Chapter 3: Resource management issues, objectives and summary of policies and methods to achieve the objectives in the Regional Policy Statement

This chapter provides an overview of the issues addressed by the Regional Policy Statement, the objectives sought to be achieved and provides a summary of the policies and methods to achieve the objectives. These are presented under the following topic headings:

- Integrated management
- Air quality
- Climate change
- Coastal environment, including public access
- Energy, infrastructure, and waste
- Fresh water, including public access
- Historic heritage
- Indigenous ecosystems
- Landscape
- Natural hazards
- Regional form, design, and function
- Resource management with *tangata whenua*
- Soils and minerals.

Each section in this chapter addresses a topic then introduces the issues. All the issues are issues of regional significance or have been identified as issues of significance to the Wellington Region ’s iwi authorities. Each section has a corresponding summary table in Appendix 7 showing all the objectives that relate to that topic and the titles of the policies and methods that will achieve those objectives. The tables also include a reference to other policies that need to be considered alongside to gain a complete view of the issue across the full scope of the Regional Policy Statement.

Chapter 3A: Integrated Management

The integrated management resource management issues for the Wellington Region are:

1. **Adverse impacts on natural environments**

Inappropriate and poorly managed use and development of the environment, including both urban and rural use and development, have damaged and continue to impact the natural environment, and contribute to an increase in *greenhouse gas emissions*. It has also contributed to ongoing *ecosystem* loss, degraded water quality and loss of highly productive land. This has adversely impacted the relationship between mana whenua / *tangata whenua* and te taiao.

2. **Increasing pressure on housing, infrastructure capacity and te taiao**

Population growth is putting pressure on housing supply and choice, infrastructure capacity and te taiao. To meet the needs of current and future populations, there is a need to increase housing supply and choice across the Wellington Region in a manner which contributes to well-functioning urban areas and rural areas, while managing adverse effects on the environment.

3. **Lack of mana whenua / *tangata whenua* involvement in decision making**

Mana whenua / *tangata whenua* have not always been involved in decision-making, including from governance level through to the implementation. As a result, mana whenua / *tangata whenua* values, Te Ao Māori, mātauranga Māori and the relationship of mana whenua whenua / *tangata whenua* with te taiao have not been adequately provided for in resource management, causing disconnection between mana whenua / *tangata whenua* and the environment.

4. **The effects of climate change on communities and the natural and built environment**

Gross *greenhouse gas emissions* must be reduced significantly, immediately and rapidly to avert the climate crisis. The resource management and planning system has an important role in this challenge. The region's communities and environments are also vulnerable to the current and future effects of climate change. There is a need to ensure that natural and physical resources are resilient to and can effectively adapt to the effects of climate change to strengthen the resilience of our communities to these impacts. This will also require informed and engaged communities, and resilient and well-functioning infrastructure networks, including *regionally significant infrastructure*.

These overarching resource management issues should be read with topic-specific resource management issues in the following chapters where relevant.

Chapter 3.1A: Climate Change

As of 2022, long term weather records show that seven of the past nine years have been amongst New Zealand's warmest on record, with 2021 and 2016 being the two hottest recorded years. In the Wellington Region[1] we have one of the highest rates of sea level rise in New Zealand, due to the effects of global sea level rise, compounded by a regional trend of tectonic subsidence.

Predictions are for significant climate change impacts in the Wellington Region1 by 2090 if global greenhouse gas emissions are not significantly reduced. The annual regional temperatures, for instance, could increase by up to 3°C. The key highlights from the report include:

- Wellington and Wairarapa will experience a significant increase in hot days
- Frost occurrence, including in the high elevation areas, is projected to significantly decrease
- Spring rainfall will reduce by up to 15 percent in eastern areas
- Up to 15 percent more winter rainfall could be experienced along the west coast
- The risk of drought will increase in the Wairarapa
- More extreme rainfall events.

Some changes are occurring faster than previously expected, such as sea level rise and ocean warming, leading to more frequent and energetic storms causing an increase in flooding, coastal erosion and slips in many parts of the Wellington Region.

There is still an opportunity to limit warming to 1.5 °C if global net anthropogenic CO_2 emissions are reduced by 48 percent from 2019 levels by 2030 and a 99 percent reduction in CO_2 emissions is achieved by 2050 (these are median values). When all greenhouse gases are considered, global net emissions expressed as CO_2e must reduce by between 73 and 98 percent by 2050 to give a 50% chance of limiting warming to 1.5°C with low or no overshoot.

In 2021 He Pou a Rangi the Climate Change Commission issued a call to all New Zealanders "to take climate action today, not the day after tomorrow", concluding that New Zealand needs to be proactive and courageous as it tackles the challenges the country will face in the years ahead. All levels of central and local government must come to the table with strong climate plans to get us on the right track, concluding that bold climate action is possible when we work

[1] NIWA, Wellington Region Climate Change Extremes and Implications, December 2019, https://www.gw.govt.nz/assets/Uploads/gwrc-niwa-climate-extremes-final3.pdf.

together.[2]

While this will require bold and decisive action, there is a need to act carefully, recognising that the costs and benefits of change will not be felt equally across our communities and that provision needs to be made for an equitable transition.

In 2019, Greater Wellington Regional Council declared a climate emergency, pledging to become carbon neutral by 2030 and to take a leadership role to develop a Regional Climate Emergency Response Programme, working collaboratively with mana whenua / *tangata whenua*, key institutions and agencies to reduce *greenhouse gas emissions* and prepare for the unavoidable effects of climate change, supporting international and central government targets for *greenhouse gas emission* reductions and adaptation planning.

The key areas of action required to address climate change are to:

1. Reduce gross *greenhouse gas emissions*. This includes transitioning as rapidly as possible from fossil fuels to renewable energy and recognising that methane reductions offer a significant opportunity for limiting global warming in the near-term.

2. Increase greenhouse gas sinks through carbon sequestration, while recognising that, due to the limitations of this approach, the focus must be on reducing gross *greenhouse gas emissions*.

3. Take adaptation action to increase the *resilience* of our communities, and the natural and built environment to prepare for the changes that are already occurring and those that are coming down the line. Critical to this is the need to protect and *restore* natural *ecosystems* so they can continue to provide the important services that ensure clean water and air, support *indigenous biodiversity* and ultimately, people.

The role of the resource management system in the climate change response

The causes of climate change need to be addressed by internationally co-ordinated action, but our success depends on responses at national, local and individual levels.

The resource management system plays a key role in helping to reduce *greenhouse gas emissions*. This section of the Regional Policy Statement sets out issues, objectives, policies and methods to help achieve a significant reduction in *greenhouse gas emissions* and improve the *resilience* of the Wellington Region to the effects of climate change. It is intended to complement the Climate Change Response Act 2002 and the range of actions and initiatives in Aotearoa New Zealand's Emission Reductions Plan and National Adaptation Plan prepared under that Act. This recognises that the achievement of *greenhouse gas emission* reduction

[2] New Zealand Climate Change Commission, 2021: Ināia tonu nei: a low emissions future for Aotearoa

targets, including those in Objective CC.3 of this statement, requires a range of actions, initiatives and financing tools that sit both within and outside of the resource management system.

Note that, for the avoidance of doubt:

- Objective CC.3 seeks to ensure that the management, use and protection of natural and physical resources in the Wellington Region contributes to the 2030 and 2050 regional *Greenhouse gas emission* targets – it is not a limit nor intended as an allocation regime between different sectors.

- The climate change objectives, policies and methods in this Chapter do not apply to greenhouse gas emissions from aircraft.

The regionally significant issues, and the issues of significance to iwi authorities in the Wellington Region for climate change are:

1. *Greenhouse gas emissions* must be reduced significantly, immediately and rapidly

Immediate, rapid, and large-scale reductions in *greenhouse gas emissions* are required to limit global warming to 1.5°C, the threshold to avoid significant impacts on the natural environment, the health and well-being of our communities, and our economy. Extreme weather events and sea level rise are already impacting our region, including on biodiversity, water quality and availability, and increasing the occurrence and severity of *natural hazards*. Historical emissions mean that we are already locked into continued warming until at least mid-century, but there is still an opportunity to avoid the worst impacts if global net anthropogenic CO2 emissions are reduced by at least 50 percent from 2019 levels by 2030, and carbon neutrality is achieved by 2050.

In the Wellington Region, the main sources of *greenhouse gas emissions* are transport (39 percent total load in 2018-19), agriculture (34 percent), and stationary energy (18 percent). Development of the renewable energy resources in the Wellington Region will be necessary to assist the transition from fossil fuel dependency and achieve the significant reductions in *greenhouse gas emissions* needed from these sources.

2. Climate change and the decline of ecosystem health and biodiversity are inseparably intertwined

Climate change is placing significant additional pressure on species, habitats, ecosystems, and ecosystem processes, especially those that are already threatened or degraded, further reducing their resilience, and threatening their ability to persist. This, in turn, reduces the health of natural ecosystems, affecting their ability to deliver the range of ecosystem services, such as carbon sequestration, *natural hazard* mitigation, erosion prevention, and the provision of food and amenity, that support our lives and livelihoods and enable mana whenua / *tangata whenua* to exercise their way of being in Te Ao Tūroa, the natural world.

3. The risks associated with *natural hazards* are exacerbated by climate change

The hazard exposure of our communities, land, mana whenua / *tangata whenua* sites, *wāhi tapu*, infrastructure, food security (including *mahinga kai*), and water security is increasing because of climate change impacts on a range of *natural hazards*. Conventional approaches to development tend not to have fully considered the impacts on natural systems and hard engineered protection works that have not been designed to withstand the impacts of climate change are likely to become compromised and uneconomic to sustain over time, which can ultimately increase the *risk* to communities and the environment.

4. The impacts of climate change will exacerbate existing inequities

The impacts and costs of responding to climate change will not be felt equitably, especially for mana whenua / *tangata whenua*. Some communities have no, or only limited, resources to enable mitigation and adaptation and will therefore bear a greater burden than others, with future generations bearing the full impact.

5. Climate change threatens tangible and spiritual components of mana whenua / *tangata whenua* well-being

Climate change threatens both the tangible and spiritual components of mana whenua / *tangata whenua* well-being, including *Te Mana o te Wai* and the relationship of mana whenua / *tangata whenua* with *indigenous biodiversity*, *mahinga kai*, and *taonga* species, and the well-being of future generations. Significant sites for mana whenua / *tangata whenua*, such as marae, *wāhi tapu and* urupā, are particularly vulnerable as they are frequently located alongside the coast and waterbodies.

6. Social inertia and competing interests need to be overcome to successfully address climate change

Many people and businesses lack the understanding, resources and funding, ability or support to make the changes needed to transition to a low-emissions and *climate- resilient* future. It can be challenging for people and businesses to make the connection between their actions, *greenhouse gas emissions* and climate change and the ways that climate change will impact their lives. Social inertia and competing interests are some of the biggest issues to overcome to address climate change.

