing development. Regional councils are not restricted in the same way. It is expected that to effectively reduce the risks to people, property and the environment, it will be necessary to manage existing structures within primary hazard zones and, therefore, the regional council needs to take on this role. Territorial authorities will retain functions for structures in relation to matters such as access, daylight requirements, yards, and height restrictions. To avoid unnecessary complications due to this overlap, the regional council will investigate transferring its functions back to the relevant **territorial authority** (refer to section 33 RMA).

Areas of intolerable risk are those areas that have been classified as a High Risk Flood Zone or a Primary Hazard Zone. These are areas where modelling the risks to people and property are likely to be high. Development in these areas will be more tightly controlled in order to reduce the risk from hazards to an acceptable level.

The methods of this policy are predominantly focused towards identified hazard areas, including Primary Hazard Zones, Flood Risk Zones, areas at high risk of coastal hazard and Residual Risk Zones. Method 13.2.8 recognises that there are other natural hazards that may be relevant in particular areas e.g. coastal erosion, coastal flooding or liquefaction risk, and that development in these areas needs to be managed to ensure that the risk from these natural hazards does not exceed an acceptable level.

Policy 13.3 High impact, low probability natural hazard events

<p><i>The relevant objective is:</i> 3.24 Natural hazards</p>

The risks associated with high impact, low probability natural hazard events such as tsunamis, volcanic eruptions, earthquakes and debris flows are considered, having particular regard to:

- a) personal health and safety;
- b) damage and/or disruption to essential community services;
- c) the ability of a community to respond and recover; and
- d) civil defence readiness, response and recovery planning.

Implementation methods

13.3.1 Planning for readiness, response and recovery

Local authorities should consider the potential effects of high impact, low probability natural hazard events and address these, including by:

- a) where possible avoiding new development in high risk hazard areas (for example, tsunami run-up areas). Development that may be directed away from such areas could include:
 - i) residential, commercial and industrial uses (especially those involving hazardous materials);
 - ii) lifeline utilities; and
 - iii) emergency services facilities including police, hospital and fire services;
- b) using other land use planning measures where it is not feasible to restrict land uses to open-space uses. These may include controlling the type of development and uses allowed in hazard areas, and avoiding high value and/or high occupancy uses to the greatest degree possible;
- c) for tsunami risk, considering site-specific mitigation measures aimed at slowing, blocking, or redirecting water, or raising structures and habitable areas above the expected level of inundation;
- d) avoiding or restricting the location of facilities such as hospitals, schools and other facilities that may be difficult to evacuate quickly in areas at risk from tsunami, lahars, lava and pyroclastic flows, and debris avalanches;
- e) liaising with civil defence and lifeline utility agencies; and
- f) designing safeguards for critical community networks (for example, water supply).

13.3.2 Advocacy

Waikato Regional Council will advocate for appropriate consideration and recognition of the likely effects of high impact, low probability natural hazard events, including through regional and district plans, structure plans, growth strategies and resource consent processes.

Explanation

It is practically impossible to completely avoid or even manage the risks associated with high impact, low probability natural hazard events such as tsunami, volcanic eruptions, earthquakes and debris flows. To do so would require relocation of the region's low-lying coastal settlements as well as those around the central volcanic plateau to name but a few. There are, however, practical measures that can be adopted to reduce or mitigate the risk, including by increasing our understanding of these events and where, when and how they may occur, or by increasing our preparedness for such events.

14 Soils

Policy 14.1 Maintain or enhance the life supporting capacity of the soil resource

Manage the soil resource to:

- a) minimise sedimentation and erosion;
- b) maintain or enhance biological, chemical and physical soil properties; and
- c) retain soil versatility to protect the existing and foreseeable range of uses of the soil resource.

The relevant objectives are:

- | | |
|------|--|
| 3.2 | <i>Resource use and development</i> |
| 3.8 | <i>Ecosystem services</i> |
| 3.9 | <i>Relationship of tāngata whenua with the environment</i> |
| 3.25 | <i>Values of soil</i> |
| 3.26 | <i>High class soils</i> |

Implementation methods

14.1.1 Manage the effects of activities to maintain soil quality and reduce risk of erosion

Regional plans shall control the effects of activities to maintain **soil quality** and to reduce the risk of erosion, including:

- a) activities that negatively impact on soil quality and ecosystem services;
- b) activities on land with high erosion potential and/or near water bodies;
- c) earthworks and soil disturbance, including controlling the timing, duration, scale and location of soil exposure;
- d) maximising the retention of soil on site and in situ; and
- e) the adverse effects on pumice soils.

