Part III
Air Quality Management: Objectives and Policies

5.1 Management framework

This part of the Plan outlines the framework for managing air quality and discharges of contaminants into air. This framework is based on the following:

- Establishing objectives for air quality in the region; and
- Determining the most effective policies for addressing each of the issues identified in Part II.

6.1 Objectives

6.1.1 To maintain ambient air quality in parts of Otago that have high air quality and enhance ambient air quality in places where it has been degraded.

Explanation

This objective seeks to maintain ambient air quality where it is high rather than let it degrade, and to enhance air quality where it has been degraded to the point that the air resource is not being sustainably managed.

Principal reasons for adopting

This objective will ensure management of the region's air resource is consistent with Objective 7.4.1 of the Regional Policy Statement for Otago. The objective also reflects the community's desire for high ambient air quality throughout the region at all times.

This objective is implemented by all of the policies in this Plan.

6.1.2 To avoid adverse localised effects of contaminant discharges into air on:

(a) Human health;
(b) Cultural, heritage and amenity values;
(c) Ecosystems and the plants and animals within them; and
(d) The life-supporting capacity of air.

Explanation

This objective recognises that many air management issues relate to the localised effects of discharges, such as the effects of odour and smoke as opposed to effects on the region's ambient air quality. It seeks to ensure that the localised effects of the contaminants discharged into air do not have adverse effects on human health, cultural, heritage and amenity values, and the life supporting capacity of air.

Principal reasons for adopting

This objective is adopted to ensure that discharges do not have localised adverse effects on the environment.

This objective is implemented by all the policies in this Plan

6.1.3 To allow for the sustainable use of Otago's air resource.

Explanation
The primary function of the Plan is to provide for the sustainable use and protection of the region's air resource. This objective recognises that people have traditionally made extensive use of the air resource and will continue to do so in the future.

Principal reasons for adopting
This objective is adopted to ensure continued access to Otago's air resource for a range of existing and new uses, recognising the need to provide for the social, economic and cultural well being of Otago's people and communities.

This objective is implemented by all of the policies in this Plan

7.1 Policy for Kai Tahu ki Otago

7.1.1 To recognise and provide for the relationship Kai Tahu have with the air resource through procedures that enable Kai Tahu to participate in management of the air resource.

Explanation
Within Otago, Kai Tahu have cultural and spiritual values that can be adversely affected by the discharge of contaminants into air. In order to recognise Kai Tahu's relationship with the air resource and the potential for cultural and spiritual values to be adversely affected, it is essential to ensure that Kai Tahu participate in the management of the resource.

Principal reasons for adopting
Part II of the Resource Management Act recognises the special importance of iwi values. In order for the Council to achieve its responsibilities under the Act, it is necessary to ensure that iwi are involved in the management of Otago's air resource. This relationship is also recognised and provided for by Policy 7.5.1 of the Regional Policy Statement for Otago.

Rules 16.3.1.7, 16.3.2.6, 16.3.3.2, 16.3.4.3, 16.3.5.9, 16.3.6.3, 16.3.7.3, 16.3.8.2, 16.3.9.4, 16.3.10.3, 16.3.11.2, 16.3.14.1, 16.3.15.2 to 16.3.15.5

8.1 Policies for ambient air quality

8.1.1 To have regard to the Otago Goal Levels identified in Schedule 1 and comply with the Resource Management (National Environmental Standards Relating to Certain Air Pollutants, Dioxins and Other Toxics) Regulations 2004 in managing the region's ambient air resource.

Explanation
Otago Goal Levels are the levels of contaminants in air that are aimed for in parts of Otago where air quality may be degraded, particularly urban areas. The aim is to ensure as much of Otago as possible has ambient contaminant concentrations below these levels. The levels should not, however, be regarded as a limit up to which it is acceptable to allow pollution to reach in those areas with good air

quality where contaminant concentrations are currently well below these levels. Concentrations exceeding these levels are considered to be in the "alert" category as defined by the Ministry for the Environment in *Environmental Performance Indicators: Proposals for Air, Freshwater and Land* (1997). These are warning levels set at between 66 and 100% of the guideline values that can lead to the AAQG or NESAQ being exceeded if trends are not curbed.

Should monitoring results indicate that contaminant concentrations are approaching or exceed Otago Goal Levels, the Council will undertake research to identify the sources of contaminants and determine whether emissions and concentrations are likely to increase over time. The results of such research will then be used to develop and implement an appropriate management response in consultation with the community.

The Otago Goal Levels are concerned with the cumulative impacts of discharges into air from human activities and natural processes. Because of this it is generally inappropriate to apply them directly to set emission limits or determine consent monitoring requirements for individual discharges. They can, however, be used as a factor in determining the duration of a consent and assessing cumulative effects.

The NESAQ is mandatory and provides for a specific range of prohibitions and restrictions on discharges from certain activities, and where practicable, these have been incorporated within the policy and rule framework of this Plan.

These regulations include prohibitions (with some exceptions) on the granting of resource consents for certain activities; lighting of fires and burning of waste at landfill; burning of tyres, bitumen, coated wire and oil; the operation of incinerators at school or healthcare institutions unless resource consent has been granted for the discharge; and the operation of high-temperature hazardous waste incinerators.

The NESAQ also sets ambient air quality standards for five contaminants; regulates aspects of granting or declining resource consents to discharge PM_{10}, carbon monoxide, oxides of nitrogen, volatile organic compounds and sulphur dioxide; and sets specific standards for woodburners and for the control of greenhouse gas emissions at landfills.

Principal reasons for adopting

The Resource Management Act requires an effects-based approach to managing the air resource. Such an approach requires guidelines against which to measure the cumulative effects of activities. This enables problem areas to be targeted and the effectiveness of management strategies to be monitored.

Because Otago's community has identified the maintenance and enhancement of air quality as the key management objective, Otago Goal Levels have been adopted which set higher standards than those contained in the AAQG and the NESAQ.

The incorporation, where practicable, of the NESAQ into this Plan's objectives, policies and rules enables an integrated approach to management of air quality by identifying in one regulatory document, all relevant restrictions and prohibitions on discharges to air.