Chapter 3.1: Air Quality

Overall, the Wellington region has good air quality. This is because it has a windy climate, and there are few air polluting industries in the region. However, the region does experience localised air quality problems that impact on the amenity and health of the community and the mauri of air.

Some contaminants in air are associated with people's activities – such as smoke from fires, dust and other emissions – which may produce fumes or odours. Of those discharges associated with people's activities:

- The most polluting air contaminant in the Wellington region is fine particulate matter. In winter almost all of this comes from domestic fires
- Odours, smoke and dust from people's activities can reduce the amenity of an area, affect people's health and social and cultural wellbeing, create annoyance, and sometimes cause poor visibility
- Our monitoring shows that discharges from motor vehicles in the region do not occur at levels that could adversely affect people's health
- Industrial discharges from sources – such as abrasive blasting and wood processing – can have localised adverse effects. Industries that discharge to air are largely concentrated around Seaview.

The amenity value of air depends on how clean and fresh it is. High amenity is associated with good visibility, low levels of deposited dust and people's ability to enjoy their outdoor environment is not impaired. Amenity is reduced by contaminants in the air affecting people's wellbeing – such as when dust and smoke reduces visibility or soils surfaces, or when odour is objectionable.

Reverse sensitivity effects can arise along the interface between areas of differing land uses – such as between residential and industrial or rural areas. Amenity values need to be considered in the context of different environments and they may change temporarily or seasonally. In effect, what constitutes an objectionable odour, or level of smoke or dust is, in part, dependant on the normal conditions experienced in a locality or at a time of year. These effects are most likely to arise where production is adjacent to residential and rural residential subdivisions or adjacent to areas which can be subdivided. In such circumstances, the new activities would need to accept the effects or incorporate provisions that ensure adequate protection from adverse effects from the established activity.

The National Environmental Standards for Air Quality were introduced in 2004. The standards are breached when the threshold concentration for fine particulate matter (PM10) is exceeded more than once in an airshed, in a 12-month period. The eight airsheds in the Wellington region are Kāpiti, Porirua, Upper Hutt, Lower Hutt, Wainuiomata, central Wellington, Karori and Wairarapa.

Outdoor air quality monitoring has shown that during periods of cold calm weather, levels

of fine particulate matter may build up, particularly in the Wairarapa (specifically Masterton), Wainuiomata and Upper Hutt airsheds. On occasions, the levels of fine particulate matter have exceeded the national environmental standard for air quality.

The regionally significant issues and the issues of significance to the Wellington region's iwi authorities for air quality are:

1. **Impacts on amenity and wellbeing from odour, smoke and dust**

Appendix 7.1: Air quality Objective 1

Odour, smoke and dust affect amenity values and people's wellbeing. These effects are generally localised and result from the following activities or land uses: (a) odour from activities – such as, rendering, spray painting and solvent use, landfills, sewage treatment plants, silage feeding and effluent spreading (b) smoke from domestic fires and backyard burning (c) dust from land uses or activities – such as, earthworks, quarries, and land clearance.

2. Health effects from discharges of fine particulate matter

Appendix 7.1: Air Quality Objective 2

Fine particulate matter predominantly discharged from domestic fires, occasionally reaches concentrations that can harm people's health. This can happen in valleys and areas where levels of fine particulate matter may build up during periods of cold calm weather.

Chapter 3.2: Coastal environment (including public access)

From Ōtaki around to the Wairarapa, the region's coastal environment contains significant habitats for a wide variety of plants and animals, and also provides for a diverse range of activities. The character ranges from the largely rural Wairarapa coast to the highly developed urban areas around Wellington and Porirua Harbours. The Kāpiti coast has sandy beaches, and is experiencing rapid population growth. The south coast is rugged, yet because of its proximity to the Hutt Valley and Wellington city, is a popular place to visit.

Tangata whenua have strong links with the coastal environment, value its mauri, its mana and all it offers. The region's identity and significance to Māori are closely intertwined with the coastal environment. Many sites within the coastal environment are associated with iwi histories, traditions and tikanga. For example, mahinga mātaitai (places to gather seafood) and tauranga waka (canoe landing places). Some of these sites embody spiritual and sacred values, such as urupa (burial places). Of particular concern to tangata whenua is the discharge of human and other wastes into the coastal environment, which causes a loss of mauri of the water body.

As well as its cultural importance, the coastal environment is important to the regional community for recreation and general enjoyment. It is also the location of many activities and structures that require a coastal location. Significant infrastructure – such as Centreport, the Cook Strait cable and other transmission infrastructure, and several state highway and rail corridors – is located in the coastal environment. This infrastructure is essential to the community's economic and social wellbeing. This region's coastal environment also has significant wind and marine energy resources. There are also other commercial activities that may be appropriate in highly modified coastal areas.

The Regional Policy Statement must give effect to the New Zealand Coastal Policy Statement, which provides a policy framework for both the wet and dry parts of the coastal environment. This framework recognises the ecological, geographical, cultural, social, and economic linkages between land and sea, and the complementary responsibilities that different authorities have for coastal management. Other national policy statements are also relevant.

The preservation of natural character in the coastal environment is a matter of national importance in the Resource Management Act. Matters that contribute to the natural character of the coastal environment include: the dynamic coastal processes and ecosystems of escarpments, sand dunes, estuaries and salt marshes, significant landscapes and seascapes, geological features and landforms, sand dunes and beach systems, sites of historic or cultural significance, an area's amenity and openness, and in some places its remoteness.

Much of the region's coastal environment is in private ownership and is being actively farmed. This rural land use has had a significant impact on the coastal environment resulting in landscapes which are 'modified but natural' in the continuum of natural character. These pastoral landscapes are valued by people not only for their natural character (aesthetic appeal) but also by landowners for the economic benefits they derive from them. While farming activities have modified the coastal environment, these pastoral "working

landscapes", in some cases, have helped to prevent further more intensive development. Reasonable use of the coastal environment, including existing use, should be provided for, while protecting the coast from inappropriate activities and development.

Natural character of the coast is being degraded through incremental loss and damage to coastal ecosystems including estuaries and salt-marshes, e.g. the Waikanae estuary, Pauatahanui Inlet, and Motuwaireka Stream estuary at Riversdale. It has largely been lost in the built-up area of Wellington Harbour extending from Kaiwharawhara to the airport, in the reclaimed and highly developed Wellington city area, and around the Onepoto Arm of Porirua Harbour. Areas that still have high natural character are under increasing pressure for development, particularly along the Kāpiti and Wairarapa coasts, and Pauatahanui Inlet.

The maintenance and enhancement of public access to and along the coastal marine area is another matter of national importance in the Resource Management Act. Where land is publicly owned, public access can be enhanced by providing walking tracks and recreational areas. Where land is privately owned, city and district councils can take esplanade reserves or strips as part of subdivisions. On private land that is not proposed to be subdivided, however, public access is at the discretion and with the permission of the landowner. To date, there has been no region-wide strategic planning in the region that has identified where public access should be enhanced. Where esplanade reserves and strips have been taken for public access, city and district councils sometimes struggle to maintain them. Even where there is legal access, it is not always aligned with access that is physically possible. There are circumstances where public access to the coastal marine area, lakes and rivers may not be desirable – such as to provide security for regional infrastructure, allow for farming activities and prevent harm to the public.

The coastal marine area is the final receiving environment for contaminants carried in streams and stormwater from rural and urban land uses. In addition, there are four discharges of treated sewage effluent from the region's four main cities, numerous sewage 'overflow' discharges and other minor discharges. Sediment from earthworks is affecting coastal water quality and shellfish beds, and stormwater sediments contaminated with heavy metals and other toxic substances are building up on the sea bed of Wellington and Porirua harbours to levels that could adversely affect aquatic life. High levels of microbial contamination in sewage and stormwater discharges can make coastal water unsuitable for swimming and could transmit diseases to marine mammals.

Seawalls, vehicle use in the coastal environment and earthworks are examples of activities that modify dunes, foreshores and the seabed. They cause adverse effects on the natural, physical and ecological processes that underpin the proper functioning of the coastal environment, including the coastal marine area. In some circumstances, some interference may be appropriate, for example extraction of sand or gravel to reduce flood risk, or planting of coastal vegetation as part of dune building programmes.

The implications of sea-level rise on the coastal environment also need to be considered when looking at the potential effects of new subdivisions, use and development.

The regionally significant issues and the issues of significance to the Wellington region's iwi authorities for the coastal environment are:

1. Adverse effects on the natural character of the coastal environment

Appendix 7.2: Coastal environment

Objectives 3,4 & 5

The natural character of the region's coastal environment has been, and continues to be, adversely affected by activities such as large-scale earthworks for housing developments and roads, changes in land use and the placement of structures.

2. Coastal water quality and ecosystems

Appendix 7.2: Coastal environment
Objective 6
Table 6(a): Indigenous ecosystems
Objective 16

Discharges of stormwater, sewage, sediment and other contaminants to the coast are adversely affecting the health of coastal ecosystems, the suitability of coastal water for recreation and shellfish gathering, mauri and amenity.

3. Human activities interfere with natural coastal processes

Appendix 7.2: Coastal environment
Objective 7
Table 8(a): Natural hazards
Objectives 19 and 20

Human activities have modified and continue to interfere with natural physical and ecological coastal processes. For example:

a) Seawalls alter sediment movement along beaches and estuaries and can cause erosion problems in some areas and deposition problems in others.

b) Sand dunes and dune vegetation can be significantly affected by inappropriate development, vehicles, and trampling by people and animals.

Appendix 7.2: Coastal environment

Objective 7

c) Some land uses and earthworks can cause increased rates of sedimentation in low energy receiving environments, smothering aquatic life, for example in Porirua Harbour.

Appendix 7.8(a): Natural hazards

4. Public access to and along the coastal marine area, lakes and rivers (shared with Issue 4 in section 3.4)

Appendix 7.2: Coastal environment
Objective 8
Appendix 7.4: Fresh water
Objective 8

There have been inconsistent approaches to the taking of access strips or esplanade reserves as part of subdivisions. This has meant that public access to and along the coastal marine area, lakes and rivers is not always provided, or has been provided in places where people cannot take advantage of it. Even where physical access is available, it is not always possible if access ways are not well maintained.

Chapter 3.3: Energy, infrastructure and waste

a) Energy

New Zealand's energy needs have largely been met from coal, oil, gas, hydro and geothermal resources. New Zealand relies on imported oil for around half of its energy needs. Electricity supply has been dominated by hydro generation, with fossil fuels used as a backup to meet peak demand and in dry years.

Energy generation operations in the Wellington region include wind, hydro and landfill gas. Resource consent has been granted for a trial marine energy development in Cook Strait.

Energy is distributed to and utilised by five main sectors in the region: transport, agriculture, industrial, commercial and residential. Demand for energy from all sectors continues to grow, with the most significant growth coming from transport.

