
PART 3
Domains and Topics
Ngā Takiwā, Kaupapa rānei

AIR – Air

Objectives

AIR-O1 – Air quality

Air quality is managed in a way that:

1. ensures that where air quality is better than national environmental standards and guidelines for ambient air, any degradation is as low as reasonably achievable;
2. avoids unacceptable risks to human health and ecosystems, with high priority placed on achieving compliance with national environmental standards and guidelines for ambient air; and
3. avoids, where practicable, adverse effects on local amenity values and people's wellbeing including from discharges of particulate matter, smoke, odour, dust and agrichemicals, recognising that it is appropriate that some areas will have a different amenity level to others.

AIR-O1 addresses the following issues:	
SRMR-I1 – State of resources *SRMR-I4 – Managing the built environment*	
AIR-O1 is achieved by the following policies:	
IM-P1 – Integrated approach *IM-P2 – Collaborative approach* *IM-P3 – Tangata whenua* *AIR-P1 – Improve degraded air quality*	*AIR-P2 – Manage discharges to air* *AIR-P3 – Manage adverse effects on amenity* *LF-P8 – Maintain or enhance the life supporting capacity of the soil resource* *UFD-P1 – Planned and co-ordinated subdivision, use and development*

Policies

AIR-P1 – 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:

1. discharges of fine particulate matter; and
2. areas where there are unacceptable risks to human health and ecosystems.

***The relevant objectives are**:*
IM-O6 – Ecosystem services *IM-O8 – Sustainable and efficient use of resources* *IM-O9 – Amenity* *AIR-O1 – Air quality* *EIT-O1 – Energy*

AIR-P2 – 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:

1. existing air quality;
2. the age of and ability to upgrade existing infrastructure;

3. any alternative modes/methods of discharge;
4. applicable emission control techniques;
5. the extent to which it is possible to apply the best practicable option;
6. the relative effects on the environment of the options;
7. economic and social factors;
8. managing discharges to air where there is high or good air quality;
9. national environmental standards and guidelines for ambient air; and
10. the duration of the discharge and whether the discharge is temporary or short-term.

***The relevant objectives are**:*
IM-O2 – Resource use and development *IM-O6 – Ecosystem services* *IM-O8 – Sustainable and efficient use of resources* *IM-O9 – Amenity* *AIR-O1 – Air quality*

AIR-P3 – 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**:*
IM-O2 – Resource use and development *IM-O3 – Decision making* *IM-O9 – Amenity* *AIR-O1 – Air quality*

Methods

AIR-M1 – Control discharges

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

***The relevant policy is**:*
AIR-P1 – Improve degraded air quality

AIR-M2 – Determine unacceptable risk

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

1. National Environmental Standards for Air Quality;
2. World Health Organisation Air Quality Guidelines;
3. National Ambient Air Quality Guidelines;
4. Regional Ambient Air Quality Guidelines; and
5. other nationally or internationally accepted criteria.

The relevant policies are:
AIR-P1 – Improve degraded air quality *AIR-P2 – Manage discharges to air*

AIR-M3 – 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, tangata whenua and other stakeholders to:

1. identify potential gaps in how air quality issues are addressed;
2. prioritise actions for improving air quality where it is degraded;
3. identify implications for communities of addressing local air quality issues, including health, financial or other implications; and
4. recognise local community needs and support community action.

The relevant policy is:
AIR-P1 – Improve degraded air quality

AIR-M4 – 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.

The relevant policy is:
AIR-P1 – Improve degraded air quality

AIR-M5 – Education and advocacy

Waikato Regional Council will:

1. use environmental education programmes to increase public awareness and to improve community understanding of:
   a. the impacts and causes of poor air quality;
   b. the benefits of correct operation of solid fuel home heating appliances and the use of good quality (low moisture) wood;
   c. the benefits of appropriate insulation;
   d. how to avoid or reduce adverse effects from outdoor open burning;
   e. the benefits of alternative modes of transport (including cycling and walking); and
   f. the benefits of low emission vehicles; and
2. promote the inclusion of initiatives that minimise air emissions from land transport including in:
   a. the Waikato Regional Land Transport Plan, and
   b. urban growth strategies and structure plans.

The relevant policy is:
AIR-P1 – Improve degraded air quality

AIR-M6 – Quality wood supply

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

The relevant policy is*:*
AIR-P1 – Improve degraded air quality

AIR-M7 – 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.

The relevant policy is:
AIR-P1 – Improve degraded air quality

AIR-M8 – 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.

The relevant policy is:
AIR-P2 – Manage discharges to air

AIR-M9 – Manage air amenity

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

1. the division of responsibilities for responding to complaints about discharges to air; and
2. 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.

The relevant policy is:
AIR-P3 – Manage adverse effects on amenity

AIR-M10 – 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:

1. frequency, intensity, offensiveness, duration and location of the incident; while
    a. recognising the amenity usually associated with the area and land uses; and
    b. recognising the potential for reverse sensitivity effects.

The relevant policy is:
AIR-P3 – Manage adverse effects on amenity

Principal reasons

AIR-PR1 – Improve degraded air quality

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. AIR-M1 provides for the establishment of a control regime through the regional plan while AIR-M3 - AIR-M7 identify non-regulatory mechanisms that are expected to promote changes in behaviour and consequently a reduction in the emissions of fine particulate matter.

AIR-PR2 – Manage discharges to air

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 AIR-P2(5).

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.

AIR-PR3 – Manage adverse effects on amenity

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 UFD – Urban form and development seek to minimise this.

Anticipated environmental results

AIR-AER1	Emissions per capita from both the domestic and transport sector are reduced.
AIR-AER2	Assessments of air quality indicate no unacceptable risk to human health from air.
AIR-AER3	Use of public transport is increased.
AIR-AER4	There are decreasing annual average concentrations of PM10 in monitored urban areas.
AIR-AER5	There is a reduction in the number of exceedences of ambient air quality guidelines or standards.

AIR-AER6	All gazetted air sheds have achieved the National Environmental Standards for Air Quality for fine particulate matter.

CE – Coastal environment

Objectives

CE-O1 – Coastal environment

The coastal environment is managed in an integrated way that:

1. preserves natural character and protects natural features and landscape values of the coastal environment;
2. avoids conflicts between uses and values;
3. recognises the interconnections between marine-based and land-based activities; and
4. recognises the dynamic, complex and interdependent nature of natural biological and physical processes in the coastal environment.

CE-O1 addresses the following issues:	
{Link, 18664,SRMR-I1 – State of resources *SRMR-I2 – Effects of climate change* *SRMR-I3 – Providing for energy demand* *SRMR-I4 – Managing the built environment* *SRMR-I5 – Relationship of tangata whenua with the environment (te taiao)*	
CE-O1 is achieved by the following policies:	
IM-P1 – Integrated approach *IM-P2 – Collaborative approach* *IM-P3 – Tangata whenua* *IM-P4 – Regionally significant industry and primary production* *IM-P5 – Maintain and enhance areas of amenity value* *IM-P6 – Maintain and enhance public access* *IM-P7 – Appropriate restrictions on public access* *CE-P1 – Planning for development in the coastal environment*	*CE-P2 – Safeguard coastal/marine ecosystems* *CE-CMA-P3 – Interests in the coastal marine area* *CE-CMA-P4 – Marine water quality* *NATC-P1 – Preserve natural character* *NFL-P1 – Outstanding natural features and landscapes* *UFD-P2 – Co-ordinating growth and infrastructure* *UFD-P7 – Implementing the Coromandel Peninsula Blueprint*

Other relevant objectives are:
IM-O1 – Integrated management *CE-CMA-O2 – Mauri and health of marine waters* *LF-O3 – Riparian areas and wetlands* *NATC-O1 – Natural character*

Policies

CE-P1 – Planning for development in the coastal environment

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

1. 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;
2. protects hydrological processes and natural functions of back dune areas;
3. avoids the adverse effects of activities on areas with outstanding natural character, and outstanding natural features and landscapes;
4. ensures that in areas other than those identified in (3) above, activities are appropriate in relation to the level of natural character or natural feature and landscape;
5. has regard to local coastal character;
6. allows for the potential effects of sea level rise, including allowing for sufficient coastal habitat

inland migration opportunities;
7. protects the valued characteristics of remaining undeveloped, or largely undeveloped coastal environments;
8. ensures adequate water, stormwater and wastewater services will be provided for the development;
9. avoids increasing natural hazard risk associated with coastal erosion and inundation;
10. has regard to the potential effects of a tsunami event, and takes appropriate steps to avoid, remedy or mitigate that risk;
11. avoids ribbon development along coastal margins;
12. does not compromise the function or operation of existing or planned coastal infrastructure;
13. provides for safe and efficient connectivity between activities occurring in the coastal marine area and associated land-based infrastructure;
14. manages adverse effects to maintain or enhance water quality; and
15. maintains and enhances public access.

The relevant objectives are:	
IM-O1 – Integrated management *IM-O2 – Resource use and development* *IM-O3 – Decision making* *IM-O5 – Adapting to climate change* *IM-O6 – Ecosystem services* *IM-O9 – Amenity* *IM-O10 – Public access* *CE-O1 – Coastal environment*	*CE-CMA-O2 – Mauri and health of marine waters* *LF-O3 – Riparian areas and wetlands* *LF-O4 – Values of soil* *ECO-O1 – Ecological integrity and indigenous biodiversity* *EIT-O1 – Energy* *HAZ-O1 – Natural hazards* *NATC-O1 – Natural character* *UFD-O1 – Built environment*

CE-P2 – Safeguard coastal/marine ecosystems

Protect indigenous biodiversity in the coastal environment by:
1. avoiding adverse effects on:
   a. indigenous taxa listed as 'Threatened' or 'At Risk' in the New Zealand Threat Classification System lists or taxa[1] listed as threatened by the International Union of Nature and Natural Resources;
   b. 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;
   c. areas containing nationally significant examples of indigenous community types;
   d. indigenous ecosystems and vegetation types that are threatened in the coastal environment, or are naturally rare; and
   e. areas set aside for full or partial protection of indigenous biological diversity under legislation[2].
2. maintaining or enhancing:
   a. areas used by marine mammals and wading/coastal birds including breeding, feeding, roosting and haul-out sites (areas where marine mammals come ashore);
   b. whitebait spawning areas and shellfish beds;
   c. habitats, corridors and routes important for preserving the abundance and diversity of indigenous and migratory species;
   d. 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;
   e. habitats of indigenous species that are important for recreational, commercial, traditional or cultural purposes; and
   f. areas of predominately indigenous vegetation in the coastal environment.