Other policies 8.1.2, 8.2.3, 8.2.4, 8.2.6, 8.2.8, 9.1.1, 9.1.2, 9.1.3, 9.1.4, 13.1.1, 14.1.1
Rules 16.3.1.7, 16.3.2.6, 16.3.3.2, 16.3.4.3, 16.3.5.9, 16.3.6.3, 16.3.7.3, 16.3.8.2, 16.3.9.4, 16.3.10.3, 16.3.11.2, 16.3.14.1, 16.3.15.2 to 16.3.15.5

8.1.2 To manage ambient air quality by airsheds and air zones.

Explanation
The Otago region comprises a number of areas specified as separate airsheds by the Minister for the Environment through notice in the New Zealand Gazette, as well as an airshed comprising the balance of the region.

Twenty-two Otago airsheds have been gazetted, representing Otago's main urban areas. The 23rd airshed comprises the balance of the Otago region. In accordance with the definition of airsheds in the NESAQ, the balance of the region is an airshed by default. The maps of the airsheds are given in Schedule 2. The Otago Regional Council monitors air quality in each of these airsheds where it is likely that the ambient air quality standards set by the NESAQ will be breached.

For simplicity of management, the twenty-two airsheds have been categorised into three Air Zones, as follows:

- **Air Zone 1:** including Alexandra, Arrowtown, Clyde and Cromwell airsheds.
- **Air Zone 2:** including Balclutha, Dunedin, Green Island, Hawea, Kingston, Milton, Mosgiel, Naseby, Oamaru, Palmerston, Port Chalmers, Queenstown, Ranfurly, Roxburgh, Waikouaiti and Wanaka airsheds.
- **Air Zone 3:** the whole of Otago, excluding the areas that are zoned 1 or 2.

The Clyde airshed is identified as a sub-zone within Air Zone 1 until 1 April 2009, pending further monitoring and an analysis of how discharges to air within the Clyde airshed affect the Alexandra airshed.

Principal reasons for adopting

This policy is adopted to enable appropriate local responses to comply with regulations 15, and 17 to 21 of the NESAQ.

Other policies 8.1.1, 8.2.1, 8.2.3, 8.2.4, 8.2.6, 9.1.1 to 9.1.4
Rules 16.3.1.1 to 16.3.1.7, 16.3.2.1 to 16.3.2.6, 16.3.4.1 to 16.3.4.3, 16.3.5.1 to 16.3.5.3, 16.3.5.9, 16.3.14.1, 16.3.15.1 to 16.3.15.5

8.2 General policies for managing discharges of contaminants into the air

8.2.1 To allow discharges of contaminants into air from industrial or trade premises that have minor or no adverse effects without the need for a resource consent.

Explanation
Section 15(1) of the Resource Management Act 1991 allows discharges of contaminants into air from industrial or trade premises only when the discharge is expressly authorised by a permitted activity rule, a resource consent or by regulations. This policy establishes a framework which allows discharges into air from industrial or trade premises, without consent when the Council is satisfied that there will be no adverse effects or that any adverse effects will be minor in nature.

Principal reasons for adopting
This policy avoids unnecessary regulation of discharges from industrial or trade premises that are unlikely to result in any significant adverse effects on the environment.

Rules 16.3.1.2 to 16.3.1.6, 16.3.2.2, 16.3.2.3, 16.3.2.5, 16.3.4.1, 16.3.4.2, 16.3.5.1 to 16.3.5.8, 16.3.6.1, 16.3.6.2, 16.3.7.1, 16.3.9.2, 16.3.10.1, 16.3.10.2, 16.3.11.1, 16.3.13.1, 16.3.13.2
Methods 17.5.2.1, 17.5.2.2

8.2.2 Priority will be given to avoiding adverse effects from hazardous air contaminants identified in Schedule 3 when considering the effects of any discharge of contaminants into air.

Explanation
The contaminants listed in Schedule 3 have been identified by the Ministry for the Environment in the *Ambient Air Quality Guidelines* (1994) as either being known or suspected to cause acute human health effects or adverse effects on the environment. While the Ministry did not identify threshold concentrations at which these effects occur, it advocated a precautionary approach to minimise their emissions.

Accordingly when assessing applications to discharge hazardous air contaminants, the Otago Regional Council will expect applicants to demonstrate that measures have been taken to avoid the occurrence of adverse effects. Such measures could include but are not limited to:

- Employing processes that do not discharge hazardous contaminants;
- Modifying processes so as to reduce the mass of hazardous contaminants discharged;
- Installing emission control equipment; or
- Using site planning mechanisms and other land use management techniques to reduce the potential for off-site effects.

Principal reasons for adopting
This policy recognises that discharges of hazardous air contaminants can have adverse effects on human health and the environment. The policy states that the Otago Regional Council's priority is the avoidance of such adverse effects.

Other policies 8.2.3, 8.2.4, 8.2.5
Rules 16.3.1.7, 16.3.2.6, 16.3.3.2, 16.3.4.3, 16.3.5.9, 16.3.6.3, 16.3.7.3, 16.3.8.2, 16.3.9.4, 16.3.10.3, 16.3.11.2, 16.3.14.1
Methods 17.5.2.1, 17.5.2.2

8.2.3 In the consideration of any application to discharge contaminants into air, Council will have:

(a) Particular regard to avoiding adverse effects including cumulative effects on:
- **(i) Values of significance to Kai Tahu;**
- **(ii) The health and functioning of ecosystems, plants and animals;**
- **(iii) Cultural, heritage and amenity values;**
- **(iv) Human health; and**
- **(v) Ambient air quality of any airshed; and**

(b) Regard to any existing discharge from the site, into air, and its effects.

Explanation
This policy sets out those matters which will be given consideration in the resource consent process. It is not intended to limit those matters that the Council must consider in terms of Section 104 of the Resource Management Act.

When considering applications for consents to discharge contaminants into air, particular regard must be had to avoiding adverse effects (including cumulative effects) on values identified in (a). Where adverse effects are considered to be unavoidable, a resource consent may be declined or, if granted, be subject to conditions requiring the adverse effects to be remedied or mitigated.