Traditional energy sources will not be able to meet increasing energy demand. The region is vulnerable to oil supply disruptions (as a result of international circumstances) and fluctuations to hydro generation during dry years.

In the long term, energy prices are likely to rise as global oil demand approaches, and then exceeds, the ability to supply. Many aspects of society – such as transport, agriculture, trade, tourism, and manufacturing – are heavily dependent on oil, and continuing oil price rises and other risks to supply may lead to severe impacts on the Wellington region's economy. Appropriate use and management of such resources will be critical in meeting the region's quality of life in the future.

There is also the challenge of reducing greenhouse gas emissions from fossil fuels to meet international climate change obligations.

The Wellington region faces several major long-term energy challenges, including responding to climate change and tackling carbon emissions, especially from transportation and energy generation. Other challenges are securing clean, renewable energy at affordable prices and using it efficiently, as well as responding to impacts on the region from oil depletion an the rising costs of oil. This means looking to make better use of existing energy resources through energy conservation and efficiency, better utilising the region's renewable energy resources, and looking at ways that the impacts from oil price increases and oil depletion can be mitigated.

The region contains significantly greater renewable energy resources than are currently used. Wind, biofuels and solar (for hot water systems), have been identified as possible renewable energy generation sources for the region. There is also the potential for domestic-scale and small-scale distributed renewable energy generation including small-scale hydro in the region. Tidal currents in Cook Strait and, to a lesser extent, wave action in Cook Strait and off the Wairarapa coast are also potentially significant renewable energy resources, but technological advances are required to realise this potential. New Zealand has limited locations appropriate for marine energy development and the Cook Strait has one of the best tidal/ocean current resources in the country.

b) Infrastructure

The roading network, airports, the port, telecommunication facilities, the rail network and other utilities and infrastructure, including energy generation, transmission and distribution networks, are significant physical resources. This infrastructure forms part of national or regional networks and enables communities to provide for their social, economic, and cultural wellbeing and their health and safety. The efficient use and development of such infrastructure can be adversely affected by development. For example, land development can encroach on infrastructure or interfere with its efficient use. Infrastructure can also have an adverse effect on the surrounding environment. For example, the operation or use of infrastructure can create noise which may adversely impact surrounding communities. These effects need to be balanced to determine what is appropriate for the individual circumstances.

The National Policy Statement on Electricity Transmission (2008) sets out objectives and policies to enable the management of effects on and of the electricity transmission network under the Resource Management Act. The Statement recognises that efficient and secure electricity transmission plays a vital role in the well-being of New Zealand and makes it explicit that electricity transmission is to be considered a matter of national significance.

c) Waste

Dealing with waste is a mounting problem because some of the resources discarded still have value, landfills use land that could be otherwise productive and landfill disposal has adverse effects on the environment. These can include reverse sensitivity effects, whereby a newly established activity may be adversely affected by an existing landfill and may need to protect itself from these effects.

Landfills should be the last resort for unwanted materials. This is because they produce leachate and methane gas from the degradation of materials and organic matter, and because landfill space is finite. In 2004 there were 10 municipal landfills in the Wellington region, in 2007 there were five, and two more will close over the next ten years.

The amount of waste needs to be reduced to ensure potentially valuable resources are used efficiently, reduce the need to develop new landfills and extend the life of existing landfills. Cleanfills are one way to extend the life of landfills by diverting clean inert waste from the landfill waste stream. In 2007 nearly 400,000 tonnes of material was sent to landfills in the Wellington region. At least 20 per cent and in some areas as much as 60 to 70 per cent could have been recycled or composted. This occurs because there is no market for the final product or there are no facilities in New Zealand to process the materials. While some materials are sent overseas for recycling or resource recovery, this option may not be viable in the long-term, so finding local solutions will become more important.

The Local Government Act requires city and district councils to prepare waste management plans that make provision for the collection and reduction, reuse, recycling, recovery, treatment, or disposal of waste in the district, and provide for its effective and efficient implementation. The Regional Policy Statement has no role in the development or implementation of waste management plans.

The regionally significant issues and the issues of significance to the Wellington region's iwi authorities for energy, infrastructure and waste are:

1. **Energy**

The Wellington region is dependent on externally generated electricity and overseas-sourced fossil fuels and is therefore vulnerable to supply disruptions and energy shortages. In addition, demand for energy is increasing. However, significant renewable energy resources exist within the region.

Appendix 7.3: Energy, infrastructure and waste Objectives 9 & 10
Appendix 7.9: Regional form Objective 22

2. **Infrastructure**

Infrastructure enables communities to provide for their social, economic and cultural wellbeing. The management, use and operation of infrastructure can be adversely affected when incompatible land uses occur under, over, or adjacent.

Appendix 7.3: Energy, infrastructure and waste Objective 10

3. **Waste**

We cannot continue to generate the current waste volumes because of the costs of disposal, limited space in existing landfills and because it is inefficient to dispose of potentially valuable resources. Developing new landfills also poses significant challenges economically, environmentally and socially.

Appendix 7.3: Energy, infrastructure and waste Objective 11

Chapter 3.4: Fresh water (including public access)

Fresh water is integral to our health, wellbeing, livelihood and culture. Freshwater is essential for our economy and defines our landscape and sustains ecosystems. People value clean fresh water for many reasons – economic, recreational, aesthetic, ecological and cultural. It is a matter of national importance to protect wetlands, lakes, rivers and streams and their margins from inappropriate use and development.

The region's fresh water has to meet a range of uses valued by the community. There is a range of differing uses and values associated with fresh water. The resource needs to be available to meet the needs of both current and future generations. This range of uses and values leads to multiple pressures on the quantity and quality of the fresh water which can cumulatively impact on the availability and value of the resource for use. This is a complex issue that involves multiple resource users with differing values. A whole of catchment approach is particularly useful for understanding and managing these complexities. It is also important that the flow of water is managed appropriately.

The concept of *Te Mana o te Wai* is central to freshwater management, as set out in the National Policy Statement for Freshwater Management 2020. *Te Mana o te Wai* includes a hierarchy of obligations, as follows:

- First, the health and wellbeing of water bodies and freshwater ecosystems as the first priority.
- Second, the health needs of people (such as drinking water)
- Third, the ability of people and communities to provide for their social, economic, and cultural wellbeing, now and in the future.

This hierarchy of obligations, and the broader concept of *Te Mana o te Wai*, demonstrates the primacy of water and that the health and wellbeing of water impacts the wider environment. Under the National Policy Statement for Freshwater Management 2020, freshwater management must be undertaken in accordance with this hierarchy and principles.

Māori consider fresh water to be a significant *taonga* (valued resource) that plays a central role. In the Māori world view. Water represents the life blood of the land. The condition of water is a reflection of the state of the land, and this in turn is a reflection of the health of the people.

The management of freshwater requires an integrated approach, ki uta ki tai, that recognises the interconnectedness of the whole environment.

In their natural state, river catchments and wetlands cleanse and purify water, recharge groundwater and reduce the extremes of flooding. Rivers, lakes and wetlands provide habitat for aquatic life, but when they and their catchments are degraded the water bodies' ability to support healthy functioning aquatic ecosystems is reduced.

Monitoring of the region's rivers shows that many urban and lowland pastoral streams regularly fail water quality guidelines. The most common reasons for failing are high levels of nutrients or bacteria, or poor clarity. Biological monitoring shows that aquatic health is also

poorest in these streams. The adverse effects of erosion and sediment run-off on fresh water are discussed in section 3.11 Soil and Minerals.

Urban streams are affected by stormwater discharges, especially when there are high proportions of impervious cover – such as roofs and roads – in the catchment. Stormwater, which generally has little or no treatment, contains sediments and bacteria, as well as persistent contaminants – like heavy metals – which accumulate in stream sediments and eventually in the *coastal environments* where the streams discharge. These contaminants affect freshwater fish and invertebrates and can have chronic long-term adverse effects on river and coastal ecosystems. Urban land uses also affect water quality in rivers and streams and can cause other pressures on freshwater habitat by creating the demand to pipe or fill in small streams.

There are seven major discharges of treated sewage to fresh water in the Wellington Region – one from the treatment plant at Paraparaumu, with the rest from the Wairarapa towns of Masterton, Castlepoint, Carterton, Greytown, Featherston, and Martinborough. Treated sewage often contains high levels of disease-causing organisms that can make the rivers unsafe for recreational use, as well as nutrients, which can promote nuisance aquatic weed and algal growth. Discharges of wastes into water bodies are of particular concern to *tangata whenua* because waste, particularly sewage waste, degrades the mauri (life force) of the water body.

Land uses affect the state of rivers and streams and, consequently, the coast. Nearly half the land in the Wellington Region is used for agriculture. Rivers and streams in these catchments have poor biological health and water quality, and are more likely to suffer from algal growth in late summer, when conditions are driest and warmest and river flows at their lowest. Groundwater around Te Horo, Ōtaki, and in the Wairarapa valley is also affected by land uses, and in some areas has elevated levels of nitrate. This could be from farming or from septic tanks.

Accommodating people's needs for water is becoming more and more difficult because some water resources in the Wellington Region are already fully allocated and others are close to full allocation. Non-consumptive uses of water can often be undertaken with negligible effects on water bodies. In the Wairarapa, the amount of water taken for farm pasture irrigation has more than doubled over the last 10 years and increasing populations in the region's urban areas means demand for water supply from rivers, lakes and groundwater is expected to increase. The pressure on water resources is also likely to increase as a result of climate change. Some predicted effects are that the central and eastern Wairarapa will become drier, and droughts will occur more frequently and persist for longer periods.

Groundwater levels in some Wairarapa aquifers are declining year by year. Lowered groundwater levels can affect the flow of springs and rivers and streams, and water levels in wetlands, which can eventually dry up. If continued *abstractions* keep the groundwater level low, the dependent ecosystems can be permanently affected.

Prolonged low flows in rivers mean there is less habitat available for aquatic life and the adverse effects of contamination are worse because of reduced dilution. Low flows in summer mean water temperatures and algal growths increase, especially if there is no riparian vegetation. Because people's need to take water is greatest at times of low rainfall, *abstractions*

generally lower river flows when aquatic life is already stressed.

Existing users often have invested in infrastructure in reliance upon consents for the take and/or use of water.

All these matters should be recognised in the efficient management of water.

The introduction and spread of aquatic pests are a threat to the health of aquatic ecosystems. In wetlands, exotic plants such as willows and blackberry can displace wetland plants and do not provide suitable habitat for wetland species. Pests – such as didymo and pest fish – also have potential for significant adverse effects.

It is a matter of national importance to maintain and enhance public access to and along rivers and lakes. There is little information about the state of public access to rivers and lakes in the Wellington Region. Where land is publicly owned, public access has generally been enhanced with the provision of walking tracks and recreational areas. For example, major rivers such as the Hutt, Waikanae and Ruamāhanga, which are managed for flood protection or soil conservation purposes, have good access for recreational use.

