

2.6 Sustainably managing our natural resources

2.6.1 Air

Introduction

Motor vehicles, domestic fires and to a lesser extent industry are the main sources of our urban air pollution. In our rural areas and even more so in our 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. Emissions in our urban areas cause our air quality to exceed national and international standards and guidelines from time to time, in both localised areas and across greater Auckland.

Air pollutants need to be controlled both for the protection of public health, particularly those groups in society that are susceptible to air borne illnesses, and for the wider use and enjoyment of our environment. As people need to be able to use vehicles and heat their homes and urban based industry and rural production is vital to our economic prosperity, a balance needs to be struck between continuing these activities, and achieving acceptable levels of air quality.

National environmental standards for air quality establish health related ambient air quality standards, which focus mainly on the control of PM¹⁰ particulate matter. To meet the national standards, Auckland must reduce its human generated PM¹⁰ levels by 50 percent by 2016. There are other air quality pollutants such as PM^{2.5} that are not addressed in national environment standards, but which have significant impacts on human health in Auckland. Therefore Auckland standards (AAAQS) have been developed to provide guidance in this Unitary Plan on the management of a range of contaminant discharges to air.

Air pollution levels are affected by the weather and topography, so levels can vary considerably across Auckland. Air quality worsens in light wind conditions and in cold winter days when contaminants are trapped close to the ground. The major sources of air pollutants in Auckland are from domestic fires used during winter and the discharges from motor vehicles. Air contaminants from industries also contribute to Auckland's urban air pollution, but to a much lesser extent than domestic fires and vehicle omissions. Some pollutants contain noxious or dangerous substances that are hazardous to human health.

Approaches to managing air quality vary, depending on the type of contaminant discharge. Some pollutants are managed by the buffering, containment and treatment of the discharge at its source, such as for discharges from industry, domestic fires and discharges in rural areas. The air quality effects of motor vehicles are managed through the control of land use and activities, which encourage more efficient land use patterns to reduce reliance on the private motor vehicle.

Objectives

1. Air discharges and the use and development of land are managed to improve air quality and enhance amenity values associated with cleaner air quality in Auckland's urban areas and maintain air quality at existing clean levels in rural areas and in the coastal marine area.
2. The Auckland Ambient Air Quality Standards and National Environmental Standards are met, and in particular priority is given to meeting the annual average standards for fine particles (PM¹⁰ and PM^{2.5}).
3. The directives of the National Environmental Standard for Air Quality to reduce PM¹⁰ contaminant levels are implemented through Unitary Plan provisions and other relevant techniques available to the council.
4. Adverse effects of hazardous air pollutants on human health, property and the environment are avoided.

Draft Auckland Unitary Plan - March 2013

Policies

1. Manage discharges to air and the use and development of land to:
 - a. avoid significant adverse human health effects and reduce exposure to adverse air discharges.
 - b. regulate activities that use or discharge noxious or dangerous substances
 - c. minimise reverse sensitivity conflicts by avoiding or mitigating land use conflict between air discharges and activities that are sensitive to air discharges
 - d. enable the operation and development of light and heavy industrial activities, that have air discharges
 - e. protect some activities that are sensitive to the adverse effects of air discharges
 - f. reduce the adverse effects of emissions from domestic fires and motor vehicles.
 - g. minimise actual and potential risk to people and property
 - h. protect flora and fauna from the adverse effects of air contaminants.

2. Meet AAAQS by giving priority to:
 - a. reducing PM¹⁰ and PM^{2.5} particulate discharges from combustion sources such as domestic fires, motor vehicle emissions and industrial discharges to air
 - b. establishing a cap for the total discharge of fine particles (PM¹⁰ and PM^{2.5}) from sources that require air discharge consents
 - c. providing for new major discharges, or increases in existing discharges of fine particles (PM¹⁰ and PM^{2.5}) where:
 - i. the activity will not exceed the cap established under (b) above
 - ii. the emissions are offset
 - f. advocating for the reduction of discharges of nitrogen oxides in motor vehicles omissions
 - g. advocating for reductions in contaminants, particularly sulphur dioxide, from vessels moored at the Port of Auckland.