14.1.2 Soil conservation

Waikato Regional Council will prepare and administer soil conservation and **catchment** management programmes in order to reduce erosion risk.

14.1.3 Research and advocacy

Waikato Regional Council will:

- a) advocate for research into the risks from and effects of erosion and soil degradation, and for the development of land management practices that enhance the life supporting capacity of the soil resource; and
- b) collaborate with primary industry, landowners, **tāngata whenua** and other stakeholders to develop and adopt best practice, and to provide education and advice to land managers.

14.1.4 Pest management

Waikato Regional Council will ensure that the Regional Pest Management Strategy addresses the control of pest species that may threaten or damage vegetation that offers protection from soil erosion.

Explanation

The Waikato region relies on the soil resource to support primary industries including farming, forestry and horticulture.

The processes to form soil occur over hundreds to thousands of years, so keeping soil on site and in situ is the most natural and effective way for soil to continue to provide **ecosystem services** and maintain quality for a range of uses. Retaining soil on site and in situ is the most effective means of meeting Policy 14.1 to maintain or enhance

the values of the soil resource. There are, however, some activities that require soil removal and accordingly Method 14.1.1 is to maximise the retention of soil on site and in situ, rather than require full retention.

Soil disturbance and loss results in a decline in soil quality and productive capability, and a loss in the range of purposes for which the soil can be used. Erosion occurs naturally irrespective of land use, but the way that land is managed changes the risk and extent of soil disturbance and loss. For example, the risk and extent of soil lost during cultivation practices or as a result of vegetation removal may be affected by the soil type, topography, timing, scale of the activity, or by the way in which the activity is carried out. Methods 14.1.1, 14.1.2 and 14.1.4 focus on managing activities when the risk of erosion is high or where it may result in adverse effects on water quality and elsewhere.

Degradation of the soil resource may also occur through changes in physical condition, including porosity and soil structure, chemical properties including carbon levels (organic matter), and biological activity. These affect productivity and health of soil and its ability to hold and use nutrients and water. Method 14.1.3 recognises that working with industry and land managers and advocating for good soil management practices offers opportunities to ensure that soil quality is maintained or enhanced. Research into soil and land management practices may include consideration of carbon sequestration, greenhouse gas emissions and the values of soils under native vegetation as a reservoir of **biodiversity** and of ecosystem services.

Primary production activities such as agriculture, forestry and horticulture have a direct relationship with the management and continued viability and availability of the soil resource. Policy 4.4 and associated methods recognise this relationship, as well as the social and economic value and benefits that are to be derived from ongoing availability of resources such as soils.

Policy 14.2 High class soils

Avoid a decline in the availability of **high class soils** for primary production due to inappropriate subdivision, use or development.

The relevant objectives are:
 3.2 *Resource use and development*
 3.8 *Ecosystem services*
 3.10 *Sustainable and efficient use of resources*
 3.25 *Values of soil*
 3.26 *High class soils*

Implementation methods

14.2.1 Manage the form and location of development

District plans shall give priority to productive uses of high class soils over non-productive uses including through:

- a) restricting **urban** and **rural-residential development** on high class soils;
- b) restricting the level of impermeable surfaces allowable on high class soils;
- c) facilitating the return or continued availability of high class soils to primary production activities, for example through amalgamation of small titles;
- d) directing urban and rural-residential development onto soils of lesser versatility where there is an option to do so;
- e) accepting that where high class soil removal or disturbance cannot be avoided, the soil should be used to rehabilitate the land or enhance soils elsewhere in the region in order to retain soil versatility and productive capacity; and
- f) the development of growth strategies.

For the purpose of implementing the above method (including in particular development referred to in (a), (b) and (d)), development provided for in:

- a) a growth strategy identified in Chapter 6 of this Regional Policy Statement; or

- b) a council-approved growth strategy developed with regard to the development principles in 6A, shall be recognised and provided for where such growth strategies identify development which may occur on high class soils.

14.2.2 Provision of information

Waikato Regional Council will make information on high class soils, including the soil classifications, available to territorial authorities and other interested parties.

Explanation

Waikato region contains about one quarter of New Zealand's high class soils, making them a significant national resource within the region. High class soils are inherently highly productive for a wide range of purposes not always possible on other class soils. They are a finite resource.

