

Table of Contents

10.0	MONITORING AND REVIEW	1
10.1	Introduction	1
10.2	State of the Environment Monitoring.....	1
	10.2.1 Air quality indicators and guidelines.....	2
10.3	Compliance Monitoring	3
10.4	Review of the Plan.....	3

10.0 MONITORING AND REVIEW

10.1 Introduction

The Gisborne District Council is required by Section 35(2) of the Act to gather information, monitor and keep records. The Council must monitor:

- a) The state of the regional environment to the extent that is necessary to carry out the Council's air management functions;
- b) The suitability and effectiveness of the Plan;
- c) The exercise of any functions, powers or duties delegated or transferred by it; and
- d) The exercise of resource consents for discharges to air;

and take appropriate action where this is shown to be necessary.

Section 67(i) of the Act requires Gisborne District Council to include within the Plan the procedures to be used to review the matters contained within it and to monitor the effectiveness of the Plan as a means of achieving its objectives and policies.

To meet the requirements of Section 35 of the Act, the Gisborne District Council will carry out the following types of monitoring:

- a) Monitoring the ambient air quality of the Region to assess whether applicable targets and guidelines are being met;
- b) Maintaining an emissions inventory to determine the relative contributions of various sources of air contaminants of concern to the Gisborne Region;
- c) Compliance monitoring of resource consents and permitted activity standards to ensure compliance with the Plan; and
- d) Responses to complaints as a result of air discharges.

10.2 State of the Environment Monitoring

The Gisborne District Council will continue to monitor the presence of particular contaminants in the air at various locations throughout the Gisborne Region at air quality monitoring sites.

To the present, the Gisborne District Council has undertaken monitoring of a number of contaminants in the air.

A regional particulate monitoring programme commenced in Gisborne in 1993 with dust (PM₁₀) measurements at a neighbourhood site near the city airport and a network of 8 deposition gauges. The programme was extended in 1994 with an additional PM₁₀ monitor that was used for short-term studies at three different sites in both rural and urban areas.

A number of short-term monitoring studies were also carried out in 1993. Carbon monoxide was measured at the kerbside (peak site) on an inner city street during April/May.

Smoke and sulphur dioxide (SO₂) were monitored for four months (April to July) at a suburban neighbourhood site. Tests for possible gas emissions from the Gisborne city landfill were carried out during April 1993 at 3 gas bores.

In 1994 further monitoring was carried out. Nitrogen dioxide was monitored in April/May at a residential site. Ten 24-hour lead measurements were taken at the suspended particulate site over a 3 month period from April to June. Formaldehyde was also measured at a rural site from December 1993 to June 1994.

Measurements will continue to be taken from these sites to assess whether the air quality of the Gisborne Region is being managed in accordance with the Plan's objectives.

An emissions inventory for the Gisborne Region was completed in 1996. This categorised the major sources of contaminants being discharged to air in the Region.

Gisborne District Council also operates a meteorological site that provides limited data on climate and weather conditions.

10.2.1 Air quality indicators and guidelines

The Council will continue its State of the Environment monitoring programme. This will continue to be based around certain contaminant indicators from the Ministry for the Environment's Ambient Air Quality Guidelines. After applying certain criteria, such as cost effectiveness, fitness for use now and applicability to the Gisborne Region, a number of indicators have been selected as being appropriate for use as air indicators for State of the Environment monitoring.

Priority will be given to the following ambient air quality indicators as a basis for setting monitoring priorities:

- a) particulate / visibility;
- b) sulphur oxides (SO_x);
- c) nitrogen oxides (NO_x);
- d) carbon monoxide (CO).

The levels set can be found in Appendix 1. These indicators will be monitored and assessed in the following ways:

- a) comparing the information about the indicators to guideline levels (Appendix 1);
- b) developing categories of air quality;
- c) comparing indicator data between sites locally and nationally; and
- d) by undertaking trend analysis to determine how air quality is changing over time, identifying the underlying reasons for any changes and determining effects of policies.

It should be noted that when undertaking comparisons between air quality monitoring information and the guideline levels, the guidelines are minimum requirements for air quality.

They are not maximum permissible concentrations of pollutants in air or limits that can be polluted "up to" safely (Ministry for the Environment, 1994). The Ministry for the Environment has recommended that ambient concentrations of gaseous pollutants should not exceed 66% of the applicable guideline (Ministry for the Environment, 1996). See the table below for a summary of the Ministry's assessment criteria for air quality guidelines.

Table 1: Indicators of Ambient Air Quality

Category	Maximum Measured Value	Comment
Excellent	Less than 10% of guideline	Of little concern. If maximum values are less than 1/10 of guideline, average values are likely to be much less
Good	Between 10% and 33% of guideline	Peak measurements in this range unlikely to impact air quality
Acceptable	Between 33% and 66% of guideline	A broad category where maximum values might be of concern in some sensitive locations but generally at a level not requiring dramatic action
Alert	Between 66% and 100% of guideline	A warning level, which can lead to exceedances if trends are not curbed
Alarm	Exceeds the guideline	Completely unacceptable by national and international standards
Not Assessed		Insufficient monitoring data

Four years after the Plan becomes operative a review of monitoring needs will be undertaken that:

- a) Reviews areas of concern arising in the interim;
- b) Assesses the applicability of the ambient air quality indicators and the specified levels used for monitoring ambient air in the Gisborne Region, and makes alterations as necessary;
- c) Assesses the need for further research and programmes to be undertaken in the following areas:
 - i. sources of emissions (including consideration of an update of the regional emissions inventory);
 - ii. the influence of meteorology and topography (including consideration of resourcing these areas and the need to develop a meteorological database to record information about meteorological conditions, patterns and fluctuations in the Gisborne Region);
 - iii. discharge of contaminants not covered by the Ambient Air Quality Guidelines (including consideration of whether there is a need to include any identified contaminants in the monitoring programme); and
 - iv. monitoring sites (including consideration of the need to expand or further develop these sites).

10.3 Compliance Monitoring

The Gisborne District Council will undertake the following with regard to emissions from particular sources:

- a) Continue to maintain a complaints register that categorises complaints according to the type of contaminant. At present, these are divided into odour, smoke, dust and spray drift complaints. These categories will be continued unless circumstances warrant a change to these broad categories;
- b) Require demonstration of compliance by applicants of discharge to air consents, where appropriate;
- c) Continue compliance monitoring of consents;
- d) Undertake site inspections, where necessary, as part of compliance monitoring; and
- e) Undertake special investigations, where necessary, on the basis of complaints, monitoring information or new information on certain activities.

10.4 Review of the Plan

This Plan must be reviewed within ten years of becoming operative, although it may be reviewed or changed at any time, in accordance with section 79 of the Act.

- a) Circumstances that may result in a review or change include:
 - b) Changes in legislation that may make any part of the Plan *ultra vires*;
 - c) Case law prompting changes to any part of the Plan;
 - d) Changes to the Gisborne Regional Policy Statement;
 - e) The notification of, or change to, any national policy statement with which this Plan can not be inconsistent;
 - f) Any other national initiatives, such as new national standards or guidelines, which require a change to the Plan;
 - g) New information, including information arising as a result of monitoring; and
 - h) the emergence of new air quality issues not dealt with in the Plan.