[1] 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 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),
[2] Including, for example, the West Coast North Island Marine Mammal Sanctuary.

The relevant objectives are:
IM-O1 – Integrated management *IM-O3 – Decision making* *IM-O9 – Amenity* *CE-O1 – Coastal environment* *LF-O3 – Riparian areas and wetlands* *ECO-O1 – Ecological integrity and indigenous biodiversity* *NATC-O1 – Natural character*

Other relevant policies are:
IM-P5 – Maintain and enhance areas of amenity value *IM-P7 – Appropriate restrictions on public access* *HAZ-P2 – Manage activities to reduce the risks from natural hazards* *HAZ-P3 – High impact, low probability natural hazard events* *NATC-P1 – Preserve natural character*

Methods

CE-M1 – 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.

The relevant policy is:
CE-P1 – Planning for development in the coastal environment

CE-M2 – Provisions for inland migration of habitats

Waikato Regional Council will collaborate with territorial authorities to:

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

The relevant policy is:
CE-P1 – Planning for development in the coastal environment

CE-M3 – 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:

1. preserving natural character values;
2. avoiding natural hazards;
3. protecting the values associated with marine water quality;
4. maintaining and enhancing public access to public areas;
5. natural ecosystem functioning; and
6. 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.

The relevant policy is:
CE-P1 – Planning for development in the coastal environment

CE-M4 – 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:

1. preserving natural character values;
2. avoiding natural hazards;
3. protecting the values associated with marine water quality;
4. maintaining and enhancing public access to public areas; and
5. 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.

The relevant policy is:
CE-P1 – Planning for development in the coastal environment

CE-M5 – Regional and district plans

Regional and district plans shall:

1. protect marine habitat in the coastal marine area that has been identified as an area of significant indigenous biodiversity in ECO-M12; and
2. 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 CE-CMA-P4.

The relevant policy is:
CE-P2 – Safeguard coastal/marine ecosystems

CE-M6 – 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.

The relevant policy is:
CE-P2 – Safeguard coastal/marine ecosystems

CE-M7 – Managing the coastal environment

Local authorities should:

1. recognise and manage the coastal environment as an integrated unit; and
2. 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.

The relevant policy is:
IM-P1 – Integrated approach

CE-M8 – Identifying extent of the coastal environment

In relation to the coastal environment:

1. the Regional Policy Statement shall map the landward extent of the coastal environment at an indicative level;
2. regional and district plans shall map or otherwise identify the landward extent of the coastal environment as the area:
   a. identified in the indicative maps provided in 5.2.3 Indicative coastal environment maps; or
   b. determined by further detailed investigation;
3. any detailed investigation undertaken under b) above shall:
   a. recognise and include assessment and consideration of all of the elements of the coastal environment (as defined in the Definitions);
   b. be undertaken by the relevant local authority using a collaborative approach under IM-P2 in recognition of the need to manage the coastal environment as an integrated unit;
4. 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 5.2.3 Indicative coastal environment maps.
5. regional and district plans shall contain provisions that:
   a. address adverse effects of activities on the coastal environment, including cross-boundary and cumulative effects; and
   b. recognise the particular values and issues present in the coastal environment; and
   c. 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.

The relevant policy is:
IM-P1 – Integrated approach

Other relevant methods are:
IM-M9 – Offsite mitigation of adverse effects *IM-M17 – Joint planning* *CE-CMA-M15 – Activities affecting water quality* *ECO-M2 – Adverse effects on indigenous biodiversity* *HAZ-M3 – Assess natural hazard risk to communities* *NFL-M1 – Protect values of outstanding natural features and landscapes*

Principal reasons

CE-PR1 – Planning for development in the coastal environment

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 CE-P1 and its methods.

As sea level rises, some coastal margin habitats such as salt marshes will cease to exist unless they can 'migrate' inland. CE-M2 recognises that this effect can be minimised by appropriate land use planning.

CE-M3 and CE-M4 recognise that setting back development from the coastal margin is a useful approach to managing the matters listed in CE-P1. 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.

CE-PR2 – Safeguard coastal/marine ecosystems

CE-P2 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. CE-P2 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 CE-P2(1)(a)) and of those, Maui dolphin is one of the most important as it is facing potential extinction.

CE-P2 is a sub-set of the broader policy directions of ECO-P1 and, as such, the methods to implement ECO-P1 may also apply to CE-P2. It is intended that areas of significant indigenous biodiversity within the coastal environment are identified within those addressed by ECO-P2, and CE-M5 and CE-M6 identify that link as well as recognising the benefits of protecting representative marine habitats and ecosystems in a marine areas network. CE-M5 also provides for a regulatory approach to maintain other indigenous biodiversity in the coastal environment.

Other relevant principal reasons are:
IM-PR1 – Integrated approach *ECO-PR1 – Maintain or enhance indigenous biodiversity* *ECO-PR2 – Protect significant indigenous vegetation and significant habitats of indigenous fauna* *NFL-PR1 – Outstanding natural features and landscapes*

Anticipated environmental results

CE-AER1	Development in the coastal environment does not diminish coastal values in a way that was not anticipated by development planning.
CE-AER2	Valued coastal habitats that may be affected by sea level rise are identified.
CE-AER3	Public values of the coastal environment are enhanced through the use of occupation charges and mitigation of unavoidable adverse effects.
CE-AER4	Marine habitats and ecosystems are protected from significant adverse effects.

The relevant appendices and maps are:
APP6 – Significant indigenous biodiversity roles and responsibilities *APP8 – Natural character of the coastal environment: assessment criteria* *5.2.3 Indicative coastal environment maps* *5.2.9 Outstanding natural features and landscapes*

CE – CMA – Coastal marine area

Objectives

CE-CMA-O2 – Mauri and health of marine waters

Recognise and provide for the mauri and health of marine waters by:

1. maintaining the following:
    a. natural character and natural function;
    b. health and functioning of indigenous biodiversity, ecosystems and habitats;
    c. human relationships with marine water including:
        i. the cultural and traditional relationship of tangata whenua with marine waters;
        ii. harvesting of aquatic food species and mahinga kai that is safe to eat; and
        iii. recreation values including swimming;
2. improving the life-supporting capacity of marine waters where they have been degraded as a result of human activities;
3. to enable people and communities to provide for their social, economic and cultural wellbeing and for their health and safety; and
4. managing adverse cumulative of land use activities on water in the coastal marine area.

CE-CMA-O2 addresses the following issues:	
SRMR-I1 – State of resources *SRMR-I5 – Relationship of tangata whenua with the environment (te taiao)*	
CE-CMA-O2 is achieved by the following policies:	
IM-P1 – Integrated approach *IM-P2 – Collaborative approach* *IM-P3 – Tangata whenua* *IM-P4 – Regionally significant industry and primary production* *CE-P1 – Planning for development in the coastal environment* *CE-CMA-P3 – Interests in the coastal marine area*	*CE-CMA-P4 – Marine water quality* *LF-P1 – Approach to identifying fresh water body values and managing fresh water bodies* *LF-P3 – All fresh water bodies* *LF-P4 – Catchment-based intervention* *LF-P5 – Waikato River catchment* *LF-P6 – Allocating fresh water*

Other relevant objectives are:
IM-O10 – Public access

Policies

CE-CMA-P3 – 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:

1. recognises the Crown's interest in the coastal marine area;
2. recognises conflicting uses;
3. provides for protected customary rights; and
4. provides for ecosystem values as well as people's social, economic and cultural aspirations.

The relevant objectives are:	
IM-O1 – Integrated management *IM-O2 – Resource use and development* *IM-O3 – Decision making*	*CE-O1 – Coastal environment* *CE-CMA-O2 – Mauri and health of marine waters* *ECO-O1 – Ecological integrity and indigenous*

IM-O5 – Adapting to climate change *IM-O6 – Ecosystem services* *IM-O7 – Relationship of tangata whenua with the environment* *IM-O8 – Sustainable and efficient use of resources* *IM-O9 – Amenity* *IM-O10 – Public access*	*biodiversity* *EIT-O1 – Energy* *HAZ-O1 – Natural hazards* *HCV-O1 – Historic and cultural heritage* *NATC-O1 – Natural character* *NFL-O1 – Outstanding natural features and landscapes* *UFD-O1 – Built environment*

CE-CMA-P4 – 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 tangata whenua values.