3. Recognise the significance of air pollutant discharges from domestic fires as the major source of poor air quality in urban Auckland and reduce discharges of fine particles (PM¹⁰ and PM^{2.5}) to meet Auckland Ambient Air Quality Standards and National Environmental Standards by:
 - a. banning the use of new domestic open fires in urban Auckland
 - b. requiring new solid fuel-burning domestic fires to meet appropriate emissions standards
 - c. promoting effective and efficient low emission home heating sources
 - d. encouraging housing design which minimises the need for home heating
 - e. encouraging the use of clean burning fuel and the effective operation of existing domestic open fires, while supporting their progressive replacement by more efficient heating options.

4. Manage the use and development of land to reduce the impacts of air contaminant discharges from motor vehicles on human health and the environment by:
 - a. promoting patterns of land use that minimise the need to travel by motor vehicle
 - b. promoting urban design that minimises the adverse effects of air discharges from motor vehicles
 - c. supporting the development of passenger transport, ride sharing, cycling, walking, tele-working and other measures to reduce the need to use motor vehicles to move people and goods around Auckland
 - d. avoiding and mitigating the adverse effects on human health associated with high traffic generating activities and major new transport projects
 - e. encouraging heavy-duty diesel vehicles to use routes that are part of the strategic freight network and to avoid routes that are not part of this network
 - f. encouraging public transport to meet appropriate emission standards including the preferred use of electric and low emission vehicles
 - g. supporting the use of low emission motor vehicles (both light and heavy duty).

5. Manage the discharge of contaminants to air from the use and development of land and the coastal marine area in a manner that provides for different levels of amenity according to the purpose of the zone and the predominant types of activities within any given area, and in particular:

-
- a. allow for reduced air quality amenity in industrial areas
 - b. maintain a high level of air quality amenity, including good visibility in other urban areas and in the coastal marine area
 - c. provide for minor and localised degradation of amenity, including visibility in rural areas, only where the air discharge is from a rural activity.
 - d. avoid offensive or objectionable odour, dust, particulate, ash, smoke, fumes, overspray and visible emissions in urban areas, the coastal marine area and in rural areas where these effects are not of a rural character or nature.

Explanation

International and national air quality standards and guidelines have been developed for key ambient air pollutants, to provide a minimum level of health protection. These standards and guidelines have informed the development of the Auckland Ambient Air Quality Standards as a technical basis for the management of air quality across Auckland's urban, rural and coastal areas. The main focus is on the protection of human health from adverse air quality effects and on the maintenance of air quality amenity values.

Achieving the standards set out in the Auckland Ambient Air Quality Standards and giving effect to the National Environmental Standards for Air Quality, involves the reduction of some contaminants such as PM10 and PM2.5 from their existing levels and the maintenance of other contaminants at their current levels. A variety of means are identified to avoid exceeding the Auckland Ambient Air Quality Standards that involve both management of land use development and redevelopment to reduce vehicle movements and thereby reduce levels of discharges from mobile sources, controlling the quality of individual air discharges and managing conflicting land uses to avoid reverse sensitivity effects. A variety of different methods will be used to achieve these outcomes, including the use of the statutory powers of this Unitary Plan, the use of council bylaws and council advocacy to central government, where changes are required at a national level.

2.6.2 Minerals

Introduction

Minerals are essential for Auckland's development and 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
- clay for brick, ceramics and pottery products.

At their peak, Auckland's mineral extraction sites produce nearly 10 million tonnes of aggregates per year. Some 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 service new growth, and renew and maintain buildings, roads and infrastructure.

Given anticipated increases in demand and Auckland's dependence on minerals, an accessible supply of minerals is a matter of regional importance.

Objective

1. Auckland's mineral needs are met largely from within Auckland.

Policies

1. Zone regionally significant quarries and provide for mineral extraction activities within rural areas to ensure a secure supply of extracted minerals for Auckland's continuing development.

