

## **B7. Toitū te whenua, toitū te taiao – Natural resources**

### ***Ngā ariki o te rangi, ngā ariki o te whenua, ngā ariki o te moana, ngā ariki o te taiao***

The chiefly deities of the sky, of the earth, of the sea, the spiritual caretakers of the environment

#### **B7.1. Issues**

The combination of urban growth and past land, coastal and freshwater management practices have:

- (1) placed increasing pressure on land and water resources including habitats and biodiversity;
- (2) reduced air quality; and
- (3) increased demand for mineral resources.

The pressures on natural resources need to be managed not only for environmental well-being but also for social, economic and cultural well-being.

#### **B7.2. Indigenous biodiversity**

##### **B7.2.1. Objectives**

- (1) Areas of significant indigenous biodiversity value in terrestrial, freshwater, and coastal marine areas are protected from the adverse effects of subdivision use and development.
- (2) Indigenous biodiversity is maintained through protection, restoration and enhancement in areas where ecological values are degraded, or where development is occurring.

##### **B7.2.2. Policies**

- (1) Identify and evaluate areas of indigenous vegetation and the habitats of indigenous fauna in terrestrial and freshwater environments considering the following factors in terms of the descriptors contained in Schedule 3 Significant Ecological Areas – Terrestrial Schedule:
  - (a) representativeness;
  - (b) stepping stones, migration pathways and buffers;
  - (c) threat status and rarity;
  - (d) uniqueness or distinctiveness; and
  - (e) diversity.
- (2) Include an area of indigenous vegetation or a habitat of indigenous fauna in terrestrial or freshwater environments in the Schedule 3 of Significant Ecological Areas – Terrestrial Schedule if the area or habitat is significant.

- (3) Identify and evaluate areas of significant indigenous vegetation, and the significant habitats of indigenous fauna, in coastal environments considering the following factors in terms of the descriptors contained in Schedule 4 Significant Ecological Areas – Marine Schedule:
  - (a) recognised international or national significance;
  - (b) threat status and rarity;
  - (c) uniqueness or distinctiveness;
  - (d) diversity;
  - (e) stepping stones, buffers and migration pathways; and
  - (f) representativeness.
- (4) Include an area of indigenous vegetation or a habitat of indigenous fauna in the coastal environment in the Schedule 4 Significant Ecological Areas – Marine Schedule if the area or habitat is significant.
- (5) Avoid adverse effects on areas listed in the Schedule 3 of Significant Ecological Areas – Terrestrial Schedule and Schedule 4 Significant Ecological Areas – Marine Schedule.

### **B7.3. Freshwater systems**

#### **B7.3.1. Objectives**

- (1) Degraded freshwater systems are enhanced.
- (2) Loss of freshwater systems is minimised.
- (3) The adverse effects of changes in land use on freshwater are avoided, remedied or mitigated.

#### **B7.3.2. Policies**

##### *Integrated management of land use and freshwater systems*

- (1) Integrate the management of subdivision, use and development and freshwater systems by undertaking all of the following:
  - (a) ensuring water supply, stormwater and wastewater infrastructure is adequately provided for in areas of new growth or intensification;
  - (b) ensuring catchment management plans form part of the structure planning process;
  - (c) controlling the use of land and discharges to minimise the adverse effects of runoff on freshwater systems and progressively reduce existing adverse effects where those systems or water are degraded; and

- (d) avoiding development where it will significantly increase adverse effects on freshwater systems, unless these adverse effects can be adequately mitigated.

