

8. Air

8.1 Introduction

The atmosphere performs a variety of functions which are vital to the survival of life on the planet. At an individual level, humans need air to breath. For communities, weather and climate are key factors in the successful production of food to eat and in the supply of water to drink. In a wider sense, the insulation of the earth by the atmosphere provides a thermal control and a protective barrier to incoming cosmic radiation.

Atmospheric processes are ceaseless and complex. Chemicals and energy are constantly discharged into the air from natural and human based sources. As with the other natural resources of water, soil and ecosystems, humans have used the chemical and physical properties of the atmosphere — in industrial processes, in synthesising new products and materials, and as a repository for waste products.

Pollution of the global atmosphere through human activity (referred to as "anthropogenic" sources) has increased significantly over the last 300 years. Industrialisation, the expanding use of fossil fuel energy sources, increasingly intensive agricultural production, the manufacture and use of new chemical compounds, and the disposal of wastes from all these activities place heavy demands on the assimilative capacity of the atmosphere.

The impacts of atmospheric pollution can be broadly considered in terms of effects on human health and the adverse effects on soil, water, plants, animals, and on buildings and structures. Other impacts include those related to levels of personal comfort and to appreciation of the overall quality of the environment, including such matters as visibility.

A special appreciation of air and atmospheric pollution is held by tangata whenua. Air is taonga and to despoil or diminish the resource is an act of deep offensiveness, a breach of the law of stewardship or kaitiakitanga. Pollution of air and airspace is as abhorrent as putting raw sewage into the sea. One traditional means of helping to purify air is through tree planting.

To a large extent, the Wellington Region and New Zealand have been fortunate to have avoided some of the major transboundary air pollution problems (e.g., acid rain) that have been most apparent in the northern hemisphere.

The general perception of local conditions is that the Wellington Region is well ventilated and has few, if any, problems of air pollution. The prevalent winds are seen to either disperse pollutants or transport them elsewhere for environmental assimilation. However, the Region does have its own set of local and more widespread air pollution problems. Problems can arise from four types of emission sources:

- **Point** sources, such as large individual combustion sources, manufacturing premises or processing works;
- **Area** sources, such as emissions from domestic heating systems in urban and rural areas or general emissions from industrial areas;
- **Mobile** sources, such as motor vehicles, ships, aircraft (including aerial spraying) or trains; and
- **Natural** sources, arising from biological, ocean and fresh water and volcanic processes, and including naturally occurring substances such as salt, dust and pollens.

The Wellington Region is also subject to atmospheric pollution from sources outside the Region and these sources are likely to increase.

The air objectives and policies included in this chapter deal with these sources of emissions, and relate closely to policies in the Energy, Waste Management and Hazardous Substances, and Built Environment and Transportation chapters in particular.

See also Objectives and Policies in chapters 12 (Energy), 13 (Waste) and 14 (Built Environment)

8.2 Issues

Issue 1

There is **very little data** on which to base an understanding of the current, or historical, status of air quality in the Region. Information about ambient (general) air quality is almost totally lacking. Information about emissions is very patchy and dated.

Air Policies 1-4.

Studies are limited to surveys of air quality in Upper Hutt during the winter in 1977-79, a survey at Kiwi Point Quarry in 1978-79, a survey of motor vehicles and air quality in Mount Victoria Tunnel in 1981-82 and some ambient air quality monitoring in Newtown and Naenae during the mid-1980s as part of the National Lead in Air Survey. The Baring Head Clean Air Facility is a potential source of information on relatively unmodified air quality in the Region.

Issue 2

While commonly recognised as a global or national issue, **climate change** is also an issue of regional concern. The Wellington Region contributes to greenhouse gas emissions (including carbon dioxide from transport sources and methane from agricultural production) and increased levels of greenhouse gases in the atmosphere have potential effects on the Region's climate.

Air Objective
4.

Although good information on the Region's contribution to greenhouse gas emissions is not available, it is likely that the Region's per capita contribution is high on a global basis, as New Zealand has 0.07 percent of the world's population but contributes between 0.15 and 0.3 percent of human induced greenhouse gas emissions. The Region's contribution is also likely to be high on a national basis because of its high traffic levels and relatively high socioeconomic characteristics. However, this may be offset, to an extent, by the relatively high levels of afforestation in the Region.