2. Encourage the use of recycled mineral material, construction waste and demolition waste to supplement supply.
3. Undertake new mineral extraction activities, where possible, outside:
 - a. ONCs, ONLs or SEAs
 - b. ONFs or sites of significance to Mana Whenua.
4. Where there are no practicable alternatives to locating outside the areas in Policy 3, council will consider:
 - a. the benefits derived from mineral extraction, particularly its contribution towards meeting greater regional demand and improved self-sufficiency
 - b. the reduced transport effects and costs from having a mineral extraction site closer to the area of demand
 - c. the scale of significant physical and visual adverse effects on ONCs, ONLs or SEAs and the extent to which these can be remedied or mitigated
 - d. the extent to which residual adverse effects on the SEAs can be mitigated or offset to achieve, where practicable, no net loss of biodiversity.
5. Identify mineral deposits for future use and safeguard the regionally significant ones from inappropriate land use and development.
6. Mineral extraction activities shall be established and operated in ways which mitigate significant adverse effects on the natural environment and on the health, safety and amenity values of affected people and communities by:
 - a. considering design and layout of the site, access roads and supporting facilities
 - b. preparing management, mitigation, biodiversity offsetting and/or rehabilitation plan(s) to address a full range of adverse effects
 - c. undertaking remedial measures during mineral extraction
 - d. considering site rehabilitation and use after mineral extraction ceases.
7. Subdivision, use and development adjacent to regionally significant mineral resources and adjoining transport routes shall avoid the establishment of sensitive activities which may compromise existing and future mineral extraction.

Explanation

Auckland's increasing dependence on mineral resources from adjacent regions has environmental and cost implications for the industry and end-users, particularly the increased costs associated with longer transport distances. There are also benefits from locating the extraction and processing of aggregates as close together as possible. Increasing the level of mineral self sufficiency for Auckland is the main objective of this plan's mineral extraction section. This involves identifying and protecting existing significant quarries by the use of specific zones, and enabling mineral extraction in rural areas to provide both local and Auckland wide needs.

Mineral extraction activities are encouraged to adopt best practice management of the site 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.

2.6.3 Freshwater

Introduction

Lakes, rivers, streams and wetlands including their headwaters, margins and associated flood plains make up our natural freshwater systems. They are valued for their natural character, landscape, ecological and biodiversity values, amenity and recreational values, navigation and access, and stock, domestic and municipal water supply. They also provide an essential link between the land and the sea, including natural processes to

Draft Auckland Unitary Plan - March 2013

regulate runoff during storms, receive and filter contaminants, and allow fish to reach spawning areas and upstream habitats.

Auckland is characterised by relatively small and shallow natural lakes, remnant numbers of wetlands, a few larger rivers and a network of small, shallow and short streams. Groundwater aquifers underlie both urban and rural areas and there are geothermal resources at Waiwera and Parakai, which are currently fully allocated. The municipal water supply for Auckland includes a number of dam impounded water supply lakes. Maintenance of the quality of freshwater and more targeted management of its amount, allocation and use can improve the relationship between demand and supply of both surface and groundwater.

The loss of natural freshwater systems and degradation of their values, particularly streams, is a significant issue facing Auckland. The piping and infilling of streams, including headwater reaches, has been prevalent in our past urban development and results in a permanent loss of important community and ecological values. Sediment runoff from land development and the runoff of contaminants from urban land uses have contaminated urban streams. Increased impervious surfaces in urban areas have also changed the amount and intensity of surface water runoff which can create or worsen flooding events. However, rivers and streams in particular have an essential role as a natural component of an urban stormwater collection and management system and this function must be balanced against the retention of natural, recreational and amenity values.

In rural areas lakes, rivers and particularly streams are physically affected by stock access to and trampling of stream beds, loss of riparian vegetation, and reduced water quality from the runoff of fertiliser, sediment and other contaminants from primary production activities. Major infrastructure in rural areas may also affect all types of freshwater resources.

Degraded freshwater also has undesirable impacts on coastal water quality and the use and enjoyment of the CMA.

In the Mana Whenua worldview, water represents the tears of Ranginui, the lifeblood of Papatūānuku, and is the domain of Tangaroa. The mauri of water is at the core of sustaining Papatūānuku. 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 also 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 natural freshwater systems during subdivision, use and development. The National Policy Statement for Freshwater Management 2011 and the New Zealand Coastal Policy Statement 2010 (NZCPS) provide both short-term and long-term directions that this Unitary Plan has to implement. This needs to be done in a way that takes account of Auckland's physical, economic, social and cultural characteristics and requirements.