Where land is privately owned, city and district councils can take esplanade reserves or strips as part of subdivisions. On private land that is not proposed to be subdivided, however, public access is at the discretion and with the permission of the landowner. To date, there has been no region-wide strategic planning in the Wellington Region that has identified where public access should be enhanced. Where esplanade reserves and strips have been taken for public access, city and district councils sometimes struggle to maintain them. Even where there is legal access, it is not always aligned with access that is physically possible. There are circumstances where public access to the coastal marine area, lakes and rivers may not be desirable – such as to provide security for regional infrastructure, allow for farming activities and prevent harm to the public.

Since 2018, the regional council has been progressing whaitua processes with mana whenua / tangata whenua and community representatives across the Wellington Region to develop Whaitua Implementation Programmes (WIPs) to improve the health of freshwater. There are five whaitua (catchments) in total being Ruamāhanga, Te Awarua- o-Porirua, Whaitua Te Whanganui-a-Tara, Kāpiti, and Wairarapa Coast. The following WIPs have been completed to date:

- Ruamāhanga Whaitua (2018)
- Te Awarua-o-Porirua Whaitua and the Statement of Ngāti Toa Rangatira (2019)
- Whaitua Te Whanganui-a-Tara and Te Mahere Wai o Te Kāhui Taiao (2021).

The WIPs include freshwater values, objectives, outcomes and recommendations which inform freshwater provisions of the Regional Policy Statement and the direction provided to regional and district plans.

The National Policy Statement for Freshwater Management 2020 (clause 3.2(3)) requires the Regional Policy Statement to include an objective that describes how the management of

freshwater in the Wellington Region will give effect to *Te Mana o te Wai*. All policies and methods in this Regional Policy Statement relating to freshwater must contribute to achieving this objective.

Iwi of the Wellington Region can express what *Te Mana o te Wai* means to them in their own words and these expressions can be included in the Regional Policy Statement.

The Regional Policy Statement includes several policies to give effect to *Te Mana o te Wai* including specific policy direction that the mana whenua / *tangata whenua* expressions of *Te Mana o te Wai* must be recognised and provided for. These expressions underpin the regional response to *Te Mana o te Wai*.

Note: There are three expressions of *Te Mana o te Wai* in this Regional Policy Statement at this time from Rangitāne o Wairarapa, Kahungunu ki Wairarapa, and Taranaki Whānui. Others will be added either through the Schedule 1 process or in future plan changes.

The regionally significant issues and the issues of significance to iwi authorities in the Wellington Region for fresh water are:

1. Pollution is affecting water quality in water bodies

The water quality of rivers and streams, lakes, wetlands and groundwater in the Wellington Region is being polluted by discharges and contaminants arising from urban and rural land uses.

2. Poor ecosystem function in rivers, lakes and wetlands

The ecosystem function of some rivers, lakes and wetlands has been impaired, with some wetland and lowland stream ecosystems coming under particular pressure. Some activities that can impair ecosystem function are:

a) filling in gullies and ephemeral streams and straightening or piping small streams

b) lining stream banks and *beds* with rock or concrete

c) removing streamside vegetation

d) works in rivers, particularly during low flows

e) the introduction and spread of aquatic pests, including didymo and pest fish, and weeds in wetlands which displace wetland plants

f) stock access to river and stream *beds*, lake *beds* and wetlands, and their margins

g) creating impermeable land within a catchment through asphalting, concreting and building structures

h) taking water from rivers and groundwater connected to rivers, wetlands and springs.

3. There is increasing demand on limited water resources

There is a limited amount of water in water bodies available for human use and demand is increasing. The efficient management of water in the region's water bodies is a matter of vital importance for sustaining the wellbeing of people, communities and the regional economy.

An additional issue shared with the *coastal environment* is:

4. Public access to and along the coastal marine area, lakes and rivers (shared with Issue 4 in section 3.2)

There have been inconsistent approaches to the taking of access strips or esplanade reserves as part of subdivisions. This has meant that public access to and along the coastal marine area, lakes and rivers is not always provided, or has been provided in places where people cannot take advantage of it. Even where physical access is available, it is not always possible if access ways are not well maintained.

Chapter 3.4A: Long-term freshwater visions

Objective TAP: Long-term freshwater vision for Te Awarua-o-Porirua

Te Awarua-o-Porirua harbour, awa, wetlands, groundwater estuaries and coast are progressively improved to become healthy, wai ora, accessible, sustainable for future generations by the year 2100, and:

1) The values of Ngāti Toa Rangatira are upheld by way of revitalising and protecting Ngāti Toa Rangatira practices and tikanga associated with Te Awarua o Porirua; and

2) Mahinga kai are abundant, healthy, diverse and can be safely gathered by Ngāti Toa Rangatira and served to Ngāti Toa Rangatira uri and manuhiri to uphold manaakitanga; and

3) Have restored and healthy ecosystems that support an abundance and diversity of indigenous species, and have natural form and character and energy that demonstrate kei te ora te mauri (the mauri of the place is intact); and

4) Where appropriate, provide for safe access and healthy water quality for people and communities to enjoy a range of recreational activities including waka ama, swimming, and fishing, fostering a strong connection to these waterbodies; and

5) Are taken care of in partnership with Ngāti Toa Rangatira giving effect to the rights, values, aspirations and obligations of Ngāti Toa as kaitiaki for the mana of Te Awarua-o-Porirua as a taonga; and

6) Are resilient to the impacts of climate change; and

7) The use of water and waterways provide for social and economic use benefits, provided that the vision for the ecological health and well-being of waterbodies, freshwater ecosystems and coastal waters is not compromised.

Objective TWT: Long-term freshwater vision for Te Whanganui-a-Tara

By the year 2100 a state of wai ora is achieved for Te Whanganui-a-Tara in which the harbour, awa, wetlands, groundwater estuaries and coast are healthy, accessible, sustainable for future generations, and:

1) Mana Whenua practices and tikanga associated with Te Whanganui-a-Tara are revitalized and protected; and

2) Mahinga kai are abundant, healthy, diverse and can be safely gathered by Taranaki Whānui and Ngāti Toa Rangatira and served to Taranaki Whānui

and Ngāti Toa Rangatira uri and manuhiri to uphold manaakitanga; and

3) Have mauri/mouri that is nurtured, strengthened and able to flourish and restored natural form and character, and ecosystems that support an abundance and diversity of indigenous species; and

4) Where appropriate, provide for safe access and healthy water quality for the use of all rivers, lakes, wetlands, estuaries, harbours, and the coast for a range of recreational activities including waka ama, swimming, and fishing, fostering an appreciation of and connection to these waterbodies; and

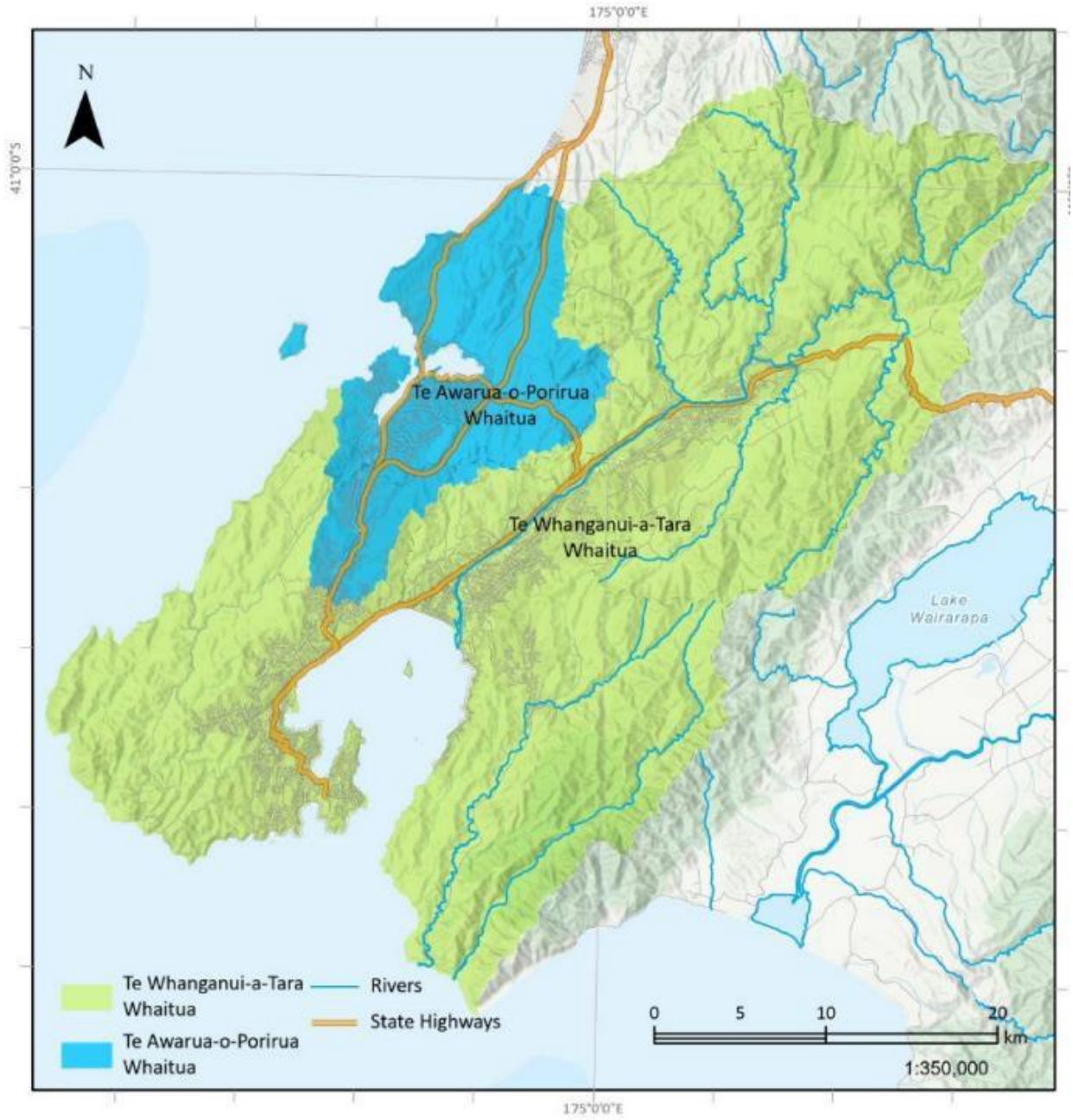
5) Are taken care of in partnership with Taranaki Whānui and Ngāti Toa Rangatira giving effect to the rights, values, aspirations and obligations of Ngāti Toa and

6) Taranaki Whānui that respects the mana of Te Whanganui-a-Tara and the whakapapa connection with Taranaki Whānui and Ngāti Toa Rangatira; and

7) Are resilient to the impacts of climate change; and

8) The use of water and waterways provide for social and economic use benefits, provided that the vision for the ecological health and well-being of waterbodies, freshwater ecosystems and coastal waters is not compromised.