Although some scientific uncertainties remain, the current international scientific consensus¹⁵ on the effects of increased levels of greenhouse gases indicates that the anticipated levels of greenhouse gases are likely to have effects on climate. In the Wellington Region these effects are likely to include an increased incidence of storms, wider temperature variations, more extreme rainfall levels and greater rainfall intensity, etc. Effects may be felt on sea levels, coastal settlements and activities, the costs of managing river and coastal flooding, and on horticultural production.

See also
Natural
Hazards
Issue 5.

The emission and management of **ozone depleting substances** (CFCs, halons, etc.) are also still seen to pose problems. Effects of ozone depletion for the Region include an increased incidence of ultraviolet radiation, with effects on human health, on horticulture, and on ecosystems.

Air Objective
3.

¹⁵ The best available analysis is that of the First Assessment Report (1990) of the Intergovernmental Panel on Climate Change (IPCC), as reported in *Exploring the Options for Reducing Net Emissions of Carbon Dioxide*, Ministry for the Environment, March 1994.

Issue 3	An important amenity issue in the Wellington Region is the assessment and management of odours . The general public is much less tolerant of odour production than in the past, be it from industry, agricultural production or domestic sources. There is an enhanced expectation that odour emission will be controlled. However, this can pose problems of enforcement, mainly because odour assessment is very much a subjective matter and not amenable to scientific quantification. It is also often difficult to trace ambient odours back to specific sources. Additionally, the topography of the Region means that there can be unusual localised effects (e.g., in valleys), and normal dispersion patterns can be distorted.	Air Objectives 1-3.
Issue 4	Another important amenity issue is the effect of smoke, dust and other particulate matter . Smoke is an issue in relation to rural and forestry burn-off in the Region and the cumulative effects of backyard or other domestic burning can also create nuisance effects in some areas. Dust and other particulates are typical contaminants from rural activities and are also associated with subdivision and mining activities. Particulates can cause damage to materials, nuisance effects and human health effects. They can also affect visibility (an important amenity value for residents and visitors to the Region) and are an obvious sign of deteriorating air quality.	Air Objectives 1-3
Issue 5	Some of the larger stationary or point sources of emissions in the Wellington Region have the potential to cause significant adverse impacts on air quality. Manufacturing premises and processing works (e.g., meat works or fish processing) are specific sites with activities where more effective control of emissions is needed.	Air Objectives 2-3.
Issue 6	The principal mobile sources of emissions are motor vehicles and aircraft, causing both local and global air pollution problems. Localised effects can be found in the vicinity of major transport routes (high carbon monoxide levels are commonly found near major roads during rush hour traffic and areas with poor dispersion, e.g., tunnels, may be particularly vulnerable to these effects). Other impacts are felt more widely throughout the Region, for example, airborne particulates from vehicle exhausts finding their way into waterways and other ecosystems.	Air Objectives 2-4. See also Built Environment Issue 6.

Issue 7 Domestic energy and fuel use are a primary source of **area emissions** and can be found in various forms in most of the Region's settlements. Individually, domestic heating appliances that use wood, gas or coal are not a major air pollution problem. However, when whole neighbourhoods in urban areas collectively emit pollutants from such activities, the cumulative effects can create problems of a different scale. As with problems of odour, these effects can be worsened by local topography, with valleys not only concentrating the pollutants but also restricting dispersion.

Air Objectives 2-3.

Issue 8 Contaminants are released to the air as a result of many industrial and commercial production processes, and from **waste disposal practices**. Underlying this issue is a broader concern about how to determine which method of disposal and which receiving environment (land, water, air) ensures the least adverse environmental effect. For example, is it better on balance to incinerate particular wastes, causing pollutants to be released to the air, or to bury that waste, with longer-term impacts on soil and water? This is a Region-wide issue and concerns the sustainable use of all environmental systems.

Air Objectives 1-4.

See also Waste Issues 7-8.

Issue 9 A major issue of public concern in the Region is the effect of **spray drift** from the spray application of agrichemicals on non-target areas and neighbouring land uses. Chemicals used in agriculture, forest management and the control of plant and animal pests on roadsides and in parks are all of concern. The aerial application of agrichemicals is a particular concern. The regional population is becoming increasingly sensitive about the use of agrichemicals, although little study has been done in the Wellington Region of the actual adverse effects of spray drift.

Air Objective 3. See also Soil Issue 11.

8.3 Objectives

Objective 1 *High quality air in the Region is maintained and protected, and there is no significant deterioration in air quality in any part of the Region.*

Air Policies 1-5.

