BAY OF PLENTY REGIONAL COUNCIL TOI MOANA

Section 32 Evaluation Report

Plan Change 13 (Air Quality) to the Regional Natural Resources Plan

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Part 1: Introduction

1.1 Introduction

This Section 32 evaluation report provides a summary of the process of evaluating **Plan Change 13 (Air Quality)** to the Regional Natural Resources Plan, including why the Plan Change is needed and how it was developed. This report records the thinking and option analysis over the life of the project to create new provisions to manage air quality within the Bay of Plenty.

1.2 Background

Under the Resource Management Act 1991 (RMA), regional councils are responsible for the management of natural and physical resources such as land, air, and water and may develop regional plans to assist with resource management.

The Regional Air Plan (the current plan) was prepared to help manage air quality and it was made operative in 2003. Since its development, the National Environmental Standards for Air Quality 2004 (NESAQ) have been released and amended in 2011, and the next generation Bay of Plenty Regional Policy Statement (RPS) was made operative in 2014.

Any regional plan needs to be reviewed every ten years to assess whether it is still managing the resource in the best possible way. The review of the current plan in 2013 found that the plan had addressed some air quality issues, but was now out of date. The recommendation was to replace the current plan with a new plan as soon as practicable.

The primary reasons for developing a new plan are detailed further in this report, but can be briefly summarised here:

1. **Address the air quality issues in the RPS.** These issues are the impacts of odours, particulates, and chemicals on amenity and well-being, and effects of fine particulate matter on human health.

2. **Meet the ambient air quality standards of the NESAQ.** The Rotorua Airshed is exceeding the PM_{10} limit of the NESAQ and is at risk of breaching the standard in 2020. The provisions in the current plan are not sufficient to achieve the required reduction in emissions.

3. **Resolve deficiencies identified during the plan review.** Some activities are causing adverse effects as currently managed by the plan. About 1,000 complaints per year regarding air issues, many about permitted activities. These provisions need to be amended to assist with compliance and enforcement, and to improve air quality.

As outlined further below, the Regional Council is currently amalgamating six regional plans, including the air plan, into one consolidated plan. The Regional Water and Land Plan was reformatted to ease the consolidation process, and was renamed the Regional Natural Resources Plan (RNRP) and reissued in November 2017. The new air plan will be incorporated into the operative RNRP as Plan Change 13 (Air Quality). It is referred to in this document as “the Plan Change” or “this Plan Change”.

The provisions relating to Air Quality apply to the whole Bay of Plenty region, including the coastal marine area. As such this plan is both a regional plan and regional coastal plan, and the Minister of Conservation is the final approval authority for the parts of the plan that relate to the coastal marine area.

Air is essential to life. While there is no danger of the volume of air running out, good quality air unpolluted by contaminants is under pressure in many areas of the world.

The Bay of Plenty in general, has good air quality. However, there are areas of the region where air quality is not as good as it could be, and this is affecting health and well-being.

The Regional Council is responsible for sustainably managing the air in the region, in particular the discharge of contaminants to air. This involves managing activities that discharge to air to ensure businesses and communities in the region continue to thrive and grow economically, while ensuring the contaminants being discharged do not affect human health and well-being.

In the past the focus has been on managing point source discharges to air, such as large scale industrial processes like pulp and paper mills. These large discharges are, for the most part, managed through resource consent conditions. The conditions often require monitoring, equipment installed to reduce discharges, and many other requirements to manage the effect of the discharges on the environment.

Now that these large discharges are under better control, it is becoming clear that most of the air quality issues the region faces today are from smaller sources like fires used to heat homes, open burning, and agrichemical spraying.

The current plan needs updating to manage these sources better, and this has driven the need to update the provisions through this Plan Change.

1.3 Plan Change overview

The Regional Council is amalgamating six regional plans, including the air plan, into one consolidated plan. The Regional Water and Land Plan was reformatted to ease the consolidation process. It was renamed the Regional Natural Resources Plan (RNRP) and reissued in October 2017.

A new “Air Quality” chapter has been included in the RNRP. This chapter is currently empty as air provisions are still covered by the current plan. Once this Plan Change becomes operative, it will be included in the RNRP as the Air Quality chapter and the current plan will be withdrawn.

The Plan Change focuses on discharges of contaminants to air and contains:

- 3 objectives
- 10 policies
- 21 rules

1.4 Section 32 requirements

The Section 32 evaluation is an important part of ensuring clear, robust decision-making. It provides a process for critical evaluation of proposals, and a transparent way to assess the risks, costs and benefits of new policies and rules.

Regional Councils are required by Section 32 of the Resource Management Act (RMA) to evaluate the purpose of the proposal, along with the proposed policies and methods (including rules). The evaluation must:

- Assess the scale and significance of the problem or issue
- Examine whether the objectives of the proposal (or Plan Change) are the most appropriate way to achieve the purpose of the RMA
- Examine whether the proposed approach is the most appropriate way of achieving the objective
- Identify and assess the benefits and costs of the new policies and rules on the community, the economy and the environment
- Assess the effectiveness of the new policies and rules, including identifying assumptions and risks
- Assess the risks of acting or not acting if there is uncertain or insufficient information.

In addition to the Section 32 requirements, this report documents the process undertaken to prepare the Plan Change (including engagement with the community).

This report must be made available for public inspection at the same time the Plan Change is notified.

The full wording of Section 32 of the RMA is included in Appendix 1.

1.5 Technical reports

There are a large number of technical reports and documents used to develop the Plan Change and assess its provisions according to Section 32. These reports and documents form part of the Section 32 evaluation process that has been undertaken. All documents referenced in this report are listed in the bibliography or within the relevant sections.

Key documents are:

- Bay of Plenty Regional Council (2003), *Operative Bay of Plenty Regional Air Plan*. Environmental Publication 2003/22.
- Bay of Plenty Regional Council (2015), *Regional Air Plan Review*, Strategic Policy Publication 2015/01, February 2015, Whakatane.
- New Zealand Government (2004). *Resource Management (National Environmental Standards for Air Quality) Regulations 2004,* reprint as at 17 October 2014.

- Ministry for the Environment (2011) *2011 Users' Guide to the revised National Environmental Standards for Air Quality: Updated 2014.* Wellington.

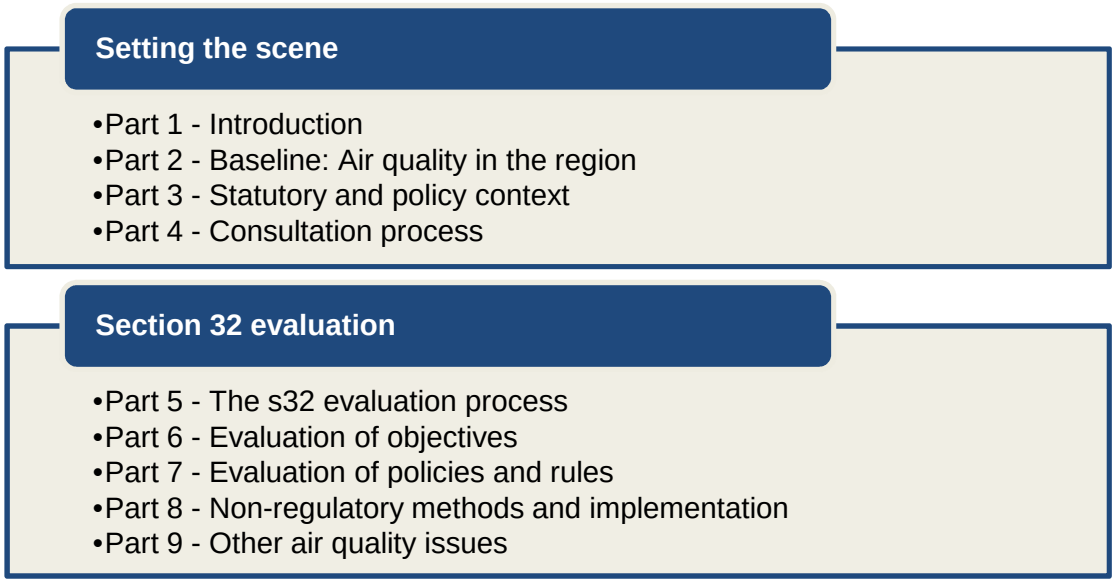
- Ministry for the Environment, Ministry of Health (2002). *Ambient Air Quality Guidelines.* Air Quality Report No. 32. May 2002. Wellington.

1.6 Report structure

Parts 1-4 set the scene on air quality in the Bay of Plenty region. It summarises the key air quality issues, provides the statutory and policy context for regional and national air quality management, and describes the consultation process for this Plan Change.

Parts 5-9 contain the evaluation as required by Section 32. It provides the evaluation of the objectives in the Plan Change, and assesses the effectiveness and efficiency of the provisions in achieving the objectives.

The report is structured with an expectation that users will have a particular air quality issue in mind prior to reading. Part 7 contains eight topic areas covering the key air quality issues. Each topic area sets out the baseline for the issue, then analyses the appropriateness of the provisions to meet the objectives and address the issue.



Part 2: Baseline: Air quality in the region

2.1 Terms used in this document

There are a number of terms used in this document. For the most part any acronyms are defined in the text and any chemical formulae are also explained.

Airshed – has a specific definition in the Plan Change which is the same definition used in the National Environmental Standards for Air Quality. The definition does not provide any helpful guidance to readers of the Section 32 therefore for the purposes of this report, an airshed is an area defined by parameters including topography, meteorology, and human activities where the air may be contaminated with one or more harmful contaminants.

Fugitive dust – dust from several sources such as roads, stockpiles, bare land, not easily identifiable as coming from a single source.

Total suspended particulate – the total amount of particulates small enough to become suspended in air

PM_{10} – particulates smaller than 10 micrometres in diameter.

$PM_{2.5}$ – particulates smaller than 2.5 micrometres in diameter.

Offensive and objectionable – discussed in detail in Appendix 2

2.2 Sub-regions

The area of the region forms a rough triangle which divides the region into three sub-regions: Western Bay, Rotorua, and the Eastern Bay. For the most part, air quality issues are similar across the region (Figure 2.1).

In the current plan, air discharges are dealt with on a regional scale. Plan provisions are designed to deal with the activity and its effects, regardless of where it is located in the region.

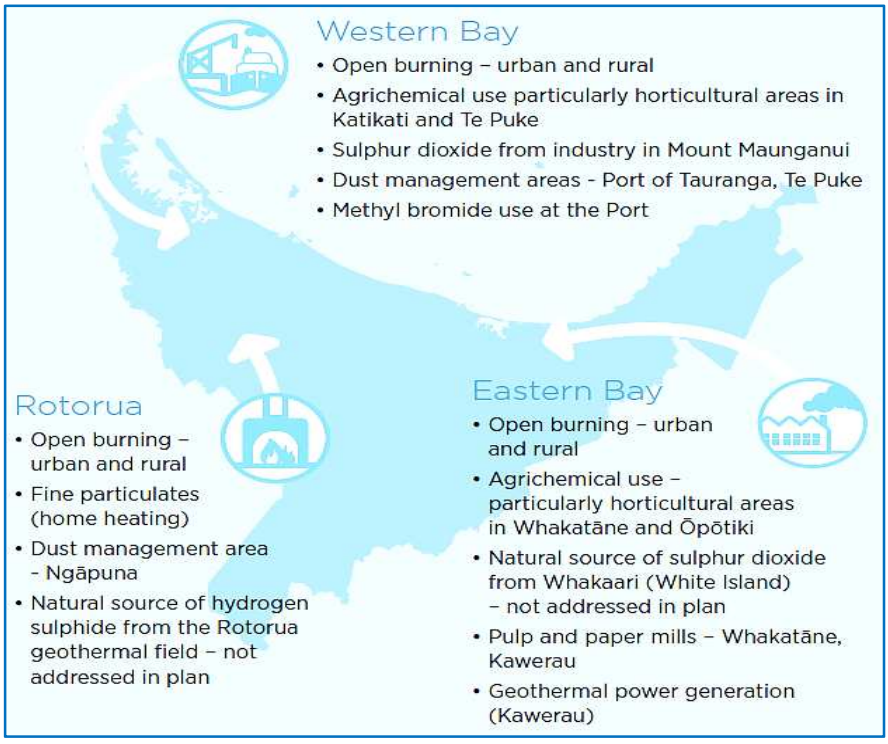


Figure 2.1: Air quality issues in the Bay of Plenty Region

A regional approach is appropriate for most air discharges, but there are areas where discharges would be better managed with an approach tailored to specific locations. These areas are discussed in further detail in this document.

2.3 Monitoring network

The Council collects data from ambient air quality monitoring sites located around the region as summarised in Table 2.1. Air quality monitoring is focused on the larger urban areas as this is where higher levels of contaminants are expected due to the density of anthropogenic sources.

Particulate matter monitoring is currently the primary focus of the Council's monitoring programme. Four permanent sites continuously measure PM_{10}, total suspended particulate (TSP) is measured at Totara Street, Mount Maunganui, and $PM_{2.5}$ at Edmund Road, Rotorua.

Recent complaints in the Mount Maunganui area have resulted in the installation of investigative sites at Taiaho Place and the Tauranga Harbour Bridge Marina. The site at Taiaho Place also measures hydrogen sulphide (H_2S), hydrogen fluoride (HF) and TSP. Exceedances of the NESAQ sulphur dioxide (SO_2) standard have been measured at the Taiaho Place site. Council is currently working with local industrial SO_2 sources to remedy this situation. H_2S values above the Ministry for the Environment (MfE) Guideline value (7µg/m^3) for non- geothermal areas have been also recorded and identified to have come from a particular industrial operation, Council is currently working with this operation.

All monitoring sites also measure meteorological data such as wind speed and wind direction, air temperature, and humidity.

Historical monitoring has also been undertaken at the following locations:

- Ōpōtiki
- Kawerau
- Te Puke
- Ngongotahā
- Marsh/Chapel intersection, Tauranga
- Morland Fox Park, Tauranga
- Pererika Street, Rotorua
- Amohau/Fenton Street, Rotorua
- Quay Street, Whakatāne,
- Henderson Street, Whakatāne.

The Council has monitored concentrations of nitrogen oxides (NOx), sulphur oxides (SOx), volatile organic compounds (VOCs), and carbon monoxide (CO) at locations throughout the region. Monitoring has revealed only low concentrations, and as a result monitoring has ceased. Long term monitoring exercises undertaken by other regional councils have also been used as quasi-indicators for the Bay of Plenty region e.g. benzene monitoring by Waikato Regional Council.

Hydrogen sulphide monitoring has been undertaken at several locations in Rotorua. Recent health investigations have shown that there are no issues with long term exposure to the general ambient levels of H_2S. However, health issues do occur with exposure to higher levels of H_2S.

Monitoring summary reports are produced on an annual basis and published on the Council's website.

Table 2.1: Monitoring sites in the Bay of Plenty region

Location	TSP	PM_{10}	$PM_{2.5}$	SO_2	H_2S	HF	Meteorological
Permanent sites							
Tauranga (Otumoetai)		✓					✓
Mount Maunganui (Totara Street)	✓			✓			✓
Rotorua (Edmund Road)		✓	✓				✓
Rotorua (Ngāpuna)*		✓					✓
Whakatāne (Kopeopeo)		✓					✓
Investigation sites							
Taiaho Place, Mount Maunganui	✓			✓	✓	✓	✓
Tauranga Harbour Bridge Marina				✓			✓

*Currently removed as entertainment centre is constructed.

A summary of the PM_{10} monitoring from the long term urban monitoring sites is shown in Figure 2.2. This colour coding of the data presented in these plots is the percentage of the NESAQ. The Rotorua issue is highlighted by the amount of data in the red category.

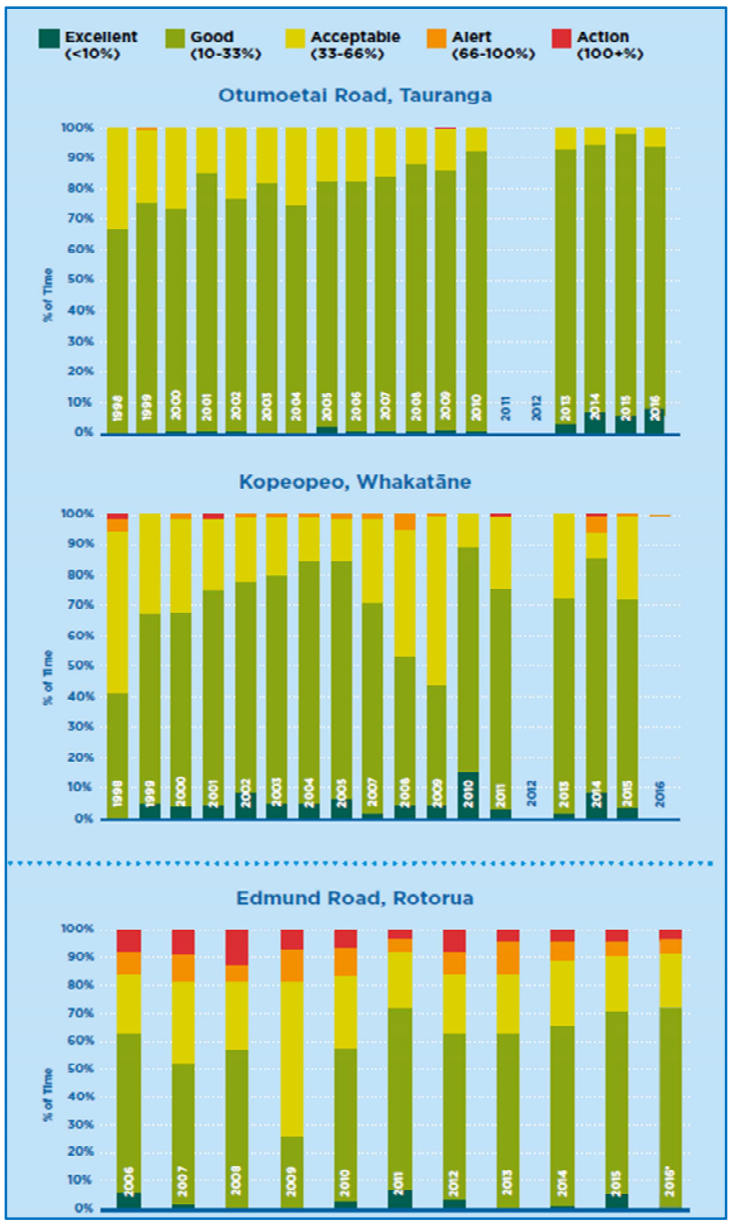


Figure 2.2 PM_{10} data summary for the three main urban PM_{10} monitoring sites. Colour coding is in relation to the NESAQ.

2.3.1 Future monitoring

The Rotorua monitoring will continue in order to meet the requirements of the NESAQ. Redevelopment of the Sealed Air Ltd site has resulted in the Ngāpuna monitoring being put on hold until development has finished. Negotiations are currently underway with the property owner to re-establish this site.

Whakatāne will continue until a suitable wintertime profile is determined. Otumoetai will continue as the long term (commenced in 1997) monitoring site for Tauranga. Data from Otumoetai shows that air quality is well below the NESAQ health effect value.

The $PM_{2.5}$ monitoring has commenced at the Edmund Road site and will be used as one of the tools for Rotorua Airshed management. The site will also be used as a benchmark for the region in case the NESAQ is modified to include $PM_{2.5}$.

As a result of sulphur dioxide exceedances and ongoing issues with various contaminants in Mount Maunganui, the Council is establishing a comprehensive and expanded monitoring network in this area. This involves additional monitoring equipment at existing sites and the commissioning of four new sites within the industrial areas at Sulphur Point and Mount Maunganui.

The equipment will monitor TSP (dust), PM_{10} (coarse particulates), $PM_{2.5}$ (fine particulates), SO_2 (sulphur dioxide), H_2S (hydrogen sulphide), HF (hydrogen fluoride), CH_3Br (methyl bromide) and a full suite of meteorological parameters

It is important that basic meteorological parameters (wind speed, direction, air temperature) are recorded at all of the air quality monitoring sites. The minimum requirements are outlined in the Good Practice Guide for Air Quality Monitoring[1]. This additional information provides added value to the primary dataset in determining causes of elevated concentrations and long term source contributions. The datasets are also critical for future modelling investigations in relation to airshed compliance or the consenting of significant activities.

2.4 Complaints

The Council receives about 1,000 air-related complaints every year. Of those, half are about air discharges, many from activities listed as permitted in the plan.

The factors that lead to a member of the public complaints include:

- Genuine concerns about health and wellbeing
- Low awareness of the requirements of the plan – e.g. questions about whether specific activity are prohibited.
- High awareness of the requirements of the plan – e.g. aware that burning plastic is prohibited, seeing a neighbour doing it, and calling it in.
- High visibility of air discharges – e.g. smoke can be seen from a great distance.
- Complainant assumes that because an air discharge is visible, it is bad for the environment or human health.
- Dispute with neighbours.

A complaint may not always be about a breach of the plan or significant health effect. The complaints record gives Council information about air discharge activities, and the acceptability and concerns of the community. However, evaluating complaints records can have a number of shortcomings which should be borne in mind by the reader:[2]

- Some people may be reluctant to complain, or not know who to complain to
- Other people may complain excessively or make frivolous complaints because they are opposed to a particular activity

[1] Ministry for the Environment (2009).
[2] Ministry for the Environment (2016).

- People may stop complaining about a particular problem if they feel no action is being taken
- Tolerance or intolerance to air emissions can vary with individual perception and health status
- The source of the emissions may be difficult to identify, and so one activity may be wrongly blamed for the actions of another.

Air complaints are classified into smoke, odour, dust, and agrichemical spraying categories. Nearly half of the complaints received from 1 January 2006 to 2 September 2016 were about smoke (Figure 2.3).[3] This pattern of complaints is similar across years.

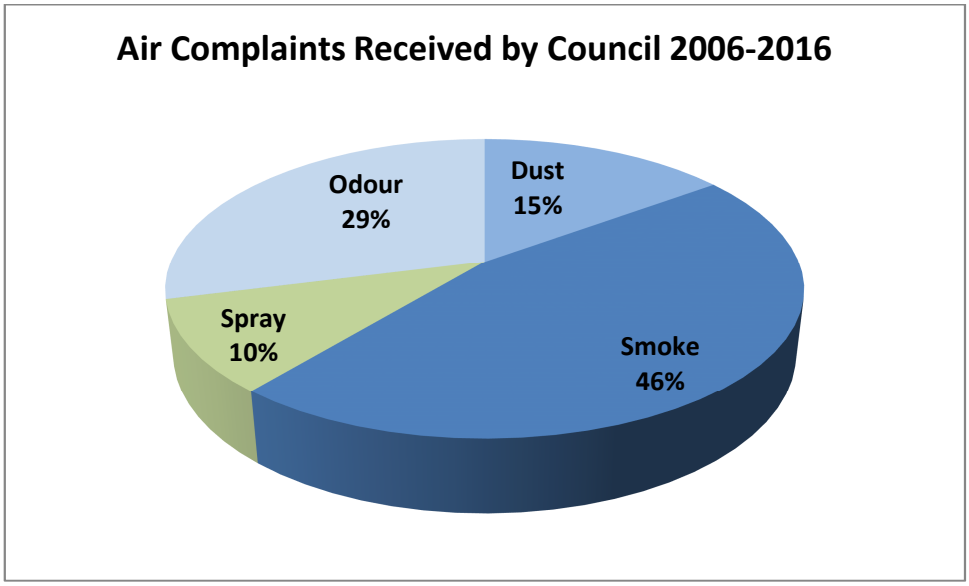


Figure 2.3: Air complaints - 1 January 2006 to 2 September 2016[4]

Complaints made in the 2015 calendar year were analysed by BOPRC staff to provide information for the policy process. Information from the analysis is provided in relevant sections throughout the s32.

2.5 Incompatible activities

Some activities are incompatible. Many economic activities in the Bay of Plenty discharge contaminants to air, including industrial and commercial operations, horticulture, agriculture, and waste processing (e.g. rubbish and sewage). Contaminants emitted include smoke, agricultural chemicals and fertilisers, gases, odour and dust. Activities sensitive to these contaminants ('sensitive activities') include residential areas, marae, schools, hospitals, and public amenity areas such as parks and walkways. The degree of sensitivity is generally related to proximity.

[3] The numbers for each category may be understated. Each complaint is input into the major category, although the complaint may refer to more than one area. For example, a complaint about smoke may also refer to the odour associated with the smoke.
[4] Bay of Plenty Regional Council Complaints Database (Accessed September 2016)

Issues may arise when incompatible activities are located sufficiently close to each other for the actions of one to impact negatively on the other. This may happen where activities that discharge contaminants to air are established near existing sensitive activities.

Issues may also arise when sensitive activities are established near existing air discharge activities. This is known as “reverse sensitivity”, and can result in complaints from the newcomer about the existing activity.

Territorial authorities (city and district councils) and regional councils each manage land use for different purposes. Regional councils manage the quality of the resource, for example preventing erosion, managing pests, or reducing dust. Territorial authorities manage land use through zoning in district plans (e.g. rural, residential, industrial zones).

Ensuring incompatible activities are suitably separated by zoning, or imposing other district plan mechanisms such as building setbacks and planted buffer areas, is a city or district council function. The current air plan contains a policy to manage incompatible activities, with methods aimed at the regional council, and district and city councils. During development of the next generation RPS a policy and method was included in the RPS to discourage the creation of reverse sensitivity:

- RPS: Policy AQ 1A: Discouraging reverse sensitivity associated with odours, chemicals and particulates by actively discouraging (a) locating new sensitive activities near activities that discharge offensive and objectionable odours, chemical emissions or particulates, and; (b) locating new activities that discharge offensive and objectionable odours, chemical emissions or particulates near sensitive areas

- RPS: Method 3: Resource consents, notices of requirement and when changing, varying, reviewing or replacing plans

The Plan Change gives effect to the RPS through objectives and policies to manage the adverse effects from air discharges beyond the boundary of the subject property, including for permitted activities. Policies AQ P1- AQ P4 in the Plan Change address sensitive activities and are assessed within relevant topic areas (refer Part 7 of this report). In particular AQ P4 lists the proximity of sensitive activities to the discharge as a matter requiring consideration.

No specific provisions are included regarding reverse sensitivity. Separation distances are not included in Plan Change but used as guidelines, in keeping with current practice.

2.6 Air quality issues

There are several air quality issues that are ongoing or have emerged since the current plan became operative in 2003.

To assist with use of this document the baseline for each issue is discussed at length in the appropriate topic areas of Part 7. A summary of each issue is presented here.

1. Open burning – permitted by Rule 5 of the current plan this source is the cause of about 25% of all complaints received by the Council each year. This represents an effect on amenity values and in some cases human health

2. Rotorua domestic burners – permitted by Rule 3 of the current plan these are the main source of wintertime pollution that is causing exceedances of the ambient air quality standard for particulates.

3. Agrichemical spraying – permitted by rules 10, 11, 12 and 13 of the current plan, spray drift and non-notification of spray operations are leading to an increase in complaints regarding agrichemical use.

4. Fuel burning equipment (boilers) – permitted by rules 3 and 4 of the current plan. The permitted activity threshold is high possibly leading to adverse effects.

5. Methyl bromide and fumigation – methyl bromide is currently a discretionary activity under Rule 19(z) of the plan and needs more specific policies and rules due to possible adverse effects and community concern.

6. Mount Maunganui area – there are several discharges of pollutants and hazardous substances in this area that need new or updated rules and policies to improve management.

7. General activities and listed discretionary activities – the plan needs “catch all” rules for activities not otherwise listed in the plan. Many commercial and industrial activities should also default automatically to discretionary to allow a more detailed assessment of adverse effects and additional controls through resource consents.

8. Remaining minor activities – activities with effects most likely no more than minor should be managed with rules designed to manage discharges with minimum of bureaucracy.

Part 3: Statutory and policy context

Part 3 provides a summary of the statutory requirements and policies relevant to the preparation of the Plan Change. It provides enough information for readers to understand the context regarding the Plan Change but it is not a detailed list of the requirements. [5]

3.1 Resource Management Act 1991

Full content of the relevant sections of the RMA discussed this report is provided in Appendix 3.

The RMA sets out requirements for managing the environment. It's based on the principle of sustainable management of natural and physical resources. This means resources managed in a way to provide for social, economic, cultural well-being, while managing adverse effects on the environment and ensuring resources will be available in the future.

The RMA describes council functions which include preparing regional plans to assist with controlling the discharge of contaminants into air, and establishing rules to allocate the capacity of air to assimilate a discharge of a contaminant.

These functions must be carried out in order to achieve the purpose, while recognising and providing for matters of national importance, having particular regard to other matters and taking into account the principles of the Treaty of Waitangi.

In addition, Deeds of Settlement and Settlement Legislation achieved with each iwi, regional councils are required to include statutory acknowledgments in relevant regional plans and policy statements, and to have regard to them in resource consent decision making.

The restrictions on the discharge of contaminants to air in sections 15, 15A and 15B state that:

- Discharges of contaminants into air from industrial or trade premises are not authorised by the RMA unless the discharge is expressly allowed by a national environmental standard or other regulation, a rule in a regional plan or a resource consent.

- Discharges from other sources (and in other areas), cannot contravene a national environmental standard or regional rule unless the discharge is expressly allowed by regulations, a resource consent or under s20A.

- Sections 15A and 15B provide restrictions on certain activities within the coastal marine area.

The RMA sets out a hierarchy of planning instruments including national, regional and local requirements, summarised in Figure 3.1. Provisions within these instruments must be considered in preparation of a plan change.

[5] For readers who do not have a working knowledge of the Resource Management Act 1991 (RMA), the Ministry for the Environment has prepared a series of pamphlets *An Everyday Guide to the RMA,* to help new users understand the legislation. These can be found at http://www.mfe.govt.nz/publications/rma/everyday-guide-rma-getting-act.

Figure 3.1: Hierarchy of planning instruments under the Resource Management Act 1991

The relevant planning instruments have been taken into account during preparation of this Plan Change.

3.1.1 National regulations and policies under the RMA

Regional plans must give effect to national policy statements (NPS), including the New Zealand Coastal Policy Statement and ensure that national environmental standards (NES) and regulations are met. Plans must also comply with any other national regulation made under the RMA.

The following national planning instruments have been consulted and objectives, policies and rules have been included in the Plan Change to give effect to national policies, and achieve national environmental standards:

- NES for Air Quality 2004 (NESAQ)
- NES for Sources of Drinking Water (2007) NES-SDW
- NES for Electricity Transmission Activities (2009) NES-ETA
- NES for Plantation Forestry 2017 NES-PF (which commences on 1 May 2018)
- NES for Assessing and Managing Contaminants in Soil to Protect Human Health (2011) NES for Contaminated Soil.
- NPS on Electricity Transmission (2008) NPS-ET

- New Zealand Coastal Policy Statement 2010 (NZCPS)
- NPS on Urban Development Capacity 2016 (NPS-UDC)
- Resource Management (Marine Pollution) Regulations 1998

Full details of the assessment and corresponding provisions are provided in Appendix 4.

3.1.2 Guidelines under the RMA

The Ambient Air Quality Guidelines 2002 (AAQGs) include health based values and guidance on how to use them to manage air quality under the RMA. The health based values are the minimum requirement that outdoor air quality should meet in order to protect human health and the environment.

Full details of the consideration of these guidelines are provided in Appendix 4.

3.1.3 Regional policies and plans

Bay of Plenty Regional Policy Statement (Operative 2014)

Under the RMA (s67(3)), a regional plan must give effect to the Operative Regional Policy Statement. Topic areas within the RPS are of particular relevance:

- Air quality.
- Coastal environment.
- Integrated resource management
- Iwi resource management.

Methods 2 and 3 of the RPS list specific policies of the RPS that must be given effect to when preparing regional plans.

Provisions in the Plan Change have been designed to give effect to the relevant provisions of the RPS. Details of this assessment are provided in Appendix 5.

Regional plans

The Bay of Plenty Regional Air Plan (the current plan) became operative in 2003 and was reviewed in 2013. The recommendation of the review was that the plan was replaced with a new plan. As noted above, the Council is currently in the process of amalgamating six of its plans into one Regional Natural Resources Plan and as such this matter has been promulgated as a plan change (Plan Change 13) to the Operative Regional Natural Resources Plan. Once the Plan Change is operative, the current air plan will be removed.

Section 67(4) requires a regional plan not to be inconsistent with any other (operative) regional plan for the region. A “regional plan” includes a regional coastal plan.

The Proposed Regional Coastal Environment Plan (the Coastal Plan) is currently in its final appeals process and will be operative in the very near future. Once it becomes operative, it will supersede the current Operative Regional Coastal Environment Plan. For this reason the Operative Regional Coastal Environment Plan has not been considered.

The Proposed Regional Coastal Environment Plan clearly states that it does not manage discharges of contaminants to air in the coastal marine area as these are addressed in the Regional Air Plan.

The Coastal Plan contains provisions regarding integrated management, iwi resource management, and the port zone that have been considered alongside this Plan Change. There are no inconsistencies.

The provisions have also been aligned with the current provisions of the Regional Natural Resources Plan with the addition of new clauses in AQ R3 and advice notes added where appropriate.

Protocol agreements

A number of co-governance/co-management arrangements have been established as a result of treaty settlement processes:

There is an Integrated Planning Protocol between Tūhoe Te Uru Taumatua, Bay of Plenty Regional Council, Hawke's Bay Regional Council, Wairoa District Council and Whakatane District Council. The purpose is to provide an integrated and consistent framework for all Council planning processes within the Ngāi Tūhoe rohe. It seeks to promote effective engagement and prevent misunderstandings around respective roles and statutory obligations. The protocol includes principles and expected levels of engagement.

This Protocol is of particular relevance to this Plan Change as it requires Council to carry out early communications and share a Draft Plan Change with Tūhoe Te Uru Taumatua for comment.

In this case, the Draft Plan Change was provided to Tūhoe Te Uru Taumatua in December 2016. During discussions at this meeting it became clear that Tuhoe have few if any air quality concerns, but will be kept informed of developments in the Plan Change.

Consultation with tangata whenua and consideration of Iwi Management Plans is discussed in further detail in Part 4.

3.2 Other acts

3.2.1 Ozone Layer Protection Act 1996, Ozone Layer Protection Regulations 1996

The Vienna Convention for the Protection of the Ozone Layer (the Convention) followed by the Montreal Protocol on Substances that Deplete the Ozone Layer (the Protocol) required use of methyl bromide to be phased out to zero by January 2015,

except for quarantine and pre-shipment application.[6] New Zealand ratified the Protocol in 1987.

This is regulated in New Zealand by the Ozone Layer Protection Act 1996 (OLPA) and the Ozone Layer Protection Regulations 1996 (OLPR). These regulations give effect to New Zealand's obligations under the Convention and the Protocol to phase out ozone depleting substances by January 2005 except for critical uses. Under these regulations the importation of methyl bromide is prohibited except for quarantine and pre-shipment purposes.

3.2.2 Hazardous Substances and New Organisms Act 1996

Previously regional and district councils had an explicit function to control the adverse effects of the storage, use, disposal or transportation of hazardous substances (s30, RMA).

Since then the Hazardous Substances and New Organisms Act 1996 (HSNO) was introduced and is administered by the Environmental Protection Authority (EPA). Manages the risks of hazardous substances to safeguard people and the environment. The additional RMA controls on hazardous substances duplicate or increase those in place under HSNO, which can be confusing for users of hazardous substances.

The Resource Legislation Amendment Act 2017 removed the control of hazardous substances as an explicit function of councils. This means councils no longer have an explicit obligation to regulate hazardous substances in RMA plans, or policy statements. Consequential changes have also been made to the HSNO Act and the HSW Act in light of this change.

The intent of this change is to remove the perception that councils must always place controls on hazardous substances under the RMA and to ensure councils only place additional controls on hazardous substances if they are necessary to control effects under the RMA that are not covered by other Acts.

In most cases the HSNO Act will be adequate to avoid, remedy or mitigate adverse environmental effects (including potential effects) of hazardous substances. However, Councils still have a broad function of achieving integrated management, and must still control discharges of contaminants into or onto land, air or water (s30(f)).