Figure 3: Map of Te Awarua-o-Porirua and Te Whanganui-a-Tara Whaitua



Chapter 3.5 Historic Heritage

Historic heritage provides a connection to those who lived before us. It helps us define who we are and contributes to our sense of place. Once destroyed, it cannot be replaced.

Our history is found in both the tangible physical remains and in the intangible values associated with our ancestors. Historic heritage is not just about history, but also culture, archaeology, architecture, science and technology. For Māori, places of cultural and historic heritage are integral to wellbeing. Historic heritage resources provide continuity between the past and the present that, properly maintained, will continue into the future.

In the Wellington region, there is a wide range of historic heritage resources. The region's built heritage documents important aspects of our past. Archaeological sites contain evidence of how people have lived in the past, perhaps for centuries. For tangata whenua, there are many sites of cultural significance that provide important connections with ancestors.

In the Wellington region, many heritage places still retain high integrity and are in good condition. However, some have suffered from inappropriate subdivision, use and development. Incremental development is resulting in a loss of historic heritage in some of some of the region's towns, particularly in higher density inner centres where heritage buildings are being inappropriately modified or replaced by new buildings. Archaeological sites have been destroyed, sometimes without being properly recorded, and the evidence they contained about life in the past can never be recovered.

Since 2003, Wellington Regional Council and the region's district and city councils have had an obligation under the Resource Management Act to identify and provide for the protection of the region's historic heritage. Until then councils were only required to have "particular regard" to the protection of heritage values. Councils have improved district plan protection for historic heritage since this change. All district and city councils in the Wellington region require resource consent for the demolition, relocation or for substantial alterations of heritage buildings listed in plans. However, more work is still required, particularly for archaeological sites.

The regionally significant issue and the issue of significance to the Wellington region's iwi authorities for historic heritage is:

1. **Inappropriate modification and destruction of historic heritage**.

Loss of heritage values as a result of inappropriate modification, use and destruction of historic heritage.

Appendix 7.5: Historic heritage
Objective 15
Appendix 7.10: Resource management with tangata whenua
Objective 28

Chapter 3.6: Indigenous ecosystems

An ecosystem may be described as a community of plants, animals and micro-organisms interacting with each other and their surrounding environment.

As well as contributing to the region's natural character and having their own intrinsic values, healthy ecosystems provide us with life's essentials – such as plants and animals for food, fibre for clothing, timber for construction. This is true even in an industrialised age, although the connections are less immediately obvious. Healthy ecosystems supply us with 'services' that support life on this planet – such as:

- Processes to purify air and water
- Decomposition and detoxification of wastes
- Creation and *maintenance* of productive soils
- Reduction of the impact of climate extremes
- Capture of carbon and *maintenance* of a functioning atmosphere.

Ecosystems are dynamic (constantly changing) and the many diverse natural processes that drive ecosystems are as important as the biodiversity values within them. In addition, all parts of an ecosystem are interconnected. The species that make up an ecosystem, including humans, cannot exist in isolation from the other species and non-living parts of the ecosystem. The primacy of healthy ecosystems is central to Māori cultural values, whereby harm to mauri directly affects the wellbeing of the people. More specifically, degradation of ecosystems threatens *mahinga kai* (places where food is gathered) and other natural resources used for customary purposes.

The Wellington Region has a distinctive range of ecosystems – such as forests, mountains, wetlands, lakes, rivers and coastal and marine ecosystems. Some ecosystems have retained a high degree of indigenous~~ness~~ dominance – such as the Tararua, Remutaka, and Aorangi ranges, while others are dominated by exotic species – such as pastoral farmlands.

The area of indigenous ecosystems has been in decline since humans first settled in our region. This loss greatly accelerated from the time of European settlement. Around 70 per cent of the indigenous forest and more than 90 per cent of the wetlands that existed in 1840, have been cleared for agriculture and urban development. Most of the remaining ~~forest and wetlands and dune~~ ecosystems have been degraded or modified in some way. In addition, many of the processes that ensure ecosystems remain healthy and viable into the future have been compromised, including reproduction, recruitment, dispersal and migration.

Human actions that continue to impact on the remaining indigenous ecosystems include:

- Modification and, in some cases, destruction of ecosystems by pest plants and animals grazing animals and clearance of indigenous vegetation

- Contamination of aquatic ecosystems by sediment, pollutants and nutrients
- Destruction of ecosystems as a result of development
- Modification of natural waterways, such as ~~D~~draining wetlands and channelling, constraining or piping of ~~natural waterways~~ rivers and streams
- Contamination of coastal ecosystems by stormwater and sewage discharges.

Although New Zealand has an extensive network of public conservation land (comprising over a third of the country), this does not adequately represent all types of indigenous ecosystem. With few options to expand the public conservation estate, ~~T~~the *restoration* of ecosystems relies upon the good will and actions of landowners. There are a number of individuals, *whānau*, *hapū*, *iwi*, and community groups and organisations throughout the Wellington Region that are working to restore indigenous ecosystems. Public support for restoring indigenous ecosystems on public land and landowners retiring farmland has led to the regeneration of indigenous bush in rural gullies, along riparian margins, in regional parks and in urban backyards. This has led to increases in some indigenous habitats, such as in the hills around Wellington City, with sanctuaries such as Zealandia and pest control efforts increasing the number and variety of *indigenous* birds and invertebrates around the city. However, there is still much work to be done for many of the region's *indigenous* ecosystems and species to be in a healthy functioning state, with the *resilience* to persist in the long-term. The *restoration* of *indigenous* ecosystems on public, *whānau*, *hapū*, *iwi* and private *land* provides both public and private benefit. *Restoration* of *indigenous* ecosystems will be achieved by working collaboratively with landowners and in partnership with mana whenua / *tangata whenua*, rather than through the use of a regulatory approach.

The *decision-making principles for indigenous biodiversity* prioritise the *mauri*, intrinsic value and well-being of *indigenous biodiversity* and recognise people's connections and relationships with *indigenous biodiversity*. They recognise that the health and well-being of people and communities depend on the health and well-being of *indigenous* *biodiversity* and that, in return, people have a responsibility to care for and nurture it. The principles acknowledge the interconnectedness between *indigenous* species, ecosystems, the wider environment, and the community, at both a physical and metaphysical level. These principles must inform and be given effect to when managing *indigenous* *biodiversity* across the Wellington Region, ensuring that te ao Māori, mātauranga, and *tikanga* Māori are applied appropriately to protect, *maintain* and *restore indigenous* biodiversity.

Ecosystem health can be measured in a number of ways, including the composition, richness and indigenous dominance of communities, function of ecosystem processes (e.g., degree to which it is connected or fragmented), or the extent of the ecosystem remaining. ~~loss of individual species, loss of overall diversity of species, loss of an ecosystem's ability to function on an ongoing basis, and loss of complete ecosystems and types of ecosystems~~. While the dramatic collapse of species or whole ecosystems can capture attention, the gradual erosion of ecosystems' sustainability is also a significant issue.

The regionally significant issues and the issues of significance to ~~the Wellington region's~~ iwi authorities in the Wellington Region for indigenous ecosystems are:

1. The region's indigenous ecosystems are reduced in extent

The region's indigenous ecosystems have been significantly reduced in extent and are being increasingly fragmented. Loss of area, *ecological integrity* and *ecological connectivity* reduce the resilience of ecosystems to respond to ongoing pressures, threatening their persistence and that of the indigenous biodiversity and *mahinga kai* they support. The indigenous ecosystems most reduced in extent are ~~specifically~~:

- wetlands;
- lowland forests;
- lowland streams;
- coastal dune~~s~~lands and escarpments;
- estuaries;
- eastern 'dry land' forests.

2. The region's remaining indigenous ecosystems are under threat

The region's remaining indigenous ecosystems, and the ecosystem processes that support them, continue to be degraded or lost due to ongoing pressure from invasive species, human use and development, and the effects of climate change.

3. Mana whenua / tangata whenua values and roles are not adequately recognised and supported

Mana whenua / *tangata whenua* values and roles, including *kaitiakitanga*, are not adequately recognised and supported by the current approach to managing *indigenous biodiversity*.

4. Landowner values and roles are not adequately recognised and supported

The conservation efforts of landowners, as stewards of their land, and local communities could be better recognised and supported.

Chapter 3.7: Landscape

Landscape is shaped by a combination of natural processes and human actions. The biophysical processes over time – such as plate tectonics, weathering, landslides, water flow, climate and the influence of plants and animals – are overlaid by the effects of a wide range of human activities. Landscape is the cumulative expression of natural and cultural elements, patterns and processes in a geographical area.

Landscapes influence our sense of identity and our experiences of the places in which we live. Landscapes also influence how visitors and other people from other countries perceive us and our country. New Zealand has an international reputation for having a diversity of natural landscapes and Wellington's landscapes are as diverse as those of any region. Wellington's distinctive landscapes range from forested mountain ranges, rolling pastures, crowded urban hills and valleys, river plains and coastal dunelands, to sheltered harbours, estuaries, wild coasts and islands. We attribute different values to these landscapes, depending on their characteristics and our own culture, personal history, relationship with the land and notions about what is significant.

While all landscapes have value, the significance of those values differs. It is important that this is recognised in the way the values of landscapes are assessed and managed. Landscapes are dynamic and landscape change is inevitable, even without human activity or intervention. Some land use activities such as farming have played a pivotal role in shaping certain landscapes that are highly valued by many people. Other land uses such as poorly planned and designed urban subdivision have eroded or compromised some landscapes.

In the Wellington region there is an increasing awareness about the value of the region's landscapes and the way they are managed. The Resource Management Act requires the identification and protection of outstanding natural features and landscapes. The management of landscape more generally is inherent in the concept of sustainable management and maintaining and enhancing amenity and the quality of the environment. Within the region there are landscapes which are not outstanding natural landscapes but are distinctive, widely recognized and highly valued by the community for their contribution to amenity and the quality of the environment. These landscapes tend to be modified urban and rural environments, such as areas of the coast and prominent hilltops and ridgelines. The general amenity provisions of district and regional plans may not be suitably focused to manage the values of these landscapes, and nor would it be appropriate to strain the interpretation of outstanding natural landscapes in order to allow more careful management of these landscapes.

To be able to manage the region sustainably, an understanding of the landscape resource is required. This is an important first step, which describes the intrinsic values of these landscapes and identifies the type and nature of land uses and other changes that could potentially affect these values in either a positive or negative manner.

Landscapes do not start and finish at district and regional boundaries and are often viewed and appreciated from a distance, sometimes across boundaries. Using a consistent process to assess all of the region's landscapes against the same set of factors or criteria enables landscapes to be classified into one of the above categories, and ensures regional consistency

in landscape assessment. Consistency is particularly important where landscapes cross territorial authority boundaries and/or are visible from multiple districts.