The relevant objectives are:	
IM-O1 – Integrated management *IM-O2 – Resource use and development* *IM-O3 – Decision making* *IM-O6 – Ecosystem services* *IM-O7 – Relationship of tangata whenua with the environment*	*IM-O9 – Amenity* *CE-O1 – Coastal environment* *CE-CMA-O2 – Mauri and health of marine waters* *ECO-O1 – Ecological integrity and indigenous biodiversity* *NATC-O1 – Natural character*

Other relevant policies are:
IM-P6 – Maintain and enhance public access *IM-P7 – Appropriate restrictions on public access* *CE-P1 – Planning for development in the coastal environment* *CE-P2 – Safeguard coastal/marine ecosystems* *LF-P3 – All fresh water bodies* *LF-P4 – Catchment-based intervention*

Methods

CE-CMA-M9 – 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:

1. opportunities for recreational access across a range of experiences;
2. opportunities for electricity generation from renewable sources;
3. opportunities for the development of aquaculture;
4. the functional necessity for activities to locate in the coastal marine area;
5. avoiding the effects of natural hazards;
6. the public benefits of the use of natural resources and from any development in public space;
7. changes projected as a result of climate change;
8. avoiding sprawling and sporadic development;
9. economic, cultural and social uses of the coastal marine area; and
10. linking activities taking place in the marine area to land-based infrastructure necessary for its support; and
11. avoiding adverse effects, including cumulative effects on:
    a. areas of significance to tangata whenua;
    b. open space and amenity values;
    c. public access;
    d. existing/future marine transport corridors;
    e. marine water quality;
    f. indigenous biodiversity values;
    g. natural character and landscape values; and

h. physical coastal processes (hydrodynamic and sediment dynamics).

The relevant policy is:
CE-CMA-P3 – Interests in the coastal marine area

CE-CMA-M10 – 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 when making decisions on any applications for coastal permits in relation to the common marine and coastal area for:

1. reclamations;
2. the removal of sand, shingle, shell or other natural materials for commercial purposes; and
3. the rights to occupy such land.

The relevant policy is:
CE-CMA-P3 – Interests in the coastal marine area

CE-CMA-M11 – 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.

The relevant policy is:
CE-CMA-P3 – Interests in the coastal marine area

CE-CMA-M12 – 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 CE-CMA-M9.

The relevant policy is:
CE-CMA-P3 – Interests in the coastal marine area

CE-CMA-M13 – 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:

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

The relevant policy is:
CE-CMA-P3 – Interests in the coastal marine area

CE-CMA-M14 – Marine water types

Regional plans shall:

1. 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;
2. 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;
3. 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
4. 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 policy is:
CE-CMA-P4 – Marine water quality

CE-CMA-M15 – Activities affecting water quality

Regional plans shall:

1. control riparian activities including tracking and earthworks, removal of riparian vegetation and access to the coastal marine area by stock;
2. 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;
3. consider alternative land-based opportunities for discharges;
4. control activities so as not to result in a significant increase in sedimentation; and
5. manage discharges to avoid significant adverse effects on ecosystems and habitats.

The relevant policy is:
CE-CMA-P4 – Marine water quality

CE-CMA-M16 – 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:

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

The relevant policy is*:*
CE-CMA-P4 – Marine water quality

CE-CMA-M17 – Information gathering

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

1. set baselines for marine water quality;
2. determine the causes of marine water quality degradation; and
3. assess the limits of marine waters for assimilating discharges.

The relevant policy is:
CE-CMA-P4 – Marine water quality

Other relevant methods are:	
CE-M7 – Managing the coastal environment *CE-M8 – Identifying extent of the coastal environment* *IM-M9 – Offsite mitigation of adverse effects* *IM-M21 – Hazardous substances* *IM-M22 – Natural hazards* *IM-M31 – Amenity value of the coastal environment* *LF-M11 – Point source discharges*	*LF-M12 – Activities in riparian areas* *LF-M13 – Non-point source discharges* *LF-M18 – Natural functioning and ecological health of fresh water bodies and coastal water* *LF-M20 – Effects of subdivision, use and development* *LF-M24 – Nutrient-sensitive fresh water bodies* *UFD-M19 – Strategic planning for infrastructure within the coastal marine area and connections with land*

Principal reasons

CE-CMA-PR3 – Interests in the coastal marine area

CE-CMA-P3 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. CE-CMA-M9 and CE-CMA-M10 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 tangata 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.

CE-CMA-M11 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. CE-CMA-M12 and CE-CMA-M13 signal the desire to see strategic and holistic management of the region’s coastal marine area.

CE-CMA-PR4 – Marine water quality

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. CE-CMA-P4 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 CE-CMA-M14 and CE-CMA-M15, and information gathering is addressed through CE-CMA-M17.

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. CE-CMA-M14 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. CE-CMA-M15 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, CE-CMA-M16 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.

Other relevant principal reasons are:
IM-PR2 – Collaborative approach *UFD-PR2 – Co-ordinating growth and infrastructure*

Anticipated environmental results

CE-CMA-AER5	Access to mahinga kai is maintained.
CE-CMA-AER6	Allocation of space in the coastal marine area is based on appropriate and consistent criteria.
CE-CMA-AER7	Coastal water is safe for contact recreation, shellfish gathering and recreational fishing, and aquaculture.
CE-CMA-AER8	Marine water quality is maintained or enhanced.
CE-CMA-AER9	Marine water quality standards are developed and water meets these standards.
CE-CMA-AER10	A strategic framework for infrastructure in the coastal marine area is developed.

The relevant appendices are*:*
APP5 – Criteria for determining significance of indigenous biodiversity *APP11 – Development principles*

GEO – Geothermal

Objectives

GEO-O1 – Geothermal

Sustainable management of the Regional Geothermal Resource is promoted by:
1. ensuring integrated management of geothermal systems;
2. allocating some of the geothermal resource for take, use and discharge in a way that enables current energy needs and the reasonably foreseeable energy needs of future generations to be met, while avoiding, remedying or mitigating significant adverse effects on the Regional Geothermal Resource; and
3. protecting some characteristics of the Regional Geothermal Resource from significant adverse effects.

GEO-O1 addresses the following issues:	
SRMR-I1 – State of resources *SRMR-I3 – Providing for energy demand* *SRMR-I5 – Relationship of tangata whenua with the environment (te taiao)* *SRMR-I6 – Health and wellbeing of the Waikato River catchment*	
GEO-O1 is achieved by the following policies:	
IM-P1 – Integrated approach *IM-P2 – Collaborative approach* *IM-P3 – Tangata whenua* *IM-P4 – Regionally significant industry and primary production* *GEO-P1 – Sustainable management of the Regional Geothermal Resource* *GEO-P2 – Significant Geothermal Features*	*GEO-P3 – Development Geothermal Systems* *GEO-P4 – Limited Development Geothermal Systems* *GEO-P5 – Protected Geothermal Systems* *GEO-P6 – Research Geothermal Systems* *GEO-P7– Small Geothermal Systems* *GEO-P8– Geothermal Characteristics valued by tangata whenua*

Policies

Scope and application of the GEO chapter, APP2, and section 5.2.4

In relation to indigenous biodiversity within Development or Limited Development Geothermal Systems policies, methods and principal reasons in ECO – Ecosystems and indigenous biodiversity and APP5, APP6, and section 5.2.7 do not apply to flora and fauna forming part of geothermal features as these are subject to GEO – Geothermal. Policies, methods and principal reasons in ECO – Ecosystems and indigenous biodiversity do apply to other types of indigenous biodiversity in such systems.

GEO-P1 – 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:
1. classifying geothermal systems for management based upon:
   a. system size;
   b. the vulnerability of Significant Geothermal Features to extractive uses; and
   c. existing uses;
2. managing the effects of development and use of land and non-geothermal water on the Regional Geothermal Resource; and
3. allocating some of the Regional Geothermal Resource for protection and some for take, use and discharge.

The relevant objectives are:
IM-O1 – Integrated management *IM-O2 – Resource use and development* *IM-O3 – Decision making* *IM-O8 – Sustainable and efficient use of resources* *GEO-O1 – Geothermal* *EIT-O1 – Energy* *UFD-O1 – Built environment*

GEO-P2 – Significant Geothermal Features

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

The relevant objectives are:
IM-O2 – Resource use and development *IM-O3 – Decision making* *IM-O9 – Amenity* *GEO-O1 – Geothermal* *ECO-O1 – Ecological integrity and indigenous biodiversity* *HCV-O1 – Historic and cultural heritage*

GEO-P3 – Development Geothermal Systems

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

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

***The relevant objectives are**:*
IM-O1 – Integrated management *IM-O2 – Resource use and development* *IM-O3 – Decision making* *IM-O4 – Health and wellbeing of the Waikato River* *IM-O6 – Ecosystem services* *IM-O8 – Sustainable and efficient use of resources* *GEO-O1 – Geothermal* *EIT-O1 – Energy* *UFD-O1 – Built environment*

GEO-P4 – Limited Development Geothermal Systems

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

1. allows sustainable and efficient use and development of geothermal resources;

2. avoids, remedies or mitigates significant adverse effects from take, use or discharge of geothermal energy and geothermal water on non-geothermal natural and physical resources, including overlying structures; and
3. requires consent holders to remedy or mitigate any unintended significant effects occurring as a result of the exercise of a consent.

***The relevant objectives are**:*
IM-O2 – Resource use and development *IM-O3 – Decision making* *IM-O4 – Health and wellbeing of the Waikato River* *IM-O6 – Ecosystem services* *IM-O8 – Sustainable and efficient use of resources* *GEO-O1 – Geothermal* *EIT-O1 – Energy* *UFD-O1 – Built environment*

GEO-P5 – Protected Geothermal Systems

Protected Geothermal Systems shall be managed in a way that:

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

***The relevant objectives are**:*
IM-O3 – Decision making *IM-O4 – Health and wellbeing of the Waikato River* *IM-O6 – Ecosystem services* *IM-O8 – Sustainable and efficient use of resources* *GEO-O1 – Geothermal* *EIT-O1 – Energy*

GEO-P6 – 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 geothermal water including the flow of deep geothermal water to the surface.