Objective 2 *Air quality is enhanced in those areas with degraded air quality.*

Air Policies 6-7.

Objective 3 *The adverse effects of the discharge of contaminants into air on human health, local or global environmental systems and public amenity are avoided, remedied or mitigated.*

Air Policies 8-12.

Objective 4

The output of gases which potentially promote climate change is at a level which is consistent with central government climate change policy.

Air Policies 7 and 9.

The **objectives** are concerned with protecting and maintaining air quality where it is good, enhancing it where it is not so good, preventing further deterioration in all areas and avoiding or reducing the effects of air pollution on a range of human and environmental values.

Air quality in the Region is generally assumed to be high. Whilst knowledge of atmospheric processes and changes brought about by human activities has increased in recent years, much is still unknown. Given the life supporting significance of clean air and the limited availability of data, it is appropriate to adopt a cautious approach to decisions that could have significant impacts on air quality.

Objective 1 recognises that insofar as it is possible to identify areas of high quality air, there is a need to ensure that as a minimum, such areas of high quality are maintained and protected.

Objective 1 also reflects a public desire for high air quality in all locations and at all times. However, the objective also acknowledges through the use of the word "significant" that there may be circumstances and occasions when a minor or short-term deterioration of quality is a necessary and acceptable cost for the achievement of other objectives.

Objective 2 is based on the understanding that, as information is progressively obtained, it may prove to be desirable to enhance air quality in certain geographical areas of the Region by reducing the quantities or eliminating the types of emissions that are degrading the quality of air in that area.

Objective 3 concerns avoiding or reducing adverse effects arising from the discharge of contaminants into air. In assessing such effects, consideration needs to be given to three closely related areas:

- Adverse effects on **human health**;
- Adverse effects on **environmental systems**, including effects on soil, water, plants and animals; and

- Adverse effects on **personal and public amenity**, including effects on personal comfort and aesthetic enjoyment, and general environmental well-being.

Objective 4 specifically addresses the issue of climate change and the reduction of greenhouse gases from sources in the Region. The nature of climate change makes it difficult to choose appropriate targets for reductions in greenhouse gas emissions and enhancement of greenhouse gas sinks. For this reason the target adopted is expressed in terms of national objectives. In the short-term, central government's objective is to reduce New Zealand's total carbon dioxide emissions by 3-4 percent below the level that they would otherwise reach by 2000. This will contribute to central government's primary target of reducing net carbon dioxide emissions to 1990 levels by the year 2000.

Collectively, **Objectives 1-4** set a direction for air quality management which recognises and aims to protect the value of an important natural asset in the Wellington Region.

8.4 Policies

Policies for Establishing Information About Air

Policy 1	<i>To identify and describe the existing air quality of the Wellington Region.</i>	Air Methods 2-5.
Policy 2	<i>To identify pollution sources that currently degrade, or have the potential to degrade, air quality in the Region.</i>	Air Methods 1-4.
Policy 3	<i>To identify and improve understanding of the links between atmospheric processes, air quality and the range of human activities that occur in the Region.</i>	Air Methods 1-5.
Policy 4	<i>To develop, enhance and maintain systems for measuring air quality in the Region, for storing and analysing air quality information, and for assessing the effects of poor air quality on human health, environmental systems and public amenity.</i>	Air Methods 1-5.

These policies contribute to establishing an information base in order to understand the current situation and to provide a baseline

against which to assess future changes in air quality. At present there is very little relevant data.

The absence of data means that it is difficult to establish priorities for action or to assess the costs and benefits of various courses of action in response to particular sources of air pollution. Developing an information base can therefore be seen as an urgent task and **Policies 1-4** identify the necessary elements of such a base.

Information is needed about general (ambient) air quality, and about pollution from specific activities. **Policies 1 and 2** deal with these information deficiencies.

The effects of different activities on air quality and the impacts of air quality on other parts of the environment have not been systematically addressed in the past. Both sorts of assessment are now required under the Act, as part of the requirement to ensure that the life supporting capacity of environmental systems is maintained. **Policies 3 and 4** deal with related aspects of information needed to link causes and effects.

Policy 3 is concerned with acquiring a better understanding of atmospheric and microclimatic processes and their relationship with human activity in the Wellington Region. The topography, meteorology and economy of the Region mean that a more specific understanding of local air movement and chemistry and changes in the characteristics and condition of air quality and atmospheric processes is needed as a basis for implementing the air policies.