The discharge of agrichemicals to air may occur as spray drift which may cause adverse effects.

Spray drift is not controlled by other regulations as they focus on different aspects of hazardous substances. This regulatory gap is filled by provisions in regional plans to avoid, remedy or mitigate adverse effects of spray drift.

[6] United Nations Environment Programme (1989).

Part 4: Consultation process

Part 4 describes the development of the Plan Change, including consultation undertaken and how feedback from the community has shaped the Plan Change.

The Plan Change was initially developed as the Draft New Regional Air Plan - a stand-alone regional plan. The Council since decided to merge most of the regional plans into one plan – the Regional Natural Resources Plan as set out in Part 1.3 of this report.

During consultation, the Plan Change was referred to as the Draft New Regional Air Plan.

4.1 Overview of development process

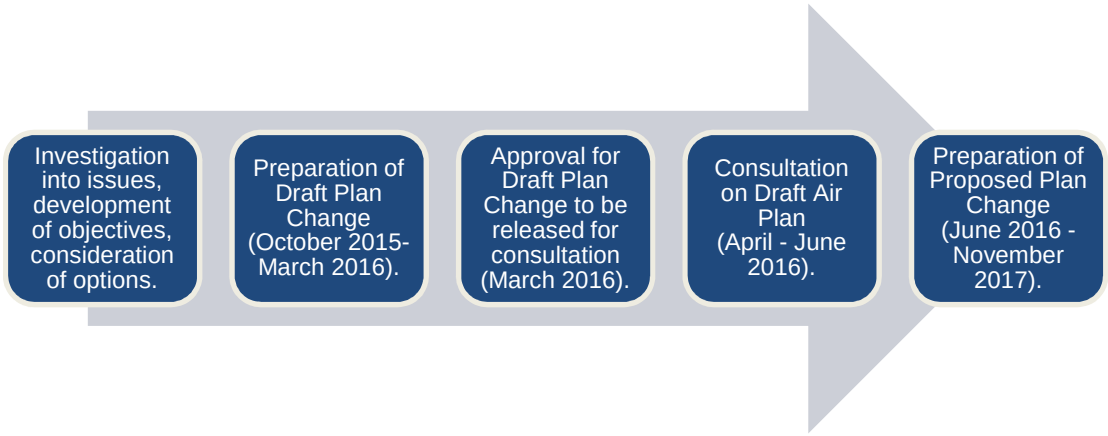


Figure 4.1 Overview of development process

4.1.1 Council committees

The Regional Direction and Delivery Committee (RDD) has a core function of policy formulation and implementation, and monitoring of Council strategy and policy. The committee meets every six weeks and are the 'decision-makers' in relation to the Plan Change.

Since February 2016 the RDD Committee has had two workshops to discuss options during development of the Plan Change. There have also been additional reports to RDD to discuss and confirm policy direction for the Plan Change, specifically concerning burner rules for the Rotorua Airshed and the regulatory approach for the Mount Maunganui area.

There have been a number of reports presented to the RDD Committee to obtain approval for policy direction and the draft plan content, summarised in the text box below.

Key Reference Documents
Regional Direction and Delivery Committee reports http://www.boprc.govt.nz/council/committees-and-meetings/regional-direction-and-delivery/ • 31 March 2016 to approve release of the Draft Plan for community feedback. • 9 August 2016 to discuss feedback on Draft Plan and approve new timeframes.

Key Reference Documents
• 11 August 2017 to approve regulatory approach for Mount Maunganui area • 11 October 2017 to discuss further options for Rotorua burner rules • 30 November 2017 approval to publicly notify Proposed Plan Change 13.

4.1.2 Rotorua Air Quality Working Party

The Rotorua Air Quality Working Party was first formed in 2006 as a community group made up of key stakeholders. The purpose of the group was to develop an action plan to address the exceedances of PM_{10} in the Rotorua Airshed. Once the Rotorua Air Quality Action Plan was adopted in 2008, the original working party was disestablished.

In early 2009 the Rotorua Air Quality Joint Committee was set up including elected members from the Council, the Rotorua District Council, the Ministry for the Environment and the District Health Board. The Joint Committee discussed options and funding for reducing discharges from domestic woodburners. The Rotorua Air Quality Control Bylaw was developed and adopted in December 2010 by Rotorua District Council under guidance and endorsement of the Joint Committee. The Joint Committee was disestablished in early 2011.

The Rotorua Air Quality Working Party was re-established in May 2015 made up of elected members from the Council and the Rotorua Lakes Council, as well as a representative from the Ministry for the Environment and the Medical Officer of Health. This group is not a formal joint committee and has no delegated authority under either council. However, the group meets every few months to discuss ongoing implementation of the Rotorua Air Quality Action Plan, the development of the regional rules to control Rotorua burners (included in this Plan Change) and the Rotorua Air Quality Control Bylaw (see section 7.5 for discussion of the Bylaw development process).

Key Reference Documents
• 13 October 2015 – Report to members on draft Rotorua burner rules. Approval from members to proceed with draft rules. • 4 March 2016 – Report to members - Updated draft Rotorua burner rules following new technology development. Approval from members to proceed with the amended draft rules. • 6 July 2016 – Report to members - Initial Feedback on Draft New Regional Air Plan • 01 August 2016 – Report to members - Feedback on Draft New Regional Air Plan • 27 February 2017 (rescheduled 06 March 2017) – Report to members – Update on Rotorua Burner Rules amended following public feedback on draft plan. Endorsement for amended draft rules. • 27 February 2017 (rescheduled 06 March 2017) - Report to members – Options for Rotorua Air Quality Bylaw • 19 April 2017 – Report to members - Endorsement of Draft Rotorua Air Quality Control Bylaw • 16 August 2017 – Report to members - Further Options for Rotorua Air Quality Control Bylaw

4.2 Taking into account iwi management plans

An Iwi Management Plan (IMP) is a term commonly applied to a resource management plan prepared and recognised by one or more iwi or hapū authority. These plans describe resource management issues of importance to them as kaitiaki within their area of interest. The plans may also contain information relating to specific cultural values, historical accounts, descriptions of areas of interest (hapū/iwi boundaries or rohe) and consultation and engagement protocols for resource consents and/or plan changes. Council must take into account any relevant planning document recognised by an iwi authority when preparing its plan change (s66(2A)(a) RMA).

IMPs provide a mechanism for tāngata whenua interests to be considered in Council processes. There are specific legislative requirements which place a duty on Council staff to take these plans into account. In practice, Councils must balance a number of competing interests including IMPs.

In preparing this Plan Change, IMPs were reviewed to:

- identify and understand the expectations of iwi and hapū with regards to natural resource management, in particular, air quality
- inform engagement with Iwi and hapū about the Plan Change.

Of the 38 IMPs lodged with the Council, 22 contained provisions directly relevant to the Plan Change.

Key issues include:

- Horticultural and agrichemical sprays
- Industrial discharges
- Domestic fires
- Burning of waste
- Odour and dust
- Methyl bromide

Table 4.1 summarises the key air quality issues and policies and how they are addressed by the provisions in the Plan Change.

In addition to the actions taken as detailed in the table, the Plan Change also requires air discharges to be managed according to the effects on cultural values (AQ O3). Air discharges must be managed to minimise the discharge of contaminants beyond the boundary where it may cause adverse effects on cultural values (AQ P3) and plan users must have particular regard to the effect of a discharge on cultural values and any effects on air quality values identified in an IMP (AQ P4).

Table 4.1: Summary of assessment of Iwi Management Plans

Iwi Management Plan	Issues and Policies	Response and remedy
Mauao		
Matakana and Rangiwaea Islands Hapu Management Plan (2012, updated 2017) Te Whanau a Tauwhao, Te Ngare, Ngāi Tamawhariua, Ngāti Tauaiti, Ngāi Tuwhiwhia	*Issue* • Commercial use of herbicides and insecticides.	Agrichemical spray drift is identified as a key issue for air quality in the region. Provisions in the Plan Change require spray drift to be avoided in the first instance, and remedied or mitigated otherwise. The notification requirement for agrichemical spray has been increased in the Plan Change and additional consideration of sensitive activities is required.
Motiti Island Native Resource Management Plan (2011 revised 2012) Ngāti Te Hapu & Korowai Kāhui o Te Patuwai Tribal Council	*Issues* • Indigenous flora and fauna, have been significantly compromised by contamination from discharges to air, land and water. • Management systems have resulted in inadequate performance standards and monitoring regimes being applied to resource users and waste generators. • Discharge related to toxic sprays has adverse effects. • Discharges related to the burning of wastes have adverse effects. • Health impact of toxic (horticultural) sprays *Provisions* • Requiring that all proposals for earthworks or the disturbance of landforms assess the impact of dust and other air-borne contaminates on health, mahi kai, indigenous flora and fauna and waahi tapu and taonga. • Require that all applications for air discharge consents assess the impact of the discharge on	Agrichemical spray drift is identified as a key issue for air quality in the region. Provisions in the Plan Change require spray drift to be avoided in the first instance, and remedied or mitigated otherwise. The notification requirement for agrichemical spray has been increased in the Plan Change and additional consideration of sensitive activities is required. The Plan Change links earthworks rules from other chapters of the RNRP to ensure earthworks at a scale to cause potential air discharges are consented. Smaller earthworks must not cause adverse effects beyond the boundary.

Iwi Management Plan	Issues and Policies	Response and remedy
	health, mahi kai, indigenous flora and fauna	
Motiti Island Native/Cultural Policy Management & Administration Plan (2011 revised 2012) Ngāti Te Hapu & Korowai Kāhui o Te Patuwai Tribal Council	*Issues* As above Provisions • That the earthworks must not be left in a barren state that may cause dust pollution. • Applications to discharge pesticides and herbicides: - must meet management guidelines under health and Safety Act. - must provide a full list of chemicals / fertilisers for the intended purpose and methods of application. - must provide a wash down facility for all equipment that are monitored at six month intervals. - must not impact on flora and fauna around waterways and foreshore. - must inform residents to isolate and disconnect all water catchments including roofs 24 hour before discharge. - must not discharge pesticides and herbicides in winds of more than 5 knots. - must not impact on mahi kai areas on land and sea. - must not operate within 300 metres of residential homes that may impact on health and safety of the residents or 100m of designated waters and foreshore (the latter relating to aerial discharge of fertilisers). - aerial discharge of pesticides and herbicides is prohibited	Agrichemical spray drift is identified as a key issue for air quality in the region. Provisions in the Plan Change require spray drift to be avoided in the first instance, and remedied or mitigated otherwise. The notification requirement for agrichemical spray has been increased in the Plan Change and additional consideration of sensitive activities is required.

Iwi Management Plan	Issues and Policies	Response and remedy
Ngāi Te Ahi Hapu Management Plan (2013) Ngāi Te Ahi	*Issue* • Ensure the Waimapu industrial area does not impact the marae and whanau living in this area – although not currently an issue due to distance.	Most industrial discharges to air require resource consent which allows for consideration of potentially affected parties and conditions that minimises any discharges beyond the boundary.
Ngāi Tamawhariua Hapu Management Plan (2015) Ngāi Tamawhariua	*Issues* • We want to be notified when any spraying of fertilisers, or poisons are being applied in our rohe. Especially around our waterways, rivers, streams. • Concerns that the Claymark Sawmill could potentially be releasing toxins into the air which hover directly over the flatlands and river of Te Rereatukahia River	Agrichemical sprayers must notify nearby properties before spraying Potential breaches of consent conditions are outside the scope of the plan
Ngāti Pūkenga Iwi ki Tauranga Trust Iwi Management Plan (2013) Ngāti Pūkenga Iwi ki Tauranga Trust	*Issues* • Pollution from: (1) Sprays, poisons, other hazardous substances and (2) Chimney smoke - Consultation requirements for renewals and new consent applications. - Monitoring role to ensure consent conditions are followed.	General issues around pollution addressed by provisions in Plan Change where adverse effects of discharges to air must be avoided, remedied or mitigated beyond the property boundary.
Ngāti Tapu Ngāi Tukairangi Hapū Management Plan (2014) Ngāti Tapu and Ngāi Tukairangi	*Issues* • Horticulture: - That all horticultural regulations are followed to ensure environmental sustainability. - That suitable buffer zones exist where any spraying or application of toxic material does exist - to protect the health of the neighbouring community.	Agrichemical spray drift is identified as a key issue for air quality in the region. Provisions in the Plan Change require spray drift to be avoided in the first instance, and remedied or mitigated otherwise. The notification requirement for agrichemical spray has been increased in the Plan Change and additional consideration of sensitive activities is required. Signage is also required.

Iwi Management Plan	Issues and Policies	Response and remedy
	- That appropriate signage is always displayed where spraying does occur. - Ensure that pesticide use is consistent with aspirations by community to be more environmentally friendly. • Te Rangi (air, sky and cosmos): Our hapu aims to become more involved in the decision making that impact on our airspace. Specifically noise, chemical and aesthetic pollution. • Hapu are involved in the process as a Treaty partner for the allocation or use of airspace within our rohe	
Pirirakau Hapu Management Plan (2017) Pirirakau Hapū	• Pirirakau regard the nature of air as a natural resource and therefore taonga. • Human health effects associated with use of agrichemicals.	Agrichemical spray drift is identified as a key issue for air quality in the region. Provisions in the Plan Change require spray drift to be avoided in the first instance, and remedied or mitigated otherwise.
Tapuika Environmental Management Plan (2014) Tapuika Iwi Authority	*Issues* • The effect of discharges from the Affco Rangiuru rendering plant on people suffering from asthma, bronchitis, and other respiratory conditions. • Odour nuisance, at times, from the Affco Rangiuru rendering plant and wastewater treatment facility. • The health effect of spray drift from agricultural and horticultural sprays (e.g. fertilisers, pesticides, Hi-Cane®) near marae, kohanga reo, kura kaupapa facilities and homes. *Provisions* • Ensure that: - Contaminant levels from industrial air discharges are reduced to minimise health	Agrichemical spray drift is identified as a key issue for air quality in the region. Provisions in the Plan Change require spray drift to be avoided in the first instance, and remedied or mitigated otherwise. The notification requirement for agrichemical spray has been increased in the Plan Change and additional consideration of sensitive activities is required. Most industrial discharges to air require resource consent which allows for consideration of potentially affected parties and conditions that minimises any discharges beyond the boundary. A policy in the Plan Change requires plan users to have particular regard to IMPs. Provisions in the Plan Change require adverse effects of discharges to air to be avoided,

Iwi Management Plan	Issues and Policies	Response and remedy
	effects. - Agricultural or horticultural sprays are not discharged within 100 metres of a marae, kohanga reo, kura kaupapa or homes. • Agricultural and horticultural industry to ensure Best Management Practices are adopted regarding the use of agricultural and horticultural sprays. • Tapuika is an affected party to any consent application to discharge contaminants to air.	remedied or mitigated beyond the property boundary.
Tauranga Moana Iwi Management Plan (2016) Ngāi Te Rangi, Ngāti Ranginui and Ngāti Pukenga *This Plan supersedes the Te Awanui Tauranga Harbour Iwi Management Plan 2008*	*Issues* • Impact of land use activities on the health of air, health, wellbeing and a way of life. Land uses and activities include: - Use of chemical sprays and fertilisers. - Industrial, agricultural and horticultural discharges to land, air and water. • Concerns about the use of methyl bromide: - There is a preference for the use of methyl bromide to be prohibited for the health of the environment, the community and staff involved in fumigation processes. - A Safe Practice Plan as well as Emergency Procedures must be in place for the use of methyl bromide. - Stringent monitoring is carried out to prevent any occurrences of harmful chemical releases into Te Awanui. *Policies* • Manage the effects of rural and urban air discharges on the health and wellbeing of our people: - A review of air discharge rules, in	Agrichemical spray drift is identified as a key issue for air quality in the region. Provisions in the Plan Change require spray drift to be avoided in the first instance, and remedied or mitigated otherwise. The notification requirement for agrichemical spray has been increased in the Plan Change and additional consideration of sensitive activities is required. The use of methyl bromide is non-complying in the Plan Change unless recaptured, and any other fumigant use requires a consent as a discretionary activity.

Iwi Management Plan	Issues and Policies	Response and remedy
	particular buffer distances from marae, papakainga, kura kaupapa, kohanga reo or dwelling. • Involvement of Iwi and hapu in resource consent processes for industrial air discharges close to marae, papakainga, kura kaupapa or kohanga reo.	
Te Awanui Tauranga Harbour Iwi Management Plan (2008) Ngāi Te Rangi, Ngāti Ranginui and Ngāti Pukenga	• Prohibit the use of methyl bromide, for the health of the environment, the community and the staff involved in fumigation processes. • In the event that methyl bromide is used at the Port of Tauranga that safe methods of control are used to prevent any release of this toxic substance into the air or water. A Safe Practice Plan and an Emergency Procedures Plan is required for any use of this substance. An approved handler must be applied during any use of methyl bromide.	The use of methyl bromide is non-complying in the Plan Change unless recaptured, and any other fumigant use is discretionary.
Te Awaroa Ngāti Kahu Hapu Environmental Management Plan (2011) Te Runanga o Ngāti Kahu	• Health impacts of poor air quality	Provisions in the Plan Change require adverse effects of discharges to air to be avoided, remedied or mitigated beyond the property boundary. Health impacts in particular are to be avoided.
Te Mana Taiao O Ngāi Tamarawaho Hapu Management Plan (2014) Ngāi Tamarawaho	• Health impacts from harmful pollutants. • There should be no discharge to air that does not meet necessary and all options should be explored to avoid, mitigate or remedy any such discharges. • Dust caused by building or road construction. • Ngāi Tamarawaho expects to be consulted in all cases where a proposal or development anywhere within its rohe seeks to make discharges to air.	Provisions in the Plan Change require adverse effects of discharges to air to be avoided, remedied or mitigated beyond the property boundary. Health impacts in particular are to be avoided.

Iwi Management Plan	Issues and Policies	Response and remedy
Te Whatu: Ngāiterangi Natural Resources Environment Management Manual (2002-2008) Ngāiterangi Iwi Inc. Society	*Issues* • Odour and dust	Provisions in the Plan Change require adverse effects of discharges to air to be avoided, remedied or mitigated beyond the property boundary.
Waitaha Iwi Management Plan (2014) Te Kapu o Waitaha	*Issues* • Pollution from local/neighbouring orchards – excessive chemical use (pesticides). • Air pollution as a result of intensive urban developments. • We want to be appropriately notified prior to any spraying of pesticides or chemicals being applied in our rohe.	Agrichemical spray drift is identified as a key issue for air quality in the region. Provisions in the Plan Change require spray drift to be avoided in the first instance, and remedied or mitigated otherwise. The notification requirement for agrichemical spray has been increased in the Plan Change and additional consideration of sensitive activities is required. Air pollution in urban areas includes backyard burning of rubbish which is no longer permitted under this Plan Change.
Whaia te Mahere Taiao o Hauraki: Hauraki Iwi Environmental Plan (2004) Hauraki	*Issues* • Air pollution – industrial, domestic and outdoor fires as well as vehicle emissions and agrichemical sprays.	Agrichemical spray drift is identified as a key issue for air quality in the region. Provisions in the Plan Change require spray drift to be avoided in the first instance, and remedied or mitigated otherwise. The notification requirement for agrichemical spray has been increased in the Plan Change and additional consideration of sensitive activities is required. Air pollution in urban areas includes backyard burning of rubbish which is no longer permitted under this Plan Change. Most industrial discharges to air require resource consent which allows for consideration of potentially affected parties and conditions that minimises any discharges beyond the boundary.

Iwi Management Plan	Issues and Policies	Response and remedy
Kohi		
Ngāi Tai Iwi Management Plan Revised Edition 1999 (lodged 2008) Ngāi Tai Iwi Authority	*Issues* • Protection of sites of significance from odour and visual pollutants. • Contamination from Natural and unnatural gases that will adversely affect the health and wellbeing of all living things *Provisions* • Ngaitai will develop the involvement of iwi in the management and protection of the air resource • Ngaitai will promote the development and use of safe air practices	Provisions in the Plan Change require adverse effects of discharges to air to be avoided, remedied or mitigated beyond the property boundary.
Ngāti Umutahi Whenua Management Plan (2005) Ngāti Umutahi	*Issues* • The Iwi will protect sites of significance from noise, odour, and visual pollutants. • Contamination from Natural and unnatural gases that will adversely affect the health and wellbeing of all living things. *Policies* • The Iwi want active involvement in the management and protection of the air resource. • The Iwi will promote the development and use of safe air practices.	Provisions in the Plan Change require adverse effects of discharges to air to be avoided, remedied or mitigated beyond the property boundary.
Ngāti Whare Iwi Management Plan (2011) Ngāti Whare	*Issue* • Discharges of airborne contaminants from commercial activities *Provisions* • Our standard position is that we must be	Provisions in the Plan Change require adverse effects of discharges to air to be avoided, remedied or mitigated beyond the property boundary. Agrichemical spray drift is identified as a key issue for air quality in the region. Provisions in the

Iwi Management Plan	Issues and Policies	Response and remedy
	consulted at the start – and be involved in discussions on any consent renewals and new applications. • We want a monitoring role to ensure consent conditions are followed – such as ensuring neighbours are notified before spraying – and steps taken to prevent spray drift.	Plan Change require spray drift to be avoided in the first instance, and remedied or mitigated otherwise. The notification requirement for agrichemical spray has been increased in the Plan Change and additional consideration of sensitive activities is required.
Te Mahere ā Rohe mō Ngāti Rangitihi / Ngāti Rangitihi Iwi Environmental Management Plan (2011) Ngāti Rangitihi	*Issue* Air pollution can diminish the quality of experience in the natural environment in particular places of significance, customary resource areas, water bodies and residences. *Provisions* • Objective (unnumbered) - Avoid the permanent and long-term sources of air pollution including noise that affect the social and cultural well-being of Ngāti Rangitihi residents and places important to Ngāti Rangitihi. • Policy (unnumbered) - Ngāti Rangitihi are particularly sensitive to noise pollution, chemical vapours, odours and smoke at Rangiaohia marae, Matata residential areas, Tarawera lakes, Tarawera River and places of significance	Provisions in the Plan Change require adverse effects of discharges to air to be avoided, remedied or mitigated beyond the property boundary.
Okurei		
Ngāti Rangiwewehi Iwi Environmental Management Plan (2012) Te Maru O Ngāti Rangiwewehi Iwi Authority, Rotorua/Awahou	*Issues* • Industrial or trade discharges from premises adversely affect local and ambient air quality and can affect papakainga and mahinga kai. • Adverse effects of agrochemical spray drift on human health and surrounding lands.	Provisions in the Plan Change require adverse effects of discharges to air to be avoided, remedied or mitigated beyond the property boundary. Agrichemical spray drift is identified as a key issue for air quality in the region. Provisions in the

Iwi Management Plan	Issues and Policies	Response and remedy
	• Adverse impacts of air pollution on wahi tapu, significant sites and buildings etc • Adverse effects of emissions from industrial or commercial activities. Poor understanding and recognition of cultural impacts of air pollution and discharges. *Provisions* • All earthworks and discharges to air are required consider the impact of dust and other airborne contaminants on health, Mahinga kai, cultural landscapes, indigenous flora and fauna, wahi tapu and Taonga. • Early consultation with Ngati Rangiwewehi in any proposed air research developments is encouraged. • A Cultural Assessment for any discharges to air, including agrochemical be required. • Clean forms of domestic heating are promoted. • Discharges to air near Mahinga kai, Rongoa sites or Waahi tapu be discouraged. • Burning of vegetation within, next to, or impacting on wahi tapu be discouraged.	Plan Change require spray drift to be avoided in the first instance, and remedied or mitigated otherwise. The notification requirement for agrichemical spray has been increased in the Plan Change and additional consideration of sensitive activities is required. Most industrial discharges to air require resource consent which allows for consideration of potentially affected parties and conditions that minimises any discharges beyond the boundary. Domestic heating is identified as an air quality issue in Rotorua with several policies phasing out inefficient forms of home heating using solid fuel. The Plan Change links earthworks rules from other chapters of the RNRP to ensure earthworks at a scale to cause potential air discharges are consented. Smaller earthworks must not cause adverse effects beyond the boundary.
Te Rautaki Taiao a Raukawa – Raukawa Environmental Management Plan (2015) Ngāti Raukawa	*Issues* • Use of inefficient heating methods and wet wood is adversely affecting air quality. • Poor air quality is linked to respiratory illness in our communities. • Policy, control, and regulation of air quality lies with government agencies, and there is little access or involvement by Raukawa. • The wider effects of air quality on plants, animals, water, and soil such as the settling of air borne contaminants on mahinga kai.	Domestic heating is identified as an air quality issue in Rotorua with several policies phasing out inefficient forms of home heating using solid fuel. Provisions in the Plan Change require adverse effects of discharges to air to be avoided, remedied or mitigated beyond the property boundary.

Iwi Management Plan	Issues and Policies	Response and remedy
	• The adverse effects of incompatible land practices/ uses (e.g. spreading whey near marae/papakāinga). • The visual effects of plumes upon our cultural landscape values.	

4.3 Consultation

4.3.1 Overview

Schedule 1, Clause 3(1) of the RMA requires that councils must consult with the following parties in preparing a proposed policy statement or plan:

(a) the Minister for the Environment; and

(b) those other Ministers of the Crown who may be affected by the policy statement or plan; and

(c) local authorities who may be so affected; and

(d) the tāngata whenua of the area who may be so affected, through iwi authorities; and

(e) any customary marine title group in the area.

To meet these requirements, copies of the Draft Plan Change were sent to all parties listed above.

As part of the Plan Change manages activities in the coastal marine area, these sections are effectively regional coastal plan provisions. Schedule 1, Clause 2(1) of the RMA requires councils to prepare a proposed regional coastal plan in consultation with:

(a) The Minister of Conservation; and

(b) Iwi authorities of the region; and

(c) Any customary marine title group in the region.

Copies of the Draft Plan Change were sent to the Minister of Conservation and iwi authorities. There are currently no customary marine title groups in the Bay of Plenty region.

Section 4.3.5 discusses tāngata whenua engagement. It is noted that there are currently no Mana Whakahono a Rohe in place

4.3.2 Draft Plan Change consultation

Early engagement and consultation is a useful means of seeking informal feedback, particularly on contentious provisions. The Draft Plan Change was publicly released on 26 April 2016 until 17 June 2016. The purpose was to obtain feedback from those affected and the wider community. Table 4.2 provides a summary of the engagement process.

Written feedback was received from 81 organisations and individuals and summarised into a report “Draft New Regional Air Plan – Summary of feedback”.

Table 4.2 Community consultation summary

Engagement period	26 April 2016 – 17 June 2016
Dissemination of information	Through letters, emails, media releases and a dedicated webpage. • Letters sent directly to approximately 1,000 statutory organisations (including territorial local authorities and central government agencies); iwi authorities and other people or organisations identified by the Māori Policy Team and other interested parties. The letters included information about the project (fact sheets), public meeting details and referred to the Councils website for more information. • Letters sent to approximately 7,000 households in Rotorua with solid fuel burners informing them of draft Plan Change and rules. • A special air quality Plan Change webpage was created and is referred to in all printed documents. The webpage included all printed materials, meeting dates and contact details.
Engagement materials	• Four summary sheets available online and at workshops and open days: - Factsheet – an overview of issues and process. - Summary of provisions – summary of polices, methods and rules in draft plan. - Rules summary – flow chart of draft rules. - Development process – diagram showing plan development process and current stage. • The Draft Plan Change (at that stage titled the Draft New Regional Air Plan). • The Draft New Regional Air Plan Discussion Document containing a detailed discussion of issues and possible solutions • All supporting / technical documents were available on a dedicated Draft Plan Change webpage) www.boprc.govt.nz/knowledge-centre/plans/regional-air-plan/second-generation-regional-air-plan/
Methods of engagement	Three workshops were held – one in each of the main centres (Tauranga, Rotorua, Whakatāne) which included presentations and discussions with attendees A corresponding open day and evening held at each centre with one on one discussions with attendees Presentations and discussions were held with interested parties on request.
Challenges with engagement	Ensuring: • Effective distribution of information about the Draft Plan Change • Tangata whenua engagement on air quality

Several workshops, meetings and open days were held to discuss the Draft Plan Change. Table 4.3 lists the meetings and presentations held over the engagement period.

Table 4.3: Meetings over the engagement period

Meeting date 2016	Type and location of meeting
19 May 2016	Western Bay/Tauranga Instep Young Leaders Forum – summary of plan and discussion of implications
20 May 2016	Rotorua Workshop attended by stakeholders and general public – detailed explanation of plan focused of issues relevant to Rotorua and assessment of options
23 May 2016	Rotorua Open Day – staff available for general public enquiries on draft plan
27 May 2016	Tauranga Workshop attended by stakeholders and general public – detailed explanation of plan focused of issues relevant to Tauranga and assessment of options
30 May 2016	Tauranga Open Day – staff available for general public enquiries on draft plan
2 June 2016	Whakatane Workshop attended by stakeholders and general public – detailed explanation of plan focused of issues relevant to Whakatane and assessment of options
3 June 2016	Whakatane Open Day – staff available for general public enquiries on draft plan
7 June 2016	Discussion with Rotorua members of New Zealand Home Heating Association (NZHHA)
15, 16, 17 July 2016	Seminars on Rotorua Burner Rules presented to general public at Rotorua Home and Leisure Show

4.3.3 Key themes from engagement

A feedback form was developed and sent or provided with every copy of the Draft Plan Change. Feedback was provided via several different methods including telephone, email, in person, via workshop feedback. A total of 81 pieces of written feedback were received, in addition to feedback from approximately 50 others via workshops, open days or discussions.

The Council produce the Draft New Regional Air Plan – Summary of Feedback report. The key themes were:

- Definitions of terms – Commenters had various issues with several key definitions needing more clarity or being inconsistent with other legislation or plans.
- The draft plan took the NESAQ into account but did not mention other relevant NESs or NPSs.
- Duplication between some definitions, objectives, policies, and rules.
- Some polices were more like methods.
- Specific issues with provisions (discussed in Table 4.4).

The changes made as a result of feedback are summarised in Table 4.4. Note that this table summarises changes made following feedback. Once further analysis was carried out according to the s32 process, further changes were made that are not reflected here.

Table 4.4: Summary of changes made as a result of community feedback

Topic area	Outcome
Overall plan	• Further introduction needed to explain context of plan, related legislation (e.g. NESs) and discussion of issues. Resolved through extending introduction (in consequential changes) to provide more detail on relevant legislation and sections of the RMA. • No consideration of NESs (besides NESAQ) and NPSs. Resolved through the inclusion of relevant provisions particularly regarding abrasive blasting of pylons as provided for in the NES-ETA. • Some duplication between provisions. Resolved by removing duplication where appropriate. • Some policies read more like methods. Resolved through removal of those policies.
Definition of Terms.	Key definitions were amended as a result: • Agrichemical – made consistent with definition in the existing RNRP. • Commercial – definition was considered too broad. Plan amended to ensure definition captured only those operations it was intended to capture. • Harmful concentrations and harmful effects – definitions replaced with “noxious, dangerous, offensive and objectionable” to be consistent with terms in RMA reduce duplication, include appropriate objective thresholds, and exclude subjective thresholds.
Use of the word “avoid” or “protect”.	• Objectives, policies and rules used the term “avoid” or “protect”. Considered by many commenters to be too high a threshold and impossible to comply with while carrying out any discharge activity. The term changed either to “avoid significant” or to “minimise” where appropriate.
Open burning Definition for “rural burning”	• Definition of rural burning not suitable. Has been resolved through defining “urban property”.
Rotorua burner rules	• Concern with limiting replacement burners to ultra-low emissions burners only. Rule amended to include low emission woodburners.
Use of agrichemicals	• Issues with definitions of terms. Resolved as detailed above. • Certification – “equivalent options” does not provide enough certainty for plan users. Certification requirements have been removed for other reasons discussed in section 3.2.2 of this report. • Notification radius (buffer distance) – concern that the radius for aerial application had increased significantly to 300m from 200m. Resolved by changing radius to 200m. • Notification – concern that 12 hours notification is not sufficient. Resolved by increasing notification window to

Topic area	Outcome
	24 hours.
Abrasive blasting	• Abrasive blasting in the draft plan was listed as a discretionary activity. This could capture many smaller operations that have little adverse effect. Resolved through further research and including a permitted activity for abrasive blasting.
Intensive farming	• The draft plan removed the controlled activity status of pre-existing intensive farms and this will have an impact on some farms ability to continue business. Resolved by including a controlled activity rule.
Existing crematoria	• Crematoria are listed as discretionary in the draft plan, but no allowance for existing crematoria. Resolved by amending rule to apply only to new crematoria
Existing boilers	• Thresholds for new permitted boilers were lowered in the draft plan, but no rule to permit existing boilers. Rule amended to allow for existing boilers permitted by current plan.

Key Reference Documents
Draft New Regional Air Plan – Summary of Feedback Objective ref: A2393251

4.3.4 Further engagement

Following consultation substantial changes were made to provisions for managing Rotorua burners, agrichemical spraying and separation distances. These provisions were sent to key stakeholders for further comment, and changes made where appropriate.

The Tauranga Moana Fumigant Action Group formed in May 2017 following the Envirofume application to discharge methyl bromide at the Port of Tauranga. As this was following the consultation process of the draft air plan, there had been no opportunity to consult with this group on draft provisions.

Draft provisions and definitions relating to the management of methyl bromide and other fumigants were emailed to members of the group for comment. This feedback was incorporated into the provisions and relevant definitions.

4.3.5 Engagement with Māori

Section 8 of the RMA requires Council to take into account the principles of te Tiriti o Waitangi when carrying out its functions in relation to managing the use, development and protection of natural resources. Engagement with Māori has been carried out taking into account the principles of active protection, mutual benefit, equity, and equal treatment.

The RPS requires Council to work with iwi and hapū to identify and reflect tāngata whenua values and interests, and decision-making. This has been carried out with consultation on the draft plan, and will continue throughout the Plan Change notified process.

In consulting with Māori through iwi authorities when preparing a proposed policy statement or plan, Schedule 1, Clause 3B of the RMA states that Council will have consulted with iwi if Council:

(a) Considers ways in which it may foster the development of iwi/hapū capacity to respond to an invitation to consult;

(b) Establishes and maintains processes to provide opportunities for iwi authorities to consult it;

(c) Consults with iwi authorities;

(d) Enables iwi authorities to identify resource management issues of concern to them; and

(e) Indicates how identified issues have been or will be addressed.

During the consultation period there was little feedback from iwi and hapū authorities and few detailed provisions in IMPs. Consultation went wider than these authorities. It also used an adaptive approach, using different consultation methods as appropriate, including presentations and discussions with iwi groups and sub-regional hui. These hui are listed in Table 4.5.

Table 4.5: Iwi and hapū consultation

Meeting date	Type and location of meeting
26 July 2016	Presentation to Ngāi Te Rangi kaitiaki meeting
7 September 2016	Presentation to SmartGrowth Tangata Whenua Collective
19 September 2016	Discussion with representative from Ngāti Tūwharetoa Holdings Limited
20 September 2016	Sub-regional hui Tauranga/Mauao
12 October 2016	Sub-regional hui Rotorua/Okurei
29 November 2016	Presentation to Ōpōtiki Coast Community Board Meeting
6 December 2016	Discussion with Ngāi Tūhoe
12 December 2016	Presentation to Whakatāne District Council Iwi Chairs Forum
24 October 2017	Presentation and discussion with Ngai Te Rangi iwi/hapū, Tauranga
26 October 2017	Discussion with Hurungaterangi Marae, Ngapuna

Air quality concerns varied depending on the sub-region. Key issues for each constituency are listed in Table 4.6 along with a summary of advice received and the response to the advice (as required by s32(4A)).