*Management of freshwater systems*

- (2) Identify degraded freshwater systems.
- (3) Promote the enhancement of freshwater systems identified as being degraded to progressively reduce adverse effects.
- (4) Avoid the permanent loss and significant modification or diversion of lakes, rivers, streams (excluding ephemeral streams), and wetlands and their margins, unless all of the following apply:
  - (a) it is necessary to provide for:
    - (i) the health and safety of communities; or
    - (ii) the enhancement and restoration of freshwater systems and values; or
    - (iii) the sustainable use of land and resources to provide for growth and development; or
    - (iv) infrastructure;
  - (b) no practicable alternative exists;
  - (c) mitigation measures are implemented to address the adverse effects arising from the loss in freshwater system functions and values; and
  - (d) where adverse effects cannot be adequately mitigated, environmental benefits including on-site or off-site works are provided.
- (5) Manage subdivision, use, development, including discharges and activities in the beds of lakes, rivers streams, and in wetlands, to do all of the following:
  - (a) protect identified Natural Lake Management Areas, Natural Stream Management Areas, and Wetland Management Areas;
  - (b) minimise erosion and modification of beds and banks of lakes, rivers, streams and wetlands;
  - (c) limit the establishment of structures within the beds of lakes, rivers and streams and in wetlands to those that have a functional need or operational requirement to be located there; and
  - (d) maintain or where appropriate enhance:
    - (i) freshwater systems not protected under Policy B7.3.2(5)(a);
    - (ii) navigation along rivers and public access to and along lakes, rivers and streams;

- (iii) existing riparian vegetation located on the margins of lakes, rivers, streams and wetlands; and
  - (iv) areas of significant indigenous biodiversity.
- (6) Restore and enhance freshwater systems where practicable when development, change of land use, and subdivision occur.

#### **B7.4. Coastal water, freshwater and geothermal water**

##### **B7.4.1. Objectives**

- (1) Coastal water, freshwater and geothermal water are used within identified limits while safeguarding the life-supporting capacity and the natural, social and cultural values of the waters.
- (2) The quality of freshwater and coastal water is maintained where it is excellent or good and progressively improved over time where it is degraded.
- (3) Freshwater and geothermal water is allocated efficiently to provide for social, economic and cultural purposes.
- (4) The adverse effects of point and non-point discharges, in particular stormwater runoff and wastewater discharges, on coastal waters, freshwater and geothermal water are minimised and existing adverse effects are progressively reduced.
- (5) The adverse effects from changes in or intensification of land use on coastal water and freshwater quality are avoided, remedied or mitigated.
- (6) Mana Whenua values, mātauranga and tikanga associated with coastal water, freshwater and geothermal water are recognised and provided for, including their traditional and cultural uses and values.

##### **B7.4.2. Policies**

###### *Integrated management*

- (1) Integrate the management of subdivision, use, development and coastal water and freshwater, by:
  - (a) ensuring water supply, stormwater and wastewater infrastructure is adequately provided for in areas of growth; and
  - (b) requiring catchment management planning as part of structure planning;
  - (c) controlling the use of land and discharges to minimise the adverse effects of runoff on water and progressively reduce existing adverse effects where those water are degraded; and
  - (d) avoiding development where it will significantly increase adverse effects on water, unless these adverse effects can be adequately mitigated.

*National Policy Statement for Freshwater Management*

- (2) Give effect to the National Policy Statement for Freshwater Management 2014 by establishing all of the following:
  - (a) freshwater objectives;
  - (b) freshwater management units and, for each unit:
    - (i) values;
    - (ii) water quality limits;
    - (iii) environmental flows and/or levels; and
  - (c) targets and implementation methods where freshwater units do not meet freshwater objectives.
- (3) Integrate Mana Whenua values, mātauranga and tikanga when giving effect to the National Policy Statement for Freshwater Management 2014 in establishing all of the following:
  - (a) water quality limits for freshwater, including groundwater;
  - (b) the allocation and use of freshwater resources, including groundwater; and
  - (c) measures to improve the integrated management of the effects of the use and development of land and freshwater on coastal water and the coastal environment.