Policy 4 highlights the need for coherent and comprehensive systems of measurement, data storage, and assessment to be established. Data that is currently available is largely ad hoc and often dated, having been collected for one-off purposes. A more directed and purposeful programme of data collection is indicated by the policy.

Policy for Setting Guidelines on Air Quality

Policy 5

To establish and promote air quality guidelines for setting desirable ambient air quality and for the control of activities which cause discharges to air.

Air Method 6.
See also Soil
Policy 2.

Policy 5 acknowledges the need to put in place some targets

against which existing air quality may be assessed. With such guidance in place, and with information about air quality, priorities for future improvements can be established and success monitored.

Air quality guidelines are central to the air quality management approach of the Act. The National Ambient Air Quality Guidelines will be used as a basis for developing appropriate regional guidelines.

Guidelines (for both ambient air quality and for managing pollution sources) do not have to be applied in the form of rules or regulations. The establishment, promotion and implementation of guidelines can be undertaken on a voluntary or co-operative basis.

Policies for Avoiding Air Pollution at Source

Policy 6

To avoid or minimise, where appropriate and practicable, the discharge of contaminants to air at their source by the development and implementation of improved control technology and by good pollution control practice.

Air Methods
7-
10.

Policy 7

To promote the use of energy sources and transport fuels that are low or non-polluting of the atmosphere.

Air Methods
7,
10, 11 and
12.

Air quality in the Wellington Region was previously administered under the Clean Air Act 1972. This legislation focused on minimising emissions and was primarily orientated towards the **process** that produced the emissions.

See also
Energy
Policies 5
and 6,
and Energy
Method 4.

The Resource Management Act 1991, however, is based on an "air quality management" approach, which is orientated towards **effects**. Under this approach, desired air quality in an area is defined within certain parameters. Emission sources are managed to maintain the air quality within these parameters. Regardless of the approach, control of processes and sources of emissions is an important means of managing adverse effects on air quality.

Policies 6 and 7 focus on ways to manage air pollution at source. While the establishment of air quality guidelines (Policy 5) reflects the merits of the air quality management approach, these complementary policies draw on the beneficial experience gained under previous legislation of using control technology to minimise emissions. The words "where appropriate and practicable" in this policy indicate that in some situations alternative ways of

avoiding, remedying or mitigating the adverse effects of air pollution may be more appropriate than avoiding or minimising emissions at source (e.g., setting emission limits or establishing buffer zones). The circumstances in which avoiding or minimising emissions at source (including, where this is the most effective and efficient means of control, using the best practicable option) will be clarified in the Regional Air Quality Management Plan.

The philosophy of preventing or minimising emissions at source is consistent with the concepts of waste minimisation and cleaner production, and is one way of avoiding, remedying or mitigating adverse effects of discharges.

Waste Policy 5.

Together, **Policies 5, 6 and 7** represent a mix of the air quality management approach allied to best practice.

Policies for Protecting Human Health, Local and Global Environmental Systems, and Public Amenity

Policy 8	<i>To avoid, remedy or mitigate the adverse effects of local and global air pollution on human health.</i>	Air Methods 6-14.
Policy 9	<i>To promote measures that achieve a net reduction in the emission of greenhouse gases and ozone depleting substances.</i>	Air Methods 7, 10 and 11-13. See also Waste Policy 6.
Policy 10	<i>To avoid, remedy or mitigate the adverse effects of air pollution on surface and groundwater, soil, plants and animals.</i>	See also Soil Policy 6 and Ecosystems Policy 4.
Policy 11	<i>To avoid, remedy or mitigate the adverse effects of air pollution on public amenity values.</i>	Air Method 14.
Policy 12	<i>To avoid, remedy or mitigate the adverse effects of odours on public amenity.</i>	Air Methods 7, 8, 10 and 14.

Several Issues identified earlier in this chapter relate to the actual or potential impact of various forms of air pollution, including naturally occurring substances, on human health. **Policy 8** specifically deals with this set of effects.

Policies 9 and 10 are concerned with the effects of air pollution on global and local environmental systems. The wording in

Policy 9 points to the need to reduce the release of gases that contribute to the greenhouse effect. **Policy 9** is consistent with central government climate change policy, that is, that there is a reduction in net additions of greenhouse gases to the atmosphere. This approach takes account of both sources of greenhouse gas emissions and sinks which remove greenhouse gases from the atmosphere.