Table 4.6: Iwi and hapū air quality concerns for Maori constituencies

Constituency	Issue	Response and remedy
Mauao (Tauranga/Western Bay)	Objective 1 "protecting the mauri of air" is supported as it gives Māori the power to determine what mauri is. It can be interpreted as having respect for the domain of kaitiaki.	Reference to mauri in AQ O1 retained
	The plan needs to start off as protective as possible, with "avoid", rather than "remedy" or "mitigate". Attendees of this meeting find that during submissions process the provisions are weakened to "remedy" or "mitigate". Better to start as strong as possible and it is up to submitters to demonstrate why they shouldn't have to avoid, rather than iwi and hapū having to demonstrate why avoidance is needed.	Requirements to "avoid" and "protect" retained in Plan Change.
	Use of the word "reduce" – better to use the word "avoid".	"Reduce" changed to "avoid"
	Discussion on the cultural impact of crematoria – support for discretionary activity.	Requirement for consents for new crematoria retained
	Significant issues from sulphur dioxide (SO_2) emissions at Mount Maunganui. Mismatch between best management practice/resource consent conditions and national environmental standards. Even when consent conditions are met, there are still exceedances of SO_2 standard.	Requirements for consents for discharges of SO_2 retained. AQ O2 requires the NESAQ ambient air quality limits to be met. AQ P3 and P4 requires discharges to avoid discharges to air where the ambient standards may be breached. Other implementation actions taken not part of Plan Change eg additional monitoring, enforcement of consent conditions, consent reviews.
Ōkurei (Rotorua)	Perception of unfairness for locals, an ever increasing burden of regulation. Unfair to target home heating while ongoing issues from industry.	Other implementation actions taken not part of Plan Change eg enforcement of consent conditions, investigation of dust sources in the area, investigation of additional monitor, dust management plans for sites in the area.
	Open burning - it happens in Ngāpuna due to high landfill costs.	Recently seen significant change in Rotorua's waste collection with kerbside recycling and wheelie bins. There should be no further need to burn rubbish in backyards.

Constituency	Issue	Response and remedy
	Fires have a traditional role for Maori (Ahi Kā)	Fires are still permitted for recreational use and for home heating (provided burners in Rotorua are modern burners)
	Some inclusion of Te Reo would tell more a story for Māori	Headings of objectives, policies and rules included in Te Reo
Kōhī (Eastern Bay)	Open burning	Urban open burning except for recreational, is banned
	Traditional practices such as hangi.	Hangi still permitted under Plan Change

Part 5: The Section 32 evaluation process

5.1 Overview

Section 32 of the RMA seeks to ensure transparent and robust decision-making on Council RMA plans and policy statements. For this reason, Section 32 of the RMA requires:

- An evaluation of the **appropriateness** of the objectives in achieving the purpose of the RMA s32(1)(a).
- An evaluation of the benefits and costs of the Plan Change, and risks of new policies and methods on the community, the economy and the environment (s32(1)(b)(ii)). This includes assessing:
    - Alternative options.
    - **Effectiveness** i.e. achieving or partly achieving the objective.
    - **Efficiency** i.e. benefits and costs of the option.
    - Justification where a provision imposes a greater restriction than a national environmental standard.
- The evaluation to be documented, so that stakeholders and decision-makers can understand the rationale for policy choices.

5.2 Scale and significance

Section 32(1)(c) of the RMA states that the evaluation report must –

> *…contain a level of detail that corresponds to the scale and significance of the effects that are anticipated from the implementation of the proposal.*

Scale refers to the anticipated size or magnitude of the effects anticipated from the proposal. Significance refers to the importance or impact of the issue that the proposal is responding to, or the significance of the response itself.

The s32 evaluation must contain a level of detail that corresponds to the scale and significance of the anticipated effects. Proposals with low effects require a lesser degree of analysis while those with high effects require more.

For Plan Change 13 the assessment of scale and significance is on a topic basis, and the criteria considered and discussed below are based on[7]:

- The nature of the issue
- Stakeholder interests, including Maori interests
- Extent of difference between policy options
- Availability of information and data
- Risks and uncertainties

[7] These criteria drawn from guidance on s32 evaluation provided by the Ministry for the Environment (2013).

Topic 1 – Open burning

The open burning rules impact only on people living in urban areas. Open burning in rural areas continues to be a permitted activity. Urban open burning is an activity carried out by a small number of households and businesses, but impacts on a relatively large number of households and businesses. The level of complaints from the community confirms that open burning in urban areas is no longer acceptable. People in urban communities have alternative means of refuse disposal, such as by kerbside collection or through the local refuse centre. The impact from burning of wastes has been identified as an issue in Iwi Management Plans.[8]

The scale and significance of this issue is **moderate** in terms of importance of the air quality issue, and low in terms of the number of people who will have to change their behaviour and the costs of doing so.

Topic 2 – Rotorua domestic burners

The approach for Rotorua domestic burners is required to achieve the National Environmental Standard for Air Quality (NESAQ) of 50µg/m^3 for fine particulates (or PM_{10}) by 2020. This is a compulsory standard. This rule applies only to the Rotorua Airshed.

A considerable amount of research has been done in the Rotorua Airshed, including measuring and modelling of contaminants including PM_{10}. From this we know that domestic heating contributes at least 60% of winter PM_{10} emissions in the Rotorua Airshed. Exceedances of the NESAQ occur in winter when domestic emissions are at their highest – in 2016 the airshed had 11 exceedances. The load of emissions from domestic heating suggests that this is the most effective source to target to meet the NESAQ.

The effects of air contaminants on health and wellbeing have been studied and modelled at national and subnational levels, including for Rotorua. The total annual cost of health impact associated with air quality in the Rotorua district has been estimated at \$38m[9]. The high emissions load from domestic heating are responsible for an estimated 5-16 premature deaths per year, 4-13 hospital admissions, and 7,600-26,000 restricted activity days. The very old, the very young, and Maori tend to be most affected by the consequences of poor air quality.

The current approach to reducing PM_{10} emissions (Option 1) is not effective. Option 2 aims to restrict the growth of wood burners in the airshed by not allowing new burners, and to restrict the emissions from replacements by tightening the standard.

Restricting the market may be considered undesirable to those who have not considered the negative externalities arising when individuals make choices that impose uncompensated costs on others. These costs include poor health that can result in restricted activity days, doctor visits, hospital admissions and premature death. These externalities are an example of market failure.

The approach to reducing PM_{10} emissions includes phasing older solid fuel burners out. At 1 February 2020 (2+ years) solid fuel burners that were installed prior to 1 September 2005 will become non-complying. Financial support is available for low income homeowners to replace non-compliant home heating. The changes are supported by a Low-Income Heating Grant Scheme and the Hot Swap Loan Scheme.

There may be cases where a rental home had a woodburner and as a result of the sale of that house, the woodburner is replaced with another form of heating that is

[8] Conroy and Donald (2017).
[9] The estimation was based on 2012 emissions from domestic heating. Converted to 2016\$ using the GDP Implicit Price Deflator.

more costly to run. In cases where the tenants previously had sufficient means to run a woodburner, but now do not to run the new heating. However, there may also be cases where the new heating is more accessible and affordable than solid fuel heating.

Based on the assessment, the scale is restricted to the Rotorua Airshed, and significance of this issue is **moderate to high** in terms of importance of the air quality issue. In terms of the number of people affected and the impacts, the scale and significance is low to moderate in terms of the number of people who will have to change their behaviour and the costs of doing so. There is some uncertainty as to the impact in terms of fuel poverty, but there is no evidence to show that it will increase as a result of this approach. The analysis of Topic 2 reflects the scale and significance of the issue and the approach.

Topic 3 – Agrichemical spraying

The Plan Change introduces specific policies for managing the effects of agrichemical spraying. Complaints to the Council from the public indicate a high level of concern about exposure to agrichemical spraying. Complainants express concerns about exposure of people, animals and non-target crops to agrichemicals. A common theme is about wanting sufficient notice before the spraying occurs and information about the spraying to take appropriate action when spraying occurs.

Agrichemical spraying is an air quality issue referred to in many of the Iwi Management Plans. The concerns raised are about the impacts on human health, areas of significance to iwi, flora and fauna, and waterways.[10]

The scale of this issue is region-wide, although agrichemical spraying tends to be concentrated in rural and semi-rural localities. The development of residential housing alongside existing horticultural or agricultural activities exacerbates this issue. For the purpose of this Plan Change the significance of the issue is deemed **moderate**, although it is acknowledged that some people will consider it high. The approach to managing this issue is considered low in terms of scale and significance. The approach addresses notification, signage and spray risk management. Providing notification is increasingly easy with technologies such as email and texting.

Topic 4 – Fuel burning equipment (boilers)

The Plan Change introduces policies to address air quality issues arising from proximity of boilers, and new information about air quality effects from boilers. Relatively good data is available for boilers at the regional level, provided by EECA. While the issue is region-wide, the estimated number of boilers across the region is 194. The issue is assessed as low on scale and significance.

The approach does not require upgrading of current fuel burning equipment. New boilers will be required to meet new rules, which include an increase in stack height for new smaller boilers (40kW<500 for oil, coal and untreated wood; 40kW-1MW for LPG or natural gas), and larger boilers will be a discretionary activity. Because the rules apply only to new installations the approach is considered **low** in terms of scale and significance.

Topic 5 – Methyl bromide and fumigation

Fumigation of imported or exported goods requires potent pesticides to protect New Zealand and its trading partners from unwanted pests and organisms. Methyl

[10] Conroy and Donald (2017).

bromide is an important chemical for this use, and users provide an annual summary report to the EPA with the amount used, the purpose, and any accidental spillages.

The geographic scale of this issue is low, being limited in general to the Port of Tauranga area, but the significance is high because of the importance of that area in terms of where people live, work and play, and the chemical nature of the pesticides. The use of fumigants at Port of Tauranga has been expressed as a concern in some iwi management plans[11] and the Tauranga Moana Fumigant Action Group has formed out of concern on the effects of fumigant use in this area.

The wider effects of methyl bromide which include its role as an ozone depleting substance also suggest **high** significance of this issue.

The approach to this issue is a distinct change from the current approach, and requires that the use of a fumigant other than methyl bromide is a discretionary activity, and the use of methyl bromide with recapture is a discretionary activity. The use of methyl bromide without recapture is a non-complying activity. This approach is of high significance. While national approach requires recapture by 2020, the technologies to achieve this are not yet available. This approach would force a shift from methyl bromide to some alternative fumigant.

Topic 6 – Mount Maunganui area

The Mount Maunganui area is an intensive industrial area adjacent to the central city and urban housing. The issue is that the area has a high level of air contaminants, most from permitted activities. Because of industrial intensiveness, the cumulative effect is high. The geographic scale of the issue is small and limited to the Mount Maunganui area, but the significance is moderate to high, given the number of people exposed. This decision about the issue significance is supported by the level of complaints regarding emissions in this area and by Maori interests as expressed in Iwi Management Plans.[12]

Although the policies and rules are not significantly different to the current plan, due to the number of contaminants, the high level of contaminants and considerable community concern, including iwi and hapū the scale and significance is **moderate** although it will be considered by many to be high.

Topic 7 – General discharges

The approach under the general discharges topic is to align particular activities with the most appropriate activity class. Most specified activities remain as they were in the current Plan. The exception is crematoria, which move from being a permitted activity to a discretionary activity. This change does not apply to existing crematoria.

Industrial discharges and odour and dust are highlighted as issues in several Iwi Management Plans[13].

The nature of the issues addressed here, the similarity with the current policy, and that the only significant change applying to new crematoria suggests that this is **low** scale and significance.

[11] Conroy and Douglas (2017).
[12] In a review of Iwi Management Plans for Plan Change 13 Conroy and Douglas (2017) note that industrial discharges along with agricultural sprays is the most common air quality issue referred to in Iwi Management Plans.
[13] Conroy and Donald (2017).

Topic 8 – Remaining minor activities

The approach under this topic is to make minor required changes to the rules not covered in Topics 1-7 and align any provisions with the other provisions of the Regional Natural Resources Plan. Most activities remain as they were in the current Plan except for spraypainting with di-isocyanates which moves from being a discretionary activity to a permitted activity.

The small scale and minor nature of the issues addressed here, the similarity with the current policy, and that the only significant change applies to spraypainting indicates that this has **low** scale and significance.

Part 6: Evaluation of objectives

The Plan Change includes three new objectives relevant to air quality.

AQ O1 Protect the mauri of air and human health from adverse effects of anthropogenic contaminant discharges to air, and enhance air quality where degraded.

AQ O2 The region's ambient air quality meets the National Environmental Standards for Air Quality (2004) and the Ambient Air Quality Guidelines (2002).

AQ O3 Manage discharges of contaminants to air according to their adverse effects on human health, cultural values, amenity values and the environment.

6.1 Evaluation requirements

Section 32(1)(a) of the RMA requires that an evaluation report must "examine the extent to which the objectives of the proposal being evaluated are the most appropriate way to achieve the purpose of this Act".[14] Also of relevance to this part of the assessment is s32(3) which states that the evaluation of the appropriateness of the objectives must relate to:

(a) The provisions and objectives of the amending proposal; and

(b) The objectives of the existing proposal to the extent that these objectives –

(i) Are relevant to the objectives of the amending proposal; and

(ii) Would remain if the amending proposal were to take effect.

The test for appropriateness uses the criteria of relevance, feasibility, and acceptability:

- Relevance – the extent to which the objective is addresses an identified resource management issue, will achieve one or more of the matters in Part 2 of the RMA including aspects of importance to Māori, assists Council with carrying out its statutory function under s30, and is within the scope of national standards and policies and the RPS

- Feasibility – the extent to which the objective can realistically be achieved with Council's powers, skills and resources, and is within an acceptable level of uncertainty and risk including unintended adverse effects.

- Acceptability – evaluates whether the objectives align with community outcomes including identified Māori outcomes and without resulting in unjustifiably high costs on the community or parts of the community.

[14] Most appropriate is interpreted as "suitable, but not necessarily superior", meaning the most appropriate option chosen does not need to be the optimal option, but must demonstrate that it will meet the objectives efficiently and effectively (Ministry for the Environment, 2014, p.14).

6.2 Objectives

6.2.1 AQ O1 – Protect air from adverse effects

Protect the mauri of air and human health from adverse effects of anthropogenic contaminant discharges to air, and enhance air quality where degraded.

Relevance	AQ O1 achieves the purpose of the RMA by: • Safeguarding the health and safety of the community, their social and cultural wellbeing, and the life-supporting capacity of air (s5(2)(b)). • Providing for the economic wellbeing of the community by allowing for appropriate development to occur providing it does not cause significant adverse effects to human health and the environment (s5(2)(c)). • Recognising and providing for the relationship of Maori and their culture and traditions with the ancestral lands, water, sites, waahi tapu, and other taonga, the protection of protected customary rights (s6(e)(g)). • Having particular regard to the maintenance and enhancement of amenity values and the environment and the intrinsic values of ecosystems (s7(c)(d)(f)). • Taking into account the principles of Te Tiriti o Waitangi (s8) in particular the principles of active protection, mutual benefit, equity and equal treatment. Objective 1 of the RPS states: *The adverse effects of odours, chemical emissions and particulates are avoided, remedied or mitigated so as to protect people and the environment.* AQ O1 ensures that this objective is carried through to the Regional Air Plan and addresses the following air quality issues of the RPS: • **Issue 1 – Impacts of odours, particulates and chemicals on amenity and well-being.** Some odours, particulates, and the emission of chemicals degrade amenity, human health and well-being when they are inconsistent with the existing activities or air quality of the area or when they are not adequately mitigated. • **Issue 2 – Effects of fine particulate matter on human health.** Fine particulate matter harms human health. Domestic heating fires are the main source of fine particulate matter in some areas. Gives effect to air quality policies of the RPS: • **Policy AQ 2A** – Managing adverse effects from the discharge of odours, chemicals, and particulates. • **Policy AQ 3A** – Managing adverse effects of fine particulate contamination. AQ O1 is relevant as air discharges can impact on health and have nuisance and amenity effects if not managed appropriately. It provides an expectation that people and the environment are protected from significant adverse effects. AQ O1 addresses resource management issues of significance to iwi authorities issues included in the RPS: • **Issue 1 – Inadequate recognition of kaitiakitanga, the Maori environmental resource management system and Te Tiriti o Waitangi principles.** Kaitiakitanga, the Maori environmental resource management system and Te Tiriti o Waitangi principles are not always recognised, considered and provided for in resource management decision-making processes. • **Issue 2 – Insufficient protection of tangata whenua**

	environmental values. Planning and resource consent decisions can provide insufficient protection of tangata whenua environmental values • **Issue 4 – Degradation of mauri.** The mauri of water, land, air and geothermal resources has been degraded and needs to be protected and restored. The objective gives effect to and builds on relevant objectives of the RPS: • **Objective 13** – Kaitiakitanga is recognised and the principles of Te Tiriti o Waitangi are systematically taken into account in the practice of resource management. • **Objective 17** – The mauri of water, land, air, and geothermal resources is safeguarded and where it is degraded, where appropriate, it is enhanced over time. The objective also gives effect to the following policies of the RPS: • **Policy IR 4B** – Using consultation in the identification and resolution of resource management issues. • **Policy IW 5B** – Adverse effects on matters of significance to Maori. • **Policy IW 2B** – Recognising matters of significance to Maori. • **Policy IW 3B** – Recognising the Treaty in the exercise of functions and powers under the Act. AQ O1 is relevant. It builds on the RPS provisions and requires specific consideration of the Maori environmental resource management system. AQ O1 also requires enhancement of air quality where degraded which applies to the Rotorua Airshed and the Mount Maunganui area which are breaching the national ambient air standards of the NESAQ
Feasibility	Ensuring human health and the environment are protected from significant adverse effects of discharges of contaminants to air is the responsibility of the Regional Council and within the means of regional plans. Consideration of the Māori environmental resource management system (including the mauri of water, land, air, and geothermal resources) is already occurring in many areas of the community and Regional Council processes. There is a reasonable amount of certainty this can be achieved without an inappropriate burden to the community.
Acceptability	AQ O1 applies to all contaminants that may be discharged across the region. Feedback on the RPS and an analysis of the complaints database indicates people and the environment may not be protected from discharges. Any objective that seeks to improve this should be acceptable to the community. The Māori environmental system is included in the purpose and principles of the RMA and is identified as a resource management issue in the RPS. The Bay of Plenty region has a high proportion of Māori and the largest number of iwi and hapū. This is an important part of our identity as a region and should be acceptable to the community.
Options	Alternatives to the status quo and the preferred option include taking no action or more lenient action. Under these options discharges may be allowed to result in negative impacts on people and the environment. This is not consistent with safeguarding the life-supporting capacity of air and discharges may affect Māori culture and traditions. This would not achieve the purpose of the RMA. Another option is to be more stringent. The effects of discharges could be reduced by heavily regulating discharges and requiring extensive consultation with iwi and hapū. This would potentially extend the scope of provisions to unreasonable and can result in benefits that will be outweighed by costs.

6.2.2 **AQ O2 – Ambient air quality**

The region's ambient air quality meets the National Environmental Standards for Air Quality (2004) and the Ambient Air Quality Guidelines (2002).

Relevance	AQ O2 achieves the purpose of the Act by: • Safeguarding the health and safety of the community their social and cultural wellbeing, and the life-supporting capacity of air (s5(2)(b)). • Providing for the economic wellbeing of the community by allowing for appropriate use and development to occur providing it does not cause a breach of the NESAQ (s.5(2)(c)). • Having particular regard to the maintenance and enhancement of amenity values and the environment and the intrinsic values of ecosystems (s.7 (c)(d)(f)). • Taking into account the principles of Te Tiriti o Waitangi (s.8) in particular the principles of active protection, mutual benefit, equity and equal treatment. The objective gives effect to the ambient air quality standards of the NESAQ (Regulation 13 and Schedule 1) and the AAQGs by ensuring people's health is protected from high concentrations of contaminants in the ambient air (carbon monoxide, nitrogen dioxide, ozone, PM_{10}) and sulphur dioxide). The objective gives effect to the RPS, in particular: • Issue 1 – Impacts of odours, particulates and chemicals on amenity and well-being. Some odours, particulates, and the emission of chemicals degrade amenity, human health and well-being when they are inconsistent with the existing activities or air quality of the area or when they are not adequately mitigated. • Issue 2 – Effects of fine particulate matter on human health. Fine particulate matter harms human health. Domestic heating fires are the main source of fine particulate matter in some areas. • Policy AQ 2A – Managing adverse effects from the discharge of odours, chemicals, and particulates. • Policy AQ 3A – Managing adverse effects of fine particulate contamination. • Policy IR 5B – Assessing cumulative effects The objective is specifically aimed at improving ambient air quality in the region, particularly the Rotorua Airshed and the Mount Maunganui area. Rotorua Airshed is breaching the national ambient air standards or the ambient air quality guidelines (for PM_{10}). Rotorua has a high proportion of low socio-economic families that already suffer from health effects caused by other factors. Improving air quality until it meets the NESAQ standards will reduce the health impacts caused by PM_{10}. Mount Maunganui area has breached the ambient standard for SO_2 and may breach for PM_{10}. AQ O2 also addresses the broad issue of ambient air quality for all areas, where they may breach the ambient air quality standards of the NESAQ.
Feasibility	Ensuring the ambient air quality of the region is maintained and enhanced is the responsibility of the Council and is well within the means of regional plans. There is a reasonable amount of certainty this can be achieved without an inappropriate burden to the community.

	The objective can be achieved by regional plan provisions that target domestic burners and will result in health benefits through improved air quality. Some of these benefits will be negated if they are at the expense of warm homes, particularly in low-income homes least able to afford a change in heating. This burden is reduced by Council funding programmes that reduce the financial impact of the change. There is some difficultly with provisions in a regional plan to control discharges from domestic burners. This has been resolved by the introduction of the Rotorua District Council Air Quality Control Bylaw which works in tandem with the regional plan to regulate the type of burners that can be installed within the Rotorua Airshed.
Acceptability	This objective applies to many contaminants across the region. Feedback on the RPS and an analysis of the complaints database indicates areas where air quality is not meeting community expectations, let alone being enhanced. Any objective that seeks to improve these areas should be acceptable to the community. However, achieving the minimum standard for ambient air quality set out in the NESAQ in Rotorua involves many households changing their solid fuel burners. During consultation on the draft plan, there was community resistance to being told what type of home heating can be installed or used. This is consistent with the consultation in 2010 on the Rotorua District Council Air Quality Control Bylaw where there was strong resistance to burner controls. However, despite low level of acceptability in the community, the Council must still ensure that all airsheds meet the NESAQ and control of domestic burners is one of the last available options to ensure this happens in Rotorua. The adverse effects have been addressed by the Council by introducing significant funding and incentive options to assist homeowners.
Options	Alternatives include not including the objective. This is a viable option as AQ O1 provides a high level objective that covers this issue. However, ambient air quality is a key issue for the region and it is appropriate to include a specific objective on this topic. Other alternatives include taking no action or more lenient action. Under these options, air quality could become degraded which would have negative effects on health and the environment. Life supporting capacity of air could be compromised by allowing unacceptable concentrations of contaminants. Setting more stringent targets than those included in the NESAQ or relevant guidelines would result in air quality that is constantly improving. However, this is likely to have economic effects and other costs that will not be outweighed by the health benefits.

6.2.3 **AQ O3 – Local air quality**

Manage discharges of contaminants to air according to their adverse effects on human health, cultural values, amenity values and the environment.

Relevance	AQ O3 achieves the purpose of the RMA by: • Safeguarding the health and safety of the community, their social and cultural wellbeing, and the life-supporting capacity of air (s.5(2)(b)). • Providing for the economic wellbeing of the community by allowing for appropriate development to occur providing it does not cause adverse effects to people and the environment

	(s5(2)(c)). • Having particular regard to the maintenance and enhancement of amenity values and the environment and the intrinsic values of ecosystems (s7(c)(d)(f)). • Taking into account the principles of Te Tiriti o Waitangi (s8) in particular the principles of active protection, mutual benefit, equity and equal treatment. Objective 1 of the RPS states: *The adverse effects of odours, chemical emissions and particulates are avoided, remedied or mitigated so as to protect people and the environment.* AQ O3 ensures that this objective is carried through to regional plans and addresses an air quality issue of the RPS: • **Issue 1 – Impacts of odours, particulates and chemicals on amenity and well-being.** Some odours, particulates, and the emission of chemicals degrade amenity, human health and well-being when they are inconsistent with the existing activities or air quality of the area or when they are not adequately mitigated. Gives effect to air quality policy of the RPS: • **Policy AQ 2A** – Managing adverse effects from the discharge of odours, chemicals, and particulates. AQ O3 is relevant as discharges to air can impact on health if not managed appropriately. It provides an expectation that people and the environment are protected from these adverse effects.
Feasibility	Ensuring people and the environment are protected from adverse effects of discharges of contaminants to air is the responsibility of the Council and is within the means of regional plans. There is a reasonable amount of certainty this can be achieved without an inappropriate burden to the community.
Acceptability	This objective applies to all contaminants that may be discharged across the region. Feedback on the RPS and an analysis of the complaints database indicates people and the environment may not be protected from discharges. Any objective that seeks to improve this should be acceptable to the community. During consultation on the draft plan there was support from the community for provisions that ensured good management of discharges. Some concern from the industry that the plan was too restrictive.
Options	Alternatives include not including the objective. This is a viable option as AQ O1 provides a high level objective that coves this issue. However, local air quality is a key issue for the region and it is appropriate to include a specific objective on this topic. Other alternatives to this objective include taking no action or more lenient action. Under these options, discharges may be allowed to result in negative impacts on people and the environment. This is not consistent with safeguarding the life-supporting capacity of air and discharges may affect Māori culture and traditions. The impact of discharges could be reduced by heavily regulating every discharge. This could extend the scope of provisions until they are unreasonable and would likely have economic effects and other costs that will not be outweighed by the benefits.

6.2.4 Retaining the status quo

An option not assessed in the table above is to select the status quo and retain objectives in the current plan.

Objective 1 and Objective 2 are very similar to AQ O1 and AQ O3. Differences include:

- Mauri and human health must be protected (higher level than requiring adverse effects to be avoided, remedied or mitigated as in the current plan).
- List of types of discharges summarised into “anthropogenic contaminant discharges”

An additional objective (AQ O2) has been added to the Plan Change to directly link with the NESAQ and AAQGs to achieve ambient air standards and guidelines.

The requirement to enhance air quality where degraded has been retained.

Objective 3 (increasing community awareness) has not been retained as this will not directly achieve the purpose of the RMA. Increasing community awareness does improve compliance with the plan and lead to better air quality, but is better placed in the implementation plan.

Objective 4 (provide for activities with minor effects) has been retained and expanded as a policy AQ P1 in the Plan Change.

6.3 Objectives conclusion

As a whole, the objectives seek to protect air quality particularly human health, from adverse effects of discharges to air that affect the ambient and local air quality, and to enhance air quality where it is degraded. The assessment found the objectives to be the most appropriate to meet the purpose of the RMA, comply with the NESAQ, and address the air quality issues identified in the RPS.

Part 7: Evaluation of policies and rules

7.1 Evaluation requirements

Section 32(1)(b) of the RMA requires an evaluation to *…examine whether the provisions in the proposal are the most appropriate way to achieve the objectives by – (i) identifying other **reasonably practicable options** for achieving the objectives and (ii) assessing the **efficiency** and **effectiveness** of the provisions in achieving the objectives.*

7.1.1 Reasonably practicable options

"Reasonably practicable" is not defined in the RMA, but may include options that are:

- Regulatory and non-regulatory;
- Targeted towards achieving the goal/objective;
- Within the council's resources, duties and powers; and
- A reasonable range of possible alternatives.

Options evaluated in this report include the following:

- Baseline/status quo – this may include relying on national standards and policies, provisions in the RPS, the current Regional Air Plan and current non-regulatory actions.
- Proposed provisions – the policies and rules of the proposed Plan Change alongside non-regulatory actions.
- Less stringent – may include no regional plan provisions or less stringent provisions. Often this option is the same as the baseline and is not considered separately.
- More stringent – includes tougher provisions or more stringent thresholds and limits.

7.1.2 Effectiveness

Effectiveness is about the extent to which the option will achieve the objective. This assessment should consider assumptions and risks related to achieving the objective.

The criteria used to assess effectiveness are:

- Relevance – how effective are the provisions in achieving the objective/s
- Feasibility – whether the provisions are within council's powers, responsibilities and resources and ability to implement, monitor and enforce.
- Acceptability – whether the provisions have a fair distribution of impacts and level of political and community acceptance.

7.1.3 **Efficiency**

Efficiency measures whether the provisions achieve the objectives at the lowest cost (to all members of the community) with the highest benefit. These costs and benefits must be quantified where practicable. However the assessment under the RMA includes a broad range of costs and benefits that are intangible and cannot be monetised.

The criterion used to assess effectiveness is whether the benefits of the effects on the four well-beings outweigh the costs of the effects on the four well-beings – economic, environmental, social and cultural.

Potential effects on these well-beings are included in Table 7.1 below.

Cultural well-being is usually assumed to be Māori cultural well-being. That is the case in this report; however cultural well-being is also used in relation to general culture. In particular it is used for "Kiwi" cultural practices that contribute to the national identity. These may include cultural practices that originate from our colonial days, such as Guy Fawkes celebrations. It may also refer to a national value, such as "Clean Green New Zealand", which forms part of our cultural identity.

Cultural well-being may also be related to a cultural practice not unique to New Zealand. For example, cooking food outdoors using fire in some form is part of many cultures, but nevertheless still makes up part of the Kiwi and/or Māori identity and culture.

There is also considerable overlap between the well-beings. For example the definition of environment in the RMA includes people and communities (social and cultural) and amenity values (social). An environmental/social effect that causes poor health results in decreased attendance at school or work which, in turn, has an economic effect.

Table 7.1 Potential effects of proposed provisions on the four well-beings.

Well-being	Effects
Environmental	• Air quality – the effect on air quality and the subsequent effects on species, ecosystems and people and communities. Closely linked to social and cultural well-beings.
Economic	• Implementation – the ease of introduction, and the ability and cost for Regional Council monitoring and enforcement • Compliance – the effect on costs of compliance for Regional Council and public • Employment – expansion of the supply of labour. Fewer days absent from work due to effects of poor air quality. • Economic growth – gains in productivity from improved technology and skills and increased production. Fewer days away from work and school.
Social	• Recreational opportunities – effect on the ability to spend time outdoors in sport or general activities • Amenity values – the effect on visibility and general pleasantness of an area • Nuisance – effect on other members of the community (related to health and well-being but nuisance effects may occur before physiological harm). • Human health and well-being – includes direct physiological

Well-being	Effects
	effects (e.g. respiratory, cardio), and psychological impacts (related to environmental effects and nuisance) • Personal and property rights – effects on an individual's ability to enjoy their own property without stress
Cultural	• Mauri of air – effects on the life force of air • Cultural activities – the effect on activities associated with a cultural identity or practice for example, hangi, barbeques, fireworks, and the kiwi lifestyle enjoying the "great outdoors".

7.1.4 Other assessments

The evaluation should include the risks of acting or not acting if there is uncertain or insufficient information about the subject matter of the provisions. This is particularly relevant when considering environmental issues, where information can be incomplete or uncertain.

Where provisions are more restrictive than activities managed by a national environmental standard, the evaluation must examine whether this is justified given the circumstances.

7.1.5 Evaluation summary

The efficiency and effectiveness of each approach has been rated on a 0 to 4 scale, with 0 indicating no contribution to effectiveness and efficiency up to 4 a large contribution:

0 = none

1 = small

2 = some

3 = medium

4 = large

The rating is based on the effectiveness measures of relevance, feasibility and acceptability, and the efficiency measures of environmental, economic, social and cultural impacts (as described above). In this approach the qualitative and quantitative information describing the effects of each approach is weighed up based on professional judgement and experience to determine the score. This approach attempts to bring some objectivity to what would otherwise be a subjective assessment and make judgements more transparent. At the end of each topic a graph provides an assessment where the alternative policy options sit relative to each other.

7.2 Topic and provisions summary

This evaluation is topic-based. All policies, methods and rules to address a particular issue are assessed as a group (as opposed to considering individual policies and methods). Table 7.2 summarises the provisions by topic, showing the linkage with relevant objectives.

Table 7.2: Summary of provisions

Topic	Objective	Policies, methods and rules
1 – Open burning	AQ O1 AQ O2 AQ O3	AQ P1, AQ P2, AQ P3, AQ P4, AQ P5, AQ R6, AQ R7, AQ R8, AQ R9, AQ R10
2 – Rotorua domestic burners	AQ O2 AQ O1	AQ P1, AQ P3, AQ P4, AQ P6, AQ P7, AQ R12, AQ R13, AQ R14
3 – Agrichemical spraying	AQ O3 AQ O1	AQ P1, AQ P2, AQ P3, AQ P4, AQ P8, AQ R15
4 – Fuel burning equipment (boilers)	AQ O3 AQ O1 AQ O2	AQ P1, AQ P2, AQ P3, AQ P4, AQ P10, AQ R2, AQ R18, AQ R17
5 – Methyl bromide and fumigation	AQ O1 AQ O3	AQ P1, AQ P2, AQ P3, AQ P4, AQ P9, AQ R20
6 – Mount Maunganui area	AQ O1 AQ O2 AQ O3	AQ P1, AQ P2, AQ P3, AQ P4, AQ P5, AQ R1, AQ R2, AQ R3, AQ R16, AQ R17, AQ R18, AQ R21
7 – General discharges and listed discretionary activities	AQ O1 AQ O2 AQ O3	AQ P1, AQ P2, AQ P3, AQ P4, AQ P6, AQ R1, AQ R2, AQ R16, AQ R17, AQ R18, AQ R19, AQ R21
8 – Remaining minor activities	AQ O1 AQ O2 AQ O3	AQ P1, AQ P2, AQ P3, AQ P4, AQ R3, AQ R4, AQ R5, AQ R16, AQ R17, AQ R19

The remainder of Part 7 provides the evaluation of the effectiveness and efficiency of provisions.

7.3 Note to reader: Using Part 7

The report is structured with an expectation that users will have a particular air quality issue in mind prior to reading. Part 7 contains eight topic areas covering the key air quality issues. Each topic area starts with setting out the baseline for the issue and identifying the relevant objectives. Reasonably practicable options for achieving the objectives and resolving the issue are then set out. The bulk of the Part 7 is the analysis of the appropriateness of the provisions to meet the objectives.

Users should refer to Proposed Plan Change 13 Version 4.0 while reading this report.

The description of the options does not include word-for-word reproduction of every relevant provision in the various plans, policies and documents. This leads to

extensive repetition and makes the report harder to use. The relevant provisions are summarised in each option.

For reference, relevant text from key documents is provided in the appendices as follows:

- National Environmental Standards for Air Quality – Appendix 6
- Regional Policy Statement – Appendix 7
- Regional Air Plan policies – Appendix 8
- Rotorua Lakes Council Air Quality Control Bylaw – Appendix 9
- New Zealand Coastal Policy Statement – Appendix 10
- Proposed Regional Coastal Environment Plan – Appendix 11
- Other key legislation – Appendix 12

A full list of references is provided in the bibliography.

7.4 Topic 1 – Open burning

7.4.1 Baseline

Open burning in rural and urban areas (also referred to as outdoor burning or backyard burning) is permitted by Rule 5 in the current plan provided good management practice is used, and there are no harmful concentrations or objectionable or offensive discharges.

Estimated emissions

The estimated PM_{10} emissions from open burning in the Bay of Plenty region are the second highest (behind the Waikato region) of all regions (Figure 7.1).[15] This pattern is similar for all emissions from open burning. These figures include both urban and rural open burning. The Auckland region has particularly low estimated emissions for open burning, possibly because of rules prohibiting outdoor burning except for fires for cooking and heating and its largely urban environment.