*Water quality*

- (4) Identify areas of coastal water and freshwater bodies that have been degraded by human activities.
- (5) Engage with Mana Whenua to:
  - (a) identify areas of degraded coastal water where they have a particular interest; and
  - (b) remedy or, where remediation is not practicable, mitigate adverse effects on these degraded areas and values.
- (6) Progressively improve water quality in areas identified as having degraded water quality through managing subdivision, use, development and discharges.
- (7) Manage the discharges of contaminants into water from subdivision, use and development to avoid where practicable, and otherwise minimise, all of the following:
  - (a) significant bacterial contamination of freshwater and coastal water;
  - (b) adverse effects on the quality of freshwater and coastal water;

- (c) adverse effects from contaminants, including nutrients generated on or applied to land, and the potential for these to enter freshwater and coastal water from both point and non-point sources;
- (d) adverse effects on Mana Whenua values associated with coastal water, freshwater and geothermal water, including wāhi tapu, wāhi taonga and mahinga kai; and
- (e) adverse effects on the water quality of catchments and aquifers that provide water for domestic and municipal supply.

*Sediment runoff*

- (8) Minimise the loss of sediment from subdivision, use and development, and manage the discharge of sediment into freshwater and coastal water, by:
  - (a) promoting the use of soil conservation and management measures to retain soil and sediment on land; and
  - (b) requiring land disturbing activities to use industry best practice and standards appropriate to the nature and scale of the land disturbing activity and the sensitivity of the receiving environment.

*Stormwater management*

- (9) Manage stormwater by all of the following:
  - (a) requiring subdivision, use and development to:
    - (i) minimise the generation and discharge of contaminants; and
    - (ii) minimise adverse effects on freshwater and coastal water and the capacity of the stormwater network;
  - (b) adopting the best practicable option for every stormwater diversion and discharge; and
  - (c) controlling the diversion and discharge of stormwater outside of areas serviced by a public stormwater network.

*Wastewater*

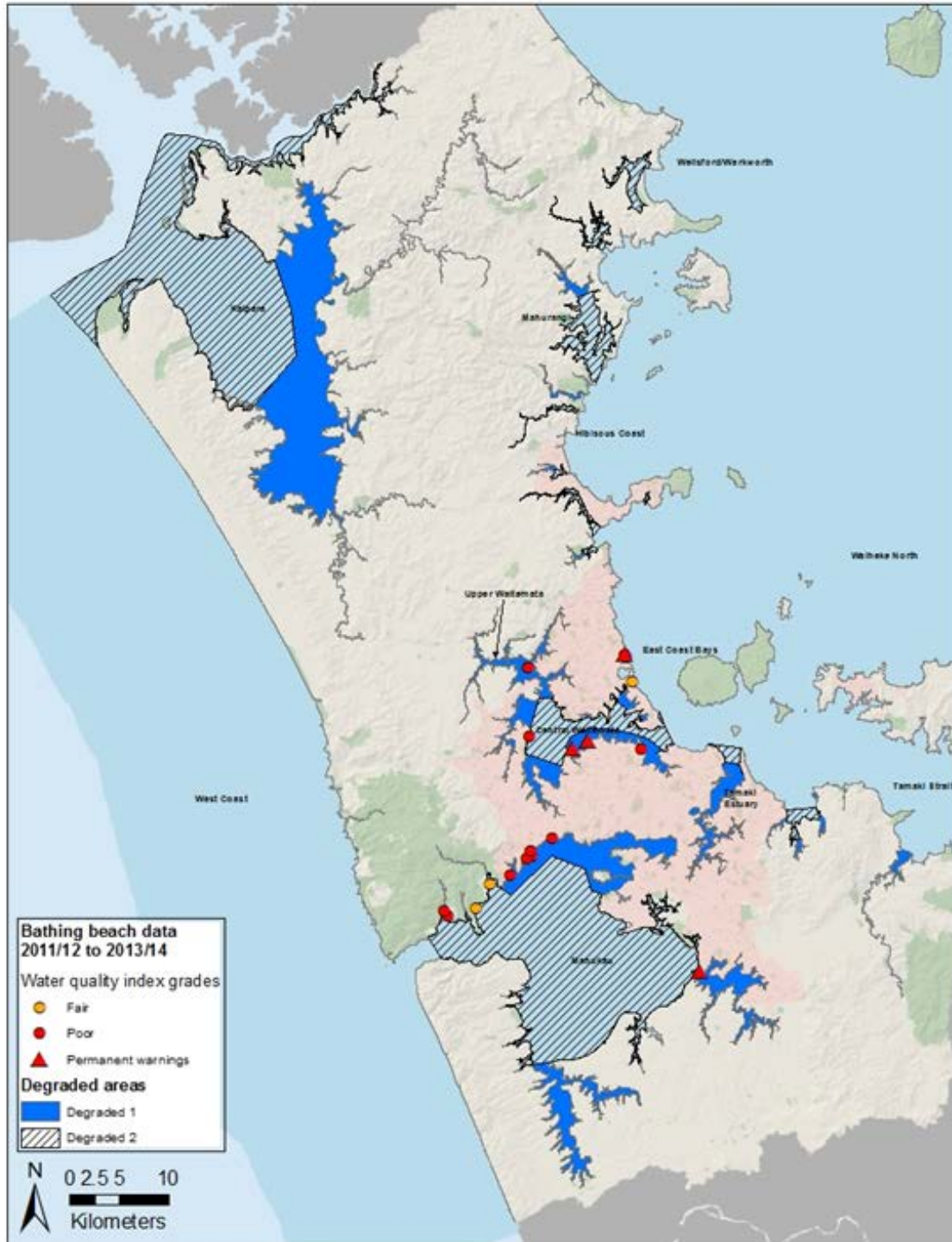
- (10) Manage the adverse effects of wastewater discharges to freshwater and coastal water by all of the following:
  - (a) ensuring that new development is supported by wastewater infrastructure with sufficient capacity to serve the development;
  - (b) progressively reducing existing network overflows and associated adverse effects by all of the following:
    - (i) making receiving environments that are sensitive to the adverse effects of wastewater discharges a priority;