***The relevant objectives are**:*
IM-O2 – Resource use and development *IM-O3 – Decision making* *IM-O4 – Health and wellbeing of the Waikato River* *IM-O6 – Ecosystem services* *IM-O8 – Sustainable and efficient use of resources* *GEO-O1 – Geothermal* *EIT-O1 – Energy*

GEO-P7 – Small Geothermal Systems

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

***The relevant objectives are**:*

IM-O2 – Resource use and development
IM-O3 – Decision making
IM-O4 – Health and wellbeing of the Waikato River
IM-O6 – Ecosystem services
IM-O8 – Sustainable and efficient use of resources
GEO-O1 – Geothermal
EIT-O1 – Energy

GEO-P8 – Geothermal characteristics valued by tangata whenua

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

***The relevant objectives are**:*

IM-O2 – Resource use and development
IM-O3 – Decision making
IM-O7 – Relationship of tangata whenua with the environment
GEO-O1 – Geothermal
HCV-O1 – Historic and cultural heritage

Methods

GEO-M1 – Classification of geothermal systems

Regional plans shall classify geothermal systems as follows:

1. 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 (2), (3) or (4) below prior to or under development conditions, and:
   a. the system contains few geothermal features that are moderately to highly vulnerable;
   b. existing geothermal features are significantly impaired by lawfully established large-scale takes; or
   c. the system is already subject to large-scale energy use and development;
2. 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;
3. 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:
   a. the system supports a substantial number of geothermal features that are moderately to highly vulnerable to the extraction of fluid;
   b. the system is largely or wholly within a National Park or a World Heritage Area; or
   c. there is evidence of a flow of subsurface geothermal fluid to or from a system described in (3)(a) and (3)(b) above;
4. Research Geothermal Systems are all other large geothermal systems, including:
   a. where there is insufficient information to identify them as Development, Limited Development, Protected Geothermal Systems or Small Geothermal Systems;
   b. any large geothermal systems undiscovered at 23 August 2003; or
   c. any part of the Regional Geothermal Resource that has not been identified as Development, Limited Development, Protected or Small Geothermal Systems; and
5. Small Geothermal Systems are those that meet the definition of Small Geothermal System.

The relevant policy is:

GEO-P1 – Sustainable management of the Regional Geothermal Resource

GEO-M2 – Identification of Protected Geothermal Systems

Regional plans shall identify the following systems as Protected Geothermal Systems:
1. Horomatangi;
2. Orakeikorako;
3. Te Kopia;
4. Tongariro; and
5. Waikite-Waiotapu-Waimangu.

The relevant policy is:
GEO-P1 – Sustainable management of the Regional Geothermal Resource

GEO-M3 – Mapping of Large Geothermal Systems

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

The relevant policy is:
GEO-P1 – Sustainable management of the Regional Geothermal Resource

GEO-M4 – Define large-scale takes

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

The relevant policy is:
GEO-P1 – Sustainable management of the Regional Geothermal Resource

GEO-M5 – Conserving geothermal energy and water

Regional plans shall promote the efficient use of geothermal energy and geothermal water including by:
1. preferring the use of energy- and water-efficient technologies; and
2. promoting the use of down-hole heat-exchangers and group-heating schemes over ad hoc extraction for individual use.

The relevant policy is:
GEO-P1 – Sustainable management of the Regional Geothermal Resource

GEO-M6 – Remediation and mitigation

Regional plans shall ensure that the potential for adverse effects arising from takes, uses or discharges of geothermal energy and geothermal water is recognised and addressed, including through:
1. appropriate resource consent conditions;
2. the use of bonds;
3. provision for site remediation;
4. abandonment of wells; or
5. removal of building and structures including surface pipework.

The relevant policy is:

GEO-P1 – Sustainable management of the Regional Geothermal Resource

GEO-M7 – Use of land and non-geothermal water within geothermal systems

Regional and district plans shall ensure that:

1. the development and uses of non-geothermal water; and
2. new development and uses of land
3. within and adjacent to all geothermal systems are compatible with the purpose for which each geothermal system is classified.

The relevant policy is:
GEO-P1 – Sustainable management of the Regional Geothermal Resource

GEO-M8 – 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.

The relevant policy is:
GEO-P1 – Sustainable management of the Regional Geothermal Resource

GEO-M9 – 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 APP5) to maintain or protect their natural geothermal characteristics or remedy and mitigate existing adverse effects on them.

The relevant policy is:
GEO-P1 – Sustainable management of the Regional Geothermal Resource

GEO-M10 – 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.

The relevant policy is:
GEO-P1 – Sustainable management of the Regional Geothermal Resource

GEO-M11 – Research and monitoring

Waikato Regional Council will:

1. facilitate investigation, research and monitoring of the characteristics of geothermal systems;
2. 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
3. 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.

The relevant policy is:
GEO-P1 – Sustainable management of the Regional Geothermal Resource

GEO-M12 – Information requirements

Regional plans shall:
1. 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;
2. 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;
3. require information commensurate with the scale of the activity for all proposed activities affecting geothermal resources;
4. require that System Management Plans associated with large scale applications are independently peer reviewed; and
5. 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.

The relevant policy is:
GEO-P1 – Sustainable management of the Regional Geothermal Resource

GEO-M13 – Significant Geothermal Features within Protected, Research and Small Geothermal Systems

Regional and district plans shall:
1. 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 APP2 are deemed to be Significant Geothermal Features;
2. ensure adverse effects on Significant Geothermal Features within Protected Geothermal Systems from take, use or discharge of geothermal energy and water are avoided;
3. 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;
4. ensure significant adverse effects on Significant Geothermal Features within Small and Research Geothermal Systems from take, use or discharge of geothermal energy and geothermal water are avoided; and
5. 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.

The relevant policy is:
GEO-P2 – Significant Geothermal Features

GEO-M14 – 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.

The relevant policy is:
GEO-P2 – Significant Geothermal Features

GEO-M15 – Managing effects on Significant Geothermal Features within Development and Limited Development Geothermal Systems

Regional and district plans shall ensure:

1. significant adverse effects on Significant Geothermal Features in Development Geothermal Systems from take, use or discharge of geothermal energy and geothermal water are remedied or mitigated;
2. significant adverse effects on Significant Geothermal Features in Limited Development Geothermal Systems from take, use or discharge of geothermal energy and geothermal water are avoided;
3. 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 geothermal water;
4. a comprehensive monitoring programme is associated with resource consents for the large-scale take, use or discharge of geothermal energy and geothermal water to detect significant adverse effects on Significant Geothermal Features (taking into account the naturally dynamic nature of such features); and
5. 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.

The relevant policy is:
GEO-P2 – Significant Geothermal Features

GEO-M16 – 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.

The relevant policy is:
GEO-P2 – Significant Geothermal Features

GEO-M17 – 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.

The relevant policy is:
GEO-P2 – Significant Geothermal Features

GEO-M18 – Large-scale takes and use

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

1. require preparation of a System Management Plan for each system prior to any use which, with reference to GEO-P1, GEO-P2, GEO-P3 and GEO-P8, defines the objectives for the management of the system and provides for, as appropriate:
   a. operational flexibility and adaptive management including provision for subsequent uses;
   b. reservoir modelling and subsidence modelling;
   c. a mechanism(s) to ensure coordination and promote co-operation between all consent holders for large-scale takes;
   d. research, monitoring and reporting;
   e. 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
   f. 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;
2. recognise that the geothermal water remaining after use should be reinjected/injected;
3. manage controlled depletion, including through modelling assessments, to determine appropriately stepped production; and
4. require preparation of a Discharge Strategy, which shall form part of the System Management Plan, which shall consider the following matters as relevant:
   a. disposal of waste water;
   b. return of geothermal water to that system;
   c. facilitation of further extraction of energy from the system;
   d. any likely benefits to or adverse effects on the system or its productive capacity;
   e. the need for adaptive management and flexibility over time;
   f. the benefits, costs and adverse effects of the Discharge Strategy;
   g. remedying or mitigating significant adverse effects on Significant Geothermal Features;
   h. avoiding, remedying or mitigating contamination of surface and ground waters;
   i. the need to avoid or mitigate potential differential subsidence, particularly in the built environment;
   j. the need to remedy or mitigate the adverse effects of subsidence, particularly in the built environment; and
   k. 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.

The relevant policy is:
GEO-P3 – Development Geothermal Systems

GEO-M19 – Small- and medium-scale takes and use

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

The relevant policy is:
GEO-P3 – Development Geothermal Systems

GEO-M20 – Peer Review Panel

Waikato Regional Council will establish a Peer Review Panel of independent experts and tangata whenua for each Development Geothermal System which will:

1. 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;
2. make recommendations for updating and reviewing the system management plan and changes to resource consents that are operative within that system; and
3. report to Waikato Regional Council on (1) and (2), with findings being publicly available.

The relevant policy is:
GEO-P3 – Development Geothermal Systems

GEO-M21 – Takes, discharges and other activities in Limited Development Geothermal Systems

Within Limited Development Geothermal Systems regional and district plans shall:

1. ensure that existing takes of geothermal energy and geothermal water and associated discharges are provided for, providing there are no significant cumulative adverse effects;
2. provide for takes and discharges of geothermal energy and geothermal water undertaken for scientific investigation or remediation or mitigation of existing adverse effects;
3. 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;
4. 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
5. seek remediation of past adverse effects in Limited Development Geothermal Systems as mitigation for adverse effects in Development Geothermal Systems.