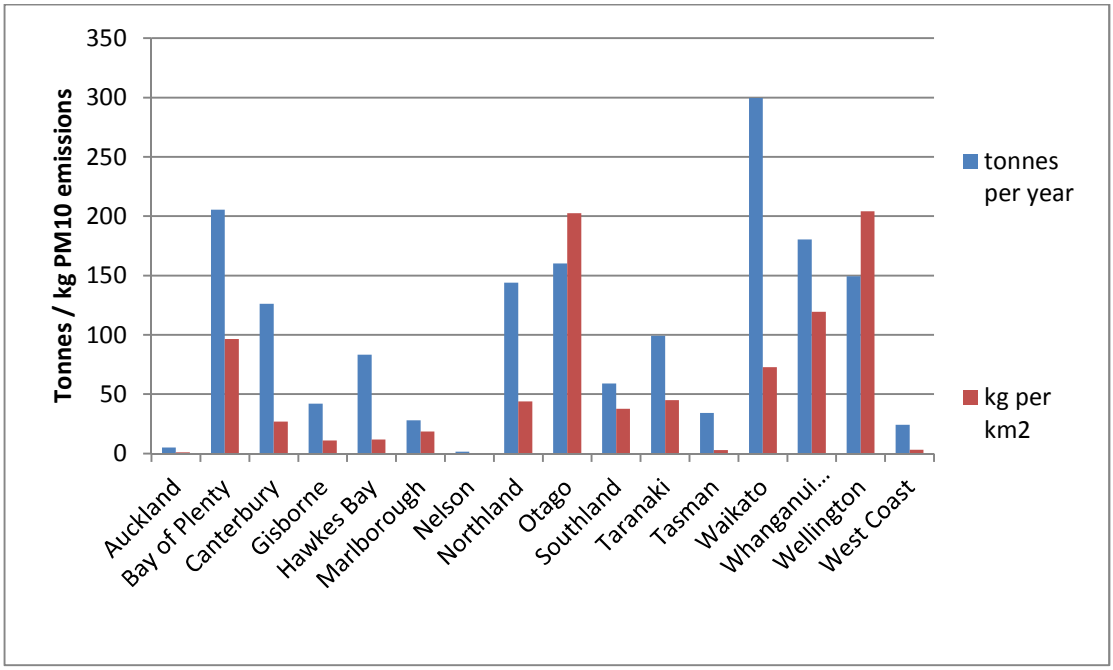


Figure 7.1: Estimated PM_{10} emissions (tonnes/year) and density of PM_{10} emissions (kg/km^2) for all regions

In 2015, the annual estimated discharges PM_{10} for the Rotorua District and Tauranga city were 10 and 23 tonnes respectively. The winter PM_{10} emissions were estimated at 33kg/day and 78kg/day respectively for the two cities.[16]

The estimated density of all open burning emissions (per square km) for the Bay of Plenty is close to double the estimated average for all regions (Figure 7.2).

[15] Data retrieved from the Ministry for the Environment website https://data.mfe.govt.nz/documents/category/environmental-reporting/air/home-heating-emissions/ . These figures are based on the Home heating and emission inventory and other sources evaluation dataset, compiled by Environet Limited. The methodology for constructing the dataset is provided by Environet Limited (2015). Open burning estimates were based on survey questions to households about the frequency of outdoor burning and the average fire size. The material burnt was assumed to be garden waste. The emissions were calculated as: Emissions (kg/day) = households in Census Area Unit * emission rate (grams/household/day)/1000. The reliability of the results depends on the survey results being representative of the Bay of Plenty residents.

[16] Environet Limited (2015).

Wellington, Otago and Whanganui/Manawatu have higher density levels (although lower absolute levels). Some regions are particularly low; Auckland, Nelson, West Coast and Tasman were estimated to produce one tonne or less per square km.

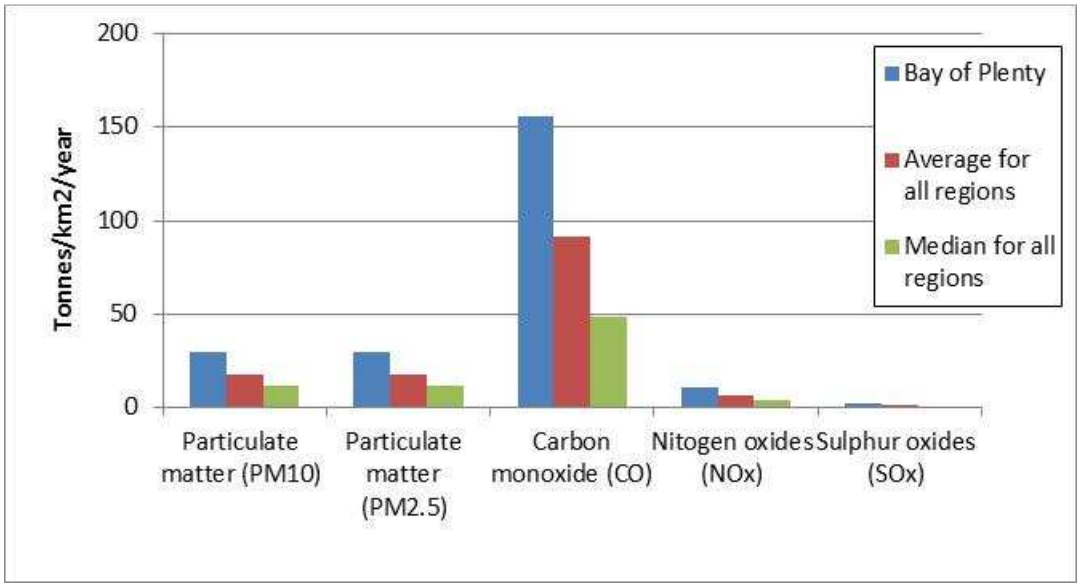


Figure 7.2: Estimated density of emissions from open burning (tonnes /km^2/yr) for Bay of Plenty

The prevalence of horticulture in the Bay of Plenty increases the estimated level of emissions from the open burning of vegetation.[17]

Complaints analysis

Complaints are an avenue for the public to inform Council of incidents where there is a risk to the environment, a harmful effect on health, or where something is objectionable or offensive. Complaints about smoke, mostly from open burning, make up half of the annual air complaints.

In 2012, Council commissioned an investigation of the open burning rule, which included reviewing relevant complaints.[18] Complaints received between November 2009 and November 2011 were analysed. Two-thirds of the complaints were about smoke in residential areas. The greatest number of complaints per capita was received from Tauranga City and the Western Bay of Plenty. This is most likely due to the more urban nature of those districts.

The 2012 investigation included setting up an evaluation group to discuss opening burning issues. Group membership included BOPRC, orchardists, Fire and Emergency New Zealand[19], grower associations, farmers, staff from local councils, and some complainants and offenders.

The main findings were:

- Awareness and understanding of the open burning rule is low.
- Small properties and proximity of neighbours leads to smoke nuisance from open burning in urban areas.
- Poor fire management, particularly burning vegetation that is not sufficiently dry, leads to smoke nuisance problems in rural areas.

[17] Environet Limited (2015).
[18] Harrison Grierson (2012).
[19] Formerly the New Zealand Fire Service.

A further review of complaints was carried out in 2016 to provide updated information for the plan change. In 2015 the Council received 525 complaints about outdoor smoke. About three-quarters of those were about open burning, and were from people living in residential areas (Figure 7.3). Under the plan change open burning in residential areas would no longer be permitted. Of the residential complaints about smoke, the greatest number of complaints came from Tauranga (91), followed by Rotorua (59), and Pāpāmoa (48). Complaints in residential areas tended to be about burning household or garden waste.

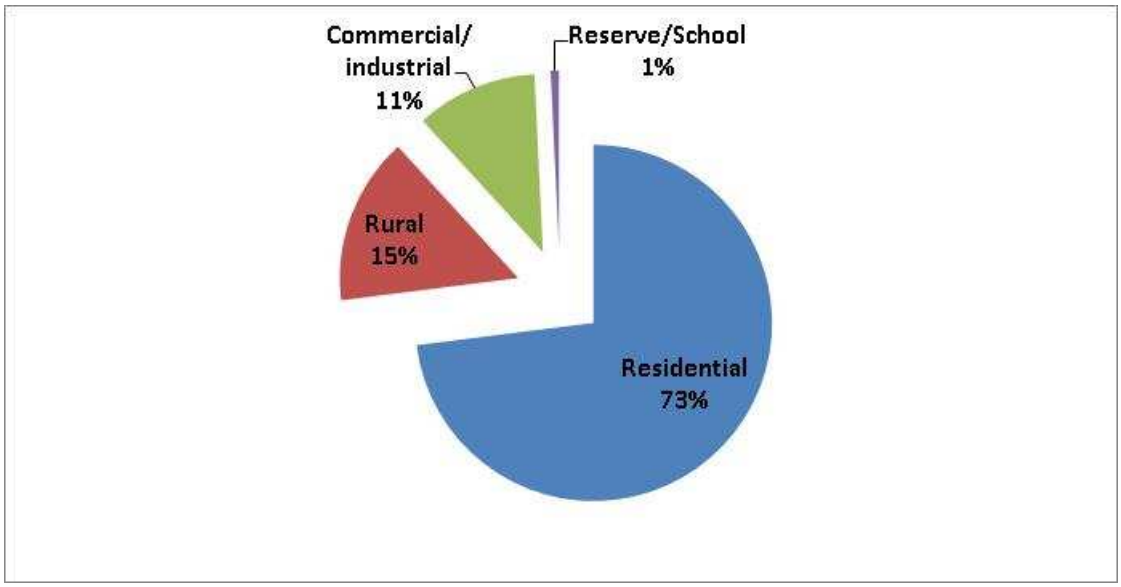


Figure 7.3: Land area type for smoke complaints made in 2015

7.4.2 Relevant objectives

Discharges to air from open burning have an adverse effect on local air quality therefore AQ O3 is the most relevant objective to this topic.

AQ O3	Manage discharges of contaminants to air according to their adverse effects on human health, cultural values, amenity values and the environment.

However, there are situations where open burning can contribute to poor ambient air quality (backyard burning in Rotorua) and where significant adverse effects on human health may occur from burning of certain materials that release toxins. Therefore AQ O1 and AQ O2 also apply.

AQ O1	Protect the mauri of air and human health from adverse effects of anthropogenic contaminant discharges to air, and enhance air quality where degraded.
AQ O2	The region's ambient air quality meets the National Environmental Standards for Air Quality (2004) and the Ambient Air Quality Guidelines (2002).

7.4.3 Options considered

Four options are considered to manage open burning.

Option 1: Status quo – Rely on national standards and national and regional policy statements, policies and rules in current plan

Option 2 Plan Change – Provide additional policy and rules specific to open burning targeting urban open burning

Option 3 Less stringent - Have no policies or rules in Plan Change. Rely on RMA, NESAQ, RPS and other relevant national policies or standards

Option 4 More stringent – Add further restrictions on open burning

Option	Description	Relevant provisions
Option 1 **Status Quo**	The RPS has air quality policies to manage the adverse effects of odours, chemicals and particulates and the main method relevant to this Plan Change is regional plan implementation. The NESAQ bans the burning of specific materials (such as coated wire) except in some circumstances. The current plan includes policies to avoid, remedy mitigate adverse effects of discharges to air and requires consideration of cumulative discharges. Key points are: • Open burning is permitted • Open must not be objective or offensive. • The emergency disposal of animal carcasses by open burning is permitted. • Open burning carried out for firefighter training or of diseased vegetation requires a resource consent.	NESAQ – Regulations 6-10 RPS – Objective 1, Policy AQ 2A, Method 2, Objective 10, Policy IR 1B. Policy IR 5B. Air Plan Policies - 1(a), 1(b), 3, 8 Air Plan Rules – 5, 8, 20
Option 2 **Plan Change**	The Plan Change would introduce more specific policies and rules to manage open burning. Key points are: • Open burning would be banned in urban areas, with permitted exceptions where open burning is for recreational purposes such as hangi, or for quarantine or disease control such as disposal of diseased materials, or for firefighter training. • Open burning remains a permitted activity in rural areas with some restrictions including type of material burnt. These restrictions are similar to those in the current plan (e.g. treated or painted timber, domestic waste except paper and cardboard). The requirements under the NESAQ and RPS are the same as for the status quo.	NESAQ – Regulations 6-10 RPS – Objective 1, Policy AQ 2A, Method 2, Objective 10, Policy IR 1B. Policy IR 5B. PC 13 policies – AQ P1-AQ-P5 PC 13 rules – AQ R6-R10
Option 3 **Less stringent**	The less stringent option would rely on regulations of the RMA and NESAQ. Discharges from open burning would be automatically permitted under the RMA S15 (2) and (2A) with no	RMA – s15(2) and s15(2A) NESAQ – Regulations 6-10

Option	Description	Relevant provisions
	additional conditions other than the regulations of the NESAQ which bans the burning of certain materials (such as coated wire) except in some circumstances. The requirements of the RPS are the same as for the status quo.	RPS – Objective 1, Policy AQ 2A, Method 2, Objective 10, Policy IR 1B. Policy IR 5B.
Option 4 **More stringent**	The more stringent option would include stricter policies and rules in the Plan Change which could include: • Banning recreational burning • Further controls on rural burning (e.g. resource consents required) or banning the practice altogether. • Making open burning of specified material or certain activities prohibited (more stringent than NESAQ).	NESAQ – Regulations 6-10 RPS – Objective 1, Policy AQ 2A, Method 2, Objective 10, Policy IR 1B. Policy IR 5B. PC 13 – additional policies and rules.

7.4.4 Evaluation of provisions to manage open burning

The scale and significance of this topic is rated as moderate.

The following table summarises the effectiveness and efficiency of the policy options to manage open burning:

Option 1:Status quo
Effectiveness
Relevance – how effective are the provisions in achieving the objective The purpose of the NESAQ is to provide a set level of protection for human health and the environment; therefore the regulations of the NESAQ are effective at achieving AQ O1, by protecting mauri of air, and human health from the significant adverse effects of open burning of the materials included in the NESAQ regulations. Option 1 provides additional management of open burning, permitting burning for some activities (Rules 5 and 8) and prohibiting burning of specified materials known to cause adverse effects (Rule 20). These rules, if carried over to the next plan, would help achieve AQ O1 and AQ O3. However, urban open burning in the region contributes an estimated 206 tonnes of PM_{10}, 204 tonnes $PM_{2.5}$, 1079 tonnes CO, 77 tonnes NO_x, and 13 tonnes SO_x to the regional air quality. In the Rotorua district, which includes the Rotorua Airshed, urban open burning contributes an estimated 10 tonnes of PM_{10}, 10 tonnes $PM_{2.5}$, 52 tonnes CO, 4 tonnes NO_x, and 1 tonne SO_x annually.[20] The NESAQ regulations and the current air plan rules do not manage these discharges and therefore this option will not contribute to achieving AQ O2. Under Option 1, open burning in all other urban areas (permitted under current Rule 5) is responsible for almost half of annual air complaints to Council. This indicates an adverse effect on amenity values and possible health in many cases and will not contribute to achieving AQ O3. Discharges from the burning of diseased carcasses will have a short term adverse effect on local air quality. Allowing for these types of discharges during certain circumstances is part of managing discharges according to adverse effects and this is consistent with AQ O3. The effects will not be significant and therefore it is also consistent with AQ O1. The NPS-ET requires consideration of effects on the national grid. However, Option 1 does not take into consideration the potential effect of discharges regionally important infrastructure, and does not

[20] Environet Limited (2015).

give effect to the NPS-ET in its provisions and therefore has a reduced ability to achieve AQ O3.

Feasibility – whether the provisions are within council's powers, responsibilities and resources and ability to implement, monitor and enforce

The control of discharges of contaminants to air is specifically listed as a function of the Regional Council (s30(1)(f)) therefore these provisions are within the powers and responsibilities of Council.

A large number of complaints are received about emissions (smoke, odour) from open burning.

Monitoring and enforcement of this activity relies solely on a subjective assessment of offensiveness or objectionability based on an assessment carried out by an officer on site for each incident. This leaves a lot of room for interpretation and makes the monitoring and enforcement more difficult.

As numbers of complaints increase, this assessment becomes more difficult to carry out as pressure on the resource increases, reducing the effectiveness of the rules in their current state.

Acceptability – whether the provisions have a fair distribution of impacts and level of political and community acceptance

Those carrying out burning enjoy the cheap easy option to dispose of waste while the impacts are shifted to those around them. The large number of complaints about open burning, particularly in urban areas, indicates that the status quo is neither adequate nor acceptable to the community.

Summary of effectiveness: 2

Efficiency

Benefits	**Costs**
Environmental Provide for air quality by: • Managing permitted activities with conditions to minimise adverse effects • Prohibiting the discharge from activities known to have serious effects. *Economic*: The disposal of some waste (e.g. garden waste) by burning provides a relatively small economic benefit to individuals in avoiding costs of with other means of refuse disposal. *Social* Control of the more damaging air discharges (e.g. burning rubber) helps to maintain air quality and amenity values. Control of contaminant discharges lessens effects on community and on personal property. Good air quality increases opportunity to enjoy the lifestyle that New Zealanders expect – the ability to enjoy the outdoors without adverse effects on heath or well-being. *Cultural* Environmental benefits enhance the mauri of air. Allows for discharges associated with New Zealand culture, such as barbecues, hangi etc.	*Environmental* The current provisions are not managing some discharges of contaminants to air which is having an effect on local and ambient air quality and human health. The discharges to the air from open burning include PM_{10}, $PM_{2.5}$, carbon monoxide, nitrogen oxides and Sulphur oxides. Under the current approach. The estimated emissions for the region are provided in Figures 7.1 and 7.2 (above). These include both rural and urban. Within the Bay of Plenty region, Tauranga has the highest density of all emissions from open burning, followed by Rotorua and Whakatāne. Open burning contributes to poorer air quality in these urban areas (Environet Limited, 2015). *Economic*: Council spends significant resources on public enquires and investigation of open burning complaints. More than 500 smoke complaints were received by the Council in 2015. These may be attended by Council staff or a contractor. The Council budget for call out costs for air quality is $45,000/year in 2016 and 2017. Costs to individuals are the poor air quality that motivates the complaint, and the time and effort in making the complaint. Health costs associated with open burning are high. Premature death, hospitalization (respiratory and cardio) and restricted activity days are estimated to have cost the regional economy

	$46.0m in 2016.[21,22] Under the status quo, the absence of provision for firefighter training or for permitted burning of diseased vegetation requires affected parties to apply for resource consents. This activity has been given an exemption in the NESAQ allowing it to be carried out. While regional rules may be more stringent than the NESAQ, there needs to be justification. There is no good reason to require resource consent for this activity, especially as it imposes additional costs. No provisions considering potential effect of open burning on regionally important infrastructure. Possible damage and corrosion of infrastructure from contaminants discharged from open burning. *Social* Across the region in 2016 PM_{10} emissions from open burning was the cause of an estimated 7.2 respiratory and cardiac hospital admissions, and more than 12,600 restricted activity days (days off work or school for example).[23] Premature death is a result of longer term exposure to the PM_{10} and other air pollutants from open burning. In some areas, such as the Rotorua Airshed, open burning exacerbates the existing poor air quality, adding to already high and negative health impacts on that community. Backyard burning in urban areas causes a nuisance and adversely affects the ability for the community to enjoy their home and yard without being affected by smoke, odour, and/or ash (see complaints summary, section 7.4.1). *Cultural* Poor air quality degrades the mauri of air. Reduced ability to enjoy a typical kiwi lifestyle which includes clean air.
Summary of efficiency: 2	
Option 2: Plan Change	
Effectiveness	
Option 2 improves air quality by: • Managing permitted activities with conditions to minimise impacts • Managing the discharge from activities known to have greater effects as non-complying activities that can be granted a resource consent only in exceptional circumstances	

[21] Based on the HAPINZ Updated Health Effects Model (Kuschel et al. 2012a), with population increased to 293,500 (Statistics New Zealand, 2017), and the costs translated to 2016$ using the NZ GDP Implicit price deflator. This assumes that costs of premature death, hospitalisation and restricted activity days have increased at a rate similar to inflation in the period 2011 to 2016.

[22] These costs relate only to exposure to PM_{10} from open burning, and so will be lower than if all pollutants were accounted for. Other pollutants from open burning include $PM_{2.5}$, CO, NO_x and SO_x.

[23] Based on the HAPINZ Updated Health Effects Model (Kuschel et al., 2012a) and an estimated regional population in 2016 of 293,500 (Statistics New Zealand, 2017).

- Building on lessons learned from implementation of current air plan to improve areas where there were regulatory gaps – such as allowing urban open burning.

Burning of specified material is managed as a non-complying activity and may still be granted a resource consent, albeit only in exceptional circumstances.

Provisions designed specifically for contaminants and activities of concern provide targeted control of air discharges, rather than general conditions.

Relevance – how effective are the provisions in achieving the objective

The purpose of the NESAQ is to provide a set level of protection for human health and the environment; therefore the regulations of the NESAQ are effective at achieving AQ O1, by protecting mauri of air, and human health from the significant adverse effects of open burning of the materials included in the NESAQ regulations. AQ R10 of the Plan Change builds on the NESAQ regulations to further restrict what materials can be burnt and also achieves AQ O1.

Open burning in urban areas (permitted under current Rule 5) is responsible for about half of annual air complaints to Council, which could be substantially reduced by a ban on urban open burning, and would contribute to achieving AQ O3. AQ R9 bans open burning in urban areas (except for recreational purposes) and contributes to achieving AQ O3. Banning this open burning will remove an estimated five tonnes of PM_{10} from the Rotorua District annually and is effective at achieving AQ O2.[24]

Discharges from the burning of diseased carcasses and diseased vegetation and firefighter training will have a short term adverse effect on local air quality. Allowing for these types of discharges in specific circumstances is part of managing discharges according to adverse effects and this is consistent with AQ O3. The effects are not expected to have an adverse effect on human health significant and therefore it is also consistent with AQ O1.

Feasibility – whether the provisions are within council's powers, responsibilities and resources and ability to implement, monitor and enforce

The control of discharges of contaminants to air is specifically listed as a function of the Regional Council (sS30(1)(f)) therefore these provisions are within the powers and responsibilities of Council.

Monitoring and enforcement of this activity is feasible because open burning is banned in urban areas except in specific situations. There is still some subjectivity involved when assessing some discharges, but the permitted activity rules (AQ R6, R7, R8) provide clear conditions for when and where open burning can occur, making monitoring and enforcement easier for some activities.

There is an assumption that urban open burning is not widespread and is generally not socially acceptable. This assumption is supported by complaints evidence.

Option 2 is easier for the community to understand both in terms of compliance and of making complaints.

Acceptability – whether the provisions have a fair distribution of impacts and level of political and community acceptance

Feedback from the community during consultation on the draft plan showed support for Option 2.

It is likely there will be a period of adjustment while people who have used open burning as a means of waste disposal change their behaviour.

The impacts of this will fall on those carrying out the burning, rather than on those being adversely affected by poor air quality.

Summary of effectiveness: 4

Efficiency

Benefits	**Costs**
Environmental A ban on urban open burning reduces the annual emissions of PM_{10} and carbon oxides. For example, it was estimated in 2007 that such a	*Environmental* An urban open burning ban may lead to increased illegal dumping of refuse (fly-tipping), and have a negative effect on land, water and air

[24] BOPRC (2007).

ban would reduce PM_{10} and carbon oxides in the Rotorua Airshed by at least five tonnes and 17 tonnes respectively.[25] Management of some discharges as non-complying activities (requiring assessment of resource consent application) rather than as a prohibited activity where no application is possible provides some flexibility for these activities. *Economic* The ban on urban open burning will reduce public complaints, and consequently the resources required by Council for investigation and enforcement. The expected reduction in urban burning complaints represents an annual saving of about $20,000 based on the current budget for air quality complaints. It also reduces costs in time and frustration for complainants. Specific provisions for firefighter training and burning of diseased carcasses and vegetation reduce resource consent costs for applicants and council. The corrosive effect that open burning can have on infrastructure is reduced, potentially reducing maintenance and replacement costs. *Social* Recognises the rights of individuals not to be exposed to the uncompensated costs that arise from the activities of others (negative externalities). Better air quality and increased recreational opportunities, amenity values, health, and overall reduced effects on the community and personal property. This relates to the high health costs of open burning, as described under the status quo option. The negative health effects from urban open burning can potentially be eliminated. *Cultural* Environmental benefits enhance the mauri of air. Well managed air quality increases opportunity to enjoy the lifestyle that kiwis expect – the ability to enjoy the outdoors without adverse effects on heath or well-being. Encourages cultural shift towards modern waste management methods of recycling and landfill (where it may be recovered for later use) rather than burning.	(odour) and amenity values. The Whakatāne District and Rotorua Lakes Councils provide a rubbish and recycling service funded by rates, so people in these areas have accessible services with no additional costs.[26] In Tauranga and Western Bay where these services are not funded through rates, illegal dumping may become an issue. *Economic* A ban on urban burning may lead to a short-term increase in complaints during a period of adjustment to the new rule. This may require additional resources (short term). In the longer term the number of complaints is expected to decrease. Previously burnt waste will result in a marginal increase in landfill. Where refuse is illegally dumped, local councils will incur clean-up costs. *Social* Perceived impact on personal property rights for those that regard the ability to burn rubbish and green waste in their urban backyards as a right. However, this is a negative externality where the costs of individual's activities are visited on the wider population. *Cultural* None identified.
Summary of efficiency: 4	

[25] BOPRC (2007).

[26] Rotorua Lakes Council and Whakatāne District Council provide bins for general household rubbish, recycling and glass (funded through rates). Whakatāne District Council also provides a bin for green waste. These are funded through rates. The Tauranga City Council and Western Bay of Plenty District Council do not rate for or provide these services. Residents purchase bins or bags for rubbish and recycling. Recycling can be delivered to recycling stations free-of-charge (although green waste is charged for).

OPTION 3: Less stringent	
Effectiveness	
Relevance - how effective are the provisions in achieving the objectives The purpose of the NESAQ is to provide a set level of protection for human health and the environment; therefore the regulations of the NESAQ are effective at achieving AQ O1, by protecting mauri of air, and human health from the significant adverse effects of open burning of the materials included in the NESAQ regulations. However, the NESAQ is set at a national level and only contains regulations to manage the open burning of specific materials. These regulations are not specific enough to address the regional issues. Regional issues and objectives have been identified in the RPS and it has air quality policies to manage the adverse effects of odours, chemicals and particulates. The key method for implementing the RPS is through regional plan implementation. Therefore provisions to manage these discharges are required in a regional plan to give effect to the RPS. One of the key discharges for the region is urban open burning. There are no national regulations in the NESAQ therefore this activity requires polices and rules in the regional plan. Option 3 would not provide the management necessary to contribute to achieving AQ O2 or AQ O3 and would not give effect to the RPS. Likewise, there is no national direction on discharges from the burning of diseased carcasses and diseased vegetation. This activity requires further management under a regional plan. Firefighter training is provided for in the NESAQ, but with few controls and only relevant to burning of coated wire.[27] Due to the potential for adverse effects from this activity (e.g. discharge of PM_{10} to the Rotorua Airshed, local effects from burning of certain materials) further management is necessary through a regional plan to ensure AQ O3 is met. Some management of open burning is carried out by local bylaw enforcement through the issuing of fire permits. However, these permits focus on the safety of the activity rather than adverse effects from air discharges. *Feasibility– whether the provisions are within council's powers, responsibilities and resources and ability to implement, monitor and enforce* It is the responsibility of Council to control discharges of contaminants to air, particularly for issues identified in the RPS, and not to rely solely on the NESAQ or on fire permits. While it would still be feasible to manage air discharges with only the NESAQ, it would not be an effective way to achieve the objectives. There is a high risk of not achieving AQ O3 and therefore AQ O1. *Acceptability – whether the provisions have a fair distribution of impacts and level of political and community acceptance* Selecting a less stringent option leaves the community to burn as they wish which would unfairly impact on those affected by smoke and odour while benefiting the burners who do not need to seek out more expensive options to dispose of waste. Feedback from the community during consultation on the draft plan showed support for greater management of open burning. Option 3 does not provide the level of management expected by the community, and is unlikely to have political support.	
Summary of effectiveness: 2	
Efficiency	
Benefits	**Costs**
Environmental Nil identified	*Environmental* Open burning would be automatically permitted by the RMA with no further controls other than

[27] Clause 9(2) allows burning of coated wire if it is part of a building that is burnt for firefighting training.

Economic May be some marginal benefit to individuals who would be freer to undertake this activity. *Social* Nil identified *Cultural* Nil identified	those provided by the NESAQ and other national standards (NES-ETA). This would not be sufficient to manage the activity in a manner that minimises the adverse effects, leading to a decline in air quality. *Economic* Increased costs of interpretation, implementation and complaint investigation due to public enquiries and complaints. Likely to attract appeals from community members adversely affected by open burning, increasing plan development costs. *Social* Like Option1, negative externalities would be experienced by the community as a result of the choices of individuals. Reduced enjoyment of the ambient and local air due to poorly managed discharges of contaminants to air. Reduced air quality impacts on enjoyment of the outdoors, part of the New Zealand lifestyle. *Cultural* Further degradation of the mauri of air.
Summary of efficiency: 1	
OPTION 4: More stringent	
Effectiveness	
Under Option 4, all open burning in urban areas would be banned, including recreational burning (e.g. hangi). Firefighter training or emergency burning would also be banned in urban areas. Burning would be by resource consent and would have specific conditions tailored for each situation to manage the discharge. *Relevance - how effective are the provisions in achieving the objectives* This option would introduce more stringent regulations for management of air discharges from open burning in addition to what is proposed by the NESAQ and the Plan Change. These controls would be effective in achieving the objectives. *Feasibility– whether the provisions are within council's powers, responsibilities and resources and ability to implement, monitor and enforce* The management of discharges of contaminants to air is specifically listed as a function of the Regional Council (S30(1)(f)) therefore these provisions are within the powers and responsibilities of Council. Implementation of this option would require a large number of resource consent applications as well as ongoing monitoring and enforcement. This increases costs for Council and the community. *Acceptability – whether the provisions have a fair distribution of impacts and level of political and community acceptance* This option relative to the preferred option provides a marginal improvement in air quality, but a potentially large and unacceptable cost to the community. This would include the loss of recreational burning such as for barbecues and hangi, and the loss of burning in rural areas where there is relatively little impact on air quality and the population is more dispersed. While there is an impact on those that habitually burn and adversely affect those around them, there is also an impact on members of the community who enjoy outdoor cooking or low effect, recreational burning activities	

<table>
<tr><td colspan="2">associated with a typical Kiwi lifestyle.

The community is unlikely to support this more stringent option and it is unlikely to have political support.</td></tr>
<tr><td colspan="2">Summary of effectiveness: 4</td></tr>
<tr><td colspan="2">Efficiency</td></tr>
<tr><td>Benefits</td><td>Costs</td></tr>
<tr><td>Environmental

Improves air quality by:

• banning open burning activities that adversely affect local and ambient air quality

• managing the discharge from other open burning activities through resource consents allowing Council to individually assess each activity.

Social

The negative externalities from the actions of individuals would be further reduced, providing a marginal benefit to the wider community. The benefit is very small because the changes from Option 2 to this option are minor and would impact on few people.

Fewer discharges to air lead to better air quality and increased recreational opportunities, amenity values, health, and overall reduced effects on the community and personal property. However, the beneficial impact would be marginal in relation to that achieved by the preferred option.

Cultural

Reduced contaminants will benefit the mauri of air. As with the social benefits (above), the beneficial impact would be marginal in relation to that achieved by the preferred option.</td><td>Environmental

Community would most likely use alternative methods to dispose of waste that could lead to adverse environmental effects.

Economic

Increased costs to community and Council through processing resource consent applications and monitoring compliance.

Increased costs to councils in dealing with illegal dumping.

Businesses and households using open burning for land management would be required to apply for a resource consent, or find another way to dispose of green waste, leading to an increase in costs.

Social

No recreational burning would stop activities such as use of pizza ovens, some barbeques and hangi. This would affect many people, and impact negatively on social values.

Cultural

Impacts negatively on many cultural activities particularly cooking food outdoors with open fires such as hangi and barbeques.</td></tr>
<tr><td colspan="2">Summary of efficiency: 2</td></tr>
</table>

7.4.5 **Risk of acting or not acting**

Council must assess the risk of acting or not acting if there is uncertain or insufficient information about the subject matter of the provisions (s32(2)(c)).

The effects of poor air quality on health have been extensively studied and there is a large body of evidence to support actions to improve air quality. Complaints from the council about urban open burning provide strong evidence that the activities of a small number of individuals are unacceptable to the wider community.

There is less certainty about the corrosive effects of air discharges on infrastructure. A study is being carried out in the near future which will result in further information. In the meantime, management of open burning is carried out according to RPS Policy IR 1B using a precautionary approach and considering the effect effects of the discharge on infrastructure (AQ P3, and P4).

The Council has sufficient information about the effects of urban open burning activities to manage their discharges of contaminants to air. No further assessment is considered necessary.

7.4.6 Justification of provisions stricter than national standards

Where provisions of the Plan Change are more restrictive than national standards, Council must examine whether the restriction is justified given the circumstances of the region (s32 (4)).

The NESAQ has five regulations that manage discharges to air from open burning of certain materials (regulations 6-10). Four of five of the regulations state that the discharge is prohibited, unless certain conditions are met and resource consent may be granted. In a regional plan this is the equivalent of a non-complying activity where consent may be granted in exceptional circumstances.

The NESAQ allows for more stringent regulations in a regional plan, and the current plan (status quo) has the burning of specified materials listed as prohibited in Rule 20. This means no consent can be granted in any circumstances and is more stringent than the NESAQ.

Council recommends Option 2 which keeps management of the burning of specified materials (or certain materials) consistent with the NESAQ, rather than more stringent as in Option 1 (status quo). Therefore burning of these materials (and some additional materials listed in the Plan Change) is a non-complying activity under AQ R10, where consent may be granted in exceptional circumstances.

The burning of bitumen on a road is prohibited under Regulation 8 of the NESAQ. It is therefore not included in AQ R10 as this would make it a non-complying activity and less stringent than the NESAQ. A regional plan cannot be less stringent than the NESAQ.

An alternative is to include a rule prohibiting the burning of bitumen on a road. However this will duplicate Regulation 8 and a regional plan cannot duplicate the NESAQ. Instead, an advice note to AQ R10 refers the reader to the status of this activity under the NESAQ.

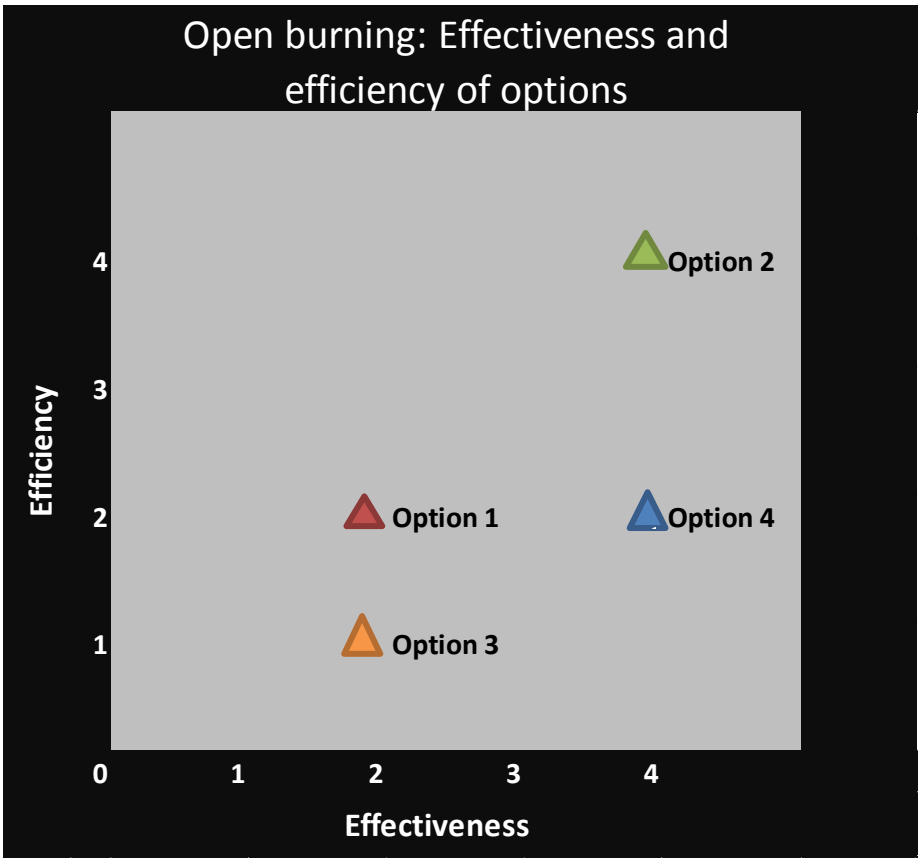
The wording of AQ R10 includes management of discharges to air from enclosed burning, as well as open burning. As the regulations of the NESAQ do not manage materials burned in enclosed burners, no justification is required.

