

Breathe Easy...

Cleaner air – a healthier you

Why do a review?

- *The existing Regional Air Quality Plan was adopted in 1999 and is out of date.*
- *We need to be able to address poor air quality issues effectively for the benefit of our health and the environment.*
- *Recent law changes have to be reflected in the Air Plan, e.g. the National Environmental Standards for Air Quality.*
- *As a community we need to weigh up our options and make important choices, including how we heat our homes.*
- *If we don't manage discharges of contaminants into the air appropriately they will have a negative effect on our health and the environment. This summary document discusses a range of issues, options and recommendations to manage air quality in the Southland region.*
- *We want your feedback on these proposals and your opinions on how to better manage air quality, especially home heating options for Invercargill and Gore.*

The Regional Air Quality Plan for Southland is up for review and changes are afoot – they will affect you! Make sure you have your say.

Environment Southland is leading the review because of its legal obligation to manage the region's air and water resources. The aim is to address areas of poor air quality and to provide effective management tools for the future.

During winter, air pollution can be severe in both Invercargill and Gore. This is when the level of fine particles (PM₁₀) in the air exceeds the national standards designed to protect human health.

More than 90% of the human-caused PM₁₀ comes from home heating fires fuelled by coal and wood; an issue made worse by the use of wet wood and the damping down of fires. This statistic is the key issue and it's a challenge to us as a community because it means we have to change the way we heat our homes.

National regulations stipulate deadlines for meeting the PM₁₀ standards. They must be met in Gore by 1 September 2016 and in Invercargill by 1 September 2020. This regulation makes home heating emissions a top priority for this review.

"We want your feedback on these proposals and your opinions on how to better manage air quality, especially home heating options for Invercargill and Gore".

What do the new Air Quality Standards mean for Southland?

The Government has set National Environmental Standards for Air Quality (NES) to protect the health and wellbeing of New Zealanders. The Government has made regional councils responsible for ensuring they are met.

The NES have minimum requirements for outdoor air quality including levels of PM₁₀. This is the key issue for Southland to address. The standard is exceeded when more than 50 micrograms of PM₁₀ is measured as a 24-hour average.

The NES requires:

- Airsheds with more than 10 exceedances of the standard per year (i.e. Invercargill) to reduce them to no more than three exceedances per year by 2016, and no more than one exceedance per year by 2020.
- Airsheds with less than 10 exceedances of the standard per year (i.e. Gore) must reduce them to no more than one exceedance by 2016.

For more information on airsheds and PM₁₀ please turn the page.



environment
SOUTHLAND
Te Taiao Tonga

PM₁₀ is our biggest air quality problem

Where does PM₁₀ come from?

Research shows that the most widespread air quality problem in Southland is PM₁₀ emitted from burning wood and coal in home fires.

In Invercargill on an average winter's night, 55% of domestic PM₁₀ emissions come from burning coal and 45% from wood. In Gore, 67% of domestic PM₁₀ emissions come from burning coal and 33% from wood.

Industries in Southland contribute comparatively minor amounts of PM₁₀

Air quality standards

The National Environmental Standards have minimum requirements for outdoor air quality, including levels of PM₁₀. The standard is exceeded when more than 50 micrograms of PM₁₀ is measured as a 24-hour average.

What is PM₁₀?

PM₁₀ is fine particulate matter smaller than 10 micrometres (10µm) in diameter. PM₁₀ is formed through combustion of fuels (burning), atmospheric reactions (weather conditions) and mechanical processes including crushing, grinding and abrasion. The main human-made sources of PM₁₀ in urban areas are:

- burning fuels such as wood and coal for home heating
- vehicle exhaust emissions
- industrial discharges.

What are the health effects of PM₁₀?

Breathing PM₁₀ is harmful to human health. Coarse PM₁₀ (between 2.5 and 10µm) accumulates in the upper airways, and fine PM₁₀ (less than 2.5µm) accumulates in the small airways deep in the lung¹.

Health effects from exposure to PM₁₀ include irritation to eyes, nose and throat, increased risk of colds and influenza, asthma attacks, deterioration in chronic heart and lung conditions. Healthy people experience mainly nuisance health effects but children, asthmatics and people with other cardiovascular problems can experience serious health effects².

This diagram shows the size of PM₁₀ particles in comparison to human hair and beach sand.