The relevant policy is:
GEO-P4 – Limited Development Geothermal Systems

GEO-M22 – Takes, discharges and other activities in Protected Geothermal Systems

Regional and district plans shall, within Protected Geothermal Systems:

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

The relevant policy is:
GEO-P5 – Protected Geothermal Systems

GEO-M23 – Takes and discharges in Research Geothermal Systems

Regional plans shall, in Research Geothermal Systems:

1. allow the continuation of legally established, existing takes of geothermal energy or geothermal water and associated discharges, providing there are no significant adverse effects;
2. prevent new large-scale takes of geothermal water and associated discharges except as provided for in clause (5) below;
3. provide for limited new small- and medium-scale takes of geothermal energy and geothermal water where it can be demonstrated that they will not adversely affect the stocks and flow of geothermal energy and geothermal water;
4. provide for takes and discharges undertaken for the remediation or mitigation of existing adverse effects; and

5. provide for takes and discharges undertaken for scientific investigation, including for:
   a. determining whether or not the system is connected to another;
   b. delineating the resistivity, hydrological and other boundaries of the system;
   c. determining other characteristics of the system such as heat and mass outflow, and gas and water chemistry; or
   d. identifying, mapping, or describing geothermal features and their characteristics within the system.

The relevant policy is:
GEO-P6 – Research Geothermal Systems

GEO-M24 – Takes, discharges and other uses in Small Geothermal Systems

Regional and district plans shall, within Small Geothermal Systems:
1. provide for the continuation of existing small-scale takes of geothermal energy or fluid and associated discharges, providing there are no cumulative adverse effects;
2. control the establishment of new takes of geothermal energy or fluid and associated discharges;
3. provide for takes and discharges undertaken for scientific investigation or remediation or mitigation of existing adverse effects; and
4. control other activities in a manner that enables assessment of whether significant adverse effects are avoided.

The relevant policy is:
GEO-P7 – Small Geothermal Systems

GEO-M25 – Characteristics of the Regional Geothermal Resource significant to tangata whenua

Waikato Regional Council will, in consultation with tangata whenua:
1. identify the characteristics of the Regional Geothermal Resource significant to tangata whenua;
2. identify threats to these characteristics; and
3. provide strategies for avoiding, remedying, or mitigating these threats.

The relevant policy is:
GEO-P8 – Geothermal characteristics valued by tangata whenua

GEO-M26 – Hapū and iwi geothermal management plans

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

The relevant policy is:
GEO-P8 – Geothermal characteristics valued by tangata whenua

GEO-M27 – Statutory documents

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

The relevant policy is:
GEO-P8 – Geothermal characteristics valued by tangata whenua

Principal reasons

GEO-PR1 – Sustainable management of the Regional Geothermal Resource

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 21). 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 geothermal 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 IM-P1 in relation to offsetting environmental effects.

GEO-PR2 – Significant Geothermal Features

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 APP2) 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 IM-P1 in relation to offsetting environmental effects.

GEO-PR3 – Development Geothermal Systems

The intention is to enable large-scale efficient and sustainable take, use and discharge of geothermal energy and geothermal 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 geothermal water. This is to be achieved by the use of the management techniques set out in GEO-P3(3). 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 geothermal 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 APP2) 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 geothermal 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.

GEO-PR4 – Limited Development Geothermal Systems

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 geothermal 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.

GEO-PR5 – Protected Geothermal Systems

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 geothermal water. In addition, the protection of all geothermal features that are valued for amenity, cultural or scientific reasons is encouraged.

GEO-PR6 – Research Geothermal Systems

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 GEO-M23(5).

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.

GEO-PR7 – Small Geothermal Systems

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.

GEO-PR8 – Geothermal characteristics valued by tangata whenua

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

Anticipated environmental results

GEO-AER1	Tangata whenua have a greater role in the management of the Regional Geothermal Resource.
GEO-AER2	There is greater public awareness of the characteristics of geothermal resources, including Significant Geothermal Features.
GEO-AER3	Adverse effects on Significant Geothermal Features are managed consistently with the relevant Geothermal System Classification.
GEO-AER4	Some geothermal energy available for use by present and future generations.
GEO-AER5	Land use, development and use of non-geothermal water are compatible with the purpose for which geothermal systems are classified.
GEO-AER6	Adverse effects on Significant Geothermal Features from the development and uses of non-geothermal water and the 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.
GEO-AER7	Large-scale use of geothermal energy and geothermal water are enabled in Development Geothermal Systems.
GEO-AER8	Adverse effects on other natural and physical resources, including overlying structures, from take, use and discharge of geothermal energy and geothermal water are avoided, remedied or mitigated.
GEO-AER9	The risk of hydrothermal eruptions is reduced.
GEO-AER10	Economic benefits derived from access to some of the energy and other geothermal characteristics, including non-extractive uses, and to Significant Geothermal Features.
GEO-AER11	Understanding of the Regional Geothermal Resource and the characteristics of Research Systems through controlled research of these systems is increased.
GEO-AER12	In situ uses of geothermal energy are increased.
GEO-AER13	There is increased protection for the full range of geothermal features.
GEO-AER14	Research Geothermal Systems are reclassified as Development, Limited Development or Protected Geothermal Systems.
GEO-AER15	There is increased use of energy- and water-efficient technologies and more efficient use of the Regional Geothermal Resource.

LF – Land and freshwater

Objectives

LF-O1 – Mauri and values of fresh water bodies

Maintain or enhance the mauri and identified values of fresh water bodies including by:

1. maintaining or enhancing the overall quality of freshwater within the region;
2. safeguarding ecosystem processes and indigenous species habitats;
3. safeguarding the outstanding values of identified outstanding freshwater bodies and the significant values of wetlands;
4. safeguarding and improving the life supporting capacity of freshwater bodies where they have been degraded as a result of human activities, with demonstrable progress made by 2030;
5. establishing objectives, limits and targets, for freshwater bodies that will determine how they will be managed;
6. enabling people to provide for their social, economic and cultural wellbeing and for their health and safety;
7. recognising that there will be variable management responses required for different catchments of the region; and
8. recognising the interrelationship between land use, water quality and water quantity.

LF-O1 addresses the following issues:	
SRMR-I1 – State of resources *SRMR-I5 – Relationship of tangata whenua with the environment (te taiao)* *SRMR-I6 – Health and wellbeing of the Waikato River catchment*	
LF-O1 is achieved by the following policies:	
IM-P1 – Integrated approach *IM-P2 – Collaborative approach* *IM-P3 – Tangata whenua* *IM-P4 – Regionally significant industry and primary production* *GEO-P3 – Development Geothermal Systems* *GEO-P4 – Limited Development Geothermal Systems* *LF-P1 – Approach to identifying fresh water body values and managing fresh water bodies* *LF-P2 – Outstanding fresh water bodies and significant values of wetlands* *LF-P3 – All fresh water bodies*	*LF-P4 – Catchment-based intervention* *LF-P5 – Waikato River catchment* *LF-P6 – Allocating fresh water* *LF-P9 – Soil contaminants* *ECO-P1 – Maintain or enhance indigenous biodiversity* *EIT-P1 – Significant infrastructure and energy resources* *HAZ-P1 – Natural hazard risk management approach* *HAZ-P4 – Contaminated land* *UFD-P1 – Planned and co-ordinated subdivision, use and development*

LF-O2 – Allocation and use of fresh water

The allocation and use of fresh water is managed to achieve freshwater objectives (derived from identified values) by:

1. avoiding any new over-allocation of ground and surface waters;
2. seeking to phase out any existing over-allocation of ground and surface water bodies by 31 December 2030;
3. increasing efficiency in the allocation and use of water; and
4. recognising the social, economic and cultural benefits of water takes and uses.

LF-O2 addresses the following issues:
SRMR-I1 – State of resources *SRMR-I2 – Effects of climate change* *SRMR-I3 – Providing for energy demand*

SRMR-I5 – Relationship of tangata whenua with the environment (te taiao) *SRMR-I6 – Health and wellbeing of the Waikato River catchment*
LF-O2 is achieved by the following policies:

IM-P1 – Integrated approach *IM-P2 – Collaborative approach* *IM-P3 – Tangata whenua* *IM-P4 – Regionally significant industry and primary production* *LF-P1 – Approach to identifying fresh water body values and managing fresh water bodies* *LF-P2 – Outstanding fresh water bodies and significant values of wetlands* *LF-P3 – All fresh water bodies*	*LF-P4 – Catchment-based intervention* *LF-P5 – Waikato River catchment* *LF-P6 – Allocating fresh water* *LF-P7 – Efficient use of fresh water* *EIT-P1 – Significant infrastructure and energy resources* *UFD-P4 – Energy demand management*

LF-O3 – Riparian areas and wetlands

Riparian areas (including coastal dunes) and wetlands are managed to:

1. maintain and enhance:
   a. public access; and
   b. amenity values.
2. maintain or enhance:
   a. water quality;
   b. indigenous biodiversity;
   c. natural hazard risk reduction;
   d. cultural values;
   e. riparian habitat quality and extent; and
   f. wetland quality and extent.

LF-O3 addresses the following issues:
SRMR-I1 – State of resources *SRMR-I5 – Relationship of tangata whenua with the environment (te taiao)* *SRMR-I6 – Health and wellbeing of the Waikato River catchment*
LF-O3 is achieved by the following policies:

IM-P1 – Integrated approach *IM-P2 – Collaborative approach* *IM-P3 – Tangata whenua* *IM-P6 – Maintain and enhance public access* *CE-P1 – Planning for development in the coastal environment* *CE-P2 – Safeguard coastal/marine ecosystems* *LF-P1 – Approach to identifying fresh water body values and managing fresh water bodies* *LF-P2 – Outstanding fresh water bodies and significant values of wetlands*	*LF-P3 – All fresh water bodies* *LF-P4 – Catchment-based intervention* *LF-P5 – Waikato River catchment* *LF-P6 – Allocating fresh water* *LF-P10 – Peat soils* *ECO-P1 – Maintain or enhance indigenous biodiversity* *HAZ-P1 – Natural hazard risk management approach* *UFD-P1 – Planned and co-ordinated subdivision, use and development*

LF-O4 – Values of soil

The soil resource is managed to safeguard its life supporting capacity, for the existing and foreseeable range of uses.