Policy 14.2 recognises that many of the region's high class soils are in or around urban areas and are consequently under pressure from urban expansion and **infrastructure** development. Using high class soils for urban development pushes agricultural activities onto more marginal soils. This has the potential to increase adverse environmental effects and necessitates greater inputs, such as fertiliser and water, to maintain production than would have been required on high class soils. It is desirable, therefore, that district plans recognise the importance of restricting use of high class soils for uses other than primary production purposes or, in situations where only high class soils are available, that Class III soils are used in preference to Classes I and II.

It is not the intention of Policy 14.2 or its methods to prevent all urban development on high class soils. However, it is expected that, in order to ensure development is appropriate, it would be subject to a comprehensive planning process such as district plan review, structure plan or growth strategy prior to any re-zoning. In addition, Chapter 6 includes further guidance on avoiding fragmentation of high class soils.

Policy 14.3 Soil contaminants

Ensure that **contaminants** in soils are minimised and do not cause a reduction in the range of existing and foreseeable uses of the soil resource. Particular attention will be given to the potential for effects on:

- a) human health;
- b) animal health;
- c) suitability of soil for food production;
- d) micro-nutrient availability;
- e) soil ecology; and
- f) groundwater.

The relevant objectives are:

- | | |
|------|---|
| 3.1 | <i>Integrated management</i> |
| 3.8 | <i>Ecosystem services</i> |
| 3.10 | <i>Sustainable and efficient use of resources</i> |
| 3.14 | <i>Mauri and values of fresh water bodies</i> |
| 3.25 | <i>Values of soil</i> |
| 3.26 | <i>High class soils</i> |

Implementation methods

14.3.1 Control discharges to land

Regional plans shall control discharges to land to ensure the accumulation of soil contaminants does not reduce the range of existing and foreseeable uses of the soil resource. For key soil contaminants including cadmium, fluorine and zinc, Waikato Regional Council will consider:

- a) adopting risk-based guidelines for contaminants in soil and linking these with specific management actions; and
- b) establishing processes to determine discharge limits which may include setting maximum discharge limits based on soil contaminant levels.

14.3.2 Research, advocacy and education

Waikato Regional Council will:

- a) work with industry and other stakeholders to identify, and incorporate into land management practices, actions to reduce the rate of accumulation of key soil contaminants including cadmium, fluorine and zinc;
- b) work with relevant agencies towards increasing the understanding of diffuse contaminant issues and developing relevant national strategies; and
- c) advocate for sustainable land management practices and the use of alternative technologies that minimise the risk of diffuse soil contamination, including through environmental education programmes.

Explanation

The intent of Policy 14.3 is to minimise contaminants in soils. Contaminants in soils, and the accumulation of contaminants, can lead to reduced soil versatility and productivity and in some cases can render land unsuitable for food production and for people to inhabit. Situations already exist in the region where the level of a contaminant has rendered an area unsuitable for habitation, and remediation was required before the area could be developed for housing. Adverse effects may also arise if a contaminant leaches from soil to groundwater, or if it causes a change in micro-nutrient (trace element) availability, resulting in either deficiency or toxicity of a micro-nutrient to animals or plants and affecting their health.

Contamination of soils arises from the discharge of contaminants onto or into land from sources such as phosphate fertiliser, animal health remedies and biosolids. Contamination may be diffuse over large areas of soil or concentrated at a particular site, and the approach used to manage activities likely to result in contamination will differ, depending on the contaminant involved and the source of the contaminant.

Contaminants currently causing concern include cadmium, fluorine and zinc, but the policy is not specific and the methods provide for research, collaboration and best practice advice on any potential contaminant issue. Regular monitoring will provide information on contaminant levels and trends.

Policy 14.4 Contaminated land

Identify and manage **contaminated land** to ensure human, plant and animal health, and water, air and soil quality are protected from unacceptable risk.

Implementation methods

14.4.1 District plans

District plans shall include provisions that support the implementation of the Resource Management (National Environmental Standard for Assessing and Managing Contaminants in Soil to Protect Human Health) Regulations 2011.

14.4.2 Regional plans

Regional plans shall control discharges to and from land arising from remediation or management of contaminated land to reduce the potential for the creation of further contaminated land.