- (ii) adopting the best practicable option for preventing or minimising the adverse effects of discharges from wastewater networks including works to reduce overflow frequencies and volumes;
  - (iii) ensuring plans are in place for the effective operation and maintenance of the wastewater network and to minimise dry weather overflow discharges;
  - (iv) ensuring processes are in place to mitigate the adverse effects of overflows on public health and safety and the environment where the overflows occur;
- (c) adopting the best practicable option for minimising the adverse effects of discharges from wastewater treatment plants; and
- (d) ensuring on-site wastewater systems avoid significant adverse effects on freshwater and coastal water.

*Freshwater and geothermal water quantity, allocation and use*

- (11) Promote the efficient allocation of freshwater and geothermal water by all of the following:
- (a) establishing clear limits for water allocation;
  - (b) avoiding over-allocation of water, including phasing out any existing over-allocation;
  - (c) safeguarding spring flows, surface waterbody base flows, ecosystem processes, life-supporting capacity, the recharge of adjacent aquifers, and geothermal temperature and amenity; and
  - (d) providing for the reasonable requirements of domestic and municipal water supplies.
- (12) Promote the efficient use of freshwater and geothermal water.
- (13) Promote the taking of groundwater rather than the taking of water from rivers and streams in areas where groundwater is available for allocation.
- (14) Enable the harvesting and storage of freshwater and rainwater to meet increasing demand for water and to manage water scarcity conditions, including those made worse by climate change.

**Figure B7.4.2.1: Areas of coastal water that have been degraded by human activities**





## **B7.5. Air**

### **B7.5.1. Objectives**

- (1) The discharge of contaminants to air from use and development is managed to improve region-wide air quality, enhance amenity values in urban areas and to maintain air quality at appropriate levels in rural and coastal areas.
- (2) Industry and infrastructure are enabled by providing for reduced ambient air quality amenity in appropriate locations.
- (3) Adverse effects on human health, property and the environment from use and development that discharge contaminants into air are avoided, remedied or mitigated.
- (4) The Auckland Ambient Air Quality Standards are met and priority is given to meeting the annual average standards for fine particles (PM<sub>10</sub> and PM<sub>2.5</sub>) and nitrogen dioxide.