Policy 9 also refers to a reduction in the release of ozone-depleting substances. The policy is included to indicate regional support for central government's international commitments concerning ozone depleting substances. Specific reference to ozone depletion is also made to emphasise the value of local actions that complement national policies.

Policy 10 deals with a range of environmental effects that arise from air pollution. It seeks to avoid, for example, unintended damage to plants and animals from spray drift, or the deposition of lead from vehicle exhausts in waterways. This policy is augmented by Policy 6, which seeks to reduce air pollution through good practice. **Policy 10** is also supported by specific policies in the Fresh Water, Soil, Ecosystems and Coastal Environment chapters of the Regional Policy Statement.

Policy 11 identifies the need to protect a range of amenity values from the adverse effects of air pollution. In the Act, amenity values are interpreted as:

.... those natural or physical qualities and characteristics of an area that contribute to people's appreciation of its pleasantness, aesthetic coherence, and cultural and recreational attributes.

The policy therefore deals with concerns about the effects of air pollution on visual quality, on the damage that chemical erosion can have on the appearance and structural integrity of important buildings, and on tangata whenua perceptions of the value of air as taonga.

Policy 12 specifically distinguishes odour as one important facet of amenity, and aims to tackle the problematical area of odour management. The variability of tolerance between individuals, and technical difficulties in measuring odours means that a range of perceptions and flexibility in interpretation will need to be accommodated in managing odours.

8.5 Methods

Method 1 *The Wellington Regional Council will prepare a Regional Air Quality Management Plan.* Air Policies 1-12.

A Regional Air Quality Management Plan will enable the Regional Council to establish the statutory basis for carrying out its functions in relation to management of the air resource. The use of the Plan for setting air quality guidelines, for providing rules for the management of activities that require discharge permits, and for monitoring compliance, etc., are discussed more fully in relevant methods below.

Methods for Establishing Information about Air

The Wellington Regional Council will:

Method 2 *Implement Air Policies 1-4 through the inclusion of provisions in the Regional Air Quality Management Plan that:* Air Policies 1-4.

(1) *Identify key information areas relevant to improving knowledge of the atmosphere, air quality and emissions in the Wellington Region and determine the extent and deficiencies of information available in these areas; and*

(2) *Determine primary indicators of air quality and any other significant contaminants.*

Method 3 *Monitor and gather information on air quality in the Region by:* Air Policies 1-4.

(1) *Developing an ambient air quality monitoring programme;*

(2) *Developing an emissions inventory on sources of discharges; and*

(3) *Investigating the factors that influence the dispersion and transport of contaminants.*

Method 4 *Require those industries and activities that require a resource consent to discharge contaminants to air to carry* Air Policies 2, 5 and 6.

out emission monitoring as part of the resource consent requirements where appropriate.

Method 5

To achieve integrated management, other means which could be used to implement Air Policies 1-4 include:

Air Policies
1-4.

- (1) National co-ordination of air quality data by central government; and*
- (2) Technical and quantitative input to the Regional Council's air quality monitoring programme by central government, Crown Research Institutes and the Ministry of Health.*

This group of methods relates to **Policies 1-4**, which are all concerned with developing an information base in order to assess air quality and determine priorities in air quality management decisions.

A Regional Air Quality Management Plan (**Method 2**) will have an important role in specifying the necessary level of knowledge about air quality and sources of emissions.

Because of the orientation of the Clean Air Act 1972 towards the management of **processes** that produced emissions, little or no ambient monitoring has been carried out in the Wellington Region. However, the need to assess **effects** under the Resource Management Act 1991 requires some form of quantification of the existing air quality. It also requires an understanding of the relationship between existing air quality and the natural and anthropogenic processes that affect quality. This means that data is needed about ambient quality and emissions (**Method 3**).

Monitoring of ambient air quality is primarily directed at observation of long-term trends (**Method 3**). However, ambient monitoring also helps provide valuable information in determining likely effects of granting a discharge permit for an activity that could have impacts on surrounding air quality.

As the consent granting authority, the Regional Council could complement its monitoring programme by requiring permit holders to monitor emissions from the premises that are the subject of the permit (**Method 4**). This would be appropriate if information about the specific quantity, composition or effects of the discharge would assist in avoiding, remedying or mitigating any adverse effects of the discharge.