Landscapes can be broadly categorised into three groupings:

1. The first group covers 'outstanding' natural features and landscapes. These are considered to be exceptional and iconic, and while not necessarily pristine, they are landscapes in which natural elements and processes dominate. The Resource Management Act requires the protection of outstanding natural features and landscapes from inappropriate subdivision, use and development.

2. The second group covers special amenity landscapes. These are highly valued for their visual and physical attributes which contribute to landscape amenity and the quality of the environment. While these special 'amenity landscapes' may be more modified than the outstanding natural landscapes and features, they are none the less distinctive, widely recognised and highly valued by the community. Community recognition and value can manifest itself in various ways and an important part of the evaluation process is to describe and articulate the recognition and value of such landscapes. The values of special amenity landscapes should be managed to maintain or enhance these values.

3. The third group covers all other landscapes. These landscapes contribute to the amenity and character of the region and are managed through the general amenity provisions in local authority plans. Impacts on these landscapes are not considered to be a regionally significant issue.

As with many places, distinctive aspects of some of the region's landscapes are at risk of being altered or degraded due to ongoing pressure to utilise and develop the land resource. For example, earthworks and other landform modifications, plantation forestry, poorly planned and designed subdivisions and poorly sited and designed buildings or other structures can impact adversely on landscape values. Current pressures include large-scale earthworks and rural residential developments. Consequently, there is a need to manage landscape change. The management of landscape values may be more problematic where the area is a working environment, as is much of rural Wairarapa, and/or where the area is required for the economic and social wellbeing of the area. There is a need therefore to manage change in a way that allows for ongoing use or development.

The potential pressure on the landscape values of outstanding natural landscapes, special amenity landscapes or other landscapes do not differ in nature. However, the capacity of each landscape grouping to absorb different activities without affecting the landscape values does differ, so each requires different thresholds for management of those activities. For example, the scope for change within special amenity landscapes without losing their landscape values will be greater than for outstanding features and landscapes.

The regionally significant issues and issues of significance to the Wellington region's iwi authorities for landscape are:

1. **The inappropriate modification of the characteristics of outstanding natural features and landscapes that make them outstanding and natural.**

2. **The inappropriate modification of the characteristics of special amenity landscapes that makes them distinctive, widely recognised, and highly valued by the community.**

3. **Inconsistency in the identification of landscapes across the Wellington region may result in discrepancies in the management of landscapes and landscape values, including those which cross local authority boundaries.**

Chapter 3.8: Natural hazards

A *natural hazard* is defined in the Resource Management Act as any atmospheric, earth or water related occurrence (including earthquake, *tsunami*, erosion, volcanic, and geothermal activity, landslip, subsidence, *sedimentation*, wind, drought, fire, or flooding) which may adversely affect human life, property, or other aspects of the environment. On their own, natural processes do not constitute a hazard. Natural events become hazardous when they may adversely affect human lives.

Regional, city and district councils all have responsibilities under the Resource Management Act to manage the significant risks from these natural hazards as a matter of national importance. Additionally, particular regard must be given to the effects of climate change when achieving the sustainable management purpose of the Act.

The Wellington Region has one of the most physically diverse environments in New Zealand. It is also one of the most populous regions and, consequently, our communities and the areas that we value are affected by a wide range of *natural hazards*. The hazard exposure of people and communities, the natural environment, businesses and the economy, food production (including *mahinga kai*), water security, property and *infrastructure* is increasing because of climate change. The impacts and costs of responding to *natural hazards* and climate change is not felt equitably. Some communities have no, or only limited, resources to enable mitigation and adaptation and will bear a greater burden than others.

With the exception of geothermal activity, the Wellington Region is subject to all types of *natural hazard* events. Commonly, there are two or more hazards associated with a given event. For example, a rainstorm may cause flooding and landslips.

The three most potentially damaging and costly *natural hazards* events that can occur in the Wellington Region are:

- Earthquake: High *magnitude* earthquake (7.0+) from the rupture of a local *fault* (especially the Wellington *Fault*) affecting Te Whanganui-a-Tara/Wellington city, Te Awa Kairangi/Hutt valley, Porirua, Kāpiti Coast and towns in the Wairarapa ~~District.~~

- Flooding: Major *river* flooding in the Hutt valley, Kāpiti Coast and the central Wairarapa plains. Flooding is the most frequently occurring hazard event in the Wellington Region.

- *Tsunami*: Large *tsunami* (particularly one that is locally generated) affecting low- lying areas around Te Whanganui-a-Tara/Wellington Harbour and the southern bays, settlements along the southern and eastern Wairarapa coast, Te Awarua-o-Porirua Harbour and the Kāpiti Coast.

Other *natural hazards* have more localised impacts but occur more frequently. These include:

- Localised flooding and *inundation* from streams and *stormwater* overflow. This can occur throughout the Wellington Region in low-lying areas – such as Porirua – around

tributary streams of the larger *rivers* – such as ~~the~~ Te Awa Kairangi/Hutt River – and in areas that have short steep catchments – such as Paekākāriki.

- Coastal erosion and *inundation*, often associated with *storm surge*, affects some seafront and low-lying coastal developments in the Wellington Region. Some sections of the coastline are in long term retreat – such as Paekākāriki and Te Kopi. Other areas have episodes of erosion that form part of a cycle of erosion and deposition – such as Paraparaumu or Riversdale. Due to climate change induced sea level rise, it is expected that the areas impacted by coastal erosion and *inundation* will increase with time, and that this hazard will occur on a more frequent basis.

- Landslips in the hill suburbs of Te Whanganui-a-Tara/Wellington city, ~~the~~ Te Awa Kairangi/Hutt valley, Eastbourne, Wainuiomata, Porirua, Paekākāriki and in the Wairarapa hill country.

- Drought, especially in central Wairarapa and the coastal hills between Flat Point and Castlepoint.

- Wildfire, particularly in hill suburbs on urban fringes near heavily vegetated slopes, including western and southern Te Whanganui-a-Tara/Wellington suburbs, Eastbourne, Wainuiomata, Te Awa Kairangi/Hutt valley and Porirua, and farmland in the eastern Wairarapa hill country.

- High winds that can occur throughout the Wellington Region and cause widespread damage to buildings, *infrastructure* and forestry.

- *Sedimentation* and erosion of *rivers* and streams, *river* mouths and tidal inlets, that can exacerbate the flood *risk* by raising *bed* levels and undermining banks.

People's actions, including mitigation measures and ongoing development in areas at *high risk* from *natural hazards*, can cause or increase the *risk* from *natural hazards*. Examples include seawalls or groynes that can cause localised erosion of the adjacent shoreline and building on landslip prone slopes. Stopbanks and seawalls can also create a sense of security and encourage further development, increasing the extent and value of the assets at *risk*.

In the medium to long term, climate change effects ~~have the potential to~~ will increase both the *frequency* and *magnitude* of *natural hazard* events that already occur in the Wellington Region.

A major consequence of climate change is sea level rise. ~~The sea level is expected to rise over half a meter by 2100.~~[1] Based on the Intergovernmental Panel on Climate Change 6th assessment report, and measurements of vertical *land* movement, NZ SeaRise - Te Tai Pari O Aotearoa projects relative sea level in the Wellington Region to rise between 0.8 – 1.3 m by 2100 but, 2.0 m of sea level rise by the end of the century cannot be ruled out[3].

Climate change will increase the *frequency* and *magnitude natural hazards* that already occur in the Wellington Region and exacerbate the impacts and *consequences* from these events. For example, 30cm of sea level rise on top of what has already occurred over the

past 120 years, will mean that a 1 percent annual exceedance probability (1:100 yr) coastal flooding event has the potential to occur every one to two years.

The main *natural hazards* associated with a rise in sea levels are coastal erosion and *inundation*. Sea level rise will also put increasing pressure on the coastal margin. As the shoreline adjusts, sediment will be redistributed around the coast and may cause shorelines to form new orientations. Beaches that are currently stable may begin to erode as the shoreline adjusts to a higher water level, while those that are currently eroding may experience an increased rate of retreat.

Climate change ~~is expected to~~ will increase the intensity and duration of westerly weather systems and reduce easterly conditions. This will exacerbate differences in the regional climate, by bringing higher rainfall to the west and reducing coastal rains in the east. It will also bring longer periods of northerly gales to the entire region, particularly in the spring months. Western and southern areas of the Wellington Region may also have higher rainfall in the winter, increasing the landslide *risk* during wet winters, particularly in extreme rainfall events. This will put pressure on *stormwater* systems and flood protection works. Higher rainfall may also result in higher rates of *sedimentation* at *river* mouths and in estuaries, increasing the flood *risk* in those areas by raising the base level of the *river bed*.

It is also expected that central and eastern Wairarapa will become drier over the next 100 years. Droughts will occur more frequently and persist for longer periods. Research suggests that winter rainfall will decline in the long term, which may lead to a reduction in *groundwater* recharge rates and pressure on water resources. Dry conditions also result in a heightened *risk* of wildfire.

The regionally significant issues and the issues of significance to the Wellington Region's *iwi* authorities for *natural hazards* are:

1. E~~ffects of~~ Risks from natural hazards

Natural hazard events in the Wellington Region have an adverse impact on people and communities, the natural environment, businesses and the local economy, property and *infrastructure*.

2. Human actions can increase risk and consequences from natural hazards

People's actions, including mitigation measures and ongoing development in areas at *risk* from *natural hazards*, can cause, or increase, the *risk* and *consequences* from *natural hazards.*

3. Climate change will increase both the likelihood and consequences ~~magnitude and frequency of~~ from natural hazard events

Climate change will increase the likelihood and *consequences* ~~risks~~ from most *natural hazard* events that already occur within the Wellington Region, particularly:

a) sea level rise, exacerbating the effects of coastal erosion and *inundation*, ~~and~~ *river*, pluvial and *stormwater* flooding in low lying areas, especially during storm ~~surge~~ tide events; and

b) increased *frequency* and intensity of storm events, adding to the *risk* from floods, landslides, severe wind, *storm surge*, coastal erosion and *inundation*; and

c) increased *frequency* of drought, placing pressure on water resources and increasing the wildfire *risk*.

~~1 Intergovernmental Panel on Climate Change (IPCC) (2007), *Climate Change 2007: The Physical Science Basis.* Summary for Policymakers. Contribution of working group I to the fourth assessment report of the IPCC, 18pp.~~

[1] IPCC, 2021: Summary for Policymakers. In: Climate Change 2021: The Physical Science Basis. Contribution of Working Group I to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change, 31pp.

Chapter 3.9: Regional form, design and function

The Wellington Region is facing multiple pressures, including population growth and change, poor housing stock quality and increasing unaffordability, degradation of ecosystems, loss of productive *land*, and increasing exposure to *natural hazards* and the impacts of climate change. Historic patterns of *urban development* and growth have had ongoing impacts and adverse effects on mana whenua / *tangata whenua* throughout the Wellington Region, and their relationship with their culture, *land*, water, sites *wāhi tapu and* other *taonga*.