7.4.7 Summary of assessment

Under Option 1 open burning is a permitted activity in urban and rural areas, with specified materials prohibited and direction on good management practices. This policy has been difficult to manage in urban areas, with people reportedly burning household rubbish and prohibited materials. Banning open burning, as in Option 2, reduces the negative externalities experienced by the urban community due to smoke and odour. Urban households have access household rubbish collections, refuse stations and recycling facilities. Option 2 continues to allow recreational fires, such as for hangi and some barbeques, and for quarantine purposes and firefighting.

Other potential options included a more stringent approach (Option 3), or a more lenient approach (Option 4). Option 3 would result in higher social costs for little additional benefit, and Option 4 would not be effective at achieving the objectives.

The evaluation shows that Option 2 the Plan Change to be the most effective and efficient option to achieve the objectives regarding open burning.



Having regard to this information, and taking into account the benefits and costs and the risks of acting or not acting, the most appropriate way of contributing to the achievement of objectives AQ O1, AQ O2 and AQ O3 is by implementing policies AQ P1, AQ P2, AQ P3, AQ P4, and AQ P5, and rules AQ R6, AQ R7, AQ R8, AQ R9, and AQ R10.

7.5 Topic 2 – Rotorua domestic burners

7.5.1 Baseline

The National Environmental Standards for Air Quality (NESAQ) sets a limit of 50µg/m^3 for fine particulates (or PM_{10}). This limit is not a "safe" concentration for fine particulates, but provides an acceptable level of protection for human health while still allowing for normal activities. The deadline for compliance is no more than three exceedances per year by September 2016, and one per year by 2020. An airshed is deemed unpolluted when it has not breached the standard for five years.

The Rotorua Airshed (the airshed) regularly exceeds the NESAQ (Figure 7.4).

Figure 7.4: Boundary of the Rotorua Airshed

During the 2015 and 2016 calendar years the Rotorua Airshed exceeded the standard 13 times and 11 times respectively (Figure 7.5) (BOPRC, 2017).

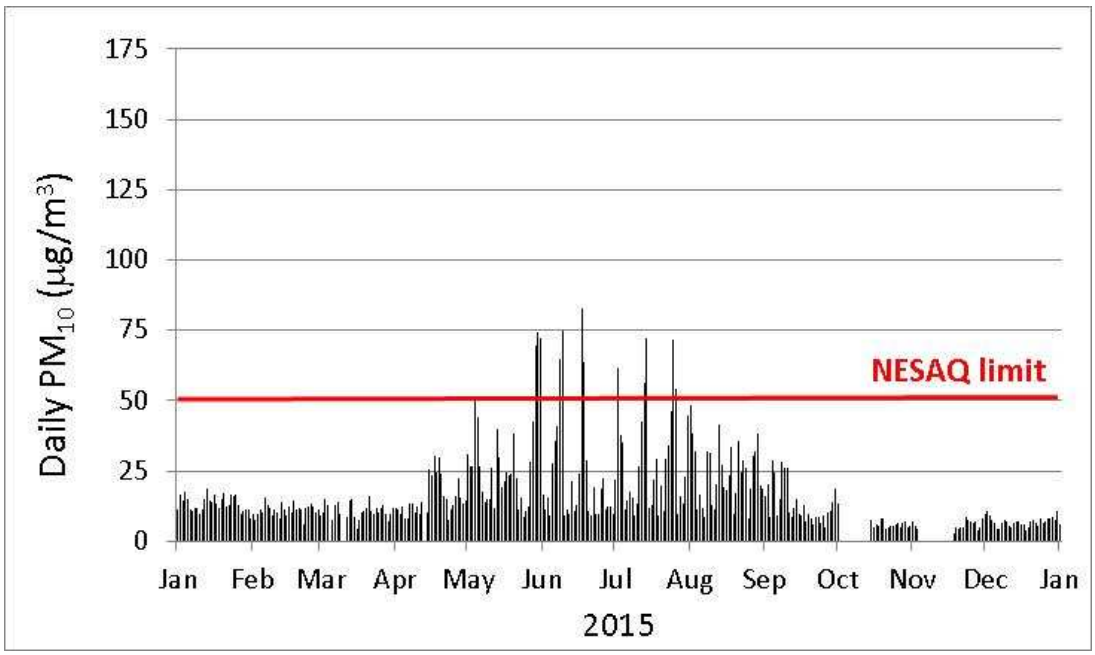


Figure 7.5: PM_{10} (24 hour) values measured at Edmund Road, Rotorua 2015

History of the Rotorua Airshed

The Regional Council has carried out monitoring and research, including an emissions inventory,[28] a home heating survey,[29] and airshed modelling.[30] The inventory showed that although industry contributes to poor air quality, the main source of fine particulates in the Rotorua airshed in winter is domestic burners (Figure 7.6). The home heating survey confirmed that the older burners (not designed to the same standard as modern domestic burners) were a feature of the airshed.

Figure 7.6: Rotorua Airshed in 2008

The findings of the 2007 modelling and research are still considered relevant. The drivers of poor air quality have not changed. Although the burner replacement programme has been operating, the number of burners has not changed markedly.

[28] BOPRC (2007)
[29] BOPRC (2006)
[30] Fisher et al (2007)

National modelling undertaken in 2015 suggested that in Rotorua the contribution of domestic heating to winter PM_{10} could be as high as 92%.[31]

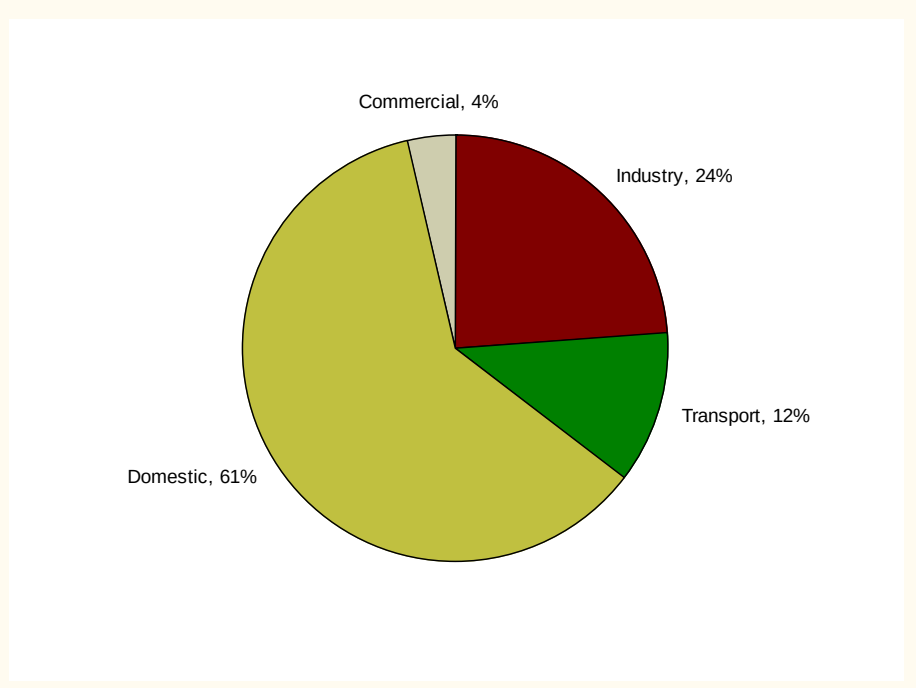


Figure 7.7: PM_{10} winter percentage by source (BOPRC, 2007).

In 2007, modelling showed that in the Rotorua Airshed, PM_{10} emissions from domestic sources of would have to reduce by 60 tonnes/year to meet the NESAQ.[32] To do that, 7,650 (89% of a total 8,550) domestic burners needed to be converted to cleaner heating. This number was calculated based on an assumption that 45% of domestic burners are converted to zero-emission appliances (such as heat pumps), 45% to low emission domestic burners, and 10% to pellet burners. This also assumed that five tonnes of PM_{10} contributed to the airshed from backyard burning is banned through regional rules.[33]

The Council prepared the Rotorua Air Quality Action Plan (the action plan) in December 2008, with a range of actions designed to reduce discharges of PM_{10} in the airshed. Actions included rules, incentives, education, and research targeting domestic burners and industry[34].

The Rotorua Lakes Council introduced the Rotorua Air Quality Control Bylaw (the Bylaw) in 2010[35]. The Bylaw restricts new burner installations to certain types and models, phases out indoor open fires and requires old burner to be removed at the point of property sale.

The number of exceedances of the NESAQ has fallen from highs of around 20-30 per year to 10+ per year in the last 10 years (Figure 7.8). The height of the individual exceedances has also reduced from highs of around 120μg/m^3 to around 80μg/m^3.[36]

[31] Environet Limited (2015).
[32] Fisher et al. (2007).
[33] BOPRC (2007)
[34] BOPRC (2008).
[35] Rotorua District Council (2010).
[36] BOPRC (2017).

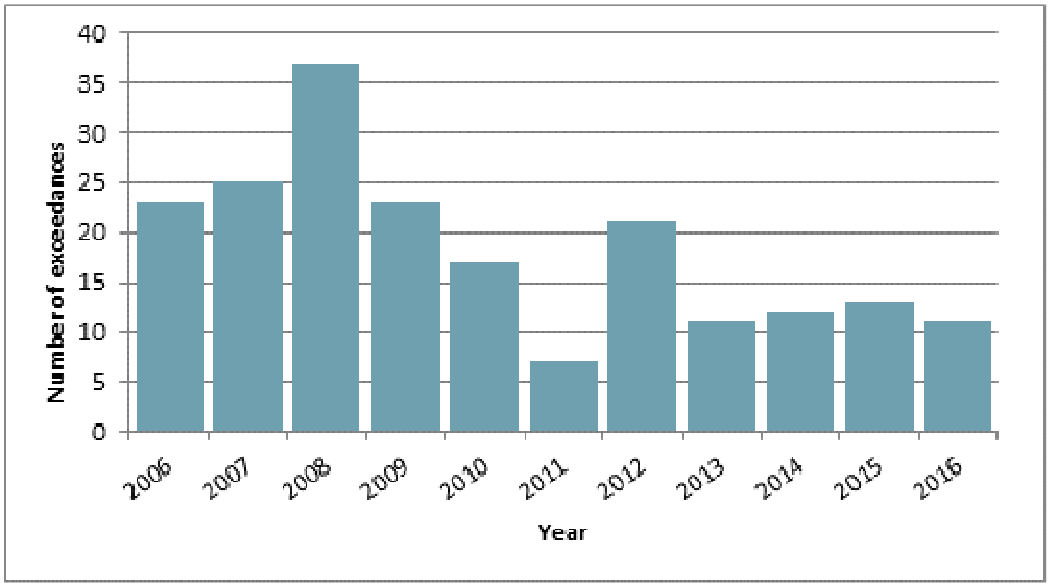


Figure 7.8: Rotorua Airshed annual PM_{10} exceedances of NESAQ: 2006-2016[37]

The Bylaw was reviewed and updated it in 2017[38]. A key reason for the review was to address the continuing breaches of the NESAQ. The 2010 bylaw allowed new burners into the catchment provided they met the NESAQ standard. The update tightened the standard from 1.5 g/kg to 0.6 g/kg. The prohibition on indoor open fire use and the point-of-sale removal of non-complying wood burners remained in place.

The Council has implemented the action plan, converting approximately 4,500 burners to cleaner heating. The annual number of conversions (via the incentive schemes) has declined to about 250 per year. With four years to the NESAQ 2020 deadline and at least 3,150 burners still to convert (from original calculations) current actions are not expected to achieve the NESAQ targets.

Air quality and health

While domestic heating by solid fuel burners provides a benefit to individual households it imposes an uncompensated cost on the wider community in terms of poor health and reduced amenity.[39] The health cost includes early mortality, cardiac and respiratory hospital emissions (including for children), time off work and time out of school (Figure 7.9). Poor air quality can compromise people's ability to work and to get an education.

[37] Missing observations for 23 May - 28 June 2011 mean recorded exceedances are probably lower than actual..
[38] Rotorua District Council (2017).
[39] In economics this type of uncompensated cost is referred to as a negative externality.

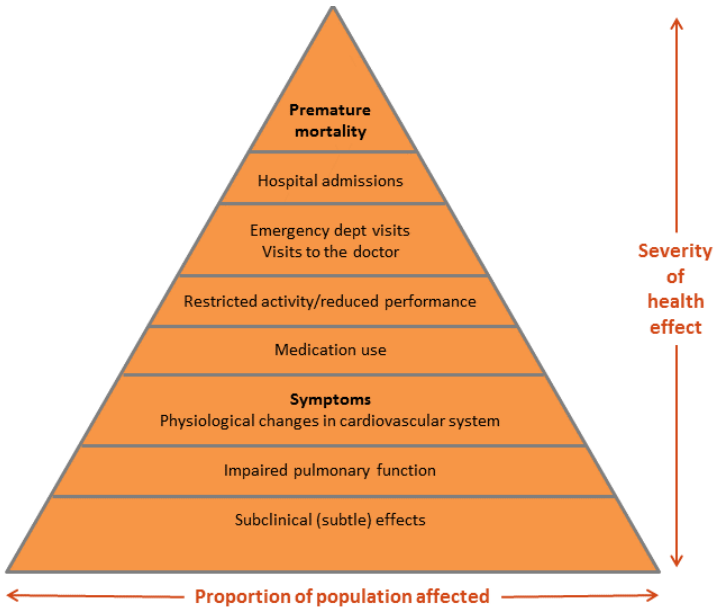


Figure 7.9: Pyramid of PM10 health effects (Source: WHO)

Premature death is the most extreme effect of poor air quality, and is a result of long term exposure to PM_{10}. Modelling of PM_{10} emissions and health outcomes (based on 2006 levels and population) suggested that in the Rotorua district 5-16 people die prematurely each year as a result of exposure to PM_{10} from domestic heating (Table 7.3).[40]

The more immediate health impacts of exposure to PM_{10} emissions include respiratory and cardio health issues, including doctor visits and hospitalisation, and days away from work or school. The modelling[41] suggested annual impacts of 4-13 hospital admissions and 7,500-25,700 restricted activity days (e.g. not going to work/school) as a result of exposure to PM_{10} from domestic heating. The number of people hospitalised, restricted, or otherwise affected by poor air quality is a function of population size – the number of cases increases with the size of a population, even if the air quality remains the same.

[40] Fisher et al. (2007).
[41] Fisher et al (2007)

Table 7.3 Modelled health effects of exposure to PM10 emissions, by source, Rotorua district[42]

Effect	Domestic heating	Motor Vehicles	Industry	Open burning
Premature mortality: All adults 30+ years	5 - 16	2 - 6	4 - 13	0 - 1
Premature mortality: Māori 30+ years	2 - 7	2	2 - 7	0
Cardiac admissions: All ages	1.2 - 3.7	0.4 - 1.3	0.9 - 2.8	0.1
Respiratory admissions: All ages	3.3 - 9.1	1.1 - 2.9	2.3 - 6.4	0.2 - 0.5
Respiratory admissions: Children 1-4 years	1.2 - 4.5	0.3 - 1.3	0.8 - 3.1	0.1 - 0.3
Respiratory admissions: Children 5-14 years	0 - 2.2	0 - 0.7	0 - 1.5	0 - 0.1
Restricted activity days	7,563 - 25,713	1,904 - 6,473	5,011 - 17,036	449 - 1,525

7.5.1 Relevant objectives

Discharges from Rotorua burners are the main source of PM_{10} discharges in the Rotorua Airshed. The airshed is in breach of the standard for PM_{10} in the NESAQ therefore AQ O2 is the most relevant objective for this topic.

AQ O2 The region's ambient air quality meets the National Environmental Standards for Air Quality (2004) and the Ambient Air Quality Guidelines (2002).

The breach of the NESAQ degrades the mauri of air, indicates an area with degraded air quality, and causes proven health effects, therefore AQ O1 also applies.

AQ O1 Protect the mauri of air and human health from adverse effects of anthropogenic contaminant discharges to air, and enhance air quality where degraded.

7.5.2 Options considered

Four options are considered to manage Rotorua burners.

Option 1: Status quo – Rely on national standards, local bylaw, regional policy statement, policies and rules in current plan, non-regulatory actions from Rotorua Air Quality Action Plan

Option 2 Plan Change – Provide additional policies and rules specific to Rotorua burners

[42] This model is based on figures from the 2013 NZ Census when the Rotorua population was about 66,000. See HAPINZ website for model http://www.hapinz.org.nz/ . In Table 7.3 the greyed rows are subsets of the white rows above e.g. premature mortality of Maori aged 30+ are a subset of premature mortality adults aged 30+.

Option 3 Less stringent – Have no policies or rules in Plan Change. Rely on RMA, NESAQ, RPS, other relevant national policies or standards and the local bylaw

Option 4 More stringent – Further restrictions on Rotorua burners

Option	Description	Relevant provisions
Option 1 **Status Quo**	The RPS has a policy to manage the adverse effects of fine particulate contamination. The NESAQ restricts the discharge from new domestic burners in urban areas to an emission standard of 1.5g/kg. Under the current plan the use of domestic burners anywhere in the region is a permitted activity. The Rotorua Air Quality Control Bylaw (the Bylaw) 2017 restricts installation of new burners to low emission modern designs, bans indoor open fire use and requires removal of non-complying burners at point of property sale. The current plan has policies to avoid, remedy mitigate adverse effects of discharges to air, requires consideration of cumulative discharges and permits domestic burners. Council provides incentives to support Rotorua households replacing their old burners.	NESAQ – Regulations 22-24A RPS – Objective 1, Policy AQ 3A, Method 2, Method 3, Objective 10, Policy IR 1B. Policy IR 5B. Bylaw – Rules in Parts 3 and 4 Air Plan Policies - 1(a), 1(b), 8 Air Plan Rule – 3
Option 2 **Plan Change**	The RPS has a policy to manage the adverse effects of fine particulate contamination and the main method relevant to this Plan Change is regional plan implementation. The requirements under the NESAQ, RPS and the Bylaw are the same as for the status quo. Council provides incentives to support Rotorua households replacing their old burners. The Plan Change would introduce specific policies and rules to manage Rotorua burners. Key points are: • Low emission, modern burners are a permitted activity when replacing existing burners. • Imposes an emission standard of 0.6 g/kg for new and replacement burners (stronger than the NES requirement of 1.5g/kg). • Enables new burners (new sources of emissions) in situations where offsets are made elsewhere in the airshed (a discretionary activity) • Restrict or phase out pre-2005 burners (non-complying from 2020) • Open fires are banned (as in the current plan)	NESAQ – Regulations 22-24A RPS – Objective 1, Policy AQ 3A, Method 2, Method 3, Objective 10, Policy IR 1B. Policy IR 5B. Bylaw – Rules in Parts 3 and 4 PC 13 policies – AQ P1, AQ P3, AQ P4, AQ P7 PC 13 rules – AQ R12-R14
Option 3 **Less stringent**	The less stringent option is the same as the status quo in terms of RMA provisions and has not been analysed separately.	n/a
Option 4 **More stringent**	The more stringent option would include stricter policies and rules in the Plan Change which may include:	NESAQ – Regulations 22-24A RPS – Objective 1, Policy

Option	Description	Relevant provisions
	• Stricter requirements for replacement burners e.g. tamper resistant. • Allow only ULEBs as new installs or replacements. • Allow no new burners of any type or design – replacement of existing burners only. • Any burners not permitted by plan are prohibited, not allowing for any exceptional circumstances. • Earlier phase out date e.g. date of notification. • Rolling phase-outs of any burner older than 15 years (or nominated date range)	AQ 3A, Method 2, Method 3, Objective 10, Policy IR 1B. Policy IR 5B. Bylaw – Rules in Parts 3 and 4 PC 13 – stricter policies and rules

7.5.3 Evaluation of provisions to manage Rotorua burners

The scale and significance of this topic is rated as moderate to high.

The following table summarises the effectiveness and efficiency of the policy options to manage Rotorua burners:

Option 1: Status quo
Effectiveness
Relevance – how effective are the provisions in achieving the objective/s To achieve AQ O2, the region's air quality must meet the NESAQ and AAQGs. Currently the Rotorua Airshed regularly exceeds the daily ambient air quality standard for PM_{10} in the NESAQ and AAQG (see Figure 7.4, above). The main source of PM_{10} in the Rotorua Airshed is domestic burners. Option 1 does not identify ambient air quality in Rotorua as a specific issue and there are no controls on the use of domestic burners in the airshed. Management of domestic burners relies on incentives and other legislation. In 2006 it was estimated that PM_{10} needed to be reduced by 60 tonnes per year (Fisher et al. 2006). At the time there were 8,550 burners in the airshed (BOPRC, 2006). Council estimated that 7,650 burners would need to be replaced to achieve the 60 tonne reduction. This figure assumed that 45% of homeowners would replace with heat pumps or flued gas, 10% would install pellet burners, and 45% would install a woodburner. This assumption was based on a combination of the expected uptake for EECA's Clean Heat programme in 2009 (60% heat pumps, 20% woodburners, 15% pellet fires and 5% gas)[43] and the observed uptake from the Council's participation in this programme where conversion was 70% woodburners, 20% heatpumps and 10% pellets[44]. Due to the large difference in these conversion rates, and factors that indicated a higher likelihood of participating homeowners selecting woodburners throughout the trial, Council selected a midpoint of 45% between these two figures. The level of PM_{10} reductions depends on which appliance the homeowner selects to replace their existing burner. When a burner is replaced with a heat pump, all the emissions are removed. However, when an old burner is replaced with a new burner, even a modern one, emissions reduce by only about half; for every two new burners in the airshed, another has to be removed, on top of the original estimate of removals. In 2009 the Council introduced the Bylaw and incentives to encourage conversions. The uptake of these incentives is discussed further below. Option 1 will not meet the NESAQ limit by the 2020 deadline (and therefore will not achieve AQ O2) for the

[43] EECA (2009)
[44] BOPRC Memorandum (2011)

following reasons:

1. New burners – The NESAQ regulations restrict the installation of new woodburners in urban areas to those meeting the national standard and prohibit the installation of indoor open fires in gazetted airsheds. The regulations do not address coal burners or multi-fuel burners (the most polluting types). The Bylaw provides additional management, and restricts *all* new burner installations to those meeting the NESAQ regulations, including coal burners and multi-fuel burners. The Bylaw allows homeowners to install new burners where there was no burner previously. This introduces new sources of PM_{10} into the airshed and adds to the existing problem.

2. Number of existing old burners – Over time older burners will be replaced by modern, cleaner burners. In the 2005 emissions inventory, 23% of burners in the Rotorua Airshed were less than five years old (installed between 2000 and 2005) and 11% were 5 - 10 years old (Figure 7.10). However, 48% of burners were installed prior to 1995 (and two-thirds of those before 1990), making them 10+ years old at that time. After 10-15 years burners become less efficient in terms of emissions and thermal efficiency (ability to warm a house). The survey results indicate that homeowners are slow to upgrade their burners. Without some form of regulation and/or a financial incentive natural attrition will not be sufficient to achieve the NESAQ target ambient air standard by the due date of 2020.

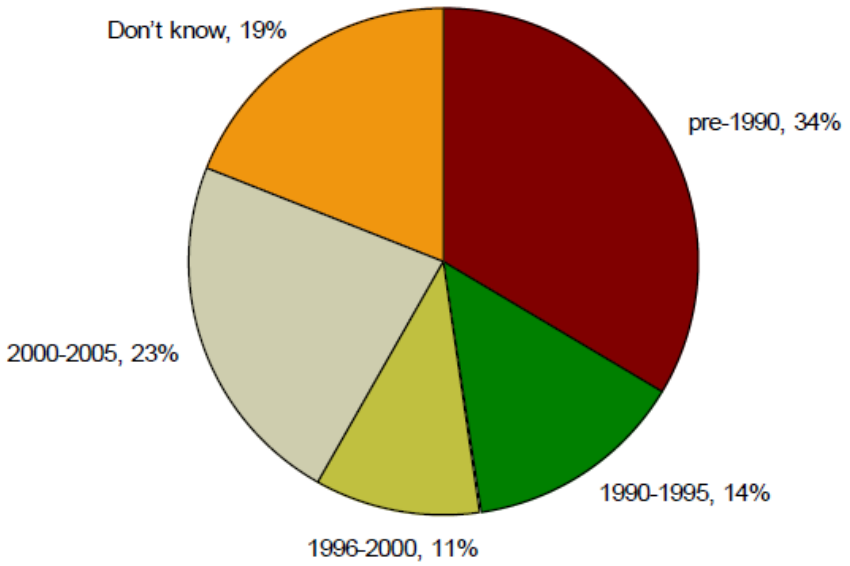


Figure 7.10: Age of Rotorua woodburner stock as at 2005 (BOPRC, 2007)

The NESAQ has no regulations to target existing burners, but Council's investigations show that older burners are an impediment to achieving the NESAQ. The Bylaw has two rules requiring the phase-out or removal of existing burners. The point of sale rule (effective since May 2012) requires any existing fire that does not comply with the NESAQ regulations to be removed before a house is sold. The open fire rule phased out indoor open fires in May 2015.

Despite these rules, the reduction of fires is not sufficient to reach the 60 tonne PM_{10} reduction required to achieve the NESAQ (one or fewer exceedances by 2020). About 4,000 more burners must be converted to achieve the goal and AQ O2.

3. Burner-for-burner replacements – The burner-for-burner replacement rate has been higher than anticipated. Instead of the 45% rate assumed by Council, in the five years to 2015 70% of homeowners chose a replacement burner. In 2015 the Hot Swap loan terms were revised, and homeowners replacing burners with burners were charged interest on the previously interest free loan. Homeowners replacing burners with heat pumps were charged no interest. The burner replacement rate dropped to 34%. However, the six year average to 2016 dropped to 62%. Even with this recent change Option 1 will not make sufficient to comply with the NESAQ and achieve AQ O2.

4. Reduced uptake of incentives – Under Option 1, unless a property is sold, homeowners are not required to upgrade their burner. Council relies on financial incentives to drive replacements. Hot Swap loans, (where homeowners, including landlords, can take out an interest free loan and pay it back over ten years) have been available since 2010, but loan applications are trending downwards (Table 7.4). Council is not in a position to support an incentives programme indefinitely. A guarantee of continuing funding cannot be made under the Local Government Act 2002.

Table 7.4: Hot Swap loans approved, by year

Month	2010/11	2011/12	2012/13	2013/14	2014/15	2015/16
July	0	38	43	75	32	13
August	3	38	51	35	19	6
September	11	26	33	31	20	10
October	88	14	22	17	25	12
November	74	17	14	16	25	14
December	32	14	19	4	0	9
January	26	16	17	13	0	7
February	38	21	41	31	13	15
March	47	30	48	53	12	25
April	54	36	63	44	22	26
May	63	38	62	46	17	28
June	44	53	44	43	18	22
Total	**480**	**341**	**457**	**408**	**203**	**187**
Total loans approved						**2076**

Council estimates 4,000 woodburner conversions may still be needed. Currently Clean Heat grants and Hot Swap loans stand at about 200/year each. Under Option 1 the Rotorua Airshed is unlikely to achieve the NESAQ target by 2020.

5. Design standard – the NESAQ design standard of 1.5g/kg for woodburners was set 12 years ago, based on the technology at the time. Since then, burner design has continued to evolve as councils introduce more stringent rules to target domestic burning (e.g. 1.0 g/kg in Canterbury[45], 0.7g/kg in Otago[46]). Woodburners are now regularly being designed and tested at 0.5g/kg. Continuing with a 1.5 g/kg emission rate reduces the chance of achieving the NESAQ targets as compared to introducing a lower emission limit.

In summary, the Bylaw and NESAQ do not regulate new burners sufficiently. Burners with emission rates up to 1.5 g/kg can be installed in the airshed. The Bylaw and NESAQ do not target older burners that must to be converted to cleaner heat to meet the NESAQ. Under Option 1 these older burners may remain in place unless the homeowner opts for an incentive such as a Clean Heat grant or Hot Swap loan. The number of Hot Swap loan applications is decreasing. Option 1 will not achieve AQ O2.

AQ O1 requires the enhancement of air quality where degraded. Any airshed not meeting the standards (included in AQ O2) has degraded air quality, therefore not achieving AQ O2 means not achieving.

Feasibility – whether the provisions are within council's powers, responsibilities and resources and ability to implement, monitor and enforce

The management of discharges of contaminants to air is specifically listed as a function of the Regional Council under the RMA (s30(1)(f)). Council is mandated to ensure that the region complies with the NESAQ.

[45] Canterbury Natural Resources Regional Plan 2009
[46] Regional Plan: Air for Otago 2003

Council currently administers and enforces the Bylaw on behalf of the Rotorua Lakes Council. Council works with real estate agencies and conveyance lawyers to raise awareness of the Bylaw and compliance requirements. Council uses a combination of building permits and transfer of property documents to follow up with compliance and enforcement.

Acceptability – whether the provisions have a fair distribution of impacts and level of political and community acceptance

Many households enjoy using burners to heat their homes and are likely to be reluctant to upgrade sooner than they consider necessary. Option 1 will be attractive to part of the community. Burners provide a benefit to individuals at a cost to the community; the sector of the community affected by poor air quality caused by high PM_{10} concentrations will not find this option acceptable. Option 1 will not achieve the NESAQ, so it is unlikely to be supported politically, either at local or national level.

Summary of effectiveness: 1

Efficiency

Benefits	**Costs**
Environmental: Option 1 represents a gradual improvement in air quality as aging woodburners are replaced, but it is insufficient to improve air quality to the NESAQ target. *Economic*: A relatively small but important economic benefit to some individual households who are recipients of the Clean Heat grand or an interest free loan for cleaner heating. Community health costs are unlikely to reduce under Option 1 because of new burner installations and the higher PM_{10} levels allowed for new burners. *Social* At an individual household level, the grants or Hot Swap loans have led to warmer homes for participants, and have contributed to an improvement in the air quality leading to an increase in wellbeing. *Cultural* Environmental benefits enhance the mauri of air.	*Environmental* Ongoing poor air quality (below NESAQ target). *Economic* In 2012 the costs due to negative health outcomes associated with solid fuel domestic heating in the Rotorua Airshed was estimated to total [2016]$38 million.[47] These costs were made up of mortality, cardiac and respiratory hospital admissions, and restricted activity days (Table 7.3, above). These costs may have reduced with the highest levels of emissions falling, but the airshed has had 11 or more exceedances of the standard each year since 2013, suggesting the health costs remain high. Under Option 1 homeowners must remove noncompliant domestic burners at point-of-sale (of home). This may make a marginal difference to the price paid for a house (the new homeowner has six months in which they can apply for a Hot Swap loan to replace the burner). The current programme to bring the Rotorua Airshed into compliance is costing the Regional Council approximately $1.5 million per year to implement the Rotorua Air Quality Action Plan. This cost is funded through rates and is based on 50% targeted rate (Rotorua District) and 50% general rates (Bay of Plenty region). *Social* The health issues and social costs related to poor air quality affect for the wider community. The health issues impact disproportionately on Māori (see Table 7.3, above). Restricted activity days impact on the ability of individuals to work, play and get an education. While there is a social and economic benefit to individuals in using solid fuel burners to warm their homes, it is at the expense of the wider community who have uncompensated costs in relation to health

[47] Based on the model associated with the Kuschel et al (2012a) report. Figures converted to 2016$ using the GDP Implicit Price Deflator (Statistics NZ).

	and wellbeing and amenity values. Reduced enjoyment of the ambient and local air due to discharges of contaminants to air. *Cultural* Poor air quality degrades the mauri of air. Reduced ability to enjoy a typical kiwi lifestyle which includes clean air.
Summary of efficiency: 2	
Option 2: Plan Change	
Effectiveness	

Relevance

This option includes polices and rules to sit alongside the existing incentives (loans and grants) and build on existing regulations. The provisions are more stringent than the NESAQ and target domestic burners.

The proposed polices and rules (Option 2) take into account (1) the difference between laboratory versus real-life emissions from burners, and (2) the modifications to reduce emissions. These issues are not addressed by the NESAQ, the Bylaw or the current plan.

The first issue is the difference between the NESAQ design standard and real-life emissions. The design standard of 1.5g/kg is determined using a standardised testing method. During testing, firewood must be of a specified size, type (species) and moisture content. The fire is lit using a specified method and wood is loaded at a consistent rate. This ensures the test is measuring the performance of the fire, not the firewood or the user.

In real-life firewood varies in size, type and moisture content. Users have different practices that influence the level of emissions. Some people burn rubbish, including food waste and plastics which can increase PM_{10} emissions and produce other toxic emissions.

Testing of woodburners in Tokoroa revealed the average, real-life discharges from burners was 4.6g/kg[48]. Modern burners are cleaner than older burners (which burn at about 10g/kg[49]), but 4.6g/kg is three times higher than the laboratory test of 1.5g/kg. Analysis shows that the lower the emissions rate recorded in the laboratory, the lower the real-life emissions[50].

Option 2 uses a design standard of 0.6g/kg. While this rate is below the NESAQ standard of 1.5g/kg, the rate was chosen because it represents a considerable improvement in PM_{10} reduction as required for the Rotorua Airshed, and provides some choice in solid fuel home heating.[51, 52]

Pellet burners are an exception and are proven to have low emissions both in the laboratory and in real-life. These burners are designed to burn manufactured wood pellets with a consistent size and moisture content. Pellets enter the burning chamber automatically during burning. This system removes both fuel and user variation. Real-life tests of pellet burners match laboratory emission rates[53]. Pellet burners range from 1.5 g/kg down to 0.1 g/kg.

Knowing that woodburners do not perform in real-life as they do in the laboratory makes it difficult to guarantee cleaner air, even with low emission burners. Pellet burners are a potential solution. However, pellet burners require electricity, which may be an issue in areas where power cuts are frequent or lengthy. Pellet burners also require the purchase of purpose-made pellets, so may not be a practical option for low income households. Therefore Option 2 allows the replacement of an existing burner (all types except indoor open fires) with a new woodburner, provided it meets the required standard.

[48] Ministry for the Environment (2007).
[49] Environment Waikato (2006).
[50] Applied Research Services Limited (2016).
[51] See for example the ECAN website which lists 11 woodburners meeting this standard https://www.ecan.govt.nz/data/authorised-burners/
[52] Consideration was given to using 0.5g/kg. Increasing to 0.6g/kg provided a greater range of approved burners and did not significantly undermine the focus of reducing the emission rates of individual burners. See Report to Rotorua Air Quality Working Party 18 August 2017: Further Options for Rotorua Air Quality Control Bylaw
[53] Ministry for the Environment (2007).

Another issue is modification of burners to reduce emissions through some adjustment or attachment. This includes refurbishment of burners, similar to a car service where parts (such as baffles, bricks, tubes, and seals) are cleaned or replaced. This process may improve the performance of the burner, increasing efficiency and reducing emissions. However, there is no evidence that this provides a significant improvement, and because of this refurbished woodburners are non-complying under Option 2.

Other modifications include the installation of devices to reduce emissions produced by the fire while it is burning. These may be in the burning chamber to improve combustion, or attached to the flue to remove emissions. These devices are currently untested, unproven or uncertain.

Council considered the issues of real-life emissions, modification of woodburners along with scientific research. The information was used to develop the policy and rules package of Option 2 to ensure Rotorua burners are managed to achieve AQ O2.