Given New Zealand's small population base and the limited resources available over the country as a whole, it would be helpful if central government co-ordinated monitoring programmes and data dissemination (**Method 5**). The Ministry for the Environment already has some responsibilities in this area with state of the environment reporting, and could be the logical holders of a national data base.

Other organisations that could play a role include the Crown Research Institutes (which have traditionally carried out this work) and the Ministry of Health (which has previously co-ordinated ambient monitoring).

Methods for Setting Guidelines on Air Quality

Method 6

The Wellington Regional Council will implement Air Policy 5 through the inclusion of ambient air quality guidelines which are appropriate to the Wellington Region in the Regional Air Quality Management Plan.

Air Policy 5.

Method 6 is concerned with the development and inclusion of air quality guidelines in the Regional Air Quality Management Plan. The method builds upon, but is not dependent upon, the information base provided through the implementation of **Methods 2-5**.

Air quality guidelines are central to the air quality management approach of the Act and the Regional Air Quality Management Plan. National Ambient Air Quality Guidelines were released in 1994.

The national guidelines may be most suitable for defining minimum acceptable air quality in the Region. The Regional Air Quality Management Plan may adopt higher targets designed to protect existing air quality, where this is already better than the acceptable level.

The preparation of guidelines will need to involve groups and organisations affected by the adoption of ambient air quality guidelines.

Methods for Avoiding Air Pollution at Source

The Wellington Regional Council will:

Air Policy 6.

Method 7	<ul style="list-style-type: none"> • <i>Implement Air Policy 6 by including provisions in the Regional Air Quality Management Plan that:</i> <ol style="list-style-type: none"> (1) <i>Set appropriate emission guidelines and promote strategies to reduce emissions;</i> (2) <i>Define prohibited, non-complying, discretionary, controlled and permitted activities;</i> (3) <i>Control activities that do not require a discharge permit through rules, where appropriate;</i> (4) <i>Ensure compliance with discharge permits; and</i> (5) <i>Control the effects of domestic emissions to air.</i> 	
Method 8	<ul style="list-style-type: none"> • <i>Develop guidelines for information to be provided with resource consent applications for developments that could affect air quality.</i> 	Air Policies 1-12. See also Soil Method 4.
Method 9	<ul style="list-style-type: none"> • <i>Implement a monitoring programme for all activities subject to a discharge permit, both to ensure compliance with that permit and also to monitor the effects, including cumulative effects, that discharges have on the receiving environment.</i> 	Air Policies 2, 3 6 and 8-12.
Method 10	<p><i>To achieve integrated management, other means which could be used to implement Air Policies 6 and 7 include:</i></p> <ol style="list-style-type: none"> (1) <i>Advocacy and promotion of improvements to current air quality management practice and technology by authorities and organisations with responsibilities for air quality management;</i> (2) <i>Integration of air management policies with policies for the management of energy, transportation and waste management by relevant authorities and organisations;</i> (3) <i>Investigation of the use of economic instruments to avoid or minimise air pollution at source;</i> (4) <i>Development of design guides and codes of practice by industry groups, central government and other appropriate organisations;</i> (5) <i>Promotion by the Regional Council through the Regional</i> 	<p>Air Policies 6-7</p> <p>See also Energy Method 6.</p> <p>See also Energy</p>

Land Transport Strategy, and by other relevant organisations, of the use of cleaner transport fuels, improved efficiency in the use of all transport fuels, and the greater use of public transport systems; and

Methods 2-5
and
Built
Environment
Method 3.

- (6) *Development and implementation of motor vehicle emission control strategies by central government.*

This group of methods is collectively concerned with managing emissions by preventing or reducing them at source. The emissions covered by these methods include, where appropriate, discharges from industrial or trade premises, domestic sources such as domestic heating appliances, mobile sources such as motor vehicles and other sources such as the spray application of chemicals for weed and pest management. Success in controlling emissions will largely determine the overall effectiveness of air quality management.

The Regional Air Quality Management Plan (**Method 7**) will have a central role in setting emission limits and providing rules as the basis for resource consent requirements. It will spell out those activities which are permitted and those where some form of control is needed.

The chief instrument available to control discharges of contaminants to the atmosphere is through the granting of resource consents. This process would be a good opportunity for giving guidance to applicants about the range of matters that need to be addressed in order to reduce or avoid emissions (**Method 8**).