Cumulative effects may arise over time as a consequence of the grouping of discharges. Their consideration will include having regard to the Otago Goal Levels identified in Schedule 1.

Item (i) explicitly provides for consideration of the effects of discharges on values of significance to Kai Tahu and complements Policy 7.1.1.

Items (ii) to (iv) will ensure consideration of the localised and ambient effects of discharges on the environment.

In assessing whether the proposed discharge is likely to increase significantly the concentration of PM_{10} in the airshed, the Council will have regard to:
- The characteristics of the PM_{10} discharge, including how much PM_{10} is to be discharged, and the frequency, rate and manner of the discharge;
- The nature of the receiving environment, including local climatic and geographic conditions and any surrounding environmental conditions that may affect the frequency, duration, intensity and degree of environmental effects;

- To what extent the proposed PM_{10} discharge contributes to the airshed breaching, or being at risk of breaching, the applicable curved or straight line path or the ambient air quality standard; and
- Whether any offset of PM_{10} is proposed, and the extent to which the offset mitigates the proposed discharge.

Part (b) is included to ensure that the past and present standard of the discharge of contaminants at that site forms part of the consideration of the consent authority, where an application is made to continue the discharge.

Principal reasons for adopting
This policy provides guidance on the effects that should be given consideration when making decisions on applications for resource consent.

Other policies 8.2.2, 8.2.4, 8.2.5
Rules 16.3.1.7, 16.3.2.6, 16.3.3.2, 16.3.4.3, 16.3.5.9, 16.3.6.3, 16.3.7.3, 16.3.8.2, 16.3.9.4, 16.3.10.3, 16.3.11.2, 16.3.14.1, 16.3.15.2 to 16.3.15.5
Methods 17.5.2.1, 17.5.2.2

8.2.4 The duration of any permit issued to discharge contaminants into air will be determined having regard to:
(a) The mass and nature of the discharge;
(b) The nature and sensitivity of the receiving environment; and
(c) Any existing discharge from the site, into air, and its effects.

Explanation
Permits to discharge contaminants may be granted for a duration of up to 35 years under the Resource Management Act, depending on the nature of the discharge and the receiving environment. Where the discharge has the potential for more than minor adverse effects, the duration of the permit may be set at less than the maximum term allowable.

While other policies in the Plan provide the primary means for assessing the effects of discharges, this policy identifies additional matters to be considered in relation to determining the duration of permits.

All assessments to establish the appropriate duration of a permit will be undertaken on a case by case basis having regard to the mass and nature of the discharge and the nature and sensitivity of the receiving environment. Council will take into consideration any existing discharge at the site and its effects. Council will set consent durations on an equitable basis to attain the environmental objectives of this Plan.

Principal reasons for adopting
This policy is adopted to give guidance in determining the appropriate duration of any consent to discharge contaminants into air.

The policy recognises that the maintenance and enhancement of existing ambient air quality within parts of Otago cannot be achieved if all permits are issued for the maximum duration of 35 years allowed under the Resource Management Act. It encourages new and existing dischargers to take measures to ensure that the

effects of their discharges are no more than minor in order to obtain permits for a longer duration. The guidance provided by the policy will also ensure that consent durations are applied on an equitable basis depending on the mass and nature of the discharge, the nature and sensitivity of the receiving environment, and the standard of discharges into air at that site.

Other policies 8.2.2, 8.2.3, 8.2.5
Rules 16.3.1.7, 16.3.2.6, 16.3.3.2, 16.3.4.3, 16.3.5.9, 16.3.6.3, 16.3.7.3, 16.3.8.2, 16.3.9.4, 16.3.10.3, 16.3.11.2, 16.3.14.1, 16.3.15.2 to 16.3.15.5

8.2.5 To require, as appropriate, that provision be made for review of the conditions of any resource consent to discharge contaminants into air.

Explanation
Resource consents to discharge contaminants into air are issued with the expectation that there will not be any significant adverse effects on air quality. There are occasions, however, when consented discharges may have unforeseen adverse effects on air quality that are considered noxious, dangerous, offensive or objectionable. This may be because the production process or emissions control equipment is not performing as expected. In these circumstances, a review of the resource consent conditions may become necessary before the end of the consent term. Reviews of this nature are provided for by Section 128(1)(a)(i) of the Resource Management Act. To enable this review, a condition will be included as appropriate, on any resource consent to discharge contaminants into air.

Principal reasons for adopting
This policy is adopted to inform the public that there is legislative provision to review the conditions of resource consents during their term to address any unforeseen adverse effects on air quality resulting from the exercise of the resource consent. Where such a resource consent has been issued for a long term, it may be unacceptable to wait for the end of its term to deal with any problems that have arisen.

Other policies 8.2.2, 8.2.3, 8.2.4
Rules 16.3.1.7, 16.3.2.6, 16.3.3.2, 16.3.4.3, 16.3.5.9, 16.3.6.3, 16.3.7.3, 16.3.8.2, 16.3.9.4, 16.3.10.3, 16.3.11.2, 16.3.14.1, 16.3.15.2 to 16.3.15.5

8.2.6 To control the effects from outdoor burning by:
- **(a) Enabling burning to occur providing it does not have significant adverse effects beyond the boundary of the property where burning occurs;**
- **(b) Restricting the type of materials that may be burnt, and controlling the means of burning, to minimise the discharge of hazardous air contaminants identified in Schedule 3; and**
- **(c) Applying separation distances for outdoor burning of waste in Air Zones 1 and 2, taking into account the potential for burning to occur in close proximity to neighbours, the likely frequency of burning and the likely volumes of waste involved.**

Explanation
This policy introduces three restrictions on outdoor burning. These are applied to both burning in or on the open ground, and incineration of waste and other materials, on residential and non-residential properties.

Part (a) indicates the Otago Regional Council's view that people undertaking outdoor burning need to adopt practices to avoid significant adverse effects beyond the boundary of the property where burning is being undertaken.