Objectives

1. The natural, human use and cultural values of freshwater resources that are important to Auckland's community are safeguarded when land and freshwater is used and developed.
2. The quality of freshwater is maintained and where appropriate restored and enhanced.
3. Freshwater resources are managed and allocated to support their natural values and to make efficient use of available water for economic, social and cultural purposes.
4. The amount of freshwater used by Auckland is progressively reduced on a per head basis.
5. Stormwater quantity is reduced and stormwater quality is improved in both urban and rural areas by the use

of appropriate techniques.

Policies

Natural freshwater systems

1. Manage land use, development and subdivision to:

- a. avoid the permanent loss of lakes, rivers, streams and wetlands and their margins, particularly the piping and infilling of streams and their headwaters
- b. minimise the erosion and modification of stream beds and banks
- c. protect and enhance the supporting elements of remaining rivers and streams including their headwaters, riparian margins and vegetation, flood plains and wetland areas
- d. retain and enhance the connectivity between land, natural freshwater systems and the coast as far as possible
- e. avoid the permanent diversion of rivers and streams unless required for community health and safety
- f. adopt water-sensitive design and green infrastructure in new greenfield and major redevelopment areas
- g. manage stormwater flows appropriately to minimise adverse effects on stream channels and the other values of natural freshwater systems
- h. enhance the values of natural freshwater systems.

Managing freshwater quality

2. Manage subdivision, land use and development to:

- a. maintain and enhance existing riparian vegetation located on the margins of streams in natural stream management areas
- b. avoid land use development where it would adversely impact on the water quality or biodiversity values in identified natural lake, natural stream and wetland management areas and in SEAs.
- c. reduce the potential for contaminants generated on or discharged to land at both point source and non-point sources to enter surface water and groundwater
- d. reduce flows into stormwater networks
- e. maintain rivers in greenfield areas and maintain remaining rivers in developed urban areas
- f. use opportunities provided by land use change to restore and enhance intrinsic freshwater values where practicable
- g. maintain or enhance as far as practicable, navigation along rivers and public access to and along rivers
- h. avoid adverse effects on Mana Whenua values associated with freshwater resources, including wāhi tapu, wahi taonga and mahinga kai
- i. avoid adverse effects on the quality of receiving water, including its ecology and mauri, where such water is subject to any new inter-catchment transfer or mixing of water
- j. integrate with the management of freshwater and coastal water quality, including the use of the Macroinvertebrate Community Index (MCI) guidelines to manage the adverse effects of contaminant discharges into freshwater bodies.

Freshwater quantity, allocation and use

3. Manage the quantity of water taken from natural freshwater systems by:

- a. avoiding further over allocation of water
- b. establishing limits below which water cannot be allocated
- c. safeguarding spring flows, surface water body base flows, the recharge of adjacent aquifers, and geothermal temperature and amenity.

4. Manage the allocation of freshwater by giving priority in the following order to:

- a. existing and reasonably foreseeable domestic and public water supply and animal drinking water requirements
- b. existing lawfully established water users
- c. uses of water for which alternative water sources are unavailable or unsuitable
- d. all other uses.

Draft Auckland Unitary Plan - March 2013

5. Promote the taking of groundwater rather than the taking of water from rivers and streams in areas where groundwater is available for allocation.

6. Acknowledge that Auckland's geothermal water resource is currently fully allocated, but recognise the potential for any future availability to be taken or used in accordance with tikanga Māori for the communal benefit of Mana Whenua.

Sediment runoff

7. Minimise the loss of sediment from land use and development and manage sediment discharges into surface water bodies and coastal water by requiring land disturbing activities to be designed and undertaken to:

- retain soil and sediment on land and not discharge it to surface water bodies and coastal water, as far as practicable

- use industry best practices and standards appropriate to the nature and scale of the land disturbing activity for on-site sediment loss controls and the treatment of sediment laden discharges

- limit the amount of land being disturbed at any one time particularly where:

- the nature of the soil type or topography is likely to result in increased sediment loss; or
- the resulting sediment laden discharge is likely to adversely affect sensitive areas.