An effective monitoring programme is essential to ensure that the conditions of the permit are complied with or that the activity is being carried out within the parameters set out in any regional rule (**Method 9**).

There are other ways of achieving a reduction in discharges, besides the controls available through a regional plan. Alternative means include education and advocacy through providing design guides and codes of practice, promoting greater efficiency for fuel burning equipment, encouraging (and upgrading) public transport systems, and using economic instruments to modify behaviour (**Method 10**). The Act itself restricts discharges to air from industrial or trade premises in s. 15.

The Regional Land Transport Strategy (**Method 10**) is prepared by the Regional Council under the Transit New Zealand Act 1989

and is a mechanism by which roading and passenger transport priorities are set. The Strategy can include policies which promote:

- The use of cleaner transport fuels (such as unleaded petrol, CNG and LPG);
- Improved efficiency in the use of fuels (i.e., achieving the same level of output with reduced fuel use or a greater level of output for the same fuel use, for example, through better driving habits or less traffic congestion); and
- Greater use of public transport systems.

Methods for Protecting Human Health, Local and Global Environmental Systems and Public Amenity

The Wellington Regional Council will:

Method 11

- *Support and promote Government initiatives to reduce emissions of greenhouse gases and ozone depleting substances.*

Air Policy 9.
See also
Energy
Method 5.

Method 12

- *Through the Regional Land Transport Strategy, encourage energy efficiency, changes to fuels that contribute less emissions of greenhouses gases and the utilisation of public transport systems in order to reduce greenhouse gas emissions.*

Air Policy 9.
See also
Energy
Method 4.

Method 13

- *Discourage the use of ozone depleting substances in the Region and promote the recovery of such substances by encouraging the provision of appropriate collection facilities.*

Air Policy 9.

Method 14

- *Implement Air Policies 11 and 12 by including objectives, policies and where appropriate, rules or other methods relating to the control of nuisance (particularly due to odours) and loss of public amenity, in the Regional Air Quality Management Plan.*

Air Policies
11
and 12.

This set of methods is concerned with air quality as it affects global and local environmental conditions and aspects of public

amenity, particularly the management of odour.

Protecting human health is implicit in many of the policies and methods for air management, and so no additional methods have been included here for putting **Policy 8** into effect. Similarly, methods for the protection of local environmental systems from the effects of air pollution (**Policy 10**) can be found in other parts of the Regional Policy Statement and are not repeated here.

The impact of contaminants on global environmental systems is covered by methods in this chapter (**Methods 11-13**). New Zealand's role in minimising the release of greenhouse gases and ozone depleting substances to the atmosphere is primarily a national issue. Many initiatives will be co-ordinated at a national level and it is important that any policies adopted by the Council are consistent with Government initiatives (**Method 11**).

As part of the need to establish a picture of air quality and emission sources in the Region (**Method 3**), an emissions inventory is suggested. The inventory could include information about greenhouse gas emissions and ozone depleting substances.

It is likely that the primary sources of greenhouse gases in the Wellington Region are fossil fuels used for domestic energy services and for transportation. Initiatives adopted by the Council to reduce greenhouse gas emissions should be closely integrated, therefore, with both regional and national energy and transport policies (**Method 12**).

Discouraging the use of ozone-depleting substances (**Method 13**) flows from national policy and international protocols.

Questions about the protection of amenity values are difficult to answer. Quantification is very difficult because of the subjective nature of community responses to perceived degradation of amenity. Of all discharges to the atmosphere, the most common (and often most intractable) source of public complaint is effects due to odour. While the Act contains a definition of amenity, this is not particularly specific. The question of how the Regional Council is to determine loss of amenity, and what guidelines are to be used, will be considered in the preparation of the Regional Air Quality Management Plan (**Method 14**).

8.6

Anticipated Environmental Results

- (1) There is up-to-date and relevant information available about the characteristics and condition of air quality for the Wellington Region.
- (2) High quality air is found in all parts of the Region. For those areas which do not already meet the desired air quality, air quality improves to at least an acceptable standard within 10 years of the Regional Air Quality Management Plan being operative.
- (3) Human health, environmental systems and public amenity in the Region are not adversely affected by ambient or local air quality.
- (4) The net amount of greenhouse emissions produced by activities in the Wellington Region is reduced so that levels are consistent with, or below, national and international requirements.
- (5) Ozone depleting substances are safely collected and disposed of, and eventually are no longer used in the Wellington Region.