Part (b) restricts the type of materials that may be burnt by outdoor burning without a consent to waste paper, cardboard, vegetative matter and untreated wood. This is given effect to by rules ensuring that outdoor burning which has the potential to result in the discharge of hazardous air contaminants identified in Schedule 3 be carried out only in a consented incinerator, and is carefully assessed on a case-by-case basis with appropriate controls being applied. Open burning of "specified materials" as listed in Rule 16.3.3.1 is prohibited.

Part (c) recognises that proximity to a fire largely determines whether or not a discharge will have significant adverse localised effects. It recognises that because Air Zones 1 and 2 have higher population densities, the effects of the burning of waste in these areas are more significant than elsewhere in Otago. This is supported by the high number of complaints received by the Council concerning outdoor burning in these areas. Separation distances between the source of the discharge and property boundaries are needed which are related to the likelihood and significance of impacts on neighbours.

Principal reasons for adopting
This policy is adopted to avoid or mitigate the adverse effects that outdoor burning can have on people and the environment.

Restrictions on materials that may be burnt out-of-doors are adopted to reduce the potential effects of PM_{10} and the hazardous air contaminants identified in Schedule 3. The contaminants identified in Schedule 3 have been identified by the Ministry for the Environment as either being known or suspected to cause acute human health effects or significant adverse effects on the environment. Open burning of specified materials not in a consented incinerator is likely to be inefficient and thus result in the discharge of such hazardous contaminants.

Separation distances are adopted in order to avoid adverse localised effects on neighbours. Such adverse effects result from the soiling of property, the discharge of odours and smoke, reduced visibility and reductions in the pleasantness or amenity of an area, arising from outdoor burning on the open ground or in an inefficient incinerator.

Other policy 8.1.2
Rules 16.3.2.1 to 16.3.2.6, 16.3.3.1, 16.3.3.2,
Methods 17.4.1.1, 17.4.2.1 to 17.4.2.3

8.2.7 To promote voluntary actions to assist in avoiding adverse effects from the discharge of contaminants into air from:
(a) The outdoor burning of waste; and
(b) Domestic heating using domestic heating appliances.

Explanation
Advocacy and publicity by the Otago Regional Council can raise public awareness of the adverse effects that can arise from the incineration and open burning of waste, and the use of solid fuels for domestic heating. Such awareness can result in resource users taking voluntary actions to reduce the adverse effects of discharges. The advocacy and publicity initiatives forwarded in this policy are intended to support the regulatory methods for managing the effects of these discharges. These regulatory methods are outlined in Policies 8.2.6 (burning of waste) and 9.1.1 (domestic heating) of the Plan.

Principal reasons for adopting
This policy recognises the use of advocacy and public awareness as important methods for informing the public about the adverse effects associated with discharges of contaminants into air from the burning of waste and domestic heating.

Methods 7.6.17 and 7.6.18 of the Regional Policy Statement for Otago identify the use of education and public information campaigns as means of improving community awareness and understanding of air issues, and the adverse effects associated with discharges of contaminants into air. While non-regulatory approaches alone are not effective in avoiding or mitigating the adverse effects of discharges from the incineration and open burning of waste and domestic heating, they are an important tool in improving awareness of the associated issues and regulatory methods being used.

Other policies 8.2.1, 8.2.6, 8.2.8, 9.1.4
Methods 17.4.1.1, 17.4.2.1 to 17.4.2.3

8.2.8 To avoid discharges to air being noxious, dangerous, offensive or objectionable on the surrounding local environment.

Explanation
Irrespective of any other control on discharges, a condition will be placed on all relevant permitted activities to prevent, where necessary, any noxious, dangerous, offensive or objectionable effects at or beyond property boundaries. The identification of these effects is discussed in section 16.2.8.

Principal reasons for adopting
This policy is adopted to prevent noxious, dangerous, offensive or objectionable discharges to air.

This policy is implemented by all of the permitted activity rules in this Plan

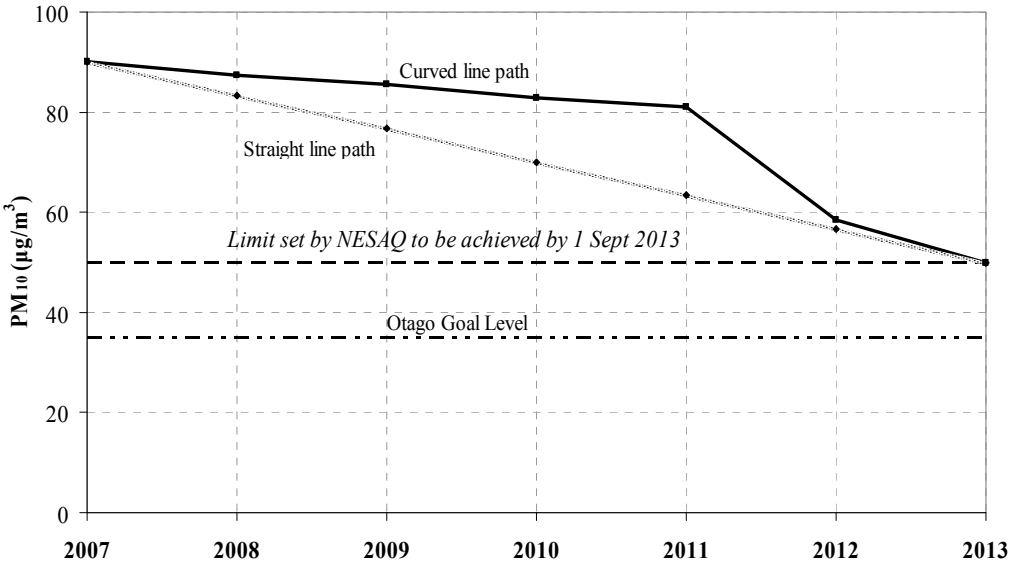
9.1 Policies for reducing discharges of PM_{10}

9.1.1 To reduce discharges of PM_{10} to comply with the ambient air quality standard for PM_{10} by 1 September 2013, in Air Zone 1 by following curved line paths to compliance, and in specified airsheds in Air Zone 2 by following straight line paths to compliance.

