



**Report** 05.18  
**Date** 4 February 2005  
**File** ENV/06/01/04

**Committee** Environment  
**Author** Perry Davy, Air Quality Scientist

## **Implications of the National Environmental Standards for Air Quality Management**

### **1. Purpose**

To provide the Committee with an indication of the implications that the recently promulgated National Environmental Standards for Air Quality (NES) may have for air quality management in the Greater Wellington Region.

### **2. Strategic context**

Clean, fresh air is an objective set for the Region in the Council's strategic plan. The target for that objective is that by 2013 there will be no recorded instances when air pollution reaches the "Alert" levels (66%) of the National Ambient Air Quality Guidelines. As such, there is no conflict with the NES and GW's own strategic air quality goals.

### **3. Background**

At the last Environment Committee, Councillors requested information about the implications of the National Environmental Standards for air quality management in the Wellington Region.

The Resource Management (National Environmental Standards Relating to Certain Air Pollutants, Dioxins, and Other Toxics) Regulations 2004 were Gazetted on 8 October 2004. National environmental standards are mandatory technical environmental regulations. They have the force of regulation and are implemented by agencies and parties with responsibilities under the Resource Management Act 1991 (the Act). The standards are prepared in accordance with sections 43 and 44 of the Act.

The air quality standards that have been introduced are:

- Seven activity standards that ban various activities which discharge unacceptable quantities of dioxins and other toxics into the air;

- Five ambient air quality standards for carbon monoxide (CO), fine particles (PM<sub>10</sub>), nitrogen dioxide (NO<sub>2</sub>), sulphur dioxide (SO<sub>2</sub>) and ozone (O<sub>3</sub>);
- A design standard for new small-scale domestic wood-burning appliances;
- A design standard for the collection and destruction of landfill gas at large landfills.

Regional councils and unitary authorities are the agencies primarily responsible for implementing and enforcing the NES.

While we do not see any problem with the intent of the standards for ambient air pollutants, several issues have arisen around the interpretation and implementation of this NES. These are outlined below.

## **4. Comments on the implementation and interpretation of NES**

The two most direct and pressing implementation issues surrounding the NES are the 'definition of airsheds', and the 'straight line path' reductions. Consequential issues, not directly addressed in the regulations, are the associated costs (particularly for monitoring) and implications for Regional Plans and Rules, and for assessing resource consent applications.

### **4.1 Definition of airsheds**

The NES regulations direct regional councils to undertake monitoring, reporting, and assessment of resource consents on an individual airshed basis. It is worth noting that the definition of airshed used in the NES and the scientific definition of airsheds are not necessarily the same. To avoid possible confusion the NES 'airsheds' are being referred to by regional council technical officers as Local Air Management Areas (LAMAs).

The regulations require each region to define LAMAs where the ambient standards will apply. This is vital to the implementation of the NES. The regulations are not clear about exactly what LAMAs are, what they represent and what size they should be. However, the NES Users Guide prepared by the Ministry for the Environment does give a better indication.

LAMAs are:-

- Reasonably large areas (around 3-9 per Council area);
- Where possible based on geophysical airshed criteria;
- Designed to mesh with other planning and management processes;
- Reviewable as circumstances change;
- Categorised – allowing for different levels of management, and expedient assessments of LAMA features.

At present there is an imperative from the Ministry for the Environment that the LAMAs are defined and Gazetted by the Minister on 1 July 2005 so that the NES ambient standards can be given effect to by 1 September 2005. A

project group of research scientists has been set up with FRST funding to provide scientific guidance to assist regional councils to delineate their LAMAs. However, Greater Wellington has already defined the LAMAs in the Wellington Region (see Section 5.1).

For those regional councils that have not defined LAMAs by the deadline, it is likely that their whole region may be Gazetted as one airshed (or divided as the Ministry sees fit).

## 4.2 The 'Straight Line Path'

The NES defines a 'Straight Line Path' for fine particles ( $PM_{10}$ ). This is the improvement required to get from the number of exceedences of the  $PM_{10}$  standard occurring today to 1 exceedence per year by 2013 (the compliance date set in the NES). This concept is illustrated in the example in Figure 1. The NES requires that the number of exceedences in any LAMA do not go above the line and that regional councils develop and implement strategies to ensure that the 2013 deadline is met.