### **B7.5.2. Policies**

Manage discharge of contaminants to air from use and development to:

- (1) avoid significant adverse effects on human health and reduce exposure to adverse air discharges;
- (2) control activities that use or discharge noxious or dangerous substances;
- (3) minimise reverse sensitivity effects by avoiding or mitigating potential land use conflict between activities that discharge to air and activities that are sensitive to air discharges;
- (4) protect activities that are sensitive to the adverse effects of air discharges;
- (5) protect flora and fauna from the adverse effects of air discharges;
- (6) enable the operation and development of infrastructure, industrial activities and rural production activities that discharge contaminants into air, by providing for low air quality amenity in appropriate locations;
- (7) meet Auckland Ambient Air Quality Standards by giving priority to reducing PM<sub>10</sub> and PM<sub>2.5</sub> discharges from combustion sources, such as domestic fires and motor vehicle emissions and industrial discharges to air.

## **B7.6. Minerals**

### **B7.6.1. Objectives**

- (1) Auckland's mineral resources are effectively and efficiently utilised.

### **B7.6.2. Policies**

- (1) Provide for mineral extraction activities within appropriate areas to ensure a secure supply of extractable minerals for Auckland's continuing development.
- (2) Encourage the use of recycled mineral material, construction waste and demolition waste to supplement mineral supply.

- (3) Identify extractable mineral deposits for future use and safeguard the areas containing regionally significant extractable deposits from inappropriate land use and development.
- (4) Require mineral extraction activities to be established and operated in ways which avoid, remedy or mitigate significant adverse effects on the environment.
- (5) Avoid locating sensitive activities adjacent to regionally significant mineral resources unless they can avoid compromising existing and future mineral extraction.
- (6) Enable industries that use the products of mineral extraction activities to locate on sites adjoining quarry zones.

### **B7.7. Explanation and principal reasons for adoption**

#### *Indigenous biodiversity*

Natural ecosystems and indigenous biological diversity are important constituents of the life-supporting capacity of the natural resources of the entire Auckland region. Healthy and functioning ecosystems contribute to improved water quality, soil conservation and the capacity to assimilate greenhouse gases, as well as contributing to the character and identity of Auckland.

Development has adversely affected Auckland's natural heritage resulting in loss of habitats and a reduction of indigenous biodiversity. Also the introduction of animal and plant pests has threatened the viability of some indigenous ecosystems and species. Coastal and marine ecosystems are also subject to change, damage or destruction from inappropriate subdivision, use and development, as well as natural processes.

Areas containing threatened ecosystems and species require effective management to protect them, and enhance their resilience which is important for the long-term viability of indigenous biodiversity and to help respond to the potential effects of climate change. Effectively addressing these issues requires a combination of regulatory and voluntary efforts.

Areas of high ecological value have been identified as significant ecological areas using significance factors set out in the schedules of the Unitary Plan. (See Schedule 3 Significant Ecological Areas – Terrestrial Schedule and Schedule 4 Significant Ecological Areas – Marine Schedule.) The coastal marine area has not yet been comprehensively surveyed for the purpose of identifying marine significant ecological areas. Those that have been identified may under-represent the extent of significant marine communities and habitats present in the sub-tidal areas of the region.

The objectives and policies seek to promote the protection of significant vegetation and fauna and the maintenance of indigenous biodiversity by:

- evidence-based factors to identify areas of significant indigenous biodiversity;
- identifying areas of ecological significance;

- promoting restoration efforts to improve the quality, functioning and extent of these areas;
- providing for Mana Whenua's role as owners of land with a high proportion of significant indigenous biodiversity and as kaitiaki of their rohe;
- establishing a management approach which seeks to avoid adverse effects on or degradation of significant indigenous biodiversity and requires that, where adverse effects do arise from activities, they are remedied, mitigated or offset;
- providing for reasonable use by landowners;
- recognising the particular pressure the coastal environment is under from use and development; and
- recognising that there are some uncertainties in the management of indigenous biodiversity for which a precautionary response is appropriate.