Explanation
By 1 September 2013, the NESAQ requires the concentration of PM_{10} in any airshed to meet an ambient air quality standard of 50 $\mu g/m^3$ (24-hour mean) with only one excedence allowed in a 12-month period.

For airsheds where the concentration of PM_{10} in ambient air exceeds the standard, regulation 17 (including 17A – 17D) of the NESAQ allows a regional council to select either a "straight line path" or a "curved line path" to achieve compliance by 1 September 2013. A straight line path means that a consistent reduction in PM_{10} discharges occurs from 1 September 2005, whereas a curved line path allows time for measures to be implemented that will achieve a reduction in PM_{10} discharges. Examples of both straight and curved line paths to compliance are shown in Figure 2.

Figure 2: Examples of Straight and Curved Line Paths to Compliance by 1 September 2013



Note: This graph is for illustrative purposes only and does not represent a path to compliance for any airshed within Otago.

A curved line path to compliance is intended to achieve the reduction of PM_{10} in airsheds in Air Zone 1, as given in Table 2. The start-point values apply from 14 April 2007 and reflect the typical level of wintertime PM_{10} observed in that airshed. As domestic heating appliances contribute significantly to PM_{10} concentrations in airsheds, Rules 16.3.1.1, 16.3.1.2, 16.3.1.5 and 16.3.1.6 are intended to ensure an ongoing reduction in PM_{10}. From 2007 until 2011, a small decrease is anticipated annually as low or no emission heating options gradually

replace existing solid fuel heating, and applications for resource consents are considered with respect to compliance with the curved line paths. More stringent requirements for domestic heating (which contributes approximately 99% of PM_{10} in Air Zone 1) are required to ensure compliance with the ambient air quality standard for PM_{10} by 2013. A timeframe of 1 January 2012 is proposed to allow time for those in Air Zone 1 to replace any domestic heating appliances that have high PM_{10} emissions, and thereby assist in meeting the ambient air quality standard for PM_{10} by 2013. The rapid decrease in PM_{10} shown by the curved line path is expected to occur between 2011 and the 1 September 2013 deadline, as stricter requirements for discharges from domestic heating appliances come into force.

Table 2: Data representing curved line paths towards achievement of the ambient air quality standard for PM_{10} in Air Zone 1

Date	Maximum Level of Particulate Matter (μg/m^3)						
	2007: From 14 April	2008	2009	2010	2011	2012	2013: By 1 September
Alexandra	131	129	127	125	123	68	50
Arrowtown	130	128	126	124	122	68	50
Clyde	66	66	65	65	64	54	50
Cromwell	97	96	95	93	93	60	50

A straight line path to compliance is intended to achieve the reduction of PM_{10} in specified airsheds in Air Zone 2. The start-point values given in Table 3 apply from 8 December 2005 and reflect the typical level of wintertime PM_{10} observed in that airshed. Rules 16.3.1.1 and 16.3.1.3 to 16.3.1.6 will ensure a steady reduction in PM_{10} discharges as low or no emission heating options gradually replace existing solid fuel heating, and applications for resource consents are considered with respect to compliance with the straight line path.

Table 3: Start points for the straight line path to achievement of the ambient air quality standard for PM_{10} in Air Zone 2

Date	Maximum Level of Particulate Matter (μg/m^3)						
	2007: From 14 April	2008	2009	2010	2011	2012	2013: By 1 September
Balclutha	54	53	53	52	51	51	50
Central Dunedin	57	56	55	54	52	51	50
Green Island	76	72	67	63	59	54	50
Milton	57	56	55	54	52	51	50
Mosgiel	83	78	72	67	61	56	50
North Dunedin	51	51	51	51	50	50	50
Oamaru	86	80	74	68	62	56	50
Palmerston	86	80	74	68	62	56	50
Port Chalmers	51	51	51	51	50	50	50

Date	Maximum Level of Particulate Matter (μg/m^3)						
	2007: From 14 April	2008	2009	2010	2011	2012	2013: By 1 September
South Dunedin	69	66	63	60	56	53	50
Waikouaiti	54	53	53	52	51	51	50

Note: Only those airsheds within Air Zone 2 where monitoring has shown breaches of the ambient air quality standard for PM_{10} have straight line paths to achieve compliance with the NESAQ.

The other Air Zone 2 airsheds and the Air Zone 3 airshed do not breach the ambient air quality standards for PM_{10} and therefore do not require a path to compliance.

Principal reasons for adopting

This policy is adopted to meet the requirement of regulation 17B(2)(a) of the NESAQ, for a plan to contain curved line paths that show how the ambient air quality standard for PM_{10} for airsheds in Air Zone 1 will be achieved by 1 September 2013. The curved path better recognises the likely path to compliance for these airsheds.

The policy also specifies the start points of the straight line paths for the specified airsheds within Air Zone 2 that currently breach the ambient air quality standard for PM_{10}, and identifies in one regulatory document the straight line path information needed to interpret the NESAQ and rules within this Plan for considering resource consent applications under section 16.3.15. For these airsheds, the straight line paths reflect the most likely path to compliance with the ambient air quality standard for PM_{10} by 1 September 2013.

Other policies 8.1.1, 8.1.2, 8.2.6, 8.2.7, 9.1.2, 9.1.3, 9.1.4
Rules 16.3.1.1 to 16.3.1.7, 16.3.2.1 to 16.3.2.6, 16.3.4.1 to 16.3.4.3, 16.3.5.1 to 16.3.5.3, 16.3.5.9, 16.3.14.1, 16.3.15.1 to 16.3.15.5
Methods 17.2.4.1, 17.3.1.1, 17.4.1.1, 17.4.2.1 to 17.4.2.3, 17.5.1.1, 17.5.1.2, 17.5.2.1, 17.5.2.2, 17.5.3.2, 17.5.4.1

9.1.2 To enable the use of offsets for the discharge of PM_{10} when:

(a) All practicable mechanisms to prevent or minimise the effects of the discharge have been applied;

(b) The offset is applied to a source in the airshed where the direct effects of the discharge may be experienced;

(c) The offset takes effect within 1 year after the grant of the resource consent; and

(d) The offset is effective for the duration of the consent.