Subdivision, use and development that is poorly planned, designed, serviced and connected can have significant adverse effects, including cumulative effects, on the natural environment, sites and areas of significance to Māori, the quality, viability and accessibility of *urban areas*, suburban and *rural areas* and the ability to manage, use and operate, existing *infrastructure*. Responding to the pressures facing Wellington Region presents opportunities to do things better.

Regional form is about the physical arrangement within and between urban and rural communities. Good urban design and planning seeks to ensure that the design of buildings, places, spaces, and networks works well for mana whenua / *tangata whenua* and communities, and that they are *environmentally responsive*.

How this chapter works

The *regional form*, design and function chapter applies to the whole region. It provides an integrating frame for how and where development is undertaken in the Wellington Region's *urban* and *rural areas*, which gives effect to relevant national direction and statutory requirements, and has regard to management plans and strategies prepared under other Acts. It also emphasises the value of spatial planning to ensure that development is responsive to the local characteristics, values, location and accessibility of *land*, protects natural and cultural values, and is sequenced with the provision and maintenance of all necessary *infrastructure*.

The chapter and associated provisions include:

An over-arching objective for *regional form* (Objective 22). This sets out the outcomes to be achieved in *urban,* and *rural areas* and how these areas are connected to each other. There is also a specific objective about meeting housing demand (Objective 22A).

- A policy articulating what contributing to well-functioning *urban areas* means in the Wellington Region (Policy UD.5).
- Policies providing direction to development to seek a strategic approach to enabling development capacity, including by integrating with *infrastructure* and transport planning and seeking that planning decisions can be responsive (Policy UD.4, Policy 31, Policy 32, Policy 33, Policy 55, Policy 56, Policy 57, Policy 58, Policy UD.3).

- Provisions to enable the expression of Māori cultural and traditional norms in use and development (Policy UD.2) and the occupation, use and development of ancestral *land* by mana whenua / *tangata whenua* (Policy UD.1).

- Methods to achieve the policies.

Well-functioning urban environments and areas

The concept of *well-functioning urban environments* was introduced in the National Policy Statement on Urban Development 2020, which provides a minimum definition. The Wellington Region contains several *urban environment*s, as well as smaller centres that contain *urban zones*, for example some towns in the Wairarapa. The term 'well-functioning *urban areas*' has been used throughout this chapter where the direction applies to all *urban areas*. Well-functioning *urban areas* encapsulate *well-functioning urban environments* as defined in the National Policy Statement on Urban Development 2020.

~~A compact and well-designed regional form~~ Well-functioning *urban areas* enhance~~s~~ the quality of life for residents as it is easier to get around, allow~~s~~ for a greater supply and choice of housing close to where people work or to public transport, support equitable access to green and open space as well as housing~~, town centres are~~ and provide vibrant, safe, and cohesive centres that are well connected by public and active transport and enhance business activity. ~~is enhanced. Energy consumption and carbon emissions are also reduced.~~ Well-functioning *urban areas* enable Māori to express their culture and traditions, and provide for the cultural visibility of mana whenua / *tangata whenua* to be incorporated, integrated, and expressed through design guides and other opportunities. Planning decisions relating to *urban environments* must take into account the principles of Te Tiriti o Waitangi as required by the National Policy Statement on Urban Development 2020.

Well-functioning *urban areas* enable ~~C~~communities and businesses ~~are~~ to be more resilient to ~~oil shortages or crisis, and there is reduced pressure for new infrastructure and more efficient use of existing infrastructure.~~ the effects of climate change, and support the uptake of zero and low-carbon emission modes throughout the Wellington Region. They have compact urban form through urban intensification, and are well-designed and planned to be low impact, give effect to *Te Mana o Te Wai*, and retain productive rural land. Well-functioning *urban areas* are supported by inter-disciplinary design guides, prepared in partnership with mana whenua / *tangata whenua*, to ensure best practice *urban design* is undertaken which supports the health and wellbeing of people and the region's natural resources. Well-functioning *urban areas* protect *regionally significant infrastructure* from potentially incompatible development and *reverse sensitivity* effects, and they are supported by a reliable local supply of *aggregate* to enable *urban development* and associated *infrastructure*.

Supporting the role of regional spatial planning

~~Central~~ Wellington city contains the central business district for the Wellington Region. Its continued viability, vibrancy and accessibility are important to the whole region. There are also ~~a number of~~ other *regionally significant centres* that are an important part of the region's form. ~~These are the sub-regional city centres of Upper Hutt city centre, Lower~~

~~Hutt city centre, Porirua city centre, Masterton town centre, Paraparaumu town centre, and the suburban centres in Petone, Johnsonville and Kilbirnie. These centres are significant areas of transport movement and civic and community investment. They also have the potential to support new development and increase the range and diversity of activities.~~ Good quality high and medium *density* housing in and around these centres of business activity, and existing and planned rapid transit stops, would benefit the viability of centres and provide increased housing choice, quality and affordability. ~~could increase housing choice and the use of services and public transport.~~ Enabling intensification in the right places can bring significant environmental, social and economic benefits that are necessary for achieving well-functioning *urban areas*.

~~Encouraging use and development of existing centres of business activity can also lead to social and economic benefits.~~ Additional local employment and educational opportunities in and around these centres could also provide people with greater choice about where they work, learn, and live. Connections between communities and community resilience can also be fostered by more people living, commuting, and accessing services and amenities within neighbourhoods. ~~The physical arrangement of urban and rural communities/smaller centres, the region's industrial business areas, the port, the airport, the road and public transport network, and the region's open space network are fundamental to a compact and well designed *regional form*.~~

Collaborative spatial planning supports a compact, well-designed *regional form* by taking a strategic approach to determining how development capacity is enabled and delivered, so that it responds to the characteristics, location, values, capability, and limitations of *land*, and is coordinated with *land* release sequencing, *infrastructure* provision, and maintenance.

The *Future Development Strategy* provides a 30-year regional spatial plan that has been developed by local government, central government, and *iwi* partners in the Wellington-Horowhenua region. Territorial authorities may also have their own local frameworks or strategies about where and how future *urban development* should occur in that district.

~~The region has a strong corridor pattern, yet is generally compact. The transport corridor pattern includes State Highway 1 and the North Island Main Trunk rail line which enters the region near Ōtaki and extends southwards through Kāpiti Coast, Pukerua Bay, Porirua and northern Wellington and through to Wellington city central business district. State Highway 1 continues through to Wellington International Airport. State Highway 2 and the Wairarapa railway line enter the region north of Masterton and extend southwest through Wairarapa, the Hutt valley and on to merge with State Highway 1 and the North Island Main Trunk rail line at Ngauranga. State Highway 58 provides a vital the current east–west link between State Highways 1 and 2.~~

~~This corridor pattern is a strength for the region. It reinforces local centres, supports passenger transport, reduces energy use and makes services more accessible.~~

~~There are, however, parts of the region where growth pressures exist and where the region's current compact form is beginning to fray at the edges, reducing transport efficiency and the ability of some centres to grow as community service and employment~~

~~areas. The region also has limited east-west transport linkages, which means freight and commuter movements are focused along the north-south corridors, increasing congestion on some major routes.~~

~~In certain locations, the region's urban design has also been weakened by poorly designed developments which negatively affect the look, feel, health, safety, vitality and vibrancy of those areas.~~

~~The region's form, design and function have been examined by the region's nine local authorities, in conjunction with the region's iwi authorities, central government and business, education, research and voluntary sector interests, as part of the development of the Wellington Regional Strategy (2007), a sustainable economic growth strategy for the Wellington region. The Wellington Regional~~ Strategy ~~focuses on leadership andpartnership, growing the region's economy and good regional form. It is recognised that the region's form is a key component to making the Wellington region 'internationally competitive'.~~

The regionally significant issues and the issues of significance to ~~the Wellington region's~~ iwi authorities in the Wellington Region for *regional form*, design and function are:

1. Lack of housing supply and choice

The Wellington Region lacks sufficient, affordable, and quality (including healthy) housing supply and choice to meet current demand, the needs of projected population growth and the changing needs of our diverse communities. There is a lack of variety of housing types and sizes across the Wellington Region, including papakāinga and medium and high *density* residential living in and around centres and existing and planned transit nodes, all of which impacts housing affordability in the Wellington Region. Housing affordability has declined significantly over the last decade, causing severe financial difficulty for many lower-income households, leaving some with insufficient income to provide for their basic needs and well-being.

2. Inappropriate development

Inappropriate and poorly managed urban land use and activities in the Wellington Region have damaged, and continue to jeopardise, the natural environment including the productive capacity of rural *land*, degrade ecosystems, particularly aquatic ecosystems, and increased the exposure of communities to the impacts of climate change. This has adversely affected mana whenua / *tangata whenua* and their relationship with their culture, *land*, water, sites, *wāhi tapu and* other *taonga*.

3. ~~1.~~ Poor quality urban design

Poor quality urban design can adversely affect public health, social equity, *land* values, the cultural practices, visibility, identity and well-being of mana whenua / *tangata whenua* and communities, the vibrancy of local centres and economies, and the provision of, and access to, civic services. It can also increase the use of non-renewable resources and vehicle emissions in the Wellington Region.

4. Inadequate infrastructure

The development of well-functioning *urban areas*, including providing for sufficient development capacity, is constrained in many locations within the Wellington Region by a lack of capacity in existing *infrastructure*. These constraints include the availability and affordability of funding required for delivery of new *infrastructure*, or the maintenance and upgrading of existing *infrastructure*.

5. ~~2.~~ Sporadic, uncontrolled and/or uncoordinated development

Sporadic, uncontrolled, ~~and/~~or uncoordinated, development (including of *infrastructure*) can adversely affect the region's compact form and function. This can, among other things, result in:

a) new development that is poorly located in relation to existing *infrastructure* ~~(such as roads, sewage and stormwater systems)~~ and is costly or otherwise difficult to service
b) development in locations that restrict access to the significant physical resource in Wellington Region – such as *aggregate*
c) the loss of rural or open space land valued for its productive, ecological, aesthetic and recreational qualities
d) insufficient population densities to support public transport and other public services
e) development in locations that undermine existing centres and industrial employment areas
f) loss of vitality and/or viability in the region's central business district and other centres of regional significance
g) displacement of industrial employment activities from established industrial areas
h) adverse effects on the management, use and operation of infrastructure from incompatible land uses under, over, on or adjacent
i) adverse effects on mana whenua / *tangata whenua* and their relationship with their culture, land, water, sites, *wāhi tapu and* other *taonga.*

6. ~~3.~~ Integration of land use and transportation

A lack of integration between land use and the region's transportation network can create patterns of development that increase the need for travel, the length of journeys and reliance on private motor vehicles, resulting in:

a) increased emissions to air from a variety of pollutants, including *greenhouse gases*
b) increased use of energy and reliance on non-renewable resources
c) reduced opportunities for alternate means of travel (such as walking and cycling), increased community severance, and increased costs associated with

upgrading roads,

d) increased road congestion leading to restricted movement of goods and services to, from and within the Wellington Region, and compromising the efficient and safe operation of the transport network

e) inefficient use of existing infrastructure (including transport orientated infrastructure)

Chapter 3.10: Resource management with tangata whenua

Tangata whenua have a special relationship with the land, air, water and natural resources. Various terms are used to describe tangata whenua of the Wellington region, including iwi, hapū, whānau, marae, and iwi authorities. Iwi are tribes, groups of Māori linked by common ancestry and with a common history. Hapū are sub-tribes, social and political units based on descent from a common ancestor. Whānau are extended family groups. Marae are important cultural institutions, facilities and community meeting places where significant events are held and decisions are made. Usually a hapū or whānau is associated with a marae.