LF-O4 addresses the following issues:
SRMR-I1 – State of resources *SRMR-I5 – Relationship of tangata whenua with the environment (te taiao)*
LF-O4 is achieved by the following policies:

IM-P1 – Integrated approach	*LF-P9 – Soil contaminants*

IM-P2 – Collaborative approach *IM-P3 – Tangata whenua* *IM-P4 – Regionally significant industry and primary production* *CE-P1 – Planning for development in the coastal environment* *LF-P8 – Maintain or enhance the life supporting capacity of the soil resource*	*LF-P10 – Peat soils* *LF-P11 – High class soils* *HAZ-P4 – Contaminated land* *UFD-P1 – Planned and co-ordinated subdivision, use and development*

LF-O5 – High class soils

The value of high class soils for primary production is recognised and high class soils are protected from inappropriate subdivision, use or development.

LF-O5 addresses the following issues:	
SRMR-I1 – State of resources	
LF-O5 is achieved by the following policies:	
IM-P1 – Integrated approach *IM-P2 – Collaborative approach* *IM-P3 – Tangata whenua* *IM-P4 – Regionally significant industry and primary production*	*LF-P8 – Maintain or enhance the life supporting capacity of the soil resource* *LF-P9 – Soil contaminants* *LF-P11 – High class soils* *UFD-P1 – Planned and co-ordinated subdivision, use and development*

Other relevant objectives are:
IM-O5 – Adapting to climate change *IM-O10 – Public access*

Policies

LF-P1 – 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:

1. provide for variability in catchment management response;
2. assist in ensuring that adverse effects of activities on the identified values of water bodies are managed in an integrated manner;
3. determine any outstanding fresh water bodies and significant values of wetlands; and
4. 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:	
IM-O1 – Integrated management *IM-O2 – Resource use and development* *IM-O3 – Decision making* *IM-O4 – Health and wellbeing of the Waikato River* *IM-O6 – Ecosystem services* *IM-O7 – Relationship of tangata whenua with the environment* *IM-O8 – Sustainable and efficient use of resources* *IM-O9 – Amenity*	*IM-O10 – Public access* *CE-CMA-O2 – Mauri and health of marine waters* *LF-O1 – Mauri and values of fresh water bodies* *LF-O2 – Allocation and use of fresh water* *LF-O3 – Riparian areas and wetlands* *ECO-O1 – Ecological integrity and indigenous biodiversity* *EIT-O1 – Energy* *NATC-O1 – Natural character*

LF-P2 – 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.

The relevant objectives are:	
IM-O1 – Integrated management *IM-O2 – Resource use and development* *IM-O3 – Decision making* *IM-O4 – Health and wellbeing of the Waikato River* *IM-O6 – Ecosystem services* *IM-O7 – Relationship of tangata whenua with the environment* *IM-O9 – Amenity*	*IM-O10 – Public access* *LF-O1 – Mauri and values of fresh water bodies* *LF-O2 – Allocation and use of fresh water* *LF-O3 – Riparian areas and wetlands* *ECO-O1 – Ecological integrity and indigenous biodiversity* *NATC-O1 – Natural character*

LF-P3 – 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:

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

The relevant objectives are:	
IM-O1 – Integrated management *IM-O2 – Resource use and development* *IM-O3 – Decision making* *IM-O4 – Health and wellbeing of the Waikato River* *IM-O6 – Ecosystem services* *IM-O7 – Relationship of tangata whenua with the environment* *IM-O9 – Amenity* *IM-O10 – Public access*	*CE-CMA-O2 – Mauri and health of marine waters* *LF-O1 – Mauri and values of fresh water bodies* *LF-O2 – Allocation and use of fresh water* *LF-O3 – Riparian areas and wetlands* *ECO-O1 – Ecological integrity and indigenous biodiversity* *EIT-O1 – Energy* *NATC-O1 – Natural character*

LF-P4 – 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:

1. national or legislative direction;
2. the identified values of the fresh water bodies;
3. tangata whenua values;
4. the degree of improvement in water quality able to be attained by changes to land use practices and discharge practices;
5. existence and ongoing operation of significant renewable electricity generation activities;
6. the degree and purpose of intervention or modification that has already occurred along the fresh water body;
7. the availability of water to meet the existing and reasonably justified and foreseeable future domestic and municipal water supply requirements;
8. the existence of regionally significant industry;
9. the potential to address more than one environmental issue through the intervention;
10. the vulnerability and values of the whole catchment and its receiving environment (including the coastal marine area);
11. the consequences of inaction and delay; and
12. the social and economic benefits and costs to the community.

The relevant objectives are:	
IM-O1 – Integrated management *IM-O2 – Resource use and development* *IM-O3 – Decision making* *IM-O4 – Health and wellbeing of the Waikato River* *IM-O6 – Ecosystem services* *IM-O7 – Relationship of tangata whenua with the environment* *IM-O9 – Amenity*	*IM-O10 – Public access* *CE-CMA-O2 – Mauri and health of marine waters* *LF-O1 – Mauri and values of fresh water bodies* *LF-O2 – Allocation and use of fresh water* *LF-O3 – Riparian areas and wetlands* *ECO-O1 – Ecological integrity and indigenous biodiversity* *NATC-O1 – Natural character*

LF-P5 – 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.

The relevant objectives are:	
IM-O1 – Integrated management *IM-O2 – Resource use and development* *IM-O3 – Decision making* *IM-O4 – Health and wellbeing of the Waikato River* *IM-O6 – Ecosystem services* *IM-O7 – Relationship of tangata whenua with the environment* *IM-O9 – Amenity*	*IM-O10 – Public access* *CE-CMA-O2 – Mauri and health of marine waters* *LF-O1 – Mauri and values of fresh water bodies* *LF-O2 – Allocation and use of fresh water* *LF-O3 – Riparian areas and wetlands* *ECO-O1 – Ecological integrity and indigenous biodiversity* *NATC-O1 – Natural character*

LF-P6 – 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:

1. maintain and enhance the mauri of fresh water bodies;
2. retain sufficient water in water bodies to safeguard their life-supporting capacity and avoid any further degradation of water quality;
3. 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);
4. avoid any reduction in the generation of electricity from renewable electricity generation

activities, including the Waikato Hydro Scheme; and
5. 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:	
IM-O1 – Integrated management *IM-O2 – Resource use and development* *IM-O3 – Decision making* *IM-O4 – Health and wellbeing of the Waikato River* *IM-O5 – Adapting to climate change* *IM-O6 – Ecosystem services* *IM-O7 – Relationship of tangata whenua with the environment* *IM-O8 – Sustainable and efficient use of resources*	*IM-O9 – Amenity* *CE-CMA-O2 – Mauri and health of marine waters* *LF-O1 – Mauri and values of fresh water bodies* *LF-O2 – Allocation and use of fresh water* *LF-O3 – Riparian areas and wetlands* *ECO-O1 – Ecological integrity and indigenous biodiversity* *EIT-O1 – Energy* *NATC-O1 – Natural character*

LF-P7 – Efficient use of fresh water

Ensure that the allocated water resource is used efficiently.

The relevant objectives are:	
IM-O1 – Integrated management *IM-O2 – Resource use and development* *IM-O3 – Decision making* *IM-O4 – Health and wellbeing of the Waikato River* *IM-O5 – Adapting to climate change*	*IM-O6 – Ecosystem services* *IM-O7 – Relationship of tangata whenua with the environment* *IM-O8 – Sustainable and efficient use of resources* *LF-O2 – Allocation and use of fresh water* *EIT-O1 – Energy*

LF-P8 – Maintain or enhance the life supporting capacity of the soil resource

Manage the soil resource to:
1. minimise sedimentation and erosion;
2. maintain or enhance biological, chemical and physical soil properties; and
3. retain soil versatility to protect the existing and foreseeable range of uses of the soil resource.

The relevant objectives are:
IM-O2 – Resource use and development *IM-O6 – Ecosystem services* *IM-O7 – Relationship of tangata whenua with the environment* *LF-O4 – Values of soil* *LF-O5 – High class soils*

LF-P9 – 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:
1. human health;
2. animal health;
3. suitability of soil for food production;
4. micro-nutrient availability;
5. soil ecology; and
6. groundwater.

The relevant objectives are:

IM-O1 – Integrated management *IM-O6 – Ecosystem services* *IM-O8 – Sustainable and efficient use of resources* *LF-O1 – Mauri and values of fresh water bodies* *LF-O4 – Values of soil* *LF-O5 – High class soils*

LF-P10 – 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.

The relevant objectives are:
IM-O2 – Resource use and development *IM-O6 – Ecosystem services* *IM-O8 – Sustainable and efficient use of resources* *LF-O3 – Riparian areas and wetlands* *LF-O4 – Values of soil* *UFD-O1 – Built environment*

LF-P11 – 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:
IM-O2 – Resource use and development *IM-O6 – Ecosystem services* *IM-O8 – Sustainable and efficient use of resources* *LF-O4 – Values of soil* *LF-O5 – High class soils*

Other relevant policies are:
IM-P6 – Maintain and enhance public access *IM-P7 – Appropriate restrictions on public access* *NATC-P1 – Preserve natural character*

Methods

LF-M1 – 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:

1. the allocation and use of water;
2. flow regimes;
3. quantity and quality of groundwater;
4. quantity and quality of surface water;
5. quality of marine waters; and
6. land and water interactions, including the impacts of land use activities.

The relevant policy is:
LF-P1 – Approach to identifying fresh water body values and managing fresh water bodies

LF-M2 – Identify fresh water body values

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

The relevant policy is:
LF-P1 – Approach to identifying fresh water body values and managing fresh water bodies

LF-M3 – Recognise values, and establish fresh water objectives, limits and targets

Regional plans shall:

1. recognise identified values and establish fresh water objectives based on the identified values;
2. 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
3. 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.