Explanation
Regulation 17C of the NESAQ enables the use of offsets in particular circumstances and is silent on their use in other circumstances.

The Otago Regional Council expects an applicant to demonstrate that measures have been taken to prevent or minimise the effects of any PM_{10} discharge. Where these measures are demonstrated, and a risk remains of a breach of the applicable curved or straight line path, or ambient air quality standard, then at Council's discretion, consideration will be given to the use of offsets within the airshed.

The size of the offset will be determined by:

- The characteristics of the PM_{10} discharge, including how much PM_{10} is to be discharged, and the frequency, rate and manner of the discharge;
- To what extent the proposed PM_{10} discharge contributes to the airshed breaching, or being at risk of breaching, the applicable curved or straight line path or the ambient air quality standard; and
- Whether a full or partial reduction in PM_{10} is required under Rule 16.3.15.3.

In exercising its discretion to enable the use of offsets, Council will give consideration to the interaction between the offset discharge and the proposed discharge.

Any reduction in discharges of PM_{10} by offsetting must take effect within one year after the grant of the resource consent and be effective for the duration of the consent.

Principal reasons for adopting
This policy recognises that the discharge of PM_{10} from certain activities is possible, even when the best technology is applied. It enables industries to operate using appropriate technology, and allows mitigation of the adverse effects of any residual PM_{10} discharges in the vicinity by providing for the use of offsets in certain circumstances

Other policies 8.1.1, 8.1.2, 8.2.2 to 8.2.5, 9.1.1
Rules 16.3.1.7, 16.3.2.6, 16.3.3.2, 16.3.4.3, 16.3.5.9, 16.3.6.3, 16.3.7.3, 16.3.11.2, 16.3.14.1, 16.3.15.2 to 16.3.15.5

9.1.3 To reduce PM_{10} emissions from domestic heating appliances:

(a) In Air Zone 3, by requiring all new domestic heating appliances on properties less than 2 hectares in size to meet stringent emission and thermal efficiency standards, with an exemption for cookers; and

(b) In Air Zones 1 and 2, by requiring all new domestic heating appliances to meet stringent emission and thermal efficiency standards, with the most stringent standards to be applied to Air Zone 1; and

(c) In Air Zone 1, by prohibiting domestic heating appliances that do not meet stringent emission and thermal efficiency standards; and

(d) By providing in some circumstances for discharges from domestic heating appliances that do not meet the permitted emission and thermal efficiency standards in recognised heritage buildings and commercial

premises, having regard to cultural, heritage, amenity and economic values; and

(e) By encouraging and promoting the use of clean heating technologies.

Explanation

The main source of PM_{10} emissions in all areas during winter is derived from the heating of buildings, especially dwellings, using solid fuel. Human health and safety needs to be assured through allowing for adequate heating of buildings without causing unacceptable levels of PM_{10} contamination in ambient air.

Requiring the installation of domestic heating appliances with low PM_{10} emissions will be the principal means for ensuring PM_{10} concentrations in ambient air follow the curved line paths depicted in Policy 9.1.1, and ensuring that ambient air quality in the rest of Otago remains high. Promotion of clean heat technologies, such as well designed domestic heating appliances and fuels that are subject to strict quality control, will further reduce PM_{10} discharges.

On properties less than 2 hectares in size, the NESAQ requires an emission standard for woodburners of less than 1.5 g/kg of dry wood burnt, and a thermal efficiency standard of not less than 65%. This standard applies unless rules in this Plan are more stringent.

Both the emission and thermal efficiency standards set by the NESAQ for woodburners are applied to all other domestic heating appliances located on properties of less than 2 hectares in size, unless they are located in Air Zone 1 or 2, as this ensures all domestic heating appliances are treated equitably. In Air Zones 1and 2 the emission and thermal efficiency standards apply regardless of property size. In Air Zone 3 an exemption is made for cookers as ambient air quality is generally high and it is important for these smaller communities or isolated smaller properties to be able to be self-sufficient for heating and cooking as it may take longer to restore power in the event of a break to supply.

A more stringent emission standard applies in Air Zone 1 due to the high number of excedences of the PM_{10} ambient air quality standard. All newly installed domestic heating appliances must meet this standard, and those existing domestic heating appliances that do not have sufficiently low PM_{10} emissions will be prohibited from 2012.

Within Air Zones 1 and 2, and for under 2 hectare properties in Air Zone 3, discharges from any other domestic heating appliance installed from 14 April 2007, including any appliance that is untested or has been modified after being tested, must generally be prohibited if the Plan's objectives are to be met. The cumulative environmental effects in an air zone are likely to be significant if such appliances were able to be operated under authorisation such as a resource consent.

Provision in some circumstances is made for domestic heating appliances in recognised heritage buildings and in commercial premises to avoid adverse localised effects of this prohibition on cultural, heritage, amenity and economic values.

Principal reasons for adopting
This policy is adopted to assist in ensuring public health impacts of PM_{10} air pollution are minimised while allowing for the heating of buildings by means that are environmentally acceptable and sustainable. A stringent approach, including prohibition, is necessary for domestic heating which is the largest source of PM_{10} emissions in built up areas. Recognised heritage buildings must be provided for in certain circumstances, and allowing applications for resource consent for discharges from commercial premises provides an opportunity for businesses to consider a range of alternatives and make choices taking into account cultural, heritage, amenity and economic factors, while allowing the Council to consider environmental effects and offsets where required.

Other policies 8.1.1, 8.1.2, 8.2.6, 8.2.7, 9.1.1, 9.1.2, 9.1.4
Rules 16.3.1.1 to 16.3.1.7, 16.3.15.1 to 16.3.15.5
Methods 17.2.4.1, 17.3.1.1, 17.4.1.1, 17.4.2.1 to 17.4.2.3, 17.5.1.1, 17.5.1.2, 17.5.2.1, 17.5.2.2, 17.5.3.2, 17.5.4.1

9.1.4 To promote clean heating in new residential areas where discharges are likely to have an adverse impact on air quality in Air Zones 1 or 2, or degrade high quality ambient air.