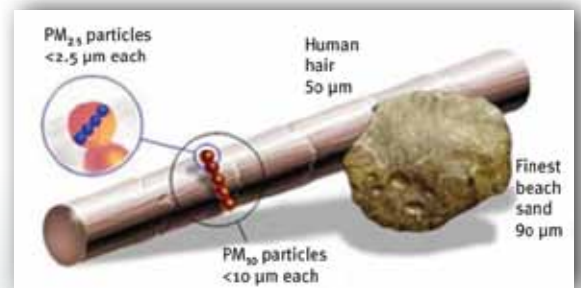


Figure 1: The size of a PM₁₀ particle relative to other objects (Source: Ministry for the Environment)

What is an Airshed?

The NES defines an airshed as an 'air quality management area'. As a concept it is similar to a river catchment area. An airshed has set standards for monitoring, reporting and resource consent requirements.

In Southland, two airsheds were gazetted in 2005 because of regular exceedances of air quality standards due to high levels of PM₁₀ emissions. One airshed is within the built up area of Invercargill city, and the other is centred on Gore township. Other townships in Southland are being monitored, including Te Anau and Riverton.



1 Source: MfE. 2011. *Clean Healthy Air for All New Zealanders: National Air Quality Compliance Strategy to Meet the PM₁₀ standard*

2 Source: Presentation at Environment Southland Workshop by Dr Emily Wilton, Environet Ltd

How serious is Southland's air quality issue?

Very serious – annual average PM₁₀ concentrations for 2011 place the Invercargill and Gore airsheds among the five most polluted airsheds in the country for that year.

During the 2012 winter the Invercargill airshed exceeded the PM₁₀ standard 23 times. The Gore airshed exceeded the standard six times.

An emission inventory undertaken for Invercargill and Gore in 2011 found that:

Domestic heating is the main source of PM₁₀ emissions in both areas and accounts for 92% and 96% in Invercargill and Gore respectively. Other sources include motor vehicles (2% and 1%), outdoor burning (<1% and 1%) and industrial and commercial activities (6% and 1%)” (Wilton, 2011).

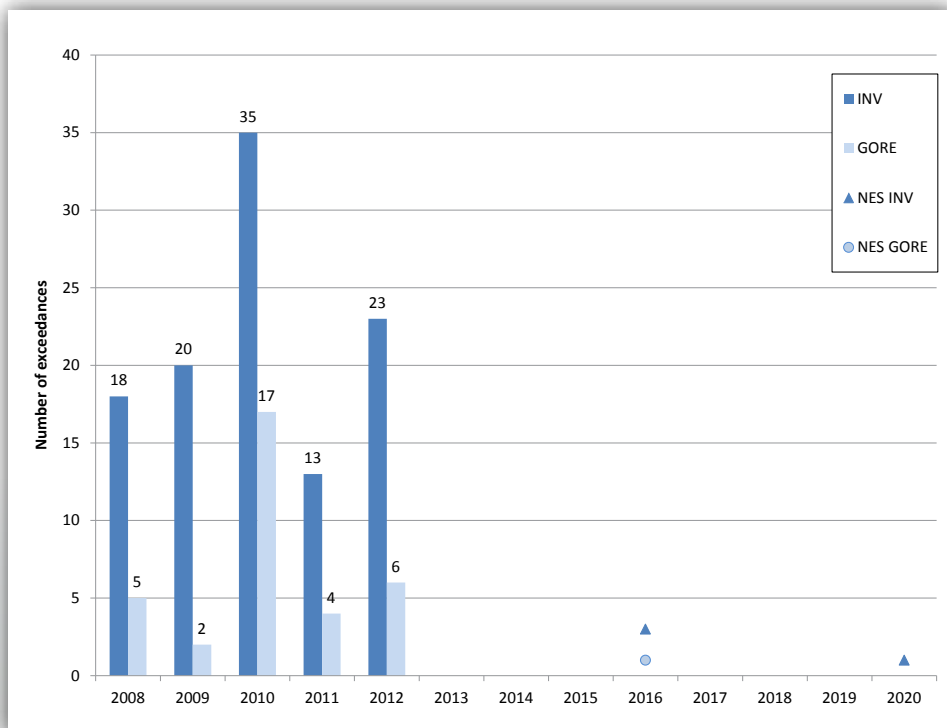


Figure 2: Number of days when exceedances occurred in Invercargill and Gore, 2008 to 2012. NES targets for each airshed are also shown.