8. Integrate the management of land use development and natural freshwater systems by:

- requiring significant intensification or land use change of existing urban areas to be supported by comprehensive and integrated land use and water management planning processes

- ensuring water supply, stormwater and wastewater collection and treatment infrastructure are adequately provided for in areas of new growth or intensification

- requiring new urban development and infrastructure to adopt water-sensitive design

- controlling the use of land where highly contaminated discharges are likely to occur, to protect natural freshwater systems.

Urban stormwater and wastewater

9. Manage the adverse effects of land use and development, and the discharge of contaminants from stormwater and wastewater networks in urban areas on natural freshwater systems by:

- using, retaining and restoring natural freshwater systems in greenfield development areas to contain and treat stormwater discharges

- encouraging the use of water-sensitive design and green infrastructure

- using land use change and redevelopment opportunities to reduce existing adverse effects of the quality and quantity of stormwater discharges, and the quality and frequency of wastewater discharges

- controlling the spatial extent of impervious surfaces and the generation and discharge of stormwater and contaminants to natural freshwater systems

- prioritising improvements to existing stormwater and wastewater network performance and management based on a catchment or network approach

- identifying those streams or stream reaches that are sensitive to the adverse effects of increased stormwater runoff from urban development, or where there is high restoration potential and identifying these streams and their catchments in stormwater management areas: flows (SMAFs).

Explanation

These objectives and policies relate to the management of the quality and quantity of freshwater resources, both surface water and groundwater in Auckland. They are implemented through a variety of different plan provisions that deal with the management of landuses, the quality of both direct and indirect discharges, including sediment and organic and chemical contaminants, the taking, use and allocation of freshwater from streams and aquifers and disturbance of lake and river banks and beds. All of these activities affect the overall quality and availability of freshwater and the options for its human use and enjoyment, as well as the maintenance and protection of its biodiversity values.

Some freshwater bodies outside urban Auckland have high biodiversity and/or water quality and are included as management areas, with a protection oriented management approach. In urban areas particular attention is given to the management of stormwater quantity and quality from stormwater network systems. These discharges have the greatest adverse effects on the physical form and water quality of urban streams. They are also the major sources of degradation of coastal water quality and ecosystem values in the urban parts of Auckland's coastal marine area.

Sediment being discharged from urban and rural streams is also a major source of freshwater and coastal contamination. The Auckland Plan sets a strategic direction of reducing the overall yield of suspended sediment to priority marine receiving environments by 15 percent between 2012 and 2040. This requires appropriate provisions to be put in place to ensure as far as practicable, soil and sediment are retained on the land and kept out of rivers, streams and coastal waters.

The National Policy Statement on Freshwater Management 2011 and the NZCPS envisage catchment specific identification of local freshwater values, the setting of objectives and associated water quality limits. As this is yet to occur in Auckland, interim water quality guidelines have been produced, using a biological measure - the Macroinvertebrate Community Index (MCI). These guidelines recognise that if biological values are being maintained in streams, then many other values are also likely to be met, including Māori cultural values.

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 being introduced. The principle consumptive use of freshwater in Auckland is for municipal water supply, which is in part supplied from the Waikato River. Maintaining the quality of freshwater so it is fit for purpose, and managing the allocation and use of water according to priority users and making more efficient use of available supply are key policy approaches taken in this Plan.

2.6.4 Land - hazardous substances

Introduction

Industry, farms, commercial activities and homes may all use, store, transport or dispose of hazardous substances including fuels, fertilisers, agrichemicals, industrial and commercial gases, solvents, cleaners, oils and corrosive substances.

Generally, the manufacture, storage, use, disposal and transport of hazardous substances that comply with other statutory requirements, mainly those listed under the Hazardous Substances and New Organisms Act 1996 (HSNO), should not result in actual adverse effects on the environment. Rather, it is the risk, likelihood and consequence, of adverse effects, such as those resulting from spills, fires and explosions, which need to be managed by land use controls.

Similarly, the outdoor use of genetically modified organisms carries risks of adversely affecting the environment, economy and social and cultural resources and values.