New burners in the airshed (not replacing an existing burner) are limited to pellet burners. Although pellet burners discharge PM_{10} into the airshed, it is at a lower rate than other burners - less than 1.5g/kg - in real life emissions.

The Bylaw phased out indoor open fires in May 2015. These emissions are considered to have been removed from the airshed, therefore any replacement of an indoor open fire with a burner of some type is adding new emissions. Under this option, indoor open fires can be replaced with a pellet burner (but not a woodburner). At the time that this Plan Change is notified, households with indoor open fires have had more than two years to replace their fire with another burner. This is considered to be sufficient time to take action.

The rules contain an exemption for indoor open fires in Heritage Buildings. Three of these Heritage Buildings contain indoor open fireplaces that have not been blocked off or replaced with modern woodburners and therefore may still be used. Although these three fires may still be used, they do not significantly contribute to the PM_{10} in the Rotorua Airshed and their continued use will not significantly undermine the objectives. There is also an exemption for smoking and cooking of food. This activity does not burn large volumes of solid fuel over several hours and does not contribute significant amounts of PM_{10}.

The main source of PM_{10} is the remaining stock of old burners. Option 2 phases out the most polluting types of burners, indoor open fires, coal burners, and multi-fuel burners by target dates. The phase out date for indoor open fires has passed (2015). The phase out date for the remaining burners is 2020.

This single rule is one of the key pathways to ensuring compliance with the PM_{10} standard in the NESAQ and achieving AQ O2.

Ensuring air quality achieves AQ O2 means enhancing air quality where degraded and achieves AQ O1.

Feasibility

The management of discharges of contaminants to air is specifically listed as a function of the Regional Council (s30(1)(f)) therefore these provisions are within the powers and responsibilities of Council.

Monitoring and enforcement of this activity is challenging, but feasible. Other councils have enforced these types of rules for several years and have developed many options for monitoring and enforcement. These methods range from raising awareness of the rule (and relying on most people to do the right thing), up to checking chimneys for emissions and issuing notices. As houses are sold the point-of-sale rule will also be effective in achieving this.

The Council is already successfully enforcing the Rotorua Air Quality Bylaw, and will continue to do so during enforcement of the regional rules.

Option 2 assumes that Council will continue to fund the clean heat through the Hot Swap loans and grants, and will fund enforcement of the rules.

Acceptability

Ultimately this is a rule to limit the negative external effects that individual households have on the health and wellbeing of the wider community. A criticism of Option 2 is that it restricts choice in the market, both in terms of reducing the NESAQ standard for woodburners, and in terms of not allowing new woodburners in the airshed where they are not replacing existing. However, Option 2 is a direct response to the negative externality, which is a market failure, where the actions of individuals (or firms) are visited on (and uncompensated) the wider community.

Previous versions of these rules did not allow for pellet burners as new burners. This was not acceptable to or supported by the Rotorua Lakes Council.

Consultation on the draft plan shows a low acceptability for phasing out older burners. However, four

commenters provided positive feedback on the phase out of old burners. The majority of commenters on these rules were in opposition. However, many comments showed a misunderstanding of the draft rule, such as thinking the Council wanted to ban all burners. There was also considerable concern for the impact of changing burners on low income households. This is an effect that Council has already carefully considered, and mitigated through incentives schemes.

Two aspects of the Bylaw 2017 may impact on poorer households. One is potentially negative, the other potentially positive. The first is related to the removal of non-compliant solid fuel heaters when houses are sold. Non-compliant includes indoor open fires and pre-September 2005 wood burners. It is the seller's responsibility. Several things could happen at this point:

(1) If the house is bought by someone who will live in it, they have six months from the house purchase to use the Hot Swap Scheme to install replacement heating. The property would also be eligible for a Hot Swap insulation loan. It is probably reasonable to expect that someone buying a house can also afford to heat it.

(2) If the house is bought as a rental then it is up to the landlord to provide heating. Landlords are required by law to provide heating for the main living area, but the heating can be in many forms, and will not necessarily be cheap to run. In cases where a household previously had a wood burner and sufficient means to keep the house warm, they may be worse off. Landlords are not eligible for the Hot Swap Scheme, but are eligible for the Hot Swap insulation loan which can be added to rates and paid off over 10 years.

    The degree of impact in a change from a wood burner to another heating option depends on two things: the household's ability to run the wood burner, and the cost of the new heating. Using a wood burner is not costless; it requires either the purchase or collection of sufficient wood for the winter. Where there is insufficient wood, poorer households may be better off with a heat pump. Heat pumps are relatively cheap to run, and are efficient heaters. If the replacement is a more expensive form of electric heating, households may tend not to run the appliance because of high costs. Whether they are worse off depends on how they used the wood burner.[54]

The second aspect in terms of poorer households is that the proposed change to stop new installations of wood burners (in new houses or where not previously installed) is that it enables more households to retain existing wood burners. Two new installations require one existing wood burner to be removed to break-even on air quality.

The regulatory approach with provisions similar to those proposed in Option 2 is consistent with rules introduced by other councils. These rules have been successful in improving air quality where they have been in place and enforced for some time. For example, Nelson City Council introduced rules to restrict discharges from certain burners and would only allow woodburners to be installed if they were replacing existing woodburners in 2008.[55] Airshed A, in Nelson South, was once one of the worst airsheds in NZ. In 2015 all Nelson airsheds, including Airshed A, complied with the National Environmental Standards, although Nelson City Council noted that the warm and windy weather may have contributed to lower emissions and better dispersion of particulate matter.

As set out in Part 7.5.1 and this part of the report, Council has implemented many other actions to improve air quality in Rotorua. Rules are the last resort. Without this approach the Rotorua Airshed will cease moving towards the NESAQ, which is the air quality standard set for New Zealand.

Summary of effectiveness: 4

Efficiency

Benefits	**Costs**
Environmental Option 2 is a proactive approach to improving air quality, and moves the Rotorua Airshed towards	*Environmental* In the short term the Rotorua Airshed will experience poor air quality until the domestic heating stock is

[54] WINZ can pay up to $200 to low income households to assist with an outstanding power accounts, or to reconnect electricity. People do not have to be on a benefit to qualify, and may not have to pay it back depending on their situation. This is done on a case-by-case basis. See https://www.workandincome.govt.nz/eligibility/living-expenses/heating-and-power-bills.html#null . Other options to manage winter power accounts include a smooth pay arrangement with the power company to avoid high winter bills.

[55] http://nelson.govt.nz/assets/Our-council/Downloads/air-quality-plan/Nelson-Air-Quality-Plan-Air-Quality-Rules.pdf

the NESAQ. *Economic* The requirement for very low emission burners promotes innovation by producers. Contributes to increased demand for research and development of new solid fuel burning technologies and tamper resistant designs.[56] Modelling suggests that community health costs under the Option 2 will reduce as air quality improves. These include premature mortality (a long term impact of poor air quality), cardio and respiratory hospital admissions, and restricted activity days. In the longer term positive health outcomes could be expected to contribute to productivity gains due to reductions in restricted activity days. A relatively small but important economic benefit to some individual households who are recipients of the Clean Heat grand or an interest free loan for cleaner heating. Better controls on air discharges reduce public complaints (long-term) reducing resources required for investigation and enforcement. *Social* Fewer nuisance issues through requirement for cleaner burners, and replacement of older burners. Improvement in quality of life through improved community health, with a reduction in restricted activity days, cardio and respiratory admissions, and premature death due to poor air quality. Over the period of change this is expected to be a substantial reduction. *Cultural* Moderate level improvement in air quality impacts positively on the mauri of air. Well managed air quality increases opportunity to enjoy the lifestyle that kiwis expect – the ability to enjoy the outdoors without adverse effects on heath or well-being. Encourages cultural shift towards modern heating appliances to heat homes which are more efficient and better for the environment. Allows for limited continued use of indoor open fires in Heritage Buildings, preserving our past culture.	changed to cleaner heat. *Economic* Less acceptable to some of the community than Option 1 (the status quo), this Option 2 may have moderate costs to the Regional Council to progress plan Schedule 1 RMA process. Moderate to high costs to council for ongoing monitoring and enforcement. Other costs include communication to encourage change to cleaner heat, and to inform people that pre-2005 burners are no longer compliant, and continuing to administer the point-of-sale rule. Resource requirement will lessen over time as domestic burners are replaced with clean heating options. The incentives programme and Plan implementation costs are funded by through rates. Option 2 continues the cost of incentives and adds on the cost of implementation of the Proposed provisions. The definition of non-compliant woodburners in the point-of-sale rule means the removal of additional woodburners that may not have otherwise been removed. The removal will be a cost to home sellers, and the replacement is likely to be a cost to home buyers. Ultra low emission burners retail for about $5,000.[57] Removal of existing burner and installation would be additional costs. *Social* In the shorter term the acute health issues associated with poor air quality are likely to persist while air quality improves. Reduced choices to homeowners for whom the installation of a woodburner in situations where there wasn't one (e.g. new homes) is no longer available unless the homeowner creates an offset elsewhere in the airshed (conditions apply). Reduced options for replacement burners, which now must meet more stringent emissions limits; however there is a range of options available that meet the Option 2 standard. Option 2 may result in some colder homes as a result of removal of pre-2005 burners at point-of-sale. It could affect people who were previously able to provide sufficient wood to warm a house, but are not able to pay the costs of electric or gas heating. This may be a particular issue with renting households.[58] However, wood is not a 'free' option. Where it is not bought it must be gathered. Gathering sufficient to adequately warm a house is likely to require a good source of quality wood, a trailer, a chainsaw and time. There is a risk of an increase in fuel poverty. This is

[56] See for example article in Stuff, 4 May 2016 'Ultra low-emission woodburners keep home fires burning', which describes the positive response from Christchurch design and manufacture of ultra low-emission burners and the market for those appliances http://www.stuff.co.nz/life-style/home-property/79592206/ultra-lowemission-woodburners-keep-home-fires-burning

[57] Consumer New Zealand /www.consumer.org.nz/

[58] See Footnote 51 regarding WINZ assistance

	mitigated by the gradual changes required by the policy, which allow homeowners to plan for the replacement of older domestic burners. For homeowners the availability of Hot Swap loans reduces the risk of increased fuel poverty. *Cultural* New Zealand has a culture of using fire for home heating. Some people will see this as reducing their ability to exercise their rights in this regard.
Summary of efficiency: 3	
Option 3: Less stringent – As noted above the less stringent option is the same as status quo so has not been analysed separately.	
Option 4: More stringent	
Effectiveness	
Relevance Option 4 includes a range of regulations more stringent than the NESAQ and Option 2, which would work alongside the incentives. The regulations could be introduced either individually or as a package, and would achieve AQ O2. The effectiveness of each regulation in achieving AQ O2 is discussed below. (1) Allow replacement burners only – only burners already installed in the airshed could be replaced with a new burner. Any house that does not have a burner would not be able to install one. This is the most effective way to restrict new discharges of PM_{10} into the airshed. (2) Allow only ultra-low emission burners (ULEB) as replacements – Environment Canterbury identified a need for a burner that was designed to burn with "ultra low emissions" even when operated under real-life conditions. To facilitate this, they developed Canterbury Method 1.[59] This method required burners to discharge no more than 0.5g/kg when operated under conditions including burning wet wood, normal firewood sourced from a merchant (containing bark, knots, differing sizes) and a hardwood species. Burners that passed this test are called ultra-low emissions burners and there are now several affordable models available on the market. However, despite being tested using Canterbury Method 1, there is uncertainty as to the performance of these burners outside the laboratory. The method itself is under constant revision and no *in situ* real life tests have been carried out to date. Both Environment Canterbury and Bay of Plenty Regional Council have commissioned real-life testing of these burners. Results are pending. If the real-life emissions turn out to match (or at least resemble) the laboratory test results, ULEBs could be the future of solid fuel burning. At this stage it is uncertain if this is the case and therefore ULEBs are considered woodburners. As discussed in Option 2, ULEB have been designed to burn cleaner under conditions more like real-life. If this is the case, requiring households to replace their existing burners with a ULEB would significantly reduce the emissions of PM_{10} into the airshed, and potentially provide the option of installing a burner to some houses that do not currently one. (3) Stricter requirements for burners (e.g. tamper resistant) – Most modern burners do not allow overnight burning because restricting oxygen to the burning chamber significantly increases emissions. There is anecdotal evidence that some burners can be altered (tampered with) after installation to allow for longer burning. Tampering results in a burner that does not meet the design standard of the NESAQ. The implications of tampering include increased fire risk, non-compliance with building permits and loss of insurance. If Council incentive funds were used to purchase a compliant burner that is tampered with, the community has funded something that provides no community benefit.	

[59] Environment Canterbury (2015).

The Council commissioned an investigation into tamper resistance of burners. The investigation focussed on burners on the Ministry for the Environment approved woodburner list (as at 2015) that had a design standard of 0.5g/kg (in 2015) and were physically inspected to determine whether alterations could be made to allow for overnight burning.

Of 37 burners inspected, 29 allowed simple adjustment to the dampening system (tampering) to close off air to the fire. Only eight were found to be tamper resistant and of those, only one model had a water heater. There were several burners with a design standard just over the 0.5 g/kg threshold that would be classified as tamper resistant.

Follow up investigation was carried out in 2016 to expand the list of tamper resistant burners to ensure availability of a wide range of freestanding or insert burners, with and without water heaters. The list of burners to be inspected was expanded to include burners with a design standard of 1.0 g/kg.

(4) Rolling replacement of burners – the Draft Plan contained a section of the rule requiring all burners within the Rotorua Airshed to be replaced after 15 years. This ongoing upgrade of would take advantage of the best technology, for example the introduction of ULEBs. However, the uncertainty about the real life performance of ULEBs means that this approach could not be realistically assessed for effectiveness.

(5) Any burner not permitted is prohibited – Option 2 has any burner that is not permitted, non-complying. This allows for resource consents to be granted for burners in exceptional circumstances. This would be effective at reducing emissions, but not significantly as Council does not expect there to be many cases where exceptional circumstances apply.

(6) Earlier phase out date – This option could bring the phase out date for older burners forward, allowing more time for monitoring and enforcement to ensure compliance with NESAQ (and achievement of AQ O2). This would be unlikely to be effective without a significant increase in resources to aid replacement of burners and monitor and enforce.

Feasibility

All of these regulations are within the Council's mandate to manage discharges of contaminants to air under RMA (s30(1)(f)). However, there is considerable uncertainty regarding the effectiveness of some of the regulations, and significant additional resources would be required for to monitor and enforce others to ensure their effectiveness, now and into the future.

Implementing the tamper-resistant option would require resourcing to inspect each type of burner and assess the ability to tamper with it. New types would also need inspection, and a list of compliant burners would need to be maintained. Implementing a rolling replacement means ongoing compliance monitoring and probably ongoing incentives to assist homeowners with conversions. The considerable resources required make this option less feasible.

Option 4 assumes that funding would be available to monitor and enforce.

Acceptability

Allowing replacement burners only and limiting these to ULEBs was the option presented to the community in the Draft Plan. This was not acceptable to the public or to Rotorua Lakes Council.

Stricter design standards may be acceptable to councillors and the community provided a suitable range of tamper-resistant burners is available. Currently there are at least eight, including one model with a water heater.

The stricter controls that would make up Option 4 are unlikely to be supported by councillors and the community due to shortened timeframes and significant costs (discussed further below), therefore this option would not be effective.

Summary of effectiveness: 1

Efficiency

Benefits	**Costs**
Environmental	*Environmental*

Option 4 would improve air quality, and moves the Rotorua Airshed towards the NESAQ. *Economic* The economic benefits of Option 2 would apply here. *Social* The social benefits of Option 2 would also apply here. *Cultural* The cultural benefits of Option 2 would apply here.	In the short term the Rotorua Airshed will experience poor air quality until the domestic heating stock is changed to cleaner heat. In Option 4 this would potentially occur more quickly than in Option 2. *Economic* Option 4 is unlikely to be accepted by community and is likely to attract appeals (based on those received for the draft rules), leading to significant costs to the Regional Council to progress the plan Schedule 1 RMA process. High and immediate costs of monitoring and enforcement, and ongoing costs to ensure the 15-year replacement compliance. Resource requirement will lessen over time as domestic burners are replaced with clean heating options. The incentives programme and Plan implementation costs are funded by through rates. Option 2 continues the cost of incentives and adds on the cost of implementation of the Proposed provisions. The definition of non-compliant woodburners in the point-of-sale rule means the removal of additional woodburners that may not have otherwise been removed. The removal will be a cost to home sellers, and the replacement is likely to be a cost to home buyers. Moderate costs to households. Earlier replacement of non-compliant burners would reduce planning time for this expense. All residents of the Rotorua District may be required to pay a targeted rate to fund the implementation of the Rotorua Air Quality Action Plan. Monitoring and enforcement will need to start again in 15 years to ensure replacement of aging burners. *Social* Low risk of increased stress on homeowners through having to change how they heat their homes and pay for the fuel. The phasing of the change reduces this risk. Reduced choices to homeowners who can now no longer install a woodburner where one previously did not exist. This includes new homes. Reduced options for replacement burners, which now must meet more stringent emissions limits. The lower the emissions level the fewer options available in the market. The extreme would be a stricter regime with a complete ban on woodburners. Like Option 2, this option may result in some colder homes, but under the same circumstances. If a shorter timeframe were imposed this would exacerbate any fuel poverty problems. The increased stringency increases the risk of impacts on groups with higher deprivation and on general social impacts. The risk of unintended consequences also increases as we have less ability to predict impacts into the future.

	Cultural New Zealand has a culture of using fire for home heating. Some people will see this as reducing their ability to exercise their rights in this regard.
Summary of efficiency: 3	

7.5.4 Risk of acting or not acting

Council must assess the risk of acting or not acting if there is uncertain or insufficient information about the subject matter of the provisions (s32(2)(c)). This is also consistent with Policy IR 1B of the RPS, which requires a precautionary approach when there is uncertainty.

The NESAQ air quality standard must be met by 2020. Modelling shows that domestic heating is responsible for at least 61%[60], and possibly 90%[61] of PM_{10} emissions. Monitoring shows that although air quality in the Rotorua Airshed has improved (fewer breaches of the standard), it is not sufficient to meet the NESAQ standard.

Currently there is significant uncertainty regarding ULEBs. These types of burners meet a design standard set out by Canterbury Method 1, not by the well-established, repeatable AS/NZS 4013:2014. Canterbury Method 1 is undergoing revisions therefore burners that meet this test should be regarded with caution until they have been tested in real-life conditions.

ULEBs could eventually prove to be the cleanest burners available, even in real life. If Council does not include ULEBs in the rules package to manage burners in the Rotorua Airshed it will miss the opportunity to improve burner stock. However, if the ULEBs do not perform well in real-life, there is a risk that emissions from these burners will be higher than their design standard of 0.5g/kg, thereby compromising the ability of the Rotorua Airshed to meet the NESAQ standard.

Real-life tests have been carried out on one type of ULEB (the Tropicair Duo) installed in 10 Rotorua houses. The results from this test are still being assessed but the initial results indicate that the average discharge is 1.0g/kg and that moisture content does not increase discharges. These results are not final and are only on one particular model of ULEB therefore should be treated with caution, however they are encouraging.

Currently ULEBs meeting the requirements of the NESAQ are considered no better or worse than any other burner that meets the same standards. Council has included ULEBs in the Plan Change with the same level of control as other NESAQ compliant woodburners. Additional testing on ULEBs will be carried out by Environment Canterbury during winter 2018 and the risk will be reassessed following further testing.

Nevertheless, there are low emission burners on the market that meet the standard required by Option 2.

There is considerable uncertainty regarding various emission-reducing devices which can be attached to existing burners – either inside the burning chamber or to the flue. These devices are subject to further scientific testing and investigation and

[60] Fisher (2007)
[61] Environet Limited (2015).

are currently not proven to consistently reduce emissions, or to be practicable to domestic burning situations.

There is little doubt that acting (Option 2) will move the airshed towards compliance with the NESAQ. The risk of not acting is that the Rotorua Airshed will not meet the NESAQ, and the high costs to health and wellbeing will continue.

When further information is available regarding these devices, this risk can be re-assessed, but until then, the precautionary approach is recommended. Burners with these devices that do not meet the permitted activity rule (AQ R12) in the Plan Change will be considered to be non-complying (AQ R13).

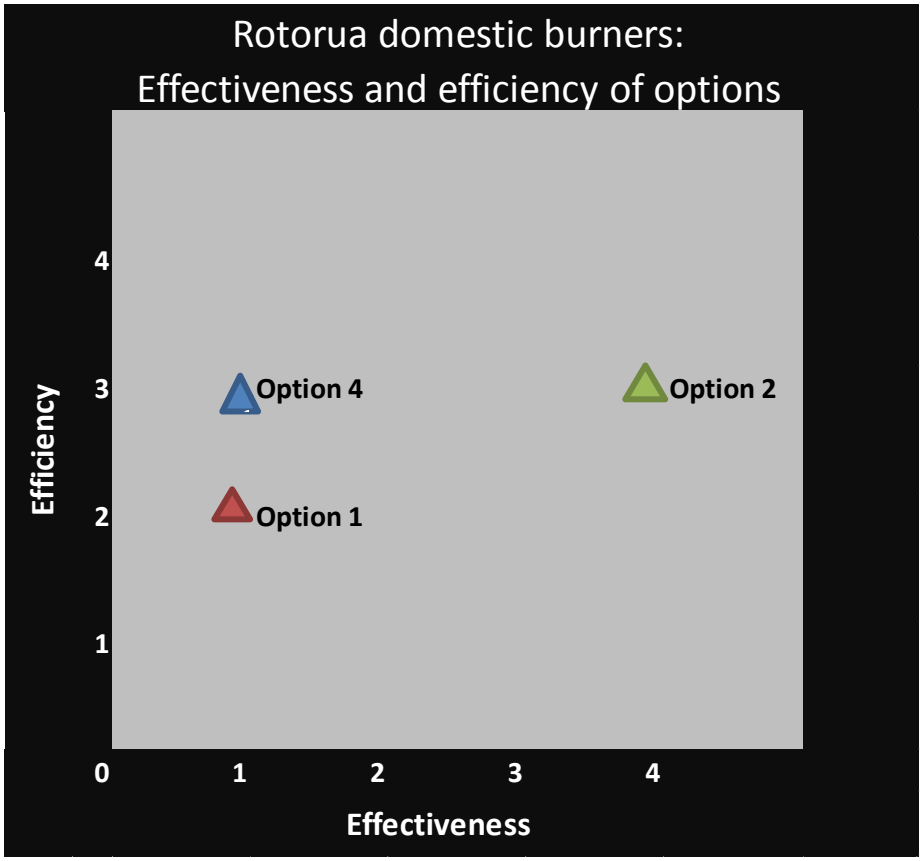
Having regard to this information, and taking into account the benefits and costs and the risks of acting or not acting, the most appropriate way of achieving

7.5.5 Justification of provisions stricter than national standards

The proposed change contains provisions stricter than national environmental standards. Justification for these provisions is provided in the analysis of Option 2.

7.5.6 Summary of assessment

The assessment shows Option 2 of the proposed Plan Change to be the most effective and efficient option to achieve the objectives regarding Rotorua burners. Option 2 reduces the number of new sources of PM_{10}, and ensures that replacements are low emission burners. This option addresses the high costs to the community from individual actions at a reasonable level. Option 1 has been in place for some considerable time, and the airshed remains a polluted airshed. Option 1 is not effective. Option 4 would achieve little more than Option 2 – the main difference being the timeframe, but it would require the Council to be very heavy-handed in enforcement, which would be costly but not necessarily effective.



Having regard to this information, and taking into account the benefits and costs and the risks of acting or not acting, the most appropriate way of contributing to the achievement of objectives AQ O1 and AQ O2 is by implementing policies AQ P1, AQ P3, AQ P4, and AQ P7 and rules AQ R12, AQ R13 and AQ R14.

7.6 Topic 3 – Agrichemical spraying

7.6.1 Baseline

Previously regional and district councils had an explicit function to control the adverse effects of the storage, use, disposal or transportation of hazardous substances under the RMA (s30).

Since then several Acts of Parliament have been introduced:

- Hazardous Substances and New Organisms Act 1996 (HSNO) – administered by the Environmental Protection Authority (EPA). Manages the risks of hazardous substances to safeguard people and the environment. Under the HSNO Act there are a number of Hazardous Substances Regulations that set out regulations for different classes of substances and for different uses (e.g. disposal, emergency management).
- Health and Safety at Work Act 2015 (HSW Act). Worksafe New Zealand is responsible for establishing workplace controls for hazardous substances, and is the principal enforcement and guidance agency in workplaces.
- Agricultural Compounds and Veterinary Medicines Act 1997 – administered by the Ministry for Primary Industries. Authorises agricultural compounds for use to prevent or manage risks to public health, trade in primary produce, animal welfare and agricultural security.
- Land Transport Act 1998 – regulates the transport of hazardous substances, including agrichemicals.

The additional RMA controls on hazardous substances duplicate or increase those in place under HSNO, which can be confusing for users of hazardous substances.

The Resource Legislation Amendment Act 2017 removed the control of hazardous substances as an explicit function of councils. This means councils no longer have an explicit obligation to regulate hazardous substances in RMA plans, or policy statements. Consequential changes have also been made to the HSNO Act and the HSW Act in light of this change.

The intent of this change is to remove the perception that councils must always place controls on hazardous substances under the RMA and to ensure councils only place additional controls on hazardous substances if they are necessary to control effects under the RMA that are not covered by the HSNO or HSW Acts.

In most cases HSNO and Worksafe New Zealand controls will be adequate to avoid, remedy or mitigate adverse environmental effects (including potential effects) of hazardous substances. However, Councils still have a broad function of achieving integrated management, and must still control discharges of contaminants into or onto land, air or water (s30(f)).

The New Zealand Standard Management of Agrichemicals 8409:2004 (the Agrichemical Standard) is a Code of Practice prepared under s78 and s79 of the HSNO Act. The Standard sets out the requirements for the safe, responsible and effective management of agrichemicals by suppliers, transporters and users. It sets out the means for meeting the performance requirements to achieve compliance with the following:

- Hazardous Substances (Classes 1 to 5 Controls) Regulations
- Hazardous Substances (Classes 6, 8 and 9 Controls) Regulations
- Hazardous Substances (Disposal) Regulations
- Hazardous Substances (Emergency Management) Regulations

The discharge of agrichemicals to air may occur as spray drift which may cause adverse effects.

Spray drift is not controlled by other regulations as they focus on different aspects of hazardous substances (although the Agrichemical Standard contains some guidance relevant to this). This regulatory gap is filled by provisions in regional plans to avoid, remedy or mitigate adverse effects of spray drift.

The current plan manages the use of agrichemicals according to the previous legislative landscape

Agrichemicals are managed according to whether they are being used for biosecurity purposes, or by application method. Different application methods have differing risks of spray drift. For example, a hand-held, non-motorised application method is less likely to result in spray drift than aerial application.

There are four rules in the current plan, generally referred to as the “spray rules”. These rules allow for the use of agrichemicals without the need to obtain a resource consent, provided the conditions of the rules are complied with.

Summary of existing rules:

- Rule 10 permits the use of agrichemicals for the eradication or management of organisms declared unwanted under the Biosecurity Act 1993
- Rule 11 permits the use of agrichemicals using hand-held non-motorised application
- Rule 12 permits the use of agrichemicals from aircraft
- Rule 13 permits the use of agrichemicals using other application techniques not covered by Rules 11 and 12

All four rules have standard conditions:

- No harmful concentrations of agrichemicals beyond the property boundary or into water
- Users must have GROWSAFE® certification (level depends on method of application)
- Agrichemical use must comply with manufacturer’s instructions and NZS 8409:1999 Code of Practice for the Management of Agrichemicals.
- For Rules 12 and 13 the occupiers of any adjoining properties within 50 metres for ground based application, and 200 metres for aerial application must be notified from 20 days to 12 hours before agrichemical use except public land.
- For agrichemical use in Rules 12 and 13 applying to land adjoining public roads and places, signs must be placed on the boundary 24 hours before application, and removed when land is safe for re-entry.
- Where agrichemicals are used in public places, notification must be 1 week before application in newspapers and other methods such as letter drops, and the site of the agrichemical use must be sign posted until the site is safe for public re-entry.

Complaints about agrichemical spraying

A 2015 review of annual complaints data revealed:

- A general increase in the number of agrichemical complaints (Figure 7.11). In a typical year the spring months bring the greatest number of complaints and August generally the highest month.
- About 10% (100-120) of annual air complaints are about agrichemicals. In any year, 50-60% of the agrichemical complaints are about spray drift. Complainants refer to chemical odour, windy conditions, and health concerns from exposure to the spray. Some complaints refer to Hi-Cane® (Hydrogen Cyanamide) by name.[62]
- Of the spray drift complaints, about half are about non-notification or inadequate notification.[63]
- In 2015 around 18% of complaints were from people who considered that notification was inadequate. Issues included as a broad window for spraying (e.g. will be in the week of 24th-31st), or just a sign in the driveway, or notification less than an hour before spraying begins.
- Information is an issue; the complaints data shows that a growing number of people want more information. Complainants are concerned that they don't know what is being sprayed and so they don't know what precautions they should take. This is an issue for businesses and individuals.
- Health concerns were about themselves and families, with particular concern for individuals with existing health issues, or when people may be particularly sensitive (e.g. during pregnancy), or children. People reported headaches and other symptoms perceived to be directly related to spray drift.
- Animal health, dead vegetation, and loss of organic grower status were concerns for business people. People reported dead birds, sick livestock.
- Agrichemical spray drift occurred when spraying was undertaken in high winds, but also occurred at other times (where high wind was not reported), suggesting that poor practice may be an issue in some cases. Aerial spraying was associated with complaints of spray drift in a small number of cases.

[62] Hi-Cane is a chemical used on kiwifruit orchards to promote budburst. In 2006 the Environmental Risk Management Authority, now the Environmental Protection Authority (EPA) reassessed the use of substances containing hydrogen cyanamide including Hi-Cane®. The risks, costs and benefits were assessed and Hi-Cane® was approved for continued use with some additional controls including requirements for labelling, transport, storage and disposal. These requirements are not relevant to the Air Plan (Environmental Risk Management Authority, 2006)

[63] Based on the expectations of the person affected.

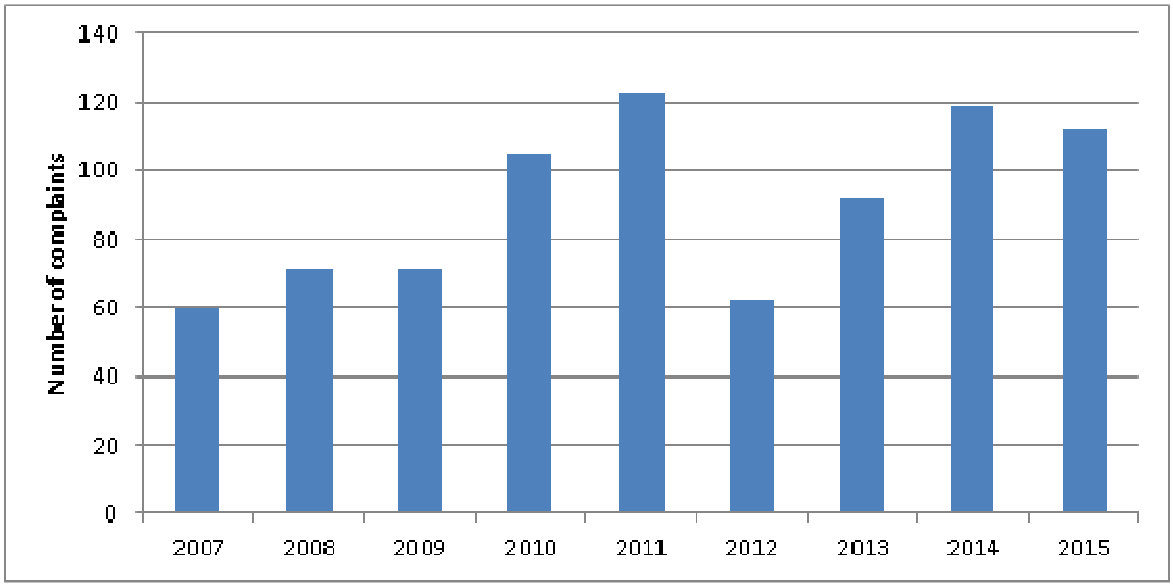


Figure 7.11: Complaints about agrichemical spraying in the Bay of Plenty, by year

The areas with the greatest number of complaints are Katikati, Ōpōtiki, Tauranga, Te Puke and Te Puna. It is worth noting that the complaints for Katikati do not include surrounding areas such as Aongatete, Pahoia and Ōmokoroa, which are listed as separate areas (Figure 7.12).

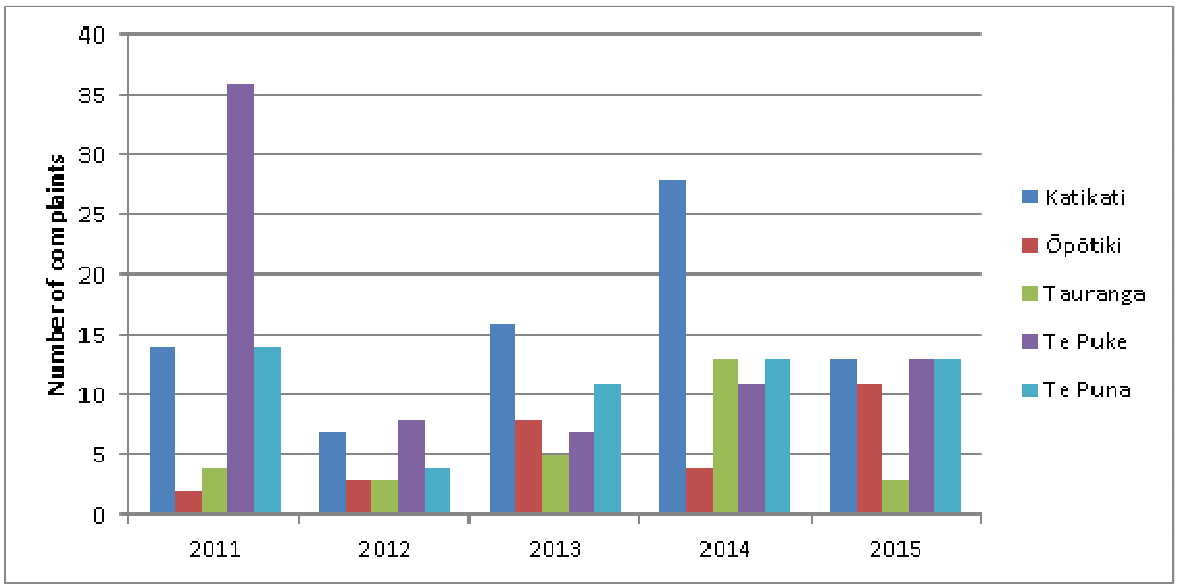


Figure 7.12: Number of complaints on use of agrichemicals by location 2011-2015.

A large number of complaints were received in November 2010, due to the discovery of a bacterial disease, *Pseudomonas syringae pv actinidiae* or Psa. A spraying programme was initiated to prevent the spread of Psa, and a spike of complaints was observed in August of 2009 and 2010.

Assessment of the spray rules

An assessment of spray rules in the current plan was undertaken in 2011.[64] The assessment included interviews with Council staff, and the formation of an evaluation group made up of industry representatives, sprayers and interested parties (such as complainants).

The assessment found that the current approach was reasonably successful but had a number of problem areas:

- NZS8409: 1999 has been replaced and is no longer relevant. References should be to NZS8409:2004 and consideration should be given to the way the standard is referenced in the plan.
- Notification was the single most contentious issue and there are a number of challenges in balancing the need for neighbours to have accurate and timely advance notice of spraying, with spray applicators needing to work around contracting and weather conditions. Issues included:
    - Buffer distances need to be consistent with NZS8409:2004.
    - Requirement to notify "occupier of adjoining property" not targeting all potentially affected dwellings.
    - Time period of 20 days to 12 hours is impractical and should be narrowed.
    - Variety of notification methods not encouraged.
    - Standardised signage requirements needed.
- Sensitive sites are currently not given any consideration when carrying out spraying.
- Certification requirements need to be reviewed to ensure they are relevant and up-to-date.
- Definition of "harmful concentration" needs to be clearly understood and measurable.
- General format needs to be considered to ensure the rules are easily understood.