Explanation
Discharges from domestic heating appliances in new residential areas may adversely affect air quality. When such developments are situated near airsheds in Air Zones 1 or 2, the discharge could adversely affect air quality in those airsheds, causing a breach of the ambient air quality standard for PM_{10}. Discharges from such developments could also adversely affect air quality in their own local area. There is a greater likelihood of this occurring in areas with similar geographical and climatic conditions to those airsheds in Air Zone 1.

While this Plan sets region-wide policies and rules for controlling the discharge of contaminants into air from domestic heating appliances, city and district councils are encouraged to set more stringent standards, using land use planning mechanisms, to further improve ambient air quality. Such mechanisms include conditions on consents and covenants specifying what types of domestic heating appliances can be installed in a building. The Otago Regional Council will encourage and support the use of such mechanisms through written submissions on plan changes and consents, commenting on urban growth strategies and liaising with developers.

Principal Reasons for Adopting
This policy is adopted to assist in ensuring public health impacts of PM_{10} from domestic heating appliances are minimised and areas of high ambient air quality are not degraded by promoting clean heating in areas of new residential development, and to meet the $NESPM_{10}$.

Other policies 8.2.7
Methods 17.2.1.1, 17.2.1.2, 17.2.4.1, 17.3.1.1, 17.4.1.1, 17.4.2.1 to 17.4.2.3, 17.5.1.1, 17.5.1.2, 17.5.2.2, 17.5.3.2, 17.5.4.1

10.1 Policy for dust from area sources

10.1.1 The Otago Regional Council will encourage:

(a) People undertaking land use activities to adopt management practices to avoid, remedy or mitigate any adverse effects of dust beyond the boundary of the property; and

(b) City and district councils to use land use planning mechanisms and other land management techniques to manage land use activities which have the potential to result in dust beyond the boundary of the property.

Explanation

Part (a) of this policy indicates the Otago Regional Council's view that people undertaking land use activities need to adopt management practices to avoid, remedy or mitigate any adverse effects beyond the property where these activities are being undertaken.

Part (b) indicates the Otago Regional Council's view that city and district councils should consider using land use planning and other mechanisms as a means of managing land use activities which have the potential to generate dust.

Principal reasons for adopting

This policy recognises that there are management practices available to people undertaking land use activities, and land use mechanisms available to city and district councils, which can assist in avoiding, remedying or mitigating the adverse effects of dust.

Methods 17.2.1.1, 17.2.1.2, 17.2.3.1, 17.4.1.1, 17.5.1.1, 17.5.1.2, 17.5.2.1, 17.5.2.2

11.1 Policy for odour

11.1.1 To avoid or mitigate any adverse effects on human health or amenity values resulting from the discharge of offensive or objectionable odour through the use of:

(a) Good management practices (including the use of codes of practice) and process technology that has an inherently low odour potential to ensure the amount of odorous contaminants generated by a process or activity is minimised;

(b) Appropriate control technologies to reduce the emission of odorous contaminants;

(c) Site planning mechanisms and other land use management techniques to reduce the potential for adverse off site effects; and

(d) Tools and techniques that provide an objective assessment of odour, such as olfactometry, odour dose response assessments and community surveys.

Explanation

It is not always practicable or necessary to avoid all detectable odours, some of which may have only minor adverse effects. As a consequence, this policy concentrates on avoiding or mitigating the discharge of odours which are

"offensive" or "objectionable" and which have the greatest potential to result in adverse effects on the well being and health of people.

The general methods identified represent the best practicable options for managing the adverse effects of odours. Options (a) and (b) are the responsibility of producers, whereas (c) refers to site management and land use planning techniques that can be implemented by both producers and city and district councils to reduce the potential for adverse off-site effects to occur. Part (c) indicates the Otago Regional Council's view that odour producers should, wherever practicable, take measures to ensure no adverse effects of their activities occur beyond their property boundaries. Measures may include buffer zones, or controls on the location of the odour-generating components of the development. City and district councils can also manage land uses so as to avoid the potential for incompatible land uses to develop within an area. The techniques listed in (d) indicate the type of measurement tools that the Regional Council considers appropriate in order to undertake odour assessments. The preferred technique will vary on a case-by-case basis and will be established in conjunction with producers.

The odour control technologies referred to in (b) include, but are not limited to, technologies which involve gas collection and control, absorption, biofiltration, incineration and odour modification. Some examples of these technologies are set out in Appendix 3 of the Ministry for the Environment publication *Odour Management Under the Resource Management Act* (1995).

Principal reasons for adopting

This policy provides guidance on how to avoid or mitigate offensive or objectionable odours. It also recognises the subjective nature of odour problems and the need for any management approach to be flexible while at the same time focusing on those discharges which are most likely to be "offensive" or "objectionable".

Rules 16.3.1.2 to 16.3.1.7, 16.3.2.1 to 16.3.2.6, 16.3.3.2, 16.3.4.1 to 16.3.4.3, 16.3.5.1 to 16.3.5.9, 16.3.7.1 to 16.3.7.3, 16.3.8.1, 16.3.8.2, 16.3.11.1, 16.3.11.2, 16.3.13.1, 16.3.13.2, 16.3.14.1
Methods 17.2.1.1, 17.2.1.2, 17.5.1.1, 17.5.2.1, 17.5.2.2

12.1 Policy for agrichemical spray drift

12.1.1 The Otago Regional Council will:

(a) Require the applicators of agrichemicals to undertake spraying in a manner that avoids:

(i) Spray drift beyond the target area or boundary of the property being sprayed; and

(ii) Adverse effects on human health and safety, ecosystems, sensitive areas or places, amenity values and other non-target areas or species; and

(b) Encourage city and district councils to use land use planning mechanisms and other land management techniques to mitigate adverse effects from agrichemical spray drift.

Explanation
Part (a) of this policy indicates the Otago Regional Council's view that it is not adequate to merely remedy or mitigate adverse effects, and that people applying agrichemicals need to take proactive measures to avoid adverse effects beyond the target area or boundary of the property.