Te Tiriti o Waitangi guarantees rangatiratanga, the right of tangata whenua to manage their lands and natural resources in accordance with cultural traditions. Tangata whenua today practise the environmental guardianship system, or kaitiakitanga, used by their ancestors. Kaitiakitanga is based on Māori views of the world and its origins, and the principle that everything is interrelated and interconnected. Mauri is the life force that exists in all things in the natural world. Tikanga, or customary practices, are followed in order to protect mauri. Observing tikanga is central to the exercise of kaitiakitanga. Kaitiakitanga is a parallel system of environmental management that should be given equal consideration in resource management.

Tangata whenua of the region consider that the region's natural and physical resources need to be managed in an integrated and holistic way in order to achieve a sustainable future. As such, all the resource management issues in this Regional Policy Statement are of significance to tangata whenua in the region. The following paragraphs describe additional issues of specific significance to iwi authorities in the Wellington region.

There are currently limited opportunities for ongoing involvement of tangata whenua in decision-making. This is an overarching issue that affects whether and how local authorities and iwi are able to work together. Iwi authorities have identified the following particular concerns:

- The principles of Te Tiriti o Waitangi are not taken into account in a systematic way in decision-making
- Education and awareness of Te Tiriti principles needs to be improved among local authority staff and elected members
- Limited availability of resources to enable iwi to effectively engage in resource management processes
- Lack of communication with iwi on how their concerns have been taken into account or acted on by local authorities
- A lack of consistency and coordination among local authorities with regard to resource management planning.

Mauri can be harmed by insensitive resource use. For example, the health and vitality of the sea, streams and rivers and the plants and animals they support can be threatened by activities – such as discharges of pollutants; stormwater and sewage; runoff of contaminants from land; excessive water use; changing the course of water bodies, or diverting water between catchments or rivers. Māori consider that rivers are the life blood of the land and that the wellbeing of natural resources is reflected in the wellbeing of people. Similarly, the mauri of the land and air and the plants and animals they support can be harmed by practices such as clearance of vegetation, soil disturbance and disposal of wastes.

Insensitive resource use also threatens mahinga kai (customary food gathering) and natural resources used for customary purposes. Tangata whenua are also sometimes prevented from accessing sites where customary resources are found. Degradation or loss of ngā kai (traditional foods), mātaitai (areas of importance for food gathering) and flora and fauna compromise the mana (authority) of tangata whenua by impairing their ability to fulfil their role and responsibilities in relation to kaitiakitanga and manaakitanga (their responsibilities of care for guests). Foods of traditional importance include, but are not limited to, forest kai, seafood, eels and whitebait.

Growth and development pressure on and around significant cultural heritage sites has led to widespread destruction and degradation of places, sites and areas with spiritual, cultural or historic heritage value of significance to tangata whenua.

The additional resource management issues of significance to iwi authorities in the Wellington region and issues of regional significance are:

1. Lack of involvement in resource management decision-making Lack of tangata whenua involvement in resource management decision-making.	Appendix 7.10: Resource management with tangata whenua Objectives 23,24 & 25
2. Loss of mauri Loss of mauri, particularly in relation to fresh and coastal waters	Appendix 7.10: Resource management with tangata whenua Objective 26
3. Quality, quantity and access to mahinga kai and natural resources used for customary purposes Continuing loss of quality, quantity, and access to mahinga kai and natural resources used for customary purposes.	Appendix 7.10: Resource management with tangata whenua Objective 27

4. Degradation and destruction of spiritual and cultural historic heritage values

Degradation and destruction of places sites and areas of spiritual, cultural or historic heritage value to tangata whenua.

Appendix 7.10: Resource management with tangata whenua

Objective 28

Chapter 3.11: Soil and Minerals

a) Soils

The soils of the Wellington region are an important source of its economic wealth, and overall wellbeing. They perform a range of important functions – such as absorbing, retaining and channelling water; supporting and sustaining vegetation and crops; storing and treating natural, domestic, and industrial waste; providing support for buildings and other structures; and, soils are a source of valuable minerals and construction materials.

As the life-giving base element of the land, soils are a significant taonga to Māori. The condition of the soil is a direct reading of the state of the land and this, in turn, reflects the health of the people.

Five major management challenges exist for soils and minerals in the region:

- Preventing soil erosion
- Maintaining soil health
- Retaining productive soils for agricultural use
- Preventing unsafe use of contaminated sites
- Efficient mineral extraction.

Soil erosion leads to land degradation and loss of soil productivity, capability and versatility. Soils are subject to the natural forces of erosion, including rain, high winds, and ice action, which can cause slumping, slips, and the formation of scree slopes.

Nearly half the land in the Wellington region has little or no sign of soil erosion. This land does not have a high risk of accelerated erosion in the long term, so long as good management practices prevail.

About one third of the region is erosion prone land, which is more susceptible to accelerated soil erosion from poor land management practices. Accelerated soil erosion has occurred where there is pastoral grazing on erosion-prone land (predominantly in the eastern Wairarapa hills), wind erosion (as a result of the cultivation of arable soils in the Wairarapa Valley), large scale earthworks (associated with subdivisions and roading), and where the removal of native vegetation or the harvesting of plantation forestry are poorly executed on erosion prone land.

Off-site effects of soil erosion include reduction in water clarity in rivers and streams, degradation of aquatic habitat from sediment deposition on stream beds, downstream flooding and aggradation of river beds.

Long term predictions of changing weather patterns from climate change also suggest that there could be more frequent and intense rainstorm events in the region, which may cause more widespread damage to erosion prone land.

Soil health refers to the biological, chemical and physical qualities of the soil that support the soil's ecosystems. Unlike soil erosion problems, which are generally obvious, soil health problems are less evident, but no less important. Soils contain the necessary minerals and nutrients to enable plants and animals to grow. Soil health can be compromised or degraded through contamination, compaction and the loss of minerals and nutrients. Soils are resilient and their health can improve over time through certain land management practices.

Some of the land in the region has elevated levels of available phosphate, particularly horticultural land. Phosphate attaches to soil particles and, if washed off land and into rivers, can promote nuisance aquatic weed or algal growth. Some areas are more prone to these problems than others.

On land used for dairying, and to a lesser extent for horticulture, there is evidence of soil compaction and elevated nitrogen concentrations. Soil compaction reduces soil pore spaces, which reduces water infiltration and increases run-off. Soil monitoring to date shows that soil organic matter is slowly declining in arable soils in the region.

The region has a small amount of land that is suitable for multiple uses such as for growing a wide range of crops, pasture and forest, and for supporting grazing animals. This land is described as Class I and II land under the Land Use Capability classification.

Class I and II land in the region is found in the river valleys of the Ōtaki and Ruamāhanga rivers and around the townships of Ōtaki, Featherston, Greytown, Carterton, and Masterton. There is growing pressure to develop some of this land, especially around Ōtaki and Greytown. The total area of Class I land in the region is small, about 0.6 per cent of the total land area (4800 hectares). Class II land is about 1.7 per cent (13,800 hectares).

Contaminated land arises where hazardous substances are found or are reasonably likely to occur at levels that could have significant adverse effects on the environment. There are more than 1,600 sites in the region that have a history of using, storing or manufacturing hazardous substances, including closed landfills. Contaminated land can make land unsuitable or unsafe for future land uses.

b) Minerals

In the Wellington region, sand, rock, gravel and limestone are extracted from rivers, seabed, beaches, coastal cliffs and inland quarries. Oil and gas exploration are also ongoing in parts of the seabed of Wairarapa and Kāpiti. As the region's population continues to expand, the demand for mineral resources, particularly aggregate, will increase. A sustained supply of aggregate will be needed to provide for building, construction and roading projects associated with this growth but also to maintain and redevelop existing infrastructure. Resource availability or inefficiencies in obtaining such resources has the potential to impact on the timely and efficient provision of regionally significant infrastructure – in particular new roading projects.

Mineral resources are fixed in location, unevenly distributed and finite. Extraction

processes, sites and transportation routes can create adverse environmental effects. If activities sensitive to the effects of extraction, processing and transportation are established nearby, the full and efficient future extraction of these resources can be compromised. Additionally, reverse sensitivity effects can arise where a new sensitive activity must either accept or protect itself from the effects associated with the working site. These effects are most likely to arise where working sites and their access routes are adjacent to residential and rural-residential subdivisions or adjacent to areas which can be subdivided. In such circumstances, the new activities would need to incorporate provisions that ensure adequate protection from potential effects such as noise, dust and visual impacts from the established activity.

Similarly, the transportation of mineral resources around, through and out of the region can give rise to adverse environmental effects and can have economic implications. There are benefits to allowing extraction and processing by extractive industries as close as possible to the location of use of the final product to avoid distributing adverse effects across a greater area than necessary to meet the need for these resources.

The regionally significant issues and the issues of significance to the Wellington region's iwi authorities for soils and minerals are:

1. Accelerated soil erosion

Some land management practices accelerate soil erosion and reduce soil quality. Soil loss can lead to increased sedimentation of waterways and subsequent effects on the coastal marine area. Soil loss can also decrease farm production, soil biodiversity and ecosystem function.

Appendix 7.11: Soils and minerals Objectives 29 & 30

2. Reduction of soil health

Some land use practices are reducing the health and productive capability of soils.

Appendix 7.11: Soils and minerals Objective 30

3. Highly productive agricultural land under threat from development

Highly productive agricultural land (Class I and II land) is under threat from development, including residential development and the construction of roads.

Appendix 7.11: Soils and minerals Objective 30

4. Contaminated land

Some land where hazardous substances have been manufactured, used or stored – such as gas works, petrol stations, landfills, and sheep dips – have contaminated soils. Development of that land for new uses may not be safe if soils are contaminated.

Appendix 7.11: Soils and minerals Objective 30

5. Limited mineral resources

There are limited mineral resources in the region and demand for these will increase. A sustained supply of mineral resources is essential to provide for the

Appendix 7. 11: Soils and minerals Objective 31

well being of the regional and local communities and the people of Wellington, and for the regional economy. There are also benefits from extracting mineral resources locally.