The review found that the agrichemical rules for the Bay of Plenty were consistent with the equivalent rules in plans from Hawke's Bay Regional Council, Taranaki Regional Council, and the Horizons (Manawatu-Whanganui) Regional Council at the time the review was carried out.

The review also identified implementation issues, not relevant to this Section 32 analysis.

The Bay of Plenty Regional Council has no monitoring information on agrichemical emissions.[65]

[64] Harrison Grierson (2011).

[65] In 2015 the Ministry for the Environment published Home heating emission inventory and other sources evaluation (Environet, 2015). This document provided no estimates of air emissions from agrichemicals, although referred to a 1997 report by Opus which noted the potential importance of agrichemicals as a source of air pollutions, recording that '*EBOP found there was no simple way of calculating the emissions from fertiliser application and information on pesticide use as not able to be obtained from the suppliers or users of these products*.' And '*To date no inventory has actually attempted to quantify emissions from this source*.'

7.6.2 Relevant objectives

Discharges to air from agrichemical spraying have an adverse effect on local air quality therefore AQ O3 is the most relevant objective to this topic.

AQ O3 Manage discharges of contaminants to air according to their adverse effects on human health, cultural values, amenity values and the environment.

This may then lead to significant adverse effects on the mauri of air, human health, and the environment therefore AQ O1 also applies

AQ O1 Protect the mauri of air and human health from adverse effects of anthropogenic contaminant discharges to air, and enhance air quality where degraded.

7.6.3 Options considered

Four options are considered to manage agrichemical spraying.

Option 1: Status quo – Rely on Regional Policy Statement, policies and rules in current plan and the New Zealand Standard Management of Agrichemicals NZS:8409 (the NZ standard)

Option 2 Plan Change – Provide additional policy and rules specific to agrichemical spraying

Option 3 Less stringent – Have no policies or rules in Plan Change. Rely on RMA, RPS and the New Zealand Standard for Management of Agrichemicals (the Standard).

Option 4 More stringent – Further restrictions on agrichemical spraying

Option	Description	Relevant provisions
Option 1 **Status Quo**	The RPS has air quality policies to manage the adverse effects of odours, chemicals and particulates and the main method relevant to this Plan Change is regional plan implementation. Under the status quo, agrichemical spraying is permitted. The current plan has policies to avoid, remedy mitigate adverse effects of discharges to air, requires consideration of cumulative discharges, requires monitoring of discharges with unknown effects and permits agrichemical spraying. Under the current plan: • Contractors or people using agrichemicals for commercial purposes require appropriate GROWSAFE® Certificate (or equivalent) • Notification to adjoining properties within 200m of agrichemical use • Notification no earlier than 20 days, no later than 12 hours prior to application (unless a private notification agreement allows otherwise) • No harmful concentrations beyond the boundary of the property or into water	RPS – Objective 1, Policy AQ 2A, Method 2, Objective 11, Policy IR 1B. Air Plan Policies - 1(a), 1(b), 2, 8 Air Plan Rules – 10-13
Option 2 **Plan Change**	The requirements under the RPS are the same as for the status quo. The Plan Change would introduce more specific policies and a consolidated rule with updated	RPS – Objective 1, Policy AQ 2A, Method 2, Objective 11, Policy IR 1B.

Option	Description	Relevant provisions
	requirements to manage spray drift from agrichemical use. The Plan Change: • Permits agrichemical spraying provided conditions for management, notification, signage and spray risk management are met. • Drone application not more than 5m above target during application • Signage and boundary notices required • Notification to adjoining properties within 50m for ground-based application and 200m for aerial application • Notification no earlier than 72 hours, no later than 24 hours prior to application (unless a private notification agreement allows otherwise) • No noxious, dangerous, offensive or objectionable discharges beyond the property boundary or into non-target waterbodies	PC 13 policies – AQ P1, AQ P2, AQ P3, AQ P4, AQ P8 PC 13 rule – AQ R15
Option 3 **Less stringent**	Discharges from agrichemical spraying would be automatically permitted under the RMA S15 (2) and (2A) with no additional conditions. Users would still need to comply with all other legislation.	RPS – Objective 1, Policy AQ 2A, Method 2, Objective 11, Policy IR 1B.
Option 4 **More stringent**	The more stringent option would include stricter policies and rules in the Plan Change which may include: • Conditions generally more stringent such as more notification, wider notification zones, increased signage. • Requiring spray risk management plans to be forwarded to the Council. • Requiring certification for agrichemical users • Notifying Council before carrying out some spray operations. • Requiring resource consents for certain types of spraying such as spraying using high pressure booms, drones, or aerial application.	RPS – Objective 1, Policy AQ 2A, Method 2, Objective 11, Policy IR 1B. PC 13 – stricter policies and rules

7.6.4 Evaluation of provisions to manage agrichemical spraying

The scale and significance of this topic is rated as moderate.

The following table summarises the effectiveness and efficiency of the policy options to manage agrichemical spraying:

Option 1: Status quo
Effectiveness
Relevance – how effective are the provisions in achieving the objective/s The RPS has methods to increase awareness and knowledge of agrichemicals, but do not improve management of the discharge to air. The RPS relies on regional plans to give effect to and implement its provisions.

The Agrichemical Standard provides the code of practice to ensure agrichemicals are used in a way to comply with the HSNO Act. The Agrichemical Standard's primary purpose is for agrichemical use to meet the requirements of the HSNO Act with the bulk of the document covering matters such as personal protection equipment, storage, transport and disposal. There are some sections of the HSNO Act that provide guidance on reducing spray drift such as s5 (requirements for notification and consideration of sensitive areas) and Appendix G (spray drift and weather conditions).

However, the Agrichemical Standard was designed to ensure compliance with the HSNO Act, not the RMA. Left on its own, there is a regulatory gap where spray drift is not managed. Additional controls are required under the RMA and this Plan Change to manage the discharge of contaminants to air in the form of spray drift.

Spray drift, where the agrichemical becomes airborne and is blown away from the target area and off-site where it may cause potential adverse effects such as effect on human health, compromising an organic crop, contamination of feed for stock. To achieve the objectives, the Plan Change requires additional controls to manage these effects under the RMA.

The policies and rules of the current plan provide additional conditions to manage agrichemical use with regard to contaminant discharges to air under the RMA. While these rules have been mostly effective, some issues have reduced their effectiveness. These are:

- References to the superseded 1999 Agrichemical Standard
- Duplication of conditions over four rules.
- Issues with notification requirements including:
    - Buffer distances inconsistent with NZ Standard
    - Definitions of "harmful concentration" and "adjoining property" not clear.
    - Notification period of time period of 20 days to 12 hours is impractical.
    - Variety of notification methods not encouraged.
    - Signage requirements not standardised.
- Sensitive activities are not considered.

The annual number of complaints about agrichemicals has been trending upwards. While increased complaints do not necessarily mean that there is an issue with the rule itself, it indicates that the rule and the supporting policies may not be as effective as required and there is a risk that AQ O3 will not be achieved.

Feasibility – whether the provisions are within council's powers, responsibilities and resources and ability to implement, monitor and enforce

The management of discharges of contaminants to air is specifically listed as a function of the Regional Council (s30(1)(f)).

A large amount of resources are currently used interpreting rules, investigating complaints, and addressing ongoing issues with agrichemical use.

Keeping the status quo will not mean that the objectives aren't met, but the provisions could be more effective than they currently are, giving more confidence that the objectives are met. In addition, Council does not enforce the GROWSAFE® certification requirements, so it is potentially ineffective.

Manages effects through mitigation – some acceptance that a certain level of spray drift will occur and it is up to the potentially affected parties to take action to prevent adverse effects.

Acceptability – whether the provisions have a fair distribution of impacts and level of political and community acceptance

Keeping rules the same without updating to be current with the NZ Standard or addressing the issues as identified (e.g. wide period for notification; subjectivity of notification) is not acceptable to the community (evidenced by complaints) and on this basis is unlikely to be accepted by councillors.

Summary of effectiveness: 3

Efficiency	
Benefits	**Costs**
Environmental This option provides greater protection from management of spray drift in addition to NZ Standard requirements. *Economic* Provides an economic benefit to landowners because it allows spraying of crops and pasture to manage pests and increase productivity without unnecessary process, such as applying for resource consent. *Social* Nil identified *Cultural* Nil identified	*Environmental* Current conditions do not adequately manage all spray drift activities, resulting in adverse environmental effects. *Economic* Four separate rules are repetitive and confusing for users, increasing the costs of meeting the regulations (i.e. transaction costs). Increased costs through agrichemical users needing GROWSAFE® certification to cover matters unrelated to discharges to air. Ongoing complaints investigation and compliance and enforcement into spray drift incidents. Spray drift can affect and devalue crops on other properties. This is a particular problem where crops on other properties are (a) near to harvest, and/or (b) are organically certified Requires notification of every potentially affected party for each occasion that spraying is carried out. Increases costs and time required. *Social* Some subjectivity in the rule (e.g. definition of "adjoining" leading to some affected properties not being notified) leading to adverse effects. This can compromise neighbourhood relations. One size fits all approach to notification does not allow for personalised approach which may lead to poor communication and deteriorating relationships with neighbours. Complaints received by Council indicate a high level of concern by the community who consider under the current approach (a) they do not receive sufficient information, and (b) the window for spraying after notification is too wide to enable people to plan their response (e.g. to be away during spraying). *Cultural* Spraying eventually reaches the ground where it may affect the whenua long term.
Summary of efficiency: 2	
Option 2: Plan Change	
Effectiveness	
Relevance The RPS has methods to increase awareness and knowledge of agrichemicals, but these do not improve management of the discharge to air. The RPS relies on regional plans to give effect to and	

implement its provisions.

The Agrichemical Standard provides the code of practice to ensure agrichemicals are used in a way to comply with the HSNO Act. The Agrichemical Standard's primary purpose is for agrichemical use to meet the requirements of the HSNO Act with the bulk of the document covering matters such as personal protection equipment, storage, transport and disposal. There are some sections of the HSNO Act that provide guidance on reducing spray drift such as s5 (requirements for notification and consideration of sensitive areas) and Appendix G (spray drift and weather conditions).

However, the Agrichemical Standard was designed to ensure compliance with the HSNO Act, not the RMA. Left on its own, there is a regulatory gap where spray drift is not managed. Additional controls are required under the RMA and this Plan Change to manage the discharge of contaminants to air in the form of spray drift.

Spray drift, where the agrichemical becomes airborne and is blown away from the target area and off-site where it may cause potential adverse effects such as effect on human health, compromising an organic crop, contamination of feed for stock. To achieve the objectives, the Plan Change requires additional controls to manage these effects under the RMA.

Polices and rules of the current plan provide additional conditions to manage agrichemical use with regard to contaminant discharges to air under the RMA. However, as discussed above, these rules have several issues that may be reducing their effectiveness. Some evidence for this can be seen in the annual number of complaints about agrichemicals. While complaints do not necessarily mean there is an issue with the rule, they do indicate that management of the issue could improve.

Anecdotal information provided by the BOPRC Regulatory Compliance team indicates that there are few reported adverse effects from hand-held methods or low pressure booms (such as booms used on the back of tractors or quad bikes for small scale spraying). Most of the complaints regarding agrichemical spraying are from aerial methods or large automated booms (such as used in horticulture). Evidence from complaints shows that lack of or inadequate notification is the main concern of complainants, and feedback from the community on the draft plan indicated concerns about spraying in public areas, particularly the lack of signage.

This information indicates that for activities with a low risk of spray drift fewer conditions are required to ensure mitigation of adverse effects. However, where there is a higher risk of adverse effects, for example with large boom or aerial spraying, or when spraying near public amenity areas, additional conditions are required to manage adverse effects.

The Plan Change includes additional conditions to increase effectiveness of the provisions. These are based on the NZ Standard or designed to address a specific issue from current rule implementation:

- High risk sprayers are required to prepare a spray risk management plan and update it annually. The plan includes consideration of specific hazards associated with agrichemicals (e.g. toxicity to bees), sensitive areas and sites, and strategies to avoid contamination of sensitive areas and sites.
- Alternative notification requirements are included for those sprayers who choose to have agreements with neighbours, with full notification requirements as a default if agreements are not in place.
- Sprayer certification requirements have been removed. Certification requirements are not considered to make the rule any more effective than the conditions.

These conditions make the Plan easier to use and understand and are more tailored for specific agrichemical spraying methods and locations and will contribute to achieving AQ O3.

Feasibility

The management of discharges of contaminants to air is specifically listed as a function of the Regional Council (s30(1)(f)) therefore these provisions are within the powers and responsibilities of Council.

A large amount of resources are currently used interpreting rules, investigating complaints, and addressing ongoing issues with agrichemical use. The Plan Change seeks to improve the rules to reduce these issues and increase effectiveness.

Manages effects through mitigation – some acceptance that a certain level of spray drift will occur and it is up to the potentially affected parties to take action to prevent adverse effects.

Acceptability

The Plan Change rules for agrichemical spraying were extensively discussed with key stakeholders prior to the release of the Draft Plan, during the draft notification period, and again before the release of this Plan Change.

Many people are interested in agrichemical spraying, from those affected by spraying to those carrying out the spraying. Option 2 is the most feasible way forward, and represents a middle ground that enables spraying to occur, while avoiding, remedying and mitigating the adverse effects of the spray. For some people the requirements will not be enough, and for others they will seem excessive. Widespread acceptability of these provisions is not expected.

For the most part however, the revised provisions are supported by key stakeholders.

Summary of effectiveness: 3

Efficiency

Benefits	**Costs**
Environmental Option 2 provides better protection from management of spray drift in addition to NZ Standard requirements. Requires specific consideration of sensitive sites and sensitive areas which may provide environmental benefits. *Economic* Allows spraying of crops and pasture to manage pests and increase productivity without unnecessary process, such as applying for resource consent. Decreased costs through agrichemical users no longer needing certification to cover matters unrelated to discharges to air (however, certification required under other legislation to use many agrichemicals). Better management of spray drift will result in less impact on neighbouring crops (e.g. spray drift at harvest time or on organic crops). Narrower window for notification will increase certainty for neighbouring commercial properties in terms of ensuring their own produce is protected. More certainty around requirements reducing transaction costs associated with interpreting requirements. *Social* Increased certainty to the community. The narrowing of the notification window from maximum 20 days: minimum 12 hours, to maximum 3 days: minimum 24 hours will address many of the concerns about inadequate notification, and the ability of the community to keep their family safe. Better relationships with neighbours through annual preparation of Spray Risk Management	*Environmental* Will not adequately manage all spray drift activities, resulting in adverse environmental effects. Option 2 provides management of these. *Economic* Increased cost to sprayers to prepare Spray Risk Management Plan, including take time for notification agreements. The Spray Risk Management Plan will require annual updating. The initial year is expected to have one-off moderate costs, but these are expected to be lower for annual updates, unless the situation has changed significantly. Ongoing complaints investigation and compliance and enforcement into spray drift incidents. Spray drift will still occur in some cases, and can affect and devalue other crops (e.g. at harvest time and/or organically grown crops). A small additional cost to landowners associated with the narrower window for notifying neighbours of an intention to spray. The cost could be reduced by agreement with neighbours about communication methods, such as texting. No certification requirement (under this rule) could lead to many operators not obtaining appropriate training. However, council officers do not currently check for certification therefore this could already be occurring under current rules. *Social* Spray drift off target will still occur in some cases, and will result in dissatisfied people and communities, and complaints about spray practices. *Cultural* Spraying eventually reaches the ground where it

Plan and notification agreements. Allows for individualised notification agreements between sprayers and neighbours leading to better communication between neighbours. *Cultural* Nil identified	may affect the whenua long term.
Summary of efficiency: 4	
Option 3: Less stringent	
Effectiveness	
Relevance The RPS has methods to increase awareness and knowledge of agrichemicals, but does not improve management of discharges to air. The RPS relies on regional plans to give effect to and implement its provisions. The Agrichemical Standard provides the code of practice to ensure agrichemicals are used in a way to comply with the HSNO Act. The Agrichemical Standard's primary purpose is for agrichemical use to meet the requirements of the HSNO Act with the bulk of the document covering matters such as personal protection equipment, storage, transport and disposal. There are some sections of the HSNO Act that provide guidance on reducing spray drift such as s5 (requirements for notification and consideration of sensitive areas) and Appendix G (spray drift and weather conditions). However, the Agrichemical Standard was designed to ensure compliance with the HSNO Act, not the RMA. Left on its own, there is a regulatory gap where spray drift is not managed. Additional controls are required under the RMA and this Plan Change to manage the discharge of contaminants to air in the form of spray drift. Spray drift, where the agrichemical becomes airborne and is blown away from the target area and off-site where it may cause potential adverse effects such as effect on human health, compromising an organic crop, contamination of feed for stock. To achieve the objectives, the Plan Change requires additional controls to manage these effects under the RMA. If no other rule was included to specifically manage agrichemical spraying, users would rely on Rule 1. Agrichemical spraying needs detailed and specific conditions to be managed effectively. This detail is not provided by Rule 1, which is not intended to manage highly specialised discharges. Council and users could use the requirements of the Agrichemical Standard to manage discharges from agrichemical spraying. Again, this is too general, covering many other matters besides the discharge to air. Using these standards alone would be time consuming for all parties, and does not have the required detail to be effective. *Feasibility* The management of discharges of contaminants to air is specifically listed as a function of the Regional Council (s30(1)(f)) therefore these provisions are within the powers and responsibilities of Council. Discharges from agrichemicals make up 10% of annual air complaints. The management of agrichemical spraying is important to the regional community, as evidenced by complaints, and is therefore a matter that Council needs to manage well. Relying only on NZ Standards would not effectively manage these discharges. Manages effects through mitigation – some acceptance that a certain level of spray drift will occur and it is up to the potentially affected parties to take action to prevent adverse effects. *Acceptability* The removal of agrichemical rules would be a significant shift from the highly detailed conditions of either the current rules (Option 1) or the Plan Change (Option 2). This change is unlikely to be acceptable to the community or to Councillors.	
Summary of effectiveness: 1	

Efficiency	
Benefits *Environmental* Nil identified *Economic* Provides an economic benefit to landowners because it allows spraying of crops and pasture to manage pests and increase productivity without unnecessary process, such as applying for resource consent. *Social* Nil identified *Cultural* Nil identified	**Costs** *Environmental* Will not adequately manage all spray drift activities, resulting in adverse environmental effects. Option 3 provides the least protection of all options presented here. Regulatory gap left by HSNO Act regarding discharges of hazardous substances into air could lead to environmental effects. *Economic* Ongoing complaints investigation and compliance and enforcement into spray drift incidents can be a significant cost to council. Less certainty and fewer rules are likely to increase the number of complaints and therefore the costs for Council. Spray drift will still occur in some cases, and can affect and devalue other crops (e.g. at harvest time and/or organically grown crops). This is likely to occur more frequently with fewer controls, such as in Option 3. No certification requirement (under this rule) could lead to many operators not obtaining appropriate training. However, council officers do not currently check for certification therefore this could already be occurring under current rules. *Social* Increased community dissatisfaction with Council management of agrichemical spraying, including about notification and signage, which are currently reasons for complaint. Fewer rules give people in the community less of an opportunity to respond to the effects (such as going out for the day when the neighbour is spraying). Fewer rules are likely to impact negatively on relationships within the community, where people are affected by spraying. *Cultural* Spraying eventually reaches the ground where it may affect the whenua long term.
Summary of efficiency: 1	
Option 4: More stringent	
Effectiveness	
Relevance Option 4 includes a range of regulations in addition to the Agrichemical Standard and more stringent than the current rules (Option 1) or the Plan Change (Option 2). These regulations could be introduced either individually or as a package to achieve AQ O3. The effectiveness of each regulation	

in achieving AQ O3 is discussed below.

More stringent notification and signage requirements – such as increasing the distance proximity for notification may reduce potential adverse effects production and on human health in cases where spray drift is an issue.

Spray Risk Management Plans submitted to Council – Allows for Council to assess adequacy of each plan, ensuring that key matters are addressed by sprayers.

Require certification for agrichemical users – Certification is according to the Agrichemical Standard. Appropriate certification is still required for some users under the HSNO Act, but certification does not make the rule any more effective than Option 2.

Notify Council before carrying out spray operations – Council would be aware of where spraying was to occur prior to the event. Assists with identifying the source if complaints are received, but this requirement would not be effective at reducing harmful effects (because complaints are generally after the event).

Require resource consents – would allow consideration of each situation and for specialised conditions which would be more effective management of discharges.

Most of these conditions would be potentially more effective, either on their own or as a package, than Options 1 or 2, but would require a high level of council resourcing (additional staffing). That requirement, plus the need for buy-in from the sector, would make Option 4 ineffective.

The regional plan needs to cover those matters not covered by other Acts such as the HSNO Act. This option moves beyond what is required and leads to ongoing overlap and confusion for agrichemical users. Users may ignore the regional plan, thinking that all matters are addressed elsewhere, leaving a regulatory gap regarding spray drift.

Feasibility

The management of discharges of contaminants to air is specifically listed as a function of the Regional Council (s30(1)(f)) therefore these provisions are within the powers and responsibilities of Council.

However this option generates a significant increase in processes such as resource consent application and monitoring and further resources would be required for effective implementation. The level of resources required make Option 4 unfeasible.

Acceptability

Option 4 introduces stringent controls to manage spray drift. If there was compelling evidence that many people are suffering adverse effects from being sprayed with harmful concentrations of agrichemicals, Option 4 would be considered. However, the complaints review revealed that most of the concerns were with lack of or inadequate notification, and the ability to make choices about being home or now when spraying is occurring. Improving communication through notification requirements (Option 2) addresses this issue.

There are some operators with poor practices that will not be affected regardless of more stringent requirements. Targeting all sprayers with strict requirements to address issues caused by a few is not economically sensible. An enforcement approach that targets those few is more appropriate.

A more stringent approach that is relatively ineffective at addressing the identified issues is unlikely to be supported by the community, in particular affected landowners, or the Council.

Summary of effectiveness: 1

Efficiency

Benefits	**Costs**
Environmental Stricter requirements with more monitoring by Council could lead to better quality environment and health, although the ineffectiveness expected with Option 4 mean these benefits are unlikely to be achieved.	*Environmental* This approach would be unlikely to manage all spray drift activities, resulting in adverse environmental effects. *Economic*

Economic Stricter regulations potentially lead to better outcomes for those currently impacted by spray drift (e.g. organic orchards, near-harvest crops), but the likely ineffectiveness of this approach makes these outcomes unlikely. *Social* While stricter regulations may suggest social benefits, the social costs expressed as complaints may not decrease because of the ineffectiveness of Option 4. *Cultural* Nil identified.	Low acceptability to the community attracts appeals and increases costs of Schedule 1 RMA process. Significant additional resources required by Council and sprayers to implement this option (administration, monitoring, compliance, enforcement, spray risk management plans). Significant additional resources required by growers and producers in meeting Council regulations, such as providing information to Council and applying for resource consents. *Social* The social costs expressed as complaints may not decrease because of the ineffectiveness of Option 4. *Cultural* Spraying eventually reaches the ground where it may affect the whenua long term.
Summary of efficiency: 1	

7.6.5 Risk of acting or not acting

Council must assess the risk of acting or not acting if there is uncertain or insufficient information about the subject matter of the provisions (s32(2)(c)).

The agrichemical issue is considered important to the affected community, who through complaints express concerns about inadvertent contact with agricultural chemicals. The risk of not acting is to add to the concerns of the community, particularly in regard to when spraying will occur and they type of chemicals used. Much of this concern can be addressed by a relatively small change in the rules to narrow the window for notification of spraying. While this may be considered to increase inconvenience to users, but the availability and reliability of electronic communication can make notification relatively easy. Users also have the option of making other arrangements with their neighbours directly.

In the preferred option GROWSAFE® certification has been removed, and the rules provide a framework for contractors. The risks associated with the policy response are considered small.

RPS Policy IR 1B requires the use of a precautionary approach where there is insufficient information. This approach is used by requiring agrichemical users to avoid spray drift, and remedy or mitigate if avoidance is not possible. The rule includes notification and signage requirements for agrichemical spraying, particularly when using high risk methods.

7.6.6 Justification of provisions stricter than national standards

Where provisions of the Plan Change are more restrictive than national standards, Council must examine whether the restriction is justified given the circumstances of the region (s32(4)).

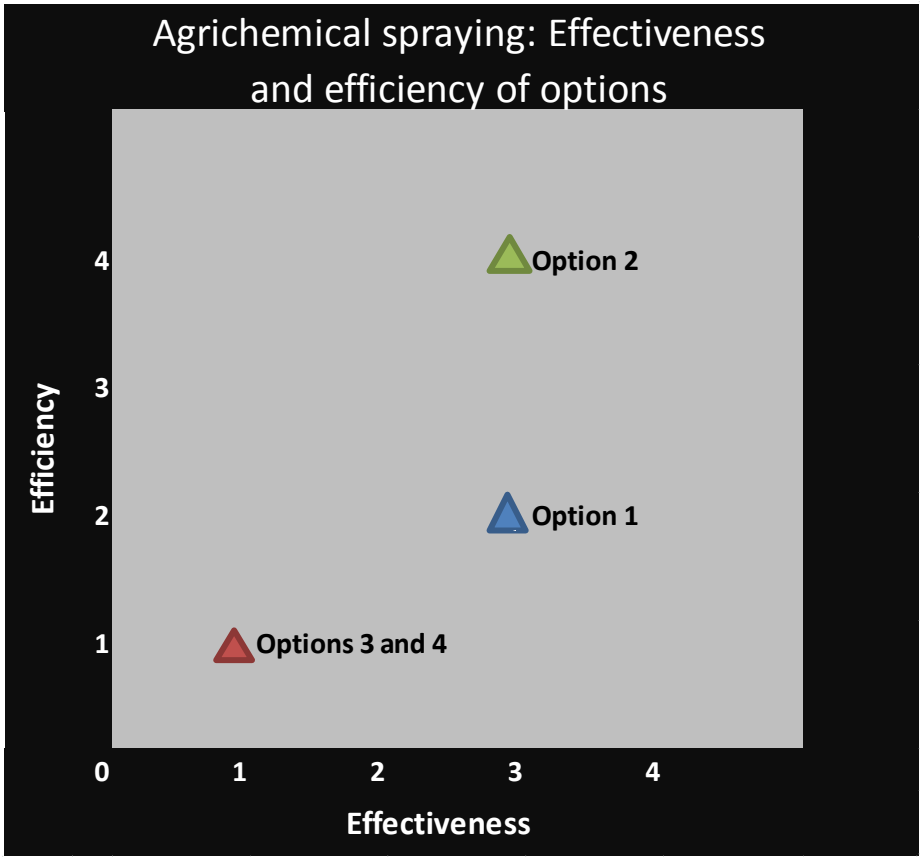
Agrichemical spraying is managed by a New Zealand Standard 8409: Management of Agrichemicals. This is not a national environmental standard prepared under the RMA therefore more stringent provisions do not need to be discussed.

7.6.7 Summary of assessment

The assessment shows Option 2 the proposed Plan Change to be the most effective and efficient option to achieve the air quality objectives regarding agrichemical spraying. A major change in that is the timeframe for notification of spraying. There are a large number of complaints about agrichemical spraying. These include reports of being adversely affected by spray drift, and many complainants report receiving no or inadequate information about the type of spray and the timing of the spraying. While the notification may be within the time period set in the current rules, the level of complaints suggest that it is too broad to enable people of properties that border sprayed areas to take appropriate action to keep themselves and their families. The Plan Change also addresses the use of drones, which has arisen since the current plan change became operative in 2003. The current plan included GROWSAFE® certification as a condition. Option 2 removes this requirement because certification does not directly relate to managing discharges of spray drift. The rule instead relies on adherence to the rules about avoiding effects beyond the boundary.

Option 1 and Option 2 have similar effectiveness; however the issues with the current rule lead to higher ongoing resource use while Option 2 will be more efficient over time for similar effectiveness.

Option 3, reliance on the HSNO Act and Agrichemical Standard, does not address region-specific issues which arise in part from the large and important area in horticulture in the region, and the proximity of residential housing to horticulture areas. Option 3 is therefore assessed as low in both effectiveness and efficiency. Option 4 is the most effective, but low in efficiency. The costs of implementing Option 4 were assessed as high, while the benefits may not be greater than those achieved by Option 2.



Having regard to this information, and taking into account the benefits and costs and the risks of acting or not acting, the most appropriate way of contributing to the achievement of objectives AQ O1 and AQ O3 is by implementing policies AQ P1, AQ P2, AQ P3, AQ P4, and AQ P8, and rule AQ R15.

7.7 Topic 4 – Fuel burning equipment (boilers)

Topic 4 covers fuel burning equipment, a term that is defined in the Plan Change. There are a range of different terms used to describe fuel burning equipment. The current plan refers to them as “combustion sources” while the EECA database calls them “heat plants”, and others refer to them as “boilers”. In this report, for ease of use and understanding, fuel burning equipment is referred to as “boilers”.

7.7.1 Baseline

Boilers are permitted by Rules 3 and 4 of the current plan and classified according to size (power output) and fuel type (Table 7.5). Some fuel types have higher emissions than others, and the larger the boiler, the higher the emissions are generally.

Table 7.5 Current Air Plan boiler activity classifications

Fuel	Permitted		Discretionary
	Small combustion	**Medium combustion**	**Large combustion**
Clean oil Coal Untreated wood	<500 kW	500 kW – 5MW	>5 MW
Liquefied petroleum gas (LPG) Natural gas	<1 MW	1 – 10MW	>10 MW

Off-site effects from high concentrations of contaminants from boilers can include (e.g. particulates (PM_{10}, $PM_{2.5}$), sulphur dioxide (SO_2), carbon monoxide (CO)).

To assess these potential effects, dispersion modelling is used. However, while dispersion modelling may be carried out to assess boilers that need a resource consent, boilers that are permitted under the current rules may not carry out further analysis.

For this reason the permitted activity threshold for boilers should be set at a level that will protect human health beyond the boundary.

There is also the matter of cumulative effects. Several boilers may be operating in one area and although each boiler may not cause adverse effects beyond the boundary, the combined effect of several sources in the area increase the concentration of contaminants to the point where it breaches an ambient air quality limit.

This is the case for the Rotorua Airshed which is over allocated for PM_{10}. Although the main source of PM_{10} is domestic solid fuel burners, one boiler may contribute several times more discharges into the Rotorua Airshed than a domestic solid fuel burner. Significant effort is being made to address the domestic sources (see Topic 2) and these needs to be supported by a corresponding approach to boilers to ensure gains from reducing domestic discharges are not lost by an increase in industrial discharges.

In the Mount Maunganui area, the main issue is sulphur dioxide or SO_2 with a potential issue with PM_{10}. The key sources of SO_2 are two large consented activities, and (most likely) shipping emissions. The Mount Maunganui area is overallocated for SO_2 and additional discharges should be investigated.

Investigation into boiler activity classes for Bay of Plenty region

Council noted that the permitted activity threshold for boilers was relatively high compared with other councils (Table 7.6 below). This indicated that the current boiler rules were out of sync with best practice for these sources.

In 2012, Southland Regional Council reviewed the activity classes for industrial boilers.[66] A two-stage investigation, based on meteorological conditions in Invercargill, supported the review. In Stage One, atmospheric dispersion was modelled for a range of fuels, emission rates and chimney heights. In Stage Two, the results of the dispersion modelling were used to develop a schedule of chimney heights for the range of fuels used in boilers. The chimney heights were based on the height required to achieve ground level concentrations of 2.5µg m^{-3} for PM_{10}, 70µg m^{-3} for SO_2, and 40µg m^{-3} for NO_2.[67] Findings were used to recommend limits and conditions for classifying permitted activities.

In 2013, NIWA examined the applicability of the Invercargill modelling for other regions. This research included investigating building downwash effects 'to evaluate whether permitted activity conditions could be revised to allow a building height of 6 metres within a 25 metre radius'.[68] Ground level concentrations were modelled for 1MW, 3MW and 5MW diesel boilers and 100kW, 300kW and 500kW coal boilers. The areas modelled were Blenheim, Te Kuiti, Masterton, Christchurch and Hastings. Key findings were:

- Ground level concentrations were typically higher for Invercargill than for other areas modelled, but most were within 20%. This resulted in general area specific recommendations.

- Some notable exceptions to the 20% differences occurred, such as for Masterton where a 5MW diesel boiler at 8m (chimney height) resulted in a 38% increase in PM10 emissions. These exceptions resulted in adjustments to the chimney height schedule specific to the exceptions.

- The schedules for wood, pellets, heavy fuel oil, light fuel oil and LPG were not modelled with area specific datasets. The chimney height schedules for these fuels were adjusted to allow a 20% buffer.

- The more polluting fuels (wood, coal, light fuel oil, heavy fuel oil) generally require chimney heights in excess of 12m at significantly lower heat outputs.

- The activity status recommended depended on dispersion. If a chimney height of greater than 12m was required to disperse to achieve the ground level concentrations (above), this was considered sufficiently significant to require individual assessment through a resource consent.

The geographic applicability of the Invercargill results depended primarily on the similarity or differences of meteorological conditions, and indicates that chimney

[66] NIWA (2013)
[67] These levels are 5% of the NES for PM_{10} and 20% of the NES for nitrogen dioxide and sulphur dioxide.
[68] NIWA (2013). Definition of activity classes for industrial boilers. Part 3: Applicability to other regions. Prepared for Marlborough District Council.

height schedules should be tailored for conditions in a region. Activity status (permitted or discretionary) is also region-specific for the same reasons.

The Bay of Plenty region

The Bay of Plenty region was not assessed in any of the three NIWA reports. Council commissioned an investigation of the current boiler rules in comparison to other council's regional plans.

Alongside the comparison of the Bay of Plenty permitted activity thresholds with other regions (above), the results of the NIWA reports were reviewed to assess their applicability for the Bay of Plenty region.[69]

The investigation found that although the current plan's thresholds are not excessive, in comparison to other council's regional plans they are at the high end, as set out in Table 7.6.

Table 7.6 Comparison of BOPRC permitted size thresholds with other councils

Fuel	Minimum (MW)	Maximum (MW)	BOPRC (MW)
Natural gas	1	10	10
LPG	1	10	10
Diesel	0.1	5	-
Light fuel oil	0.1	10	5
Heavy fuel oil	0.1	10	5
Coal	0.1	5	5
Wood	0.1	5	5

The investigation also recommended suitable boiler size thresholds and permitted activity conditions. The key recommendations were:

- Permitted boilers limited to smaller size
- Retention of current stack heights as unlikely to be cause more than minor adverse effects downwind.
- Total gross heat energy output from all new boilers on-site considered collectively for consideration as a permitted activity – instead of each new boiler considered as a separate activity.