The relevant policy is:
LF-P1 – Approach to identifying fresh water body values and managing fresh water bodies

LF-M4 – 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:

1. the values identified in the Vision and Strategy for the Waikato River catchment;
2. the Objectives of the Regional Policy Statement, with particular regard given to LF-O1 and LF-O2;
3. natural character and natural function, including flow regime variability;
4. the hydraulic gradient and physical form of water bodies that support hydro electricity generation values;
5. health and functioning of indigenous biodiversity, ecosystems and habitats;
6. human relationships with fresh water including:
    a. the cultural and traditional relationship of tangata whenua with fresh water;
    b. 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;
    c. harvesting of aquatic food species and mahinga kai that is safe to eat;
    d. recreation values including swimming; and
    e. the use of water for food production;
7. the life supporting capacity of fresh water bodies;
8. the ability of people and communities to provide for their social, economic and cultural wellbeing and for their health and safety;
9. adverse cumulative effects of land use activities on fresh water bodies;
10. the existence and purpose of modified or artificial water bodies, including those in APP3;
11. existence of lawfully established infrastructure, including dams;
12. that effect will be given to the provisions of national policy statements;
13. the need for local authorities to meet their general responsibilities under other relevant legislation; and
14. lawfully consented discharges and takes.

The relevant policy is:
LF-P1 – Approach to identifying fresh water body values and managing fresh water bodies

LF-M5 – 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.

***The relevant policy is**:*
LF-P1 – Approach to identifying fresh water body values and managing fresh water bodies

LF-M6 – Tangata whenua involvement

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

1. adequately involve tangata whenua in the management and decision making regarding fresh water bodies and associated ecosystems;
2. identify values and interests in fresh water bodies and associated ecosystems; and
3. develop monitoring programmes, including mātauranga Māori, to monitor the achievement of identified values of fresh water bodies.

***The relevant policy is**:*
LF-P1 – Approach to identifying fresh water body values and managing fresh water bodies

LF-M7 – Stakeholder involvement

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

1. providing for the early and meaningful involvement of stakeholders;
2. involving stakeholders in the process of identifying catchment based values and establishing freshwater objectives, limits and targets;
3. 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
4. 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.

The relevant policy is:
LF-P1 – Approach to identifying fresh water body values and managing fresh water bodies

LF-M8 – Information gathering

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

1. 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;
2. investigate and collate information about activities and land use practices that will make a positive difference to fresh water body values;
3. regularly review land use trends within catchments with high value water bodies;
4. 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
5. 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.

***The relevant policy is**:*
LF-P1 – Approach to identifying fresh water body values and managing fresh water bodies

LF-M9 – 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 APP4 and 5.2.5 Map of fresh water bodies and wetlands and the uses and associated values of those freshwater bodies that are in APP3.

The relevant policy is:
LF-P2 – Outstanding fresh water bodies and significant values of wetlands

LF-M10 – Managing outstanding fresh water bodies and the significant values of wetlands

Regional plans shall provide for:

1. 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 (4), priority shall be given to the values which resulted in the water body being identified as outstanding or significant values of wetlands;
2. the achievement of limits and targets established under LF-M3;
3. the management of the effects on these water bodies and wetlands from:
    a. direct discharges to these fresh water bodies;
    b. takes and uses of water;
    c. the damming and diversion of water (including off-line dams and/or the diversion of flood waters);
    d. changes in land use (including intensification of existing land uses) within the catchment of the fresh water body; and
    e. existing land use where this may compromise the values of the fresh water bodies;
4. the management of fresh water bodies listed in APP3 for the purpose for which they were modified, including the ongoing operation and maintenance of associated infrastructure.

The relevant policy is:
LF-P2 – Outstanding fresh water bodies and significant values of wetlands

LF-M11 – 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:

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

The relevant policy is:

LF-P3 – All fresh water bodies

LF-M12 – 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:

1. reduced sedimentation of fresh water bodies (including bank instability) and estuaries that is derived from human based activities;
2. reduced microbial contamination of fresh water bodies; and
3. that water body objectives are achieved, including by meeting the limits and targets in regional plans.

The relevant policy is:
LF-P3 – All fresh water bodies

LF-M13 – 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:

1. achieves the fresh water objectives, and meets the limits and, targets for the fresh water body and coastal water;
2. works with industry and other stakeholders to ensure appropriate information on good practice land use is available;
3. 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;
4. introduces controls on contaminant discharges; and
5. provides for mitigation or offsetting of adverse effects only where effects cannot be avoided or remedied.

The relevant policy is:
LF-P3 – All fresh water bodies

LF-M14 – Establish allocation baselines

Regional plans shall establish:

1. minimum and allocable flows in rivers; and
2. sustainable yields from groundwater resources.

The relevant policy is:
LF-P3 – All fresh water bodies

LF-M15 – Maintain and enhance lake and wetland water levels

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

1. 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
2. manage the adverse effect of activities to protect lake and wetland water levels and natural hydrological functioning.

The relevant policy is:
LF-P3 – All fresh water bodies

LF-M16 – 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.

The relevant policy is:
LF-P3 – All fresh water bodies

LF-M17 – Management of lakes

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

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

The relevant policy is:
LF-P3 – All fresh water bodies

LF-M18 – 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:

1. controlling water abstraction;
2. recognising the inter-connectedness of ground and surface waters, and between surface fresh water bodies;
3. controlling extraction activities, including sand and gravel extraction;
4. controlling structures in or on the banks or beds of fresh water bodies and coastal water;
5. where practicable avoiding the modification of fresh water bodies including the piping, excavation, infilling, widening or straightening of the fresh water body;
6. controlling the damming and diverting of water including off line dams and the diversion of flood waters;
7. addressing adverse effects including effects on natural character, habitat quality, mauri and migration of indigenous species; and
8. providing for appropriate development setbacks from fresh water bodies.

The relevant policy is:
LF-P3 – All fresh water bodies

LF-M19 – 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.

The relevant policy is:
LF-P3 – All fresh water bodies

LF-M20 – 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:

1. the availability of water, including by encouraging water conservation measures;
2. avoid, remedy or mitigate the adverse effects of the sealing of known aquifer recharge areas;
3. development and design that minimises the potential for contaminants to enter fresh water bodies and coastal water;
4. managing flows into stormwater networks including through the adoption of low impact design;
5. 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;
6. the promotion of best practice stormwater management for urban areas, including the need for stormwater catchment plans for greenfield urban development;
7. managing contaminant loadings (including sediment) entering stormwater networks;
8. minimising stormwater entering wastewater networks; and
9. addressing adverse effects on the migration of indigenous species.

The relevant policy is:
LF-P3 – All fresh water bodies

LF-M21 – Advocacy and education for fresh water bodies

Waikato Regional Council will:

1. encourage adoption of land-based mitigation of stormwater, including the use of wetlands;
2. promote awareness of the effects of stormwater systems and discharges on water quality, habitat quality and connectivity;
3. promote low-impact design options;
4. provide information on the value of fresh water bodies and the ecosystem services they provide;
5. encourage the replacement of onsite wastewater disposal with reticulated wastewater systems where applicable;
6. encourage retention, enhancement and extension of riparian vegetation and wetlands;
7. promote awareness of relevant regional and district plan provisions;
8. promote awareness of soil erosion issues;
9. encourage adoption of sustainable land management practices;
10. provide information to territorial authorities to assist in managing land use activities which may adversely affect flow regimes and the availability of water;
11. promote awareness of the effects of introduction and potential spread of plant and animal pests that affect water resources; and
12. 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, tangata whenua, industry and other stakeholders to undertake the above where it is assessed that this may provide a more effective or efficient outcome.

The relevant policy is:
LF-P3 – All fresh water bodies

LF-M22 – 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 LF-P4 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 LF-P4, the catchments of the Waikato River and Lake Taupō have been identified as priority catchments that require intervention (refer to 5.2.6 Priority catchments map) to address the adverse effects of activities and land use changes on water bodies.

The relevant policy is:
LF-P4 – Catchment-based intervention

LF-M23 – Process for determining catchment management approach

Waikato Regional Council, working with stakeholders, tangata 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:

1. defining measurable interim and long-term desired targets for the receiving water body;
2. analysing the change in management required;
3. assessing which potential policy instruments are technically feasible;
4. researching changes in land management and land use practices that would be effective in addressing the cause of adverse effects;
5. working with stakeholders, tangata 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;
6. taking into account the result of work undertaken between Waikato Regional Council and industry groups;
7. working with tangata whenua, territorial authorities, other agencies to agree changes to roles and responsibilities if appropriate;
8. identifying, in consultation with stakeholders, the implications for communities (including financial implications) of the scale and rate of change required; and
9. determining whether further scientific monitoring and investigation is required as issues are identified in catchments.

The relevant policy is:
LF-P4 – Catchment-based intervention

LF-M24 – 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:

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

The relevant policy is:
LF-P4 – Catchment-based intervention

LF-M25 – 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:

1. develop methods for property-scale delivery of advice, including advice in relation to the practical (financial and environmental) options for meeting environmental limits; and
2. promote land management practices that may assist in achieving the desired fresh water body values.

The relevant policy is:
LF-P4 – Catchment-based intervention

LF-M26 – Regional and district plans

Regional and district plans shall:

1. recognise the Vision and Strategy for the Waikato River as the primary direction-setting document for the Waikato River and its catchment; and
2. ensure activities within the Waikato River catchment (refer to Map 23) are controlled with respect to any adverse effects on the health and wellbeing of the Waikato River, including activities which:
   a. result in the destabilisation of the beds and banks of waterbodies;
   b. result in discharges of contaminants to water bodies;
   c. result in adverse effects on significant sites, fisheries, flora and fauna;
   d. result in a loss of public access; and
   e. adversely affect the cultural association of Waikato-Tainui, Ngāti Tūwharetoa, Te Arawa River Iwi, Maniapoto and Raukawa with the Waikato River.