#### *Freshwater and geothermal water*

Auckland is characterised by relatively small and shallow natural lakes, remnant wetlands, a few larger rivers and a network of small, shallow and short streams. Groundwater aquifers underlie both urban and rural areas. There are also geothermal water resources in parts of Auckland. The sources of municipal water supply for Auckland include a number of water supply lakes created by dams, rivers and groundwater aquifers. Maintaining the quality of freshwater, managing its use and making more efficient use of available supply are key policy approaches.

Freshwater systems are made up of lakes, rivers, streams and wetlands (including their headwaters, margins and associated flood plains) and aquifers. They are valued for:

- their ecological and biodiversity values;
- their natural character, landscape, amenity and recreational values;
- their use for navigation and access; and
- municipal, domestic and stock water supply.

Freshwater systems also provide an essential link between the land and the sea, including natural processes to regulate runoff during storms, receive and filter contaminants, and allow aquatic fauna to reach spawning areas and upstream habitats. Rivers and streams have an essential role as a natural component of an urban stormwater collection and management system.

The loss of freshwater systems and degradation of their values, particularly small streams, is a significant issue facing Auckland. Loss occurs through the piping and infilling of streams, including headwater reaches. Degradation can result from many causes, including sediment runoff from land development and the runoff of contaminants from urban and rural land uses. Increased impervious surfaces in urban areas can change the amount and intensity of surface water runoff which can create or worsen flooding events and exacerbate the erosion of rivers and streams. In rural areas lakes, rivers and streams are affected by stock access to stream beds, loss of riparian vegetation, and reduced water quality from the runoff of fertiliser, sediment and other

contaminants from primary production activities. Infrastructure establishment and upgrading may also affect all types of freshwater resources. Runoff into freshwater systems can also lead to undesirable impacts on coastal water quality and use and enjoyment of the coastal marine area.

Development needs be managed to facilitate the drainage function of freshwater systems while retaining the natural, recreational and amenity values of the system. Appropriate provisions need to be put in place to ensure that, as far as practicable, sediment is retained on the land and contaminants are caught and kept out of rivers, streams and coastal waters. The adverse effects of stormwater discharges cannot solely or effectively be managed 'at the end of the pipe'.

Stormwater management must also encompass the land use activities that contribute contaminants to the drainage network. Integrated land and water management is an important focus of this approach. In many situations development can be designed so as to provide for adequate drainage while retaining natural water systems and enhancing them where they are degraded. Intensification and redevelopment can also offer opportunities to restore and enhance degraded freshwater systems.

In urban areas particular attention is given to the management of the quantity and quality of discharges from stormwater network systems and of overflow discharges from the public wastewater network. These discharges have the greatest adverse effects on the physical form and quality of urban streams, and are also a major source of degradation of coastal water quality and ecosystem values.

Some freshwater bodies outside urban areas have high biodiversity and/or water quality. These are included as management areas, with a protection-oriented management approach.

Surface water bodies and groundwater aquifers cannot supply all of Auckland's future water needs without more efficient management approaches to the allocation and use of available freshwater. The principal consumptive use of freshwater in Auckland is for municipal water supply.

Mana Whenua are responsible for the kaitiakitanga of water, its spiritual essence to cleanse, and its importance to the ongoing well-being of people. Land-based activities can compromise the ways in which Mana Whenua value water in rivers and streams. The mixing of different types of water through discharges, or by the diversion of these water bodies is contrary to Mana Whenua views on how water should be managed.

All of these matters need to be addressed in an integrated manner to minimise adverse effects on freshwater systems during subdivision, use and development. The National Policy Statement for Freshwater Management 2014 and the New Zealand Coastal Policy Statement 2010 provide both short-term and long-term directions that the Unitary Plan has to implement.

#### *Areas of degraded water quality*

Water quality is fundamental to a range of use and values, to the ecosystem function and the life-supporting capacity of the coast. The coast is the receiving environment for discharges, both from historic and present activities that are undertaken in the coastal

marine area and from land. The objectives and policies seek to avoid on-going decline in water quality, to improve water quality over time through a range of mechanisms and so to give effect to Policy 21 of the New Zealand Coastal Policy Statement 2010. They also recognise the significance and value of the coastal marine area for Mana Whenua.