Objectives

1. The environment is protected from the adverse effects and risks associated with the manufacture, storage, use, disposal and transport of hazardous substances.
2. Genetically modified organisms do not adversely affect the social, cultural, economic and environmental well-being of Aucklanders.

Policies

1. Avoid more than minor adverse effects, including risks to people, property, air, land and water from hazardous facilities that manufacture, use, store, transport or dispose of hazardous substances by:

- a. locating those facilities in parts of Auckland not subject to natural hazards, unless risks to people, property, air, land or water that may occur during a natural hazard event can be avoided or mitigated
- b. managing existing hazardous facilities to minimise risks caused by a natural hazard event
- c. not allowing sensitive activities to be established near existing major hazardous facilities or areas identified for hazardous facilities
- d. not allowing new hazardous facilities, particularly those that pose significant risks to people, property, air, land or water, to be located near sensitive activities
- e. providing areas for hazardous facilities within Auckland away from sensitive activities so that major hazardous facilities or clusters of small hazardous facilities may carry out their operations without unreasonable constraints.

2. Manage the use and development of land and discharges to air, land and water from the manufacture, storage, use, disposal and transport of chemicals and hazardous substances to avoid land and water contamination, including from:

- a. hazardous facilities
- b. agrichemicals and fertilisers
- c. fuel storage systems
- d. cleanfills and landfills
- e. industrial and agricultural activities.

Explanation

To manage the effect of hazardous substances, the Unitary Plan focuses on the facilities and activities which use, store or dispose of hazardous substances, rather than on the substances themselves, which is the role of HSNO.

All activities involving hazardous substances have the potential to create adverse effects if they escape into the environment, burn, explode, or react with each other. Adverse effects resulting from inadequate management or an accidental release or spill, can include contamination of water, soil and air, damage to ecosystems, human health and property.

New hazardous facilities should not be located near sensitive activities or other hazardous facilities where significant cumulative effects may occur.

2.6.5 Land - contaminated

Introduction

Contaminated land is an area where the quality of the soil, groundwater or surface water has been compromised, predominately from the manufacture, use, storage, transport and disposal of chemicals and hazardous substances. Land contamination can limit the use of land, cause corrosion that may threaten building structures, reduce land value, and directly endanger the health and safety of people through contact with contaminated soil, swallowing food or water from contaminated environments, or breathing vapours or contaminated dust. Contaminants leaching from soil into groundwater, surface and eventually into the CMA effects water quality and flora and fauna.

Auckland has a legacy of soil contamination. Common past activities that have led to contaminated sites include:

- use of agrichemicals
- storage and use of petroleum products
- timber treatment
- sheep-dipping.

Objective

1. Human health and the quality of air, land and water resources in Auckland are protected by the identification, management and remediation of contaminated land.

Policies

1. Identify potential and confirmed contaminated land in Auckland based on the following priorities:
 - a. sites known to have supported contaminating land use activities in the past
 - b. sites with a significant potential risk to human health.
2. Land that has not been investigated but which has a likelihood of contamination due to the type or nature of prior land uses will be noted by the council as being potentially contaminated.
3. Remediate contaminated land where:
 - a. the level of contamination renders the site unsuitable for its existing or potential use
 - b. the contaminants are generating adverse effects on the environment
 - c. there is a high risk of contamination spreading beyond the site
 - d. redevelopment or subdivision of land is proposed.

Explanation

Identification of contaminated sites is the first step in any management regime. Initial assessments conducted on behalf of the Ministry for the Environment suggests Auckland may have more than 1700 contaminated sites. This assessment has only targeted sites that are, or have been, occupied by activities historically associated with site contamination, rather than sites that have actually been confirmed as contaminated. Systematic identification of sites needs to continue.

To protect human health, the National Environmental Standard for Assessing and Managing Contaminants in Soil to Protect Human Health (Soil NES) was issued in January 2011. The Soil NES has established soil contaminant standards that protect human health for a range of land uses. It aims to appropriately identify and assess land affected by contaminants in soil when the land uses changes, or it is being subdivided, and, if necessary, remediated or the contaminants contained to make the land safe for human use.