14.4.3 Approach to identifying and remediating contaminated land

- a) Waikato Regional Council will collaborate with territorial authorities and other relevant stakeholders to:

The relevant objectives are:

- 3.1 *Integrated management*
- 3.3 *Decision making*
- 3.8 *Ecosystem services*
- 3.10 *Sustainable and efficient use of resources*
- 3.11 *Air quality*
- 3.14 *Mauri and values of fresh water bodies*
- 3.25 *Values of soil*

- i) identify and monitor existing or potentially contaminated land and develop a protocol for the proper use and release of this information; and
 - ii) develop consistent, efficient and effective approaches to remediating and managing contaminated land for when there is an unacceptable risk to human health and the environment; and
- b) territorial authorities shall control any actual or potential effects of the subdivision, development, change in use, or ongoing use of contaminated land.

14.4.4 Advocacy

Waikato Regional Council will:

- a) seek guidance and assistance from central government on the management of specific contaminated lands;
- b) recognise and apply relevant Ministry for the Environment criteria and best practice guidance when managing contaminated land; and
- c) encourage the active management and remediation of identified areas of contaminated land.

Explanation

People, animals and the environment can be exposed to risk from contaminated land in a number of ways, including direct contact with contaminated soil, swallowing food or water from contaminated environments and breathing gases or contaminated dust.

Exposure to **hazardous substances** can have significant adverse effects on human health and on soil, surface water, groundwater and ecosystems. As well as endangering health, these substances can limit the current and future uses of land and reduce land value.

Contamination is not always limited to a specific site. Hazardous substances may seep through the soil into groundwater, or be carried to nearby land and waterways in rainwater or on dust particles. Vapour and gases from contaminated land may present additional risks of explosion and odour.

New Zealand has a legacy of soil contamination that requires areas of contaminated land to be identified and assessed particularly prior to any development in order to ensure that the land does not pose an unacceptable risk.

Waikato Regional Council will apply relevant Ministry for the Environment guidelines when managing contaminated land. However, where relevant guidance is unavailable other national or international criteria and best practice guidance may be applied.

The Resource Management (National Environmental Standard for Assessing and Managing Contaminants in Soil to Protect Human Health) Regulations 2011 (NESCS) now largely govern **territorial authority** responses to soil contamination. A district plan cannot be more nor less stringent than the NESCS, except where a rule is included for the purpose of giving effect to the Vision and Strategy for the Waikato River, in which case the rule may be more stringent than the NESCS. Territorial authorities should consider the need for district plan provisions to support the implementation of the NESCS. For example, resource consent applications arising under the NESCS could be supported by appropriate objectives and policies and a list of information to be supplied with applications.

It is expected that this will be a collaborative approach that uses Waikato Regional Council's expertise.

Policy 14.5 Peat soils

Manage the adverse effects of activities resulting from use and development of **peat soils**, including by slowing the rate of subsidence and the loss of carbon by oxidation from peat soils.

Implementation methods

14.5.1 Manage peat subsidence

Regional plans shall control activities on peat soils to promote best practice land management to:

- a) slow the rate of subsidence of peat soils and carbon loss;
- b) mitigate the adverse effects resulting from use and development of peat soils, including off-site effects on habitats, infrastructure, properties and other development; and
- c) ensure drainage infrastructure minimises any adverse effects on peat soils and subsidence on peat lakes.

14.5.2 Research

Waikato Regional Council will undertake and promote research to increase information on the rates and long-term impacts of subsidence and carbon loss on peat soils, associated environments and infrastructure.

14.5.3 Advocacy and education

Waikato Regional Council will advocate soil management and land use practices that avoid degradation of peat soils, including through environmental education programmes.

Explanation

Subsidence occurring as a consequence of drainage activities can adversely affect adjacent infrastructure, such as roads, and provision of services. In these situations it is appropriate that plan provisions provide for the remediation or mitigation of adverse effects.

The Waikato region contains 94,000 hectares of farmed peat, about half of New Zealand's peatland resource. Drainage and cultivation allow these soils to be farmed but this results in subsidence and oxidation of the peat and ultimately the loss of the peat resource. Subsidence can also draw down the water table on adjacent **wetlands** and contribute to greenhouse gas emissions through carbon loss.

Good moisture and pasture management can reduce the rate of subsidence and prolong the life and the use of the resource. Research is required to better understand the effects of land management on rate of subsidence and the long-term impacts of this on the peat resource and associated wetland ecosystems. Reduction of subsidence will be achieved through advocacy of practices identified to reduce moisture loss, as well as from regulation of some activities to reduce adverse effects.

The relevant objectives are:

- 3.2 *Resource use and development*
- 3.8 *Ecosystem services*
- 3.10 *Sustainable and efficient use of resources*
- 3.12 *Built environment*
- 3.16 *Riparian areas and wetlands*
- 3.25 *Values of soil*