In order to address the effects of spray drift, it is important that best practice is adopted to avoid the drift itself occurring. Best practice is the subject of the *Code of Practice for the Management of Agrichemicals* (NZS 8409:1999), developed by the New Zealand Agrichemical Education Trust. The code details management practices that can be adopted to lower the risk of drift hazard and reduce the potential for adverse effects to occur. Schedule 4 of this Plan contains a summary of these practices, and the Otago Regional Council encourages those applying agrichemicals to follow them, to ensure that users are adopting best practice.

The avoidance of adverse effects shall be achieved primarily through adopting management practices which produce the lowest risk of drift hazard. Should this fail to avoid spray drift, this policy provides guidance to people applying agrichemicals about the range of values, areas or places which are sensitive to the effects of agrichemical sprays and which people applying agrichemicals should avoid affecting.

Sensitive areas or places shall include but not be limited to:
- Residential dwellings and associated private property;
- Educational facilities;
- Places of public assembly;
- Public amenity areas including parks, reserves, gardens, sports grounds, beaches, and thoroughfares;
- Public roads;
- Domestic or community water supply catchments and intakes;
- Water bodies and wetlands, and associated riparian vegetation;
- Areas of significant indigenous vegetation and significant habitats of indigenous fauna; and
- Commercially important or sensitive plants, crops or farming systems (eg, organic farms).

This list however is not exhaustive, as sensitive areas may change over time and there may be other areas, places or features that are particularly sensitive to the effects of agrichemical spray at the local level.

Part (b) indicates the Otago Regional Council view that city and district councils should consider using land use planning and other mechanisms as a means of addressing the adverse effects of agrichemical drift following discharge into air. Some options are outlined in Method 17.2.1.2.

Principal reasons for adopting
This policy recognises that where the use of agrichemicals is necessary, applying good management practices will reduce the risk of spray drift and the potential for adverse effects to occur. It also recognises that there are mechanisms available to city and district councils which can assist in mitigating the adverse effects of spray drift and achieving integrated management.

Rules 16.3.9.1 to 16.3.9.4, 16.3.14.1
Methods 17.2.1.1, 17.2.1.2, 17.3.1.1,17.5.1.1, 17.5.1.2, 17.5.2.1, 17.5.2.2

13.1 Policy for the burning of vegetative matter on production land

13.1.1 To encourage people undertaking vegetation burning to adopt good management practices, including those set out in Schedule 5 to avoid or mitigate adverse effects.

Explanation
The discharge of smoke from the burning of vegetation can cause adverse effects including nuisance, amenity and visibility effects. In order to avoid or mitigate these effects, it is important that good burning practices are adopted. These practices are outlined in Schedule 5. Where good practices do not mitigate such effects, the Council will encourage the use of alternative means to dispose of or clear unwanted vegetation.

Principal reasons for adopting
Policy 7.5.2 of the Regional Policy Statement for Otago requires adverse effects on human health, the environment, visual impacts and odour to be avoided, remedied or mitigated. This policy aims to avoid or mitigate the adverse effects of discharges into air from the burning of vegetation on production land.

Method 17.2.1.1, 17.2.1.2, 17.5.1.2

14.1 Policy for motor vehicle emissions

14.1.1 The Otago Regional Council will:

(a) Advocate and support the development of a nationally co-ordinated programme for the management of motor vehicle emissions which:
  (i) Develops national vehicle emission testing standards;
  (ii) Encourages the use of transport fuels which minimise the emissions of contaminants into air;
  (iii) Promotes the use of improved vehicle technology to reduce emissions; and
  (iv) Promotes the use of fuel efficient and well maintained vehicles;

(b) Encourage city and district councils to use land use planning and traffic management mechanisms to avoid the occurrence of localised air quality problems associated with emissions from motor vehicles;

(c) Include appropriate provisions in the Regional Land Transport Strategy and Passenger Transport Plan for Otago aimed at avoiding, remedying or mitigating the adverse environmental effects of the discharge of contaminants into air from motor vehicles; and

(d) Promote understanding of the effects of motor vehicle emissions on the region's air resource.

Explanation
Part (a) of the policy indicates the Otago Regional Council's view that while emissions from motor vehicle sources have the potential to be a major source of pollution in Otago, a national approach towards controlling vehicle emissions using technical means is essential in order to achieve an equitable and co-ordinated approach throughout all regions in New Zealand. In this context "technical means" refer principally to on-vehicle techniques, which aim to improve the emission performance capability of motor vehicles.

At the time of writing this Plan, several national initiatives were being developed. These include:

- A Vehicle Fleet Emissions Control Strategy being developed by the Ministry of Transport. This strategy will recommend the most cost-effective means of managing vehicle emissions;
- A Ministry for the Environment co-ordinated programme to develop a core set of national environmental indicators for transport; and
- Monitoring of the effects of transport emissions by the Ministry of Transport and Ministry for the Environment.

Part (b) recognises that local land use planning and traffic management mechanisms can reduce the concentration of emission producing activity and therefore avoid localised problems. Such mechanisms can supplement and complement the technical means referred to in part (a) of the policy.

Parts (c) and (d) recognise that the Regional Council can assist in co-ordinating local initiatives and monitoring, researching, and disseminating information about air quality.

Principal reasons for adopting
This policy is adopted to reflect the Regional Council's view that it is more appropriate for any regulations or minimum standards for discharges into air from mobile sources, such as motor vehicles, to be developed at a national level. It also recognises that local initiatives can supplement and complement national initiatives.

This approach is consistent with the Regional Policy Statement for Otago, in particular, the policies in the Air and Built Environment chapters.

Methods 17.2.1.1, 17.2.1.2, 17.2.3.1, 17.3.1.1, 17.5.3.1

15.1 Policy for global issues

15.1.1 To support and promote, as appropriate, central government initiatives to control and minimise emissions of greenhouse gases and ozone layer depleting substances.

Explanation
Central government has the primary role for developing and implementing policy for discharges to air of global significance. The Regional Council will support and

implement national policies or agreements when such initiatives are appropriate in the Otago context.

Principal reasons for adopting

This policy indicates the Regional Council's commitment to support national initiatives to control and minimise emissions of greenhouse gases and ozone depleting substances.

Method 17.5.3.1