Auckland's coastal receiving environments are under continued pressure from both coastal and land-based (rural and urban) activities. Inner harbour and estuarine areas where sediments and contaminants accumulate are usually the most adversely affected areas. This is particularly the case in the Waitematā and Manukau Harbours, especially the Tāmaki Estuary and the Mangere Inlet and around marinas and ports. The best water quality is found at locations that are more exposed to open ocean water currents and have less development in their catchments, or have received upgrades to the network infrastructure.

Degradation of coastal receiving environments can have significant adverse effects on recreational, amenity, Mana Whenua and economic values.

Degraded areas have been identified based on assessments of water quality, sediment contamination and benthic health. While two classes of degraded areas have been identified, the distinction does not imply a ranking or any priority for action. It is important that both areas be considered together because of the dynamic and interconnected nature of coastal environments and because the classes may change over time as more knowledge is gained and as pressures on receiving environments change. There is evidence that even moderate levels of degradation can result in ecosystem level changes, and it is not yet known how reversible these changes might be.

Identifying an area as degraded does not imply that it has no value. Degraded areas may contain valuable habitats, support important species, or form critical connections with other systems and many are identified as significant ecological areas.

#### *Air*

Motor vehicles, domestic fires and, to a lesser extent, industry are the main sources of air pollution in urban areas of Auckland. Emissions in urban areas cause air quality to exceed national and international standards and guidelines from time to time, in both localised areas and across greater Auckland. In rural and especially coastal areas, air quality is usually very good. Rural air pollution is normally more localised and comes from outdoor fires, use of agricultural chemicals and odour from agricultural activities.

Vehicle emissions and domestic fires, which are the major sources of air pollutants in Auckland, are not directly regulated under the Unitary Plan but by other controls. Some air quality effects may be indirectly addressed by the objectives and policies for a compact urban form and a centres-based urban development strategy.

Industrial emissions can have localised adverse effects on amenity and some industrial emissions can contain noxious or dangerous substances that are hazardous to human health. Industry emissions therefore need to be managed by the reduction, containment and treatment of the discharge at its source to avoid or reduce these effects. When new sensitive activities are put in close proximity to activities with air discharges, reverse sensitivity effects may occur, challenging the long-term operation of the existing activity.

Industry and rural production is vital to our economic prosperity. Accordingly a balance needs to be struck between enabling this activity and achieving acceptable levels of air quality.

National environmental standards for air quality establish health-related ambient air quality standards. These focus mainly on the control of PM particulate matter, but also set maximum acceptable air concentrations for other contaminants such as nitrogen dioxide.

### *Minerals*

Minerals in the context of Auckland include:

- aggregates, such as stone, rock, sand and gravel, for industry, construction and infrastructure;
- limestone deposits for manufacturing fertilisers, roading basecourse and cement;
- silica sand, shells and shingle for construction materials, glass production and beach replenishment purposes;
- iron sand for production of steel; and
- clay for brick, ceramics and pottery products.

Minerals are essential for Auckland's development. In the past, Auckland's quarries have produced nearly 10 million tonnes of aggregates per year. Currently a number of mineral extraction sites still operate in Auckland. Minerals are also imported from other parts of the country, particularly from the northern Waikato area.

The demand for minerals, particularly aggregates, is expected to increase to 15 million tonnes per annum by 2041. This will support growth and development, and renew and maintain buildings, roads and infrastructure.

Given the anticipated increases in demand for and Auckland's dependence on minerals, an accessible supply of minerals is a matter of regional importance. This means that the use of aggregate resources needs to be used as efficiently and effectively as possible

Mineral extraction activities are encouraged to adopt best practice management of their sites to minimise adverse effects on both the natural environment and on the amenity values and quality of life of neighbouring land uses. Greater focus is also given to avoiding reverse sensitivity conflicts between mineral extraction sites and surrounding land uses and giving greater protection to the ongoing supply of minerals for Auckland.