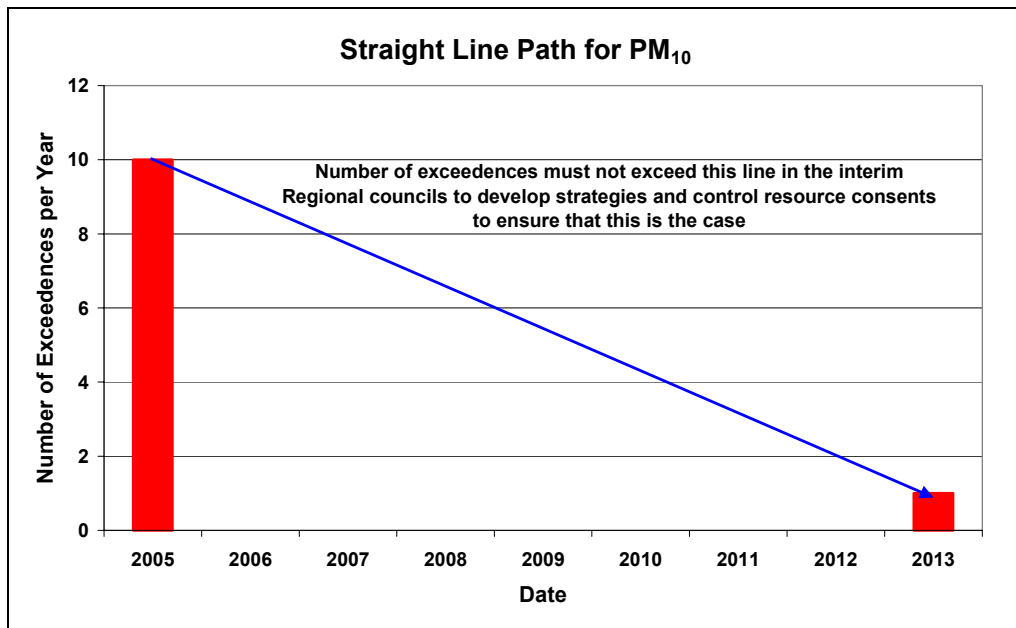


Figure 1: Example of 'Straight Line Path' for fine particles

A problem with this approach is that it does not make allowance for variations in climatic factors which play an important part in determining air pollution events. For example, one year we may have three exceedences in Masterton and the next year there could be eight exceedences. This situation could be entirely due to variations in meteorology (i.e. a mild winter versus a cold winter). Clearly this would have a dramatic effect on the slope of the line and choosing which year to use as a baseline year is of critical importance as it will dictate the extent and nature of the actions required.

Regional council technical officers have a real problem with this approach and it is generally considered that the NES should have just set a target of 1 exceedence by 2013. This would allow each regional council to do what it saw

fit to achieve the NES in its region. Each regional council is going to have a different set of issues to deal with in meeting the NES.

#### **4.3 Resource consents for discharges to air**

The NES places constraints on the resource consent process (including renewals of existing consents). These constraints differ depending upon the contaminant of concern.

The consent constraints for fine particles are progressive to allow councils time to meet the ambient standards. Before 2013, councils must not issue consents for discharges of fine particles to air in areas where levels of fine particles exceed the standard or if the discharges are likely to cause the air pollution to rise above the “straight line path” to meeting the standard. What this means is that a council may only approve discharges of fine particles to air if the discharges will not negatively impact upon the improvement progress of that air quality management area to meeting the standard by 2013. For Greater Wellington this would currently affect the issue of consents in the Wairarapa, Wainuiomata and Upper Hutt LAMAs.

After 2013, in LAMAs where fine particles levels exceed the standard, Councils cannot issue consents for any discharges of fine particles to air. In LAMAs where levels of fine particles do not exceed the standard, councils must not issue consents for discharges to air of fine particles if the discharges are likely to cause the air pollution to exceed the standard.