The graph shows that the current Air Plan was ineffective in reducing the number of exceedances between 2008–2012. A sharp downward trend in the number of exceedances is needed to meet the NES. The current Air Plan is not adequately equipped to deliver this reduction. Concentrations of PM₁₀ will have to be reduced by approximately 47% in Invercargill and by approximately 38% in Gore to meet the NES target of 50µg m⁻³ (24-hour average).

Why do we need an Air Plan?

It's a legal requirement to adopt an Air Plan to manage the discharge of contaminants into the air e.g. dust, odours, gases and PM₁₀. An Air Plan lets councils manage discharges and set regulations where necessary.



What options are the Council considering?

The review of the *Regional Air Quality Plan for Southland* creates an opportunity to consider a range of options:

1. Review and Update the Air Plan

We could review the existing Regional Air Quality Plan for Southland and update it to address the major air quality issues that have developed since it was adopted in 1999 and to meet recent legal requirements such as the NES. A review would:

- Suggest specific policies and rules to manage smoke and pollutants from home fires in order to reduce PM₁₀ levels within the Invercargill and Gore airsheds.
- Require pollutants to air from all new woodburners, pellet burners, solid-fuel burners and multi fuel burners to meet specified emission standards (i.e. Ministry for the Environment (MfE) design standards).
- Phase out domestic open fires and solid fuel burners that do not comply with the emission standards from a set date (e.g. 2015 or 15 years after their installation).
- Ban outdoor burning including burning green waste within the airsheds between May and August inclusive.
- Consider a point-of-sale rule within the airsheds. This would require the replacement or removal of solid fuel burners that do not comply with emission standards when a house is sold in the airshed. It would have a widespread impact: During 2011–12 1638 homes were sold in the Invercargill airshed and 329 homes were sold in the Gore airshed.

2. Air Quality Control Bylaw

We could implement an Air Quality Bylaw under the Local Government Act 2002 to restrict the installation of new solid fuel burners in new and existing homes, and ban the operation of indoor open fires from a set date (e.g. 2015).

The intention of the bylaw would be to improve the outdoor air quality through a reduction in the discharge of smoke and pollution into the air.

3. Incentives Programme

We could consider offering targeted incentives to encourage the use of cleaner heating options to reduce PM₁₀ levels in the most polluted areas. Options to fund and implement them could include:

- Targeted rates
- Clean heating loan scheme
- Subsidies

4. Education Programmes

Education programmes could inform the community of the negative effects of PM₁₀ on air quality, and how clean heating options and improved insulation can make a big difference.

Now's the time to have your say!

As a community we have some tough choices to make. Environment Southland is interested in your thoughts on air quality and the options being considered. The enclosed discussion document has some questions for your input.

The full discussion paper about the review of the Regional Air Quality Plan for Southland is available from Environment Southland.

Published by Environment Southland

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March 2013

Now's the time to have your say

As a community we have some tough choices to make on air quality and the options being considered. Environment Southland is interested in your thoughts and has some questions for your input below.

If you need extra space for comments, please attach extra paper. The full discussion paper about the review of the *Regional Air Quality Plan for Southland* is available from Environment Southland.

Q1 What is your preferred option to manage air quality in Southland?

- Air Plan Review
- Air Quality Control Bylaw

Q2 Why do you prefer this option? Do you think it will improve air quality in Southland, and if so, why?

Q3 Which options do you believe will improve air quality in Southland?

- Point of Sale Rule
- A Targeted Incentives Programme to encourage the use of cleaner home heating options to reduce PM₁₀
- Education Programmes

Q4 Why do you think it/they will improve air quality in Southland?

Q5 If you think an incentives programme is needed to help improve air quality in Southland, how do you think this could be paid for?

- Targeted rates
- Interest free loans
- Full subsidy
- Partial subsidy
- No subsidy (e.g. user pays)
- Other (Please specify) _____

Q6 Are there any other options you'd like to add?

Thank you for taking the time to provide feedback on this issue. If you have any questions please contact Sonya Nicol or Jason Domigan on 0800 76 88 45.

We need your feedback by 4.30 pm, Friday 5 April 2013, by mail, e-mail, fax or delivered in person. Please send to:

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Phone (03)211 5115

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Email: service@es.govt.nz (subject line: Air quality feedback)

If you would like to hear more about a focus group or community meetings in your area and receive further information on this topic, please list your contact details below.

Name: _____

Address: _____

Tel: _____

Email: _____