The relevant policy is:
LF-P5 – Waikato River catchment

LF-M27 – Joint management approach

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

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

The relevant policy is:
LF-P5 – Waikato River catchment

LF-M28 – Education and advocacy in the Waikato River catchment

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

1. 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;
2. develop and share information on rivers and the effects and management of activities within their catchments;
3. encourage and foster a 'whole of river' approach to the restoration and protection of the Waikato

River;
4. promote the restoration and enhancement of indigenous riparian vegetation and wetlands within the Waikato River catchment; and
5. 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.

***The relevant policy is**:*
LF-P5 – Waikato River catchment

LF-M29 – Manage allocation of fresh water

Regional plans shall implement LF-P6 including by establishing:
1. minimum flow limits and allocable flow limits for surface water bodies and how surface water takes will be managed within those limits;
2. 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;
3. 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;
4. methods that:
    a. 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
    b. ensure that any resulting over-allocation is phased out as soon as is practicable but by no later than 31 December 2030.
5. 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;
6. 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;
7. how restrictions will be applied during water shortages; and
8. in catchments where authorised water takes exceed the allocation limit an activity status hierarchy for the taking and use of water as follows:
    a. replacement takes for existing domestic or municipal supply (where a water management plan is provided and the quantum of take is not increased);
    b. 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;
    c. 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
    d. all other activities.

The relevant policy is:
LF-P6 – Allocating fresh water

LF-M30 – Manage the use of fresh water

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

1. ensuring the volume allocated for any take and use of fresh water is reasonable and justifiable with regard to its intended use;
2. requiring a water management plan to be included as part of any resource consent application for domestic or municipal supply water takes;
3. promoting shared use of fresh water, including through voluntary water management groups;
4. promoting the adoption of water conservation and demand management measures;
5. 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
6. providing for water harvesting and water storage.

The relevant policy is:
LF-P7 – Efficient use of fresh water

LF-M31 – 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:

1. water saving devices;
2. water metering;
3. water recycling;
4. water demand management plans;
5. water efficient technology; and
6. leak detection and loss monitoring technologies.

The relevant policy is:
LF-P7 – Efficient use of fresh water

LF-M32 – 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.

The relevant policy is:
LF-P8 – Maintain or enhance the life supporting capacity of the soil resource

LF-M33 – Soil conservation

Waikato Regional Council will prepare and administer soil conservation and catchment management programmes in order to reduce erosion risk.

The relevant policy is:

LF-P8 – Maintain or enhance the life supporting capacity of the soil resource

LF-M34 – Research and advocacy on the life supporting capacity of the soil resource

Waikato Regional Council will:

1. 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
2. collaborate with primary industry, landowners, tangata whenua and other stakeholders to develop and adopt best practice, and to provide education and advice to land managers.

The relevant policy is:
LF-P8 – Maintain or enhance the life supporting capacity of the soil resource

LF-M35 – 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.

The relevant policy is:
LF-P8 – Maintain or enhance the life supporting capacity of the soil resource

LF-M36 – 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:

1. adopting risk-based guidelines for contaminants in soil and linking these with specific management actions; and
2. establishing processes to determine discharge limits which may include setting maximum discharge limits based on soil contaminant levels.

The relevant policy is:
LF-P9 – Soil contaminants

LF-M37 – Research, advocacy and education on soil contaminants

Waikato Regional Council will:

1. 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;
2. work with relevant agencies towards increasing the understanding of diffuse contaminant issues and developing relevant national strategies; and
3. 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.

***The relevant policy is**:*
LF-P9 – Soil contaminants

LF-M38 – Manage peat subsidence

Regional plans shall control activities on peat soils to promote best practice land management to:
1. slow the rate of subsidence of peat soils and carbon loss;
2. mitigate the adverse effects resulting from use and development of peat soils, including off-site effects on habitats, infrastructure, properties and other development; and
3. ensure drainage infrastructure minimises any adverse effects on peat soils and subsidence on peat lakes.

The relevant policy is:
LF-P10 – Peat soils

LF-M39 – Research on peat soils

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.

The relevant policy is:
LF-P10 – Peat soils

LF-M40 – Advocacy and education on peat soils

Waikato Regional Council will advocate soil management and land use practices that avoid degradation of peat soils, including through environmental education programmes.

The relevant policy is:
LF-P10 – Peat soils

LF-M41 – 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:
1. restricting urban and rural-residential development on high class soils;
2. restricting the level of impermeable surfaces allowable on high class soils;
3. facilitating the return or continued availability of high class soils to primary production activities, for example through amalgamation of small titles;
4. directing urban and rural-residential development onto soils of lesser versatility where there is an option to do so;
5. 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
6. the development of growth strategies.

For the purpose of implementing the above method (including in particular development referred to in (1), (2), and (4)), development provided for in:
7. a growth strategy identified in UFD – Urban form and development of this Regional Policy Statement; or
8. a council-approved growth strategy developed with regard to the development principles in APP11, shall be recognised and provided for where such growth strategies identify development which may occur on high class soils.

The relevant policy is:
LF-P11– High class soils

LF-M42 – 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.

The relevant policy is:
LF-P11– High class soils

Another relevant method is:
CE-CMA-M15 – Activities affecting water quality

Principal reasons

LF-PR1 – Approach to identifying fresh water body values and managing fresh water bodies

LF-P1 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.

LF-M4 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 LF-M4 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. LF-M6 recognises the special relationship that tangata whenua have with water resources and identifies the particular ways in which council intends to involve tangata whenua in managing the resource. LF-M7 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.

LF-M8 identifies specific investigations that would provide important information for the future management of fresh water bodies.

LF-PR2 – Outstanding fresh water bodies and significant values of wetlands

LF-P2 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.

LF-M9 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 APP4, 5.2.5 Map of fresh water bodies and wetlands and APP3 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 LF-M10, 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 APP3 (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 LF-M10 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.

LF-PR3 – All fresh water bodies

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. LF-P3 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). LF-M11, LF-M12 and LF-M13 target these discharges.

LF-M11 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. LF-M11(4) 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.

LF-M12 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.

LF-M13 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 (LF-M17).

LF-M14 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 (LF-M15). Provision in regional plans will be made to control activities to protect flows, levels and yields, for example drainage near lakes and wetlands.

LF-M18 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. LF-M19 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. LF-M20 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. LF-M21 sets out the particular areas where Waikato Regional Council feels it can achieve improvements in fresh water bodies by increasing community awareness.

LF-PR4 – Catchment-based intervention

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. LF-P4 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 (LF-M22). 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.

LF-M24 gives direction on how Waikato Regional Council will approach the management of fresh water bodies that are particularly sensitive to elevated nutrient concentrations.

LF-M25 recognises that working with landowners and industry groups to develop options to meet the desired outcomes in identified catchments will be increasingly important.

LF-PR5 – Waikato River catchment

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 Ngati 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. LF-P5 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 LF-M27, 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 Waipā 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 Waipā River.

LF-PR6 – Allocating fresh water

LF-P6 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, LF-P6 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.

LF-M29 sets out some of the matters that regional plans should contain to implement LF-P6.

LF-PR7 – Efficient use of fresh water

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 (LF-M14).

LF-P7 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 LF-M30. LF-M31 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.

LF-PR8 – Maintain or enhance the life supporting capacity of the soil resource

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 LF-P8 to maintain or enhance the values of the soil resource. There are, however, some activities that require soil removal and accordingly LF-M32 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. LF-M32, LF-M33 and LF-M35 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. LF-M34 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. IM-P4 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.

LF-PR9 – Soil contaminants

The intent of LF-P9 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.

LF-PR10 – Peat soils

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.

LF-PR11 – High class soils

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.

LF-P11 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 LF-P11 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, UFD – Urban form and development includes further guidance on avoiding fragmentation of high class soils.

Anticipated environmental results

LF-AER1	Fenced, planted and managed riparian margins along waterways are increased.
LF-AER2	The values of those water bodies listed in APP4 and 5.2.5 Map of fresh water bodies and wetlands are maintained at their 2000 level, or are enhanced.
LF-AER3	The proportion of monitored sites on water bodies across the region that meet or exceed standards for satisfactory water quality and ecological health are increased.
LF-AER4	Water quality and quantity and habitat quality in water bodies supports functioning and healthy ecosystems.
LF-AER5	There are no new barriers to fish passage and the number of existing impediments is reduced.
LF-AER6	The known distribution and diversity of aquatic biota in fresh water bodies is maintained or enhanced.
LF-AER7	Flow regimes, in rivers and lakes, maintain the variability required to sustain ecological functions and do not result in excessive plant cover and/or other forms of degradation that adversely affects aquatic ecosystems.
LF-AER8	There is no reduction in extent or condition of wetlands, with some wetlands exhibiting physical, chemical, hydrological or biological improvements.
LF-AER9	The area affected by erosion is reduced.
LF-AER10	The land area impacted by a decline in soil quality characteristics (such as compaction) is reduced.
LF-AER11	The rate of accumulation of contaminants in soil across the region (such as cadmium, and zinc) is reduced.
LF-AER12	Understanding of the impacts of shrinkage on peat soils is improved.
LF-AER13	There is a reduction in the rates of shrinkage of and carbon loss on peat soils.
LF-AER14	There is minimisation of adverse effects of peat shrinkage on habitats and infrastructure, and appropriate remediation or mitigation where effects are unavoidable.

LF-AER15	Fragmentation of high class soils is reduced.