The NES for CO, NO<sub>2</sub>, O<sub>3</sub> are to be used as the basis for regional air management area planning, as levels of these contaminants are usually the result of cumulative increases of non-point sources (e.g. transport emissions). In recognition of this, consents can be granted if the discharge permitted by the resource consent is not “a principal source” of an exceedence.

For SO<sub>2</sub> the NES is aimed at the management of point sources of sulphur dioxide, as emissions of sulphur dioxide are generally the result of industry point sources. The regulation does not allow consents to be issued that would exceed the standard.

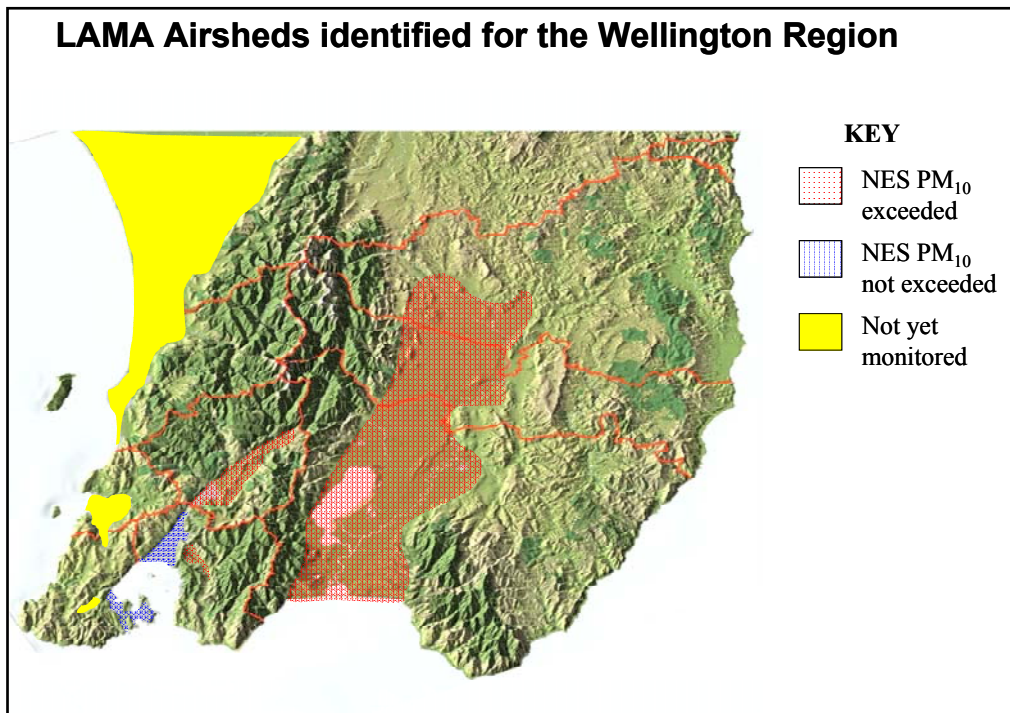
### **5. Implications for Greater Wellington**

The NES is a reporting standard, yet in essence, the inclusion of resource consents makes it otherwise. It is unclear what the actual consequences will be for a regional council not meeting the NES.

#### **5.1 Local Air Management Areas**

We have a good understanding of airsheds in the Wellington Region and have defined eight significant airsheds. These are: Central Wellington, Karori, Porirua Basin (including Tawa valley and Pauatahanui Inlet), Kapiti, Wainuiomata, Lower Hutt Valley, Upper Hutt Valley and Wairarapa Valley.

A map of the Region outlining Greater Wellington’s LAMAs is shown in Figure 2.



**Figure 2: Local Air Management Areas identified for the Wellington Region**

## 5.2 Ambient air quality monitoring

Air quality monitoring will have to be undertaken in all LAMAs that are likely to exceed the NES. Through implementing the *Wellington Regional Air Quality Monitoring Strategy 2000-2005* (Wellington Regional Council Technical Report WRC/RINV-T-00/20), we have been progressively developing monitoring stations in the eight LAMAs identified in the Wellington Region. We now have monitoring stations in five of our proposed LAMAs. The capital and operating expenses for further developing the air quality monitoring network to cover all LAMAs (i.e. three more monitoring stations) are already included in our existing long-term budget. These are scheduled for completion in 2008.