2.6.6 Natural hazards

Introduction

Throughout Auckland, natural hazards occur with varying severity at different times and locations. Each natural hazard poses different levels of risk to human safety and well-being including threats to public health, property, infrastructure, and the environment.

Existing land use activities in areas prone to natural hazards may cause or worsen risk. New growth and intensification may also cause or worsen risk, depending on the degree to which natural hazards are identified, avoided, mitigated or accepted and managed during development.

Predicted changes in climate could have an effect on the environmental processes that cause natural hazard events.

Objectives

1. Reduce risk to people, property and infrastructure from natural hazards while minimising any adverse effects on the environment.
2. Protect the natural functions of floodplains and overland flow paths from the adverse effects of development and infrastructure.

Draft Auckland Unitary Plan - March 2013

Policies

1. Identify areas potentially affected by natural hazards, giving priority to those at high risk of being affected.
2. Undertake hazard identification and risk assessments for subdivision, use and development using the best available and up-to-date hazard information.
3. Assess the consequences of development locating in areas subject to natural hazards based on the:
 - a. type and severity of the event
 - b. the effects of other activities from development
 - c. vulnerability of the activity to adverse effects, including safety, resilience to damage and effects on the environment and public health.
4. Assess hazard risk across a range of timeframes that are relevant to the potential effects of the hazard, including the 100-year timeframe for:
 - a. flooding
 - b. storm-tides and surges
 - c. processes of coastal erosion and accretion
 - d. land stabilitywhile taking into account the effects of climate change on the above matters.
5. Adopt a precautionary approach to natural hazard management and risk assessment in circumstances when:
 - a. the effects of natural hazards are either unknown or may be significant, including the possibility of low frequency, high magnitude events
 - b. the level of information on the probability and/or consequences of the hazard is limited
 - c. considering the location and design of significant infrastructure and future urban areas.

Management approaches

6. Protect, as a priority, maintain and where appropriate enhance natural defence systems, such as retention of flood plains, sand dunes and vegetation and riparian margins in their natural state, as opposed to using hard engineering methods.
7. Avoid or mitigate the effect of activities, such as earthworks, changes to natural and man-made drainage systems and/or vegetation clearance so that the risk of natural hazards in the locality is not worsened.
8. Encourage activities that reduce, or do not increase, the risk posed by natural hazards, including:
 - a. protecting and restoring natural landforms and vegetation
 - b. managing retreat by relocation, removal or abandonment of structures
 - c. replacing or modifying existing development to reduce risk without using hard engineering structures
 - d. designing for relocatable or recoverable structures
 - e. providing for low intensity activities that are less vulnerable to the effects of relevant hazards, including modifying their design and management.
9. Encourage existing development, in a natural hazard area, to reduce existing risk and not create new risk by:
 - a. using a range of measures such as the placement of buildings and structure
 - b. design
 - c. managing activities to increase their resilience to hazard events.

Infrastructure

10. Design and locate new significant infrastructure that functions as a lifeline utility by:
 - a. undertaking a risk assessment based on a 0.2 per cent Annual Exceedence Probability (AEP) natural

hazard event, or an Auckland volcanic field eruption regardless of return period

b. avoiding significant adverse effects on the community from the failure of that piece of infrastructure.

Explanation

The policy seeks to provide adequate spatial and emergency planning to manage potentially harmful future events. It also seeks to locate and design new development and infrastructure to deal with the impacts that may be experienced over their lifetime. This includes responding to the effects of climate change.

Where to follow this in the Plan

Auckland-wide - objectives, policies and rules

Zone - objectives, policies and rules

Air quality - transport corridor separation overlay - objectives, policies and rules

High -use aquifer management area overlay - objectives, policies and rules

Quality-sensitive aquifer management area - objectives, policies and rules

High-use stream management area - objectives, policies and rules

Natural Lake Management Area overlay - objectives, policies and rules

Natural Stream Management Area overlay – objectives, policies and rules

Urban Lake Management Area overlay - objectives, policies and rules

Water Supply Management Area overlay - objectives, policies and rules

Wetland Management Area overlay –objectives, policies and rules

Stormwater Management Area Flow overlay - objectives, policies and rules

GIS and other council databases