However, additional expenditure of around \$60,000 will be needed to upgrade the Wainuiomata monitoring station to meet the requirements of the NES (i.e. provide continuous monitoring). We are also finding that the task of operating the current network to the appropriate standard is significantly increasing the workload of our air quality staff. Additional technical staff will probably be required as the monitoring network is expanded into all eight LAMAs.

The ongoing costs of developing and operating the network will need to be raised as part of the 2006 LTCCP process.

## 5.3 Emissions inventory

An emissions inventory is essentially an accounting exercise to quantify the emission of air pollutants from the various activities carried by the community. The NES places significant emphasis on using emissions inventories to help determine the 'straight line path' and emissions reductions, as it is the **emission** of air pollutants that leads to air pollution events. We have already conducted

an emissions inventory for the Region but this will have to be updated and refined to provide more accurate numbers and reflect changing land use patterns. There will be some cost associated with this, probably in the order of \$100,000 for consultant assistance. There is no provision in the current budget for this work.

#### **5.4 Source apportionment**

GW has undertaken extensive monitoring work to determine the relative contributions of different sources (e.g. motor vehicles, industry, domestic fires, and natural sources such as wind blown dust and seasalt) to ambient concentrations of air pollutants. In areas subject to pollution events this information is vital for determining which sources to target for emissions reduction strategies in order to meet the NES and our own air quality goals.

#### **5.5 Regional Air Plan and Resource Consents**

The standards are mandatory regulations introduced through section 43 and 44 of the RMA. They automatically supersede controls placed by local government unless the local government controls are stricter. Section 43B (the “stricter provision prevails rule”) overrides any rule or target which attempts to set a more lenient standard. Therefore there is no need for Greater Wellington to initiate a review of the Air Plan to bring it into compliance with the national environmental standards. However, for the sake of consistency and clarity for the public, certain rules, such as the burning of combustible matter (Rule 19), should be altered to reflect the NES prohibitions as and when the plan is reviewed.

Our current monitoring has shown that we have regular exceedences of the NES for PM<sub>10</sub> in the Wairarapa, Wainuiomata and Upper Hutt LAMAs. This means that Greater Wellington will have to develop strategies to achieve the 2013 1 exceedence for PM<sub>10</sub> in these LAMAs.

Another important aspect to consider is the impact on resource consent applications for air discharge permits in areas not attaining the NES. We should consider developing resource consent processing protocols so that applicants are provided with an appropriate level of certainty regarding the information required to accompany consent applications for discharges of fine particles.

#### **5.6 Working with territorial authorities**

The NES contains a standard for woodburners. TAs are responsible for permitting the installation of all domestic fires. Therefore we will need to work closely with TAs to achieve reductions in peak concentrations of fine particles as domestic fires are a significant source of air pollution. Additionally, some aspects of land use, such as designations for roads, will have to be assessed under the NES, as a new road represents a major new source of emissions in an airshed that may already be subject to degraded air quality.

## 6. Summary

The NES regulations for air quality have implications for regional council resourcing and budgeting. For Greater Wellington, we have identified the major issues as follows:

- Generally, the existing Greater Wellington air quality monitoring strategy and proposed budget is sufficient to progressively develop monitoring sites in our identified LAMAs.
- The work we have done to date places GW in a good position to begin developing strategies to meet the NES.
- Additional expenditure will be needed to update our emissions inventory and also to provide continuous PM<sub>10</sub> monitoring at our Wainuiomata site.
- Additional staff resources will probably be required to:
  - (i) maintain and operate the air quality monitoring network;
  - (ii) develop and implement an 'air action plan' for LAMAs where the NES is being exceeded and prepare guidelines for resource consent applications.

## 7. Communication

No further public communication is necessary for this report.

## 8. Recommendation

*It is recommended that the Committee:*

1. *receive the report;*
2. *note the contents; and*
3. *note that staff will be raising these issues as part of the 2006 LTCCP process.*

Report prepared by:

Report approved by:

Report approved by:

**Perry Davy**  
Air Quality Scientist

**John Sherriff**  
Manager Resource  
Investigations

**Jane Bradbury**  
Divisional Manager  
Environment