Bay of Plenty region (excluding the Rotorua Airshed and Mount Maunganui area) is not heavily polluted so maximum stringency was not recommended.[70]

Fuel burning equipment (boilers) in the Bay of Plenty region

The EECA database of boilers[71] records 194 heat plants in the Bay of Plenty. Full detail is not available on all of these (for example, size, fuel type, sector, age). Most of heat plants are used in the public sector, followed by commercial, industrial and the agricultural sector (Figure 7.13). Under the rules in the current plan, 115 of the

[69] Emission Impossible Limited (2015)
[70] Emission Impossible (2015). (Redacted to protect confidential information)
[71] Referred to as Heat Plants in the EECA database.

boilers in the EECA database are within the limits for size and fuel type to be a permitted activity.[72]

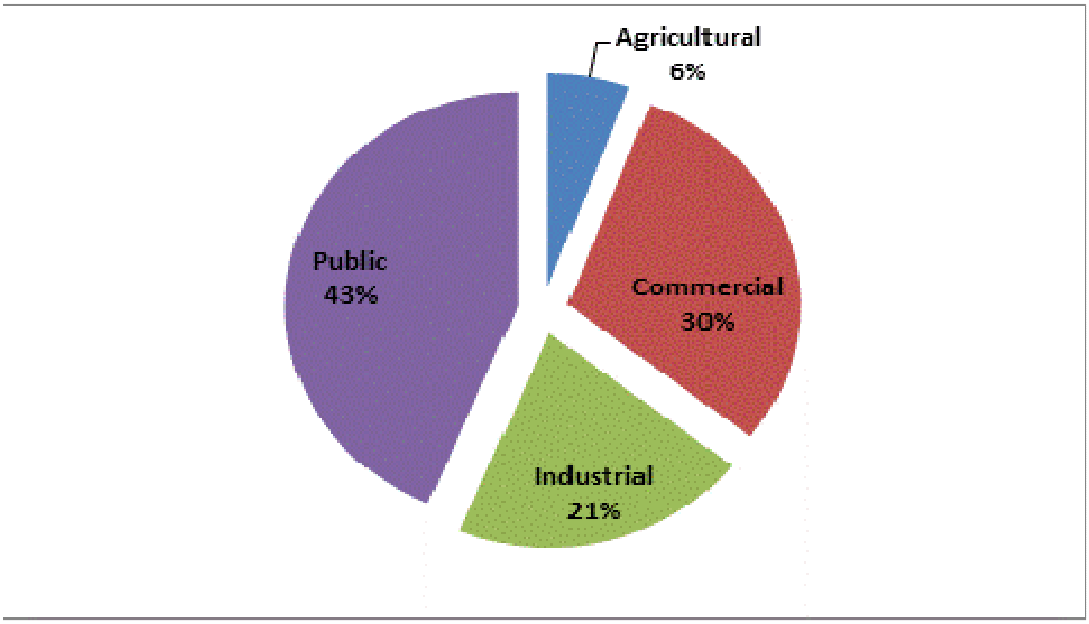


Figure 7.13: Percentage of boilers by industry sector, Bay of Plenty region (2014)

- Public: Nearly half (43%, 72) of boilers are used in public sector. This includes schools and hospitals. These are fuelled by electricity (26%, 26), natural gas (26%, 19) and wood (21%, 15). Under the current rules half (34) of these boilers are permitted. The activity status of the remaining 38 is not clear because of insufficient information.

- Commercial: About one-third (30%, 52) of boilers are used in the commercial sector – almost exclusively accommodation. The one exception is a food processing business. All boilers used by the commercial sector are fuelled by geothermal energy. Under the current rules all boilers recorded in the commercial sector have permitted activity status.

- Industrial: One-fifth (21%, 36) of boilers are used in the industrial sector, which includes wood processing (14), Pulp and paper (7), dairy processing (6), meat processing (5) and other manufacturing (5). These are fuelled by natural gas[73] (42%, 15), wood (33%, 12), and coal (17%, 6). The remaining boilers are fuelled by diesel and black liquor or green sawdust. Under the current rules half of the boilers (19) are permitted. The remaining 17 have discretionary status.

- Agricultural: Six percent (19) of boilers are used in the agricultural sector – specifically horticulture. These are fuelled by geothermal (47%, 9), coal (32%, 6) natural gas (21%, 4). Under the current rules half (10) of these are permitted. The activity status of the remaining 9 is not clear because of insufficient information.

[72] The EECA database has information gaps about individual boilers, such as MW capacity, fuel type, sector and installation year. For this reason the EECA data may differ from the data held by BOPRC for consented boilers, but it is the best source of information for permitted boilers, and provides reasonably reliable information about sector use.

[73] Natural gas and compressed natural gas are separated in the database. They have been added together here under natural gas.

Overall, Geothermal energy powers about a third (25%, 67) of heat plants, followed by natural gas (18%, 35), wood (14%, 27), electricity (13%, 26), coal (8%, 16) (Table 7.14). The fuel source was recorded as other/don't know for 9% (18) of boilers.

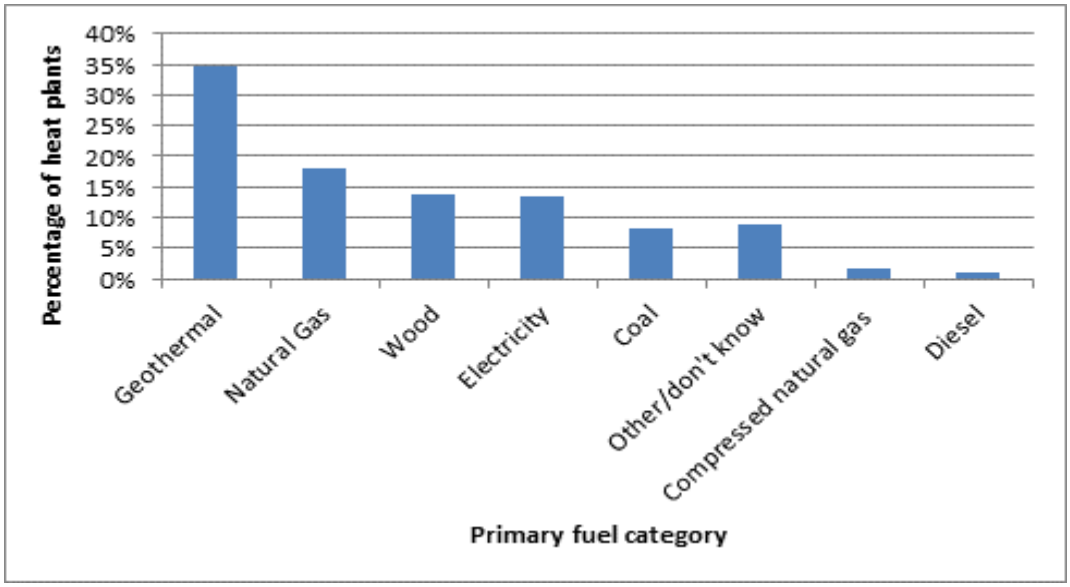


Figure 7.14: Primary fuel category for boilers, Bay of Plenty (2014)

Based on the 2014 EECA data, the fuel type for heat plants has changed over time (Figure 7.15). In the older plants coal is the dominant fuel, followed by natural gas and wood. In plants installed in the 10 years 1990 - 2000 natural gas is the dominant fuel, followed by wood. For those plants installed since 2000 natural gas remains the dominant fuel, followed by electricity, then wood. Two plants installed in 2007 in Whakatāne (horticulture sector) are fuelled by coal. One plant installed in 2003 in Kawerau (education sector) is solar powered.

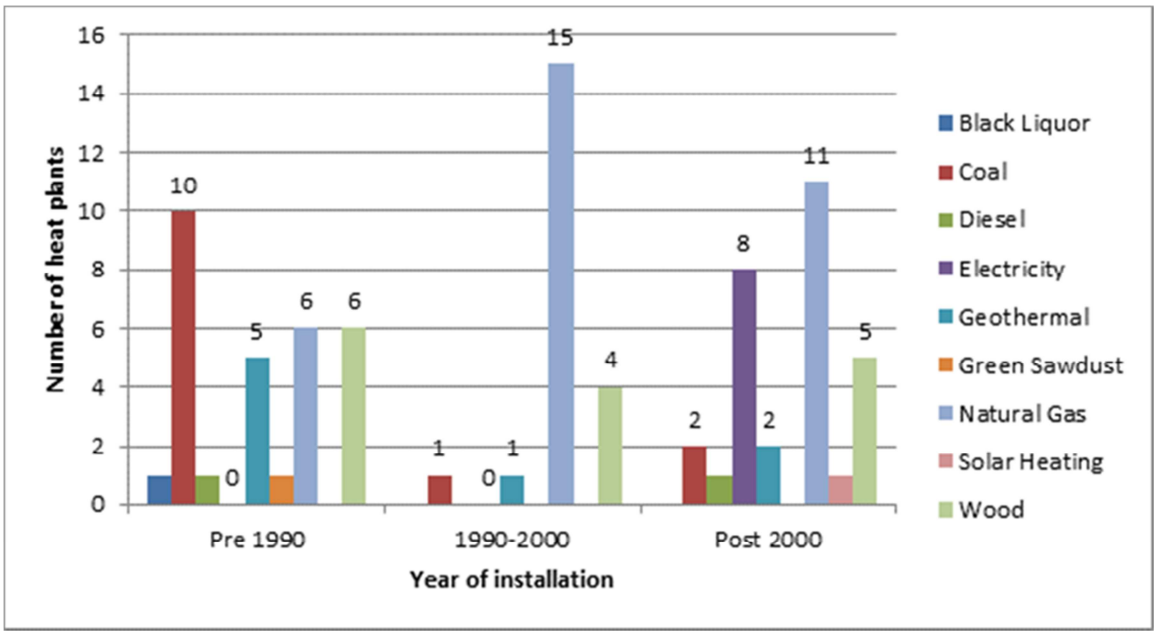


Figure 7.15: Year of installation by fuel type, Bay of Plenty (2014)

Fuel burning equipment in the Rotorua district

The EECA Heat Plant Database maintained by EECA recorded 78 boilers in the Rotorua district (2014 data).[74] They are used in the public, commercial, industrial and agricultural sectors (Figure 7.16):

Public: One-third (32%, 25) of Rotorua boilers are used in the public sector. These are fuelled by electricity (6), wood (6), geothermal (3), natural gas (3) and coal (1). Under the current rules 13 of these heat plants are permitted. The activity status of the remaining 12 is unclear because of insufficient information.

Commercial: 60% (47) of Rotorua boilers are used in the commercial sector. All of these are fuelled by geothermal. Under the current rules all have permitted activity status.

Industrial: 14% (11) of Rotorua boilers are used in industry, all for wood processing (7) or meat processing (4). These are fuelled by wood (5), natural gas (3), coal (2) and green sawdust (1). Under the current rules seven are permitted and three have discretionary activity status.

Agricultural: One boiler is used in the agricultural sector for horticulture. It is fuelled by geothermal.

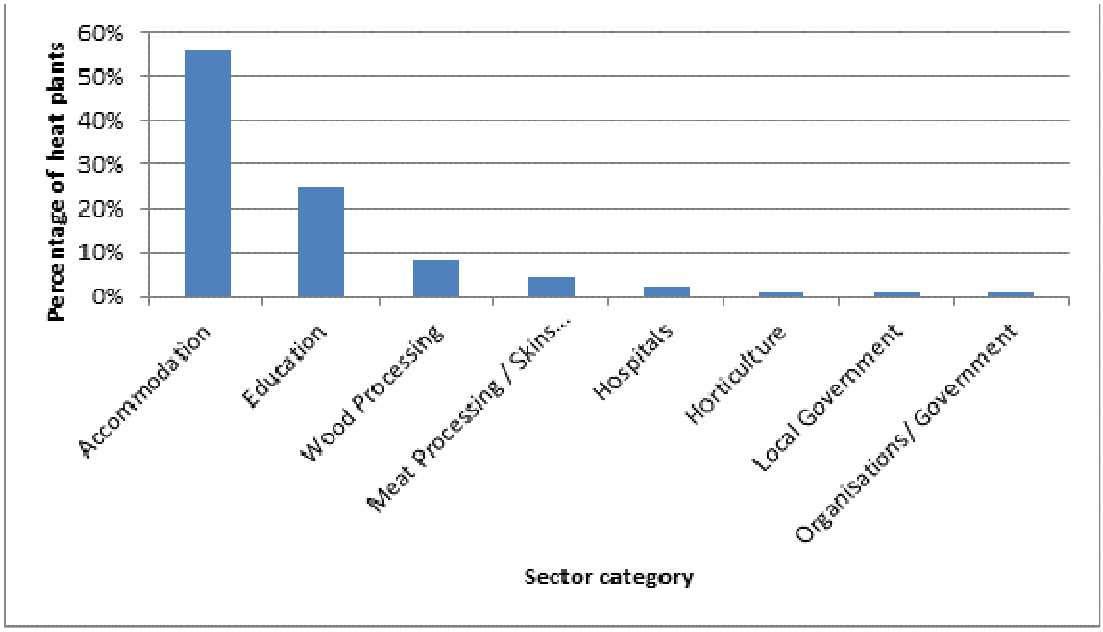


Figure 7.16: Percentage of boilers by industry sector, Rotorua (2014)

Boilers in the Rotorua Airshed (which is in non-compliance with the PM_{10} NESAQ) are a particular issue, and need additional consideration. The main source of PM_{10} in the Rotorua Airshed is domestic burners (discussed in Part 7.5 of this report). Under the original NESAQ, no new resource consents for discharges of PM_{10} could be granted in non-compliant airsheds. This potentially restricts new industry starting up and existing industry expanding. A 2011 amendment to the NESAQ introduced offsets through Regulation 17 (see Appendix 6).

The 2011 amendment allows resource consents for new discharges of PM_{10} into non-compliant airsheds provided the new discharge does not increase the concentration of PM_{10} by more than 2.5µg/m^3 beyond the boundary and it is offset

[74] 2014 is the latest year that data is available at the regional and sub-regional level.

by an equivalent reduction in discharges from another source in the same airshed. Guidance on how to implement this is provided in the User's Guide to the NESAQ (from Ministry for the Environment)[75]. Council also prepared a guidance document on how to implement offsets in the Rotorua Airshed[76].

The 2011 amendment applies only to discharges that require resource consent, therefore boilers permitted under the current plan can set up in the Rotorua Airshed, adding PM_{10} discharges to the already polluted air. This may no longer be the most appropriate way to manage these discharges, particularly while domestic burners are being targeted by rules.

7.7.2 Relevant objectives

Discharges to air from boilers have an adverse effect on local air quality therefore AQ O3 is the most relevant objective to this topic.

AQ O3 Manage discharges of contaminants to air according to their adverse effects on human health, cultural values, amenity values and the environment.

There are situations where boilers can contribute to poor ambient air quality, which may lead to significant adverse effects on the mauri of air, human health, and the environment. Therefore AQ O1 and AQ O2 also apply.

AQ O1 Protect the mauri of air and human health from adverse effects of anthropogenic contaminant discharges to air, and enhance air quality where degraded.

AQ O2 The region's ambient air quality meets the National Environmental Standards for Air Quality (2004) and the Ambient Air Quality Guidelines (2002).

7.7.3 Options considered

Four options are considered to manage boilers.

Option 1: Status quo – Rely on NESAQ, RMA and regional policy statement and policies and rules in current plan

Option 2 Plan Change – Provide updated policy and rules to manage fuel burning equipment in addition to NESAQ, RMA and RPS

Option 3 Less stringent – Permit all boilers or more lenient conditions.

Option 4 More stringent – Require consents for all boilers

Option	Description	Relevant provisions
Option 1 **Status Quo**	The RPS has air quality policies to manage the adverse effects of odours, chemicals and particulates and the main method relevant to this Plan Change is regional plan implementation. The current plan has policies to avoid, remedy mitigate adverse effects of discharges to air, requires consideration of cumulative discharges and permits	RPS – Objective 1, Policy AQ 2A, Method 2, Objective 11, Policy IR 1B, Policy IR 5B. Air Plan Policies - 1(a), 1(b), 2, 3, 8

[75] Ministry for the Environment (2011).
[76] Bay of Plenty Regional Council (2014).

Option	Description	Relevant provisions
	small to medium boilers. Under the status quo, • Boilers of <=5MW fuelled by clean oil, coal or untreated wood are a permitted activity; those >5MW are a discretionary activity • Boilers of <=10MW fuelled by LPG or natural gas are a permitted activity; those >10MW are a discretionary activity. • Stack heights and exit velocities are specified for permitted activities. • There is no limit for the total output or emissions from permitted boilers on a single site Burning of certain materials is non-complying.	Air Plan Rules – 3, 4, 19(d)
Option 2 **Plan Change**	The requirements under the RPS are the same as for the status quo. Under the Plan Change: • Boilers <=10MW fuelled by LPG or natural gas are a permitted activity. Stack height is reduced from 15m to 12m for the larger boilers. • Boilers >10MW fuelled by LPG or natural gas are a discretionary activity. • Boilers of <=500kW fuelled by clean oil, coal or untreated wood remain a permitted activity, but would require an increased stack height from 6m to 12m. • Boilers > 500kW fuelled by clean oil, coal or untreated would be a discretionary activity • Exit velocity for all increased from not less than 7m/sec to 10m/sec • A maximum permitted heat output per site is imposed. The Plan Change would reduce the size of new permitted boilers with more stringent conditions. The Plan Change would not require changes to existing boilers. Burning of certain materials is non-complying.	RPS – Objective 1, Policy AQ 2A, Method 2, Objective 11, Policy IR 1B, Policy IR 5B. PC 13 policies – AQ P1, AQ P2, AQ P3, AQ P4, AQ P10 PC 13 rules – AQ R10, AQ R18
Option 3 **Less stringent**	This option may include: • Permitting all boilers regardless of size and fuel • Including more lenient conditions for stack height, discharge velocity etc.	RPS – Objective 1, Policy AQ 2A, Method 2, Objective 11, Policy IR 1B, Policy IR 5B.
Option 4 **More stringent**	This option may include requiring consents for all boilers, regardless of size, fuel type, chimney height, and whether they are on an industrial or trade premises.	RPS – Objective 1, Policy AQ 2A, Method 2, Objective 11, Policy IR 1B.

7.7.4 Evaluation of provisions to manage fuel burning equipment

The scale and significance of this topic is rated as low.

The following table summarises the effectiveness and efficiency of the policy options to manage fuel burning equipment:

Option 1:Status quo

Effectiveness

Relevance – how effective are the provisions in achieving the objective/s

Two permitted rules manage small to medium boilers in the current plan. Boilers using oil (including diesel), coal or wood are permitted up to 5 megawatts (MW). Boilers using gaseous fuels are permitted up to 10 megawatts (MW). Conditions for these permitted boilers include minimum stack heights, exit velocities, visible emissions, and sulphur content of fuel.

Other regions have revised their permitted boiler rules since the current plan became operative. Informing these revisions, investigations carried out by NIWA showed that reliance on outdated design specifications like stack height would most likely result in unacceptable ground level concentrations of contaminants, in particular NO_2, SO_2 and PM_{10}[77]. A chimney height schedule was developed for boilers in Invercargill and then adapted for use in Blenheim, Masterton, Te Kuiti and Hastings.[78] A comparison of the BOPRC current stack height requirements versus the stack heights for other areas is provided in Table 7.7. The recommended stack heights give an indication of stack heights designed to manage adverse effects, although they should be treated with caution because they were developed for areas outside the Bay of Plenty.

Table 7.7: Stack heights comparison

Gross energy output	Stack height BOPRC current plan (m)	Recommended stack height (m) adapted for other areas(NIWA)
<40kW all fuel types	Any height	6-12
40kW-500kW (oil, coal, wood) 40kW – 1MW (gas)	6 6	7-13 6-10
500kW-2MW (oil, coal, wood) 1MW – 4MW (gas)	12 12	7-20 8-12
2MW-5MW (oil, coal, wood) 4MW – 10MW (gas)	15 15	8-20 12

The majority (85-90%) of permitted boilers in the Bay of Plenty have less than 2MW output capacity; about 40% are powered by geothermal and 20% by gas.[79] A comparison of stack heights indicates that gas-powered boilers are well managed by the current rules.[80] Therefore the current stack height requirements are appropriate for most boilers.

Coal is used in at least 8% (10) of permitted boilers in the Bay of Plenty.[81] Coal is one of the most polluting fuels and the recommendations suggest stack heights at the high end of the scale to adequately manage contaminants. Under the current rules, permitted coal-powered boilers may not be adequately managed and could result in harmful ground level concentrations of contaminants. However, given the small size of most permitted boilers, this is unlikely.

The BOPRC complaints data provides little useful information on complaints relating specifically to boilers. Boilers may elicit complaints regarding smoke, odour, or dust. Discussions with compliance staff indicate that while there are isolated incidents with some permitted boilers, boilers are not an issue overall and the current conditions are managing this emissions source effectively.

[77] NIWA (2013).
[78] NIWA (2013).
[79] Wickham, L (2015), and EECA Heat Plant database (2014).
[80] Wickham, L (2015).
[81] Wickham, L (2015), and EECA Heat Plant database (2014).

There are two notable issues in the current rules which could lead to reduced effectiveness in meeting air quality objectives. These issues are interrelated, and particularly relevant to the Rotorua Airshed and any future gazetted airshed.

The first issue relates to Regulation 17 of the NESAQ, which restricts resource consents for industrial discharges in gazetted airsheds (e.g. Rotorua Airshed). Regulation 17 states that any new consent to discharge PM10 into a gazetted airshed cannot be granted unless the PM_{10} is reduced (or offset) from some other source in the same airshed. These offsets apply only to activities that need resource consent; therefore permitted boilers do not need to provide offsets.

The second issue is the lack of a limit on the number of permitted boilers on a single site. The combined discharge from permitted boilers on a single site could cause adverse effects offsite and reduce the ability to meet AQ O3. Council is aware of one site with several boilers and a total power output that exceeds the permitted threshold. There have been complaints about boiler discharges from this site. Although this the only such situation that Council is aware of, there are no conditions to prevent this same issue occurring elsewhere.

The first issue, offsets, do not reduce emissions. The main source of PM_{10} in Rotorua is domestic burners. A new discharger would potentially convert domestic burners to clean heat to offset a new discharge. For example a new discharge of 1 tonne of PM_{10} would require the conversion of 87 pre-2005 woodburners[82]. At $2,500 to $5,000 per home, the cost of offsets would range from $217,500 to $435,000. While at a business level this increases the set-up costs, it is also a threat to achieving the NESAQ. Council is investing significant resources to reduce the PM_{10} emissions in the Rotorua Airshed. Offsets undertaken by businesses reduce the number of houses available to convert to clean heat (which reduces emissions), and potentially compromises the ability of the airshed to reach the NESAQ.

Rotorua is a gazetted airshed where offsets apply. There have been two consent applications for new PM_{10} discharges where the applicants found alternatives to offsets (in one example the applications installed a gas boiler instead of a solid fuel boiler to avoid the large costs of offsets). Boilers are permitted up to the thresholds in the current plan. In the future operators may choose to install several permitted boilers rather than apply for a resource consent for a large boiler which would require offsets. This potentially leads to an overall increase in PM_{10} in an already polluted airshed and reduces the likelihood of meeting the objectives

Therefore, although the current rules are mostly effective, this effectiveness may not continue into the future.

Feasibility – whether the provisions are within council's powers, responsibilities and resources and ability to implement, monitor and enforce

Without these rules, discharges to air from any boilers on industrial or trade premises automatically require a consent under s15(1)(c) unless expressly allowed by a rule in a regional plan.

The control of discharges of contaminants to air and the establishment of rules to allocate the capacity or air to assimilate a discharge of a contaminant are specific functions of the Regional Council (s30(1)(f) and (fb)) therefore these provisions are within the powers and responsibilities of Council.

Acceptability – whether the provisions have a fair distribution of impacts and level of political and community acceptance

There are few complaints or issues regarding the permitted activity rules for small to medium boilers. However, the assessment indicates that the current rules are unlikely to manage boilers into the future given changes to legislation and gazetted airsheds.

Council is committing significant resources converting domestic burners to cleaner heating options in Rotorua. This is funded by rates (a significant proportion obtained from residents of Rotorua district) and by homeowners. The current rules allow businesses to set up new, relatively large boilers in the Rotorua Airshed as a permitted activity, potentially increasing PM_{10} concentrations. This compromises the efforts of the council and community to improve air quality to achieve the NESAQ.

Option 1 is unlikely to receive political support or support from the community.

Summary of effectiveness: 3

[82] *BOPRC (2013)*

Efficiency	
Benefits	**Costs**
Environmental Nil identified *Economic* More lenient rules than other regions could mean lower set up costs for some businesses, and so could attract businesses to the region. *Social* Nil identified *Cultural* Nil identified	*Environmental* Some adverse effects experienced offsite from permitted boilers. High permitted threshold could lead to increased effects on local and ambient air quality. Increase in discharges of PM_{10} and other contaminants from permitted boilers (no offsets required). These are a particular problem in gazetted airsheds (e.g. the Rotorua Airshed) where the air quality is already compromised. *Economic* The relatively high threshold for discretionary status may mean Council incurs significant costs to ensure the Rotorua Airshed (and any other gazetted airsheds) meet the NESAQ. This would occur because permitted boilers do not require offsets, but they can have a large and negative effect on air quality. Potential for growing costs for investigation of complaints from the public. *Social* Poor ambient air quality leads to an increased respiratory and cardio illnesses and number of reduced activity days. Reduced enjoyment of the ambient and local air due to discharges of contaminants to air *Cultural* Poor air quality degrades the mauri of air.
Summary of efficiency: 2	
Option 2: Plan Change	
Effectiveness	
Relevance The Regional Policy Statement includes policies to manage discharges from boilers, but relies on regional plans to implement these policies. The rule in the Proposed Plan Change is divided into two main parts – existing boilers and new boilers. Conditions for existing boilers remain the same as in the current plan. Complaints about boilers are difficult to assess due to the setup of the Complaints Database, but discussions with Regulatory Compliance staff indicate that there are few isolated issues with permitted boilers. Under Option 2 when existing boilers are replaced the new conditions will apply. Discharges from these sources will steadily decrease as plant is upgraded and replaced although stricter requirements for new boilers may delay replacement of existing plant to avoid the new requirements. The conditions for new boilers followed an investigation into boilers in the Bay of Plenty.[83] The investigation assessed the size and fuel type of boilers in the region, conditions and stack height schedules developed for other regions, and the applicability of those to the Bay of Plenty, particularly	

[83] Wickham (2015).

in reference to the meteorological conditions of this region. These conditions will ensure that permitted boilers do not cause high ground level concentrations of contaminants, and will address gaps that reduce the effectiveness of the current rules.

Size and fuel type

A comparison of permitted boiler sizes across regions showed that the Bay of Plenty thresholds were at the higher end of the scale (see Table 7.6 - above).

The minimum thresholds in Table 7.8 typically represent more recent plans that have airsheds that do not comply with the NESAQ for PM_{10}. Maximum stringency would revise the permitted thresholds to the minimum as included in the table above. However, the Bay of Plenty is not as heavily polluted as many of the other areas assessed; therefore maximum stringency is not recommended.

The draft plan included permitted threshold of 500kW for solid fuels and 2MW for gaseous fuel. Following feedback on the draft plan the threshold for gaseous boilers was revised slightly and the recommended thresholds are as set out in Table 7.8.

Table 7.8 Permitted and discretionary activity limits in the Plan Change

Fuel type	Permitted	Discretionary
Clean oil, coal or untreated wood	<500kW	500kW+
Liquified petroleum gas (LPG) or natural gas	<2.5MW	2.5MW+

Stack heights

The best way to design an appropriate stack height that will fully manage the adverse effects is to use an outcomes based approach. That is to require all boilers to have a minimum stack height designed to meet best management practice downwind threshold conditions (Table 7.9).

Table 7.9 Pollutant thresholds (Current best management practice)

Pollutant	NIWA threshold (2012)	
	(µg/m^3)	% NES
PM_{10} (24-hr average)	2.5	5%
NO2 (1-hr average)*	40	20%
SO_2 (1-hr average)*	70	20%

However, this would require dispersion modelling carried out for every boiler which would impose unreasonable costs on operators. Council needs assurance that ground level contaminant concentrations do not exceed recommended levels and cumulative effects do not occur. To achieve this Council has provided stack height schedules to manage downwind effects based on size of boiler and fuel type.

After researching rules used in other regional plans including stack heights calculated in accordance with a 1993 New South Wales Environmental Protection Authority (NSW EPA) memorandum and the stack height schedules developed by NIWA in 2012, Council's investigation recommended retaining the stack height schedule from the current plan for small to medium boilers.[84] A comparison of these schedules is shown in Table 7.10.

[84] Wickham (2015).

Table 7.10 Comparison of stack height requirements

Fuel	Size (MW)	Stack height (m)		
		(NSW EPA, 1993)[1]	(NIWA, 2013) [2]	BOPRC, current plan, 2004
Minimum permitted size threshold				
Natural gas	1	10.6 (NO_2)	-	6
LPG	1	-	12 (NO_2)	6
Diesel	0.1	-	7.0 (PM_{10})	6
Light fuel oil	0.1	14.7 (SO_2)	13 (SO_2)	6
Heavy fuel oil	0.1	15.0 (SO_2)	14 (SO_2)	6
Coal	0.1	14.6 (SO_2)	10.5 (PM_{10})	6
Wood	0.1	-	12.5 (PM_{10})	6
Maximum permitted size threshold				
Natural gas	10	12.9 (NO_2)	-	15
LPG	10	-	12 (NO_2)	15
Diesel	5	-	8.0 (PM_{10})	15
Light fuel oil	10	17.4 (SO_2)	-	Not permitted
Heavy fuel oil	10	18.2 (SO_2)	-	Not permitted
Coal	5	16.0 (SO_2)	>20 (PM_{10})	15
Wood	5	-	>18 (PM_{10})	15

However, these stack heights are not directly comparable. The NSW EPA[85] heights are calculated to meet ambient ground level concentrations significantly higher than best management practice in New Zealand (Table 7.11).

Table 7.11 Comparison of pollutant thresholds

Pollutant	NSW EPA threshold (1993)		NIWA threshold (2012)	
	(µg/m^3)	% NES	(µg/m^3)	% NES
PM_{10} (24-hr average)	-	-	2.5	5%
NO_2 (1-hr average)*	158	79%	40	20%
SO_2 (1-hr average)*	244	70%	70	20%

The NSW EPA calculations take into account building downwash, terrain effects and plume impingement. Therefore, despite aiming for a higher downwind concentration, the NSW EPA heights are more conservative (i.e. higher stack heights).

The NIWA heights were not recommended for wholesale adoption. The meteorological data used to design these stack heights was for Invercargill, which experiences more frequent higher wind speeds (giving greater dispersion of contaminants).

Council's investigation recommended that the current stack height schedule was retained.[86] Taking this into account, the stack heights for this option were developed as shown below in Table 7.12.

Table 7.12: Recommended minimum stack height

Fuel	Power output	Minimum stack height
Clean oil Coal Untreated wood	< 500 kW	12 metres
Liquefied petroleum gas (LPG) Natural gas	< 10 MW	12 metres

The minimum stack height for gas fuelled boilers up to up to 10MW has reduced from 15m to 12m. If

[85] NSW EPA (1993)
[86] Wickham. (2015).

the current situation continues, where 50% of permitted boilers are gas and 90% are smaller than 2MW, this condition will ensure adverse effects are managed. If the trend were to change and large scale gas boilers up to 10MW were to become commonplace, a stack height of 12m will manage adverse effects based on the NSW and NIWA stack height recommendations.

The stack height for solid fuels has been kept at 12m as the permitted power output for these fuel types has reduced and a 12m stack height will manage adverse effects.

Rotorua Airshed

No new boilers using clean oil, coal or untreated wood are permitted in the Rotorua Airshed. This ensures that any new sources of PM_{10} must apply for a resource consent and therefore need to provide offsets under Regulation 17 of the NESAQ.

Multiple boilers

Current rules do not restrict the number of permitted boilers installed on one site. This could result in multiple boilers on one site with a combined discharge exceeding permitted thresholds, leading to adverse effects offsite. This is known to be occurring at one site in the region.

The new rule restricts installation of multiple boilers on one site where the total discharge from the site exceeds the permitted threshold.

Feasibility

The control of discharges of contaminants to air and the establishment of rules to allocate the capacity or air to assimilate a discharge of a contaminant are specific functions of the Regional Council (s30(1)(f) and (fb)) therefore these provisions are within the powers and responsibilities of Council.

Acceptability

Council received little feedback from the community regarding the permitted boiler rule in the Draft Plan. Some comments resulted in a minor change to the permitted threshold for gaseous fuels. Overall there was a general acceptance for a move to more stringent controls on boiler discharges.

The draft rules contained a minimum stack height of 6m which was doubled to 12m during the course of the Section 32 analysis because

- There is a strong policy focus in the RPS to manage adverse effects of contaminants
- The new objectives in this plan require discharges of contaminants to air to be managed according to their adverse effects

And to

- Align with direction elsewhere in New Zealand
- Ensure compliance with NESAQ ground level concentration requirements in either an individual or cumulative discharge setting
- Recognise that plume dispersion theory is based around a number of factors, one being high discharge points typically result in better dispersion and reduced ambient ground level concentrations of pollutants

These are larger capacity fuel burning equipment (with greater emission rates) when compared with domestic appliances which would typically have chimney discharge heights of about 6m.

This change does not affect current boilers this is unlikely to cause significant concern.

Summary of effectiveness: 4

Efficiency

Benefits	**Costs**
Environmental Places stricter conditions on permitted boilers leading to reduced environmental effects. The requirement not to exceed limits at a property level will ensure that localized pockets of air pollution from this source are restricted. Lower activity thresholds for boilers fueled by	*Environmental* Existing boilers may continue to discharge under the existing conditions which are less effective and may be leading to high ground level concentrations of contaminants and higher ambient concentrations. As boilers are replaced this issue will solve itself.

clean oil, coal or untreated wood will mean consents required for bigger boilers and assessment of effects on case-by-case basis. This will lead to positive environmental effects in the longer run, particularly as boilers are replaced. Eliminates new boilers as new source of PM_{10} and other air pollutants discharging to Rotorua Airshed. *Economic* Existing boilers are unaffected by new requirements – no retrofitting or consents necessary. Reduces the threat that offsets in the Rotorua Airshed will compromise the air quality programme designed to achieve the NESAQ standard. *Social* Better air quality because chimneys now suited to achieving safer ground level discharges. Potential for increased health and wellness, and overall reduced effects on the community and personal property. *Cultural* Environmental benefits enhance the mauri of air. Well managed air quality increases opportunity to enjoy the lifestyle that kiwis expect – the ability to enjoy the outdoors without adverse effects on heath or well-being. Encourages cultural shift towards better industrial practices.	Stricter conditions on new boilers may lead to slower replacement of existing boilers. This may result in poorer air quality in the interim period. *Economic* Smaller boilers (40kW>500kW fueled by clean oil, coal or untreated wood; 40kW>1MW LGP or natural gas) are required to have higher chimneys to improve the ground level discharge levels. The higher chimneys will be an economic cost to businesses. Lower thresholds mean more boilers will need to apply for resource consent increasing costs to applicants and regional council. *Cultural* Nil identified.
Summary of efficiency: 4	
Option 3: Less stringent	
Effectiveness	
Relevance This option would permit larger boilers with more lenient conditions such as lower stack heights and lower exit velocities. The current plan provisions (analysed in Option 1) were found to be mostly effective, but this effectiveness will be reducing as we move into the future. Any move to provisions less stringent than the current provisions would not manage adverse effects from the discharges and would not be effective at achieving AQ O3 or AQ O1. *Feasibility* A more lenient approach would most likely increase complaints to Council leading to increased resources necessary to implement. It is highly unlikely that this option would achieve the relevant objectives. *Acceptability* It is unlikely that an option that would most likely expose the community to adverse effects from discharges from boilers would receive political or community support.	

Summary of effectiveness: 1	
Efficiency	
Benefits	**Costs**
Environmental Some limited environmental protection from emissions controls imposed by conditions. *Economic* While more lenient environmental requirements may be attractive to businesses looking to relocate, it is not likely to be sufficient to drive economic development in the region. *Social* Nil identified *Cultural* Nil identified	*Environmental* Poorer health due to off-site adverse effects from discharges. This could occur across the region. *Economic* Increased costs of interpretation, implementation and complaint investigation due to public enquiries and complaints. Likely to attract appeals from community members adversely affected by boilers, increasing plan development costs. Poor air quality contributes to poor health outcomes, and the associated GP visits, hospitalisations, and reduced activity days. *Social* Reduced enjoyment of the ambient and local air due to poorly managed discharges of contaminants to air. *Cultural* Reduced air quality impacts on enjoyment of the outdoors, part of the New Zealand lifestyle.
Summary of efficiency: 1	
Option 4: More stringent	
Effectiveness	
Relevance Under this option all boilers would require consents and would be assessed on a case-by-case basis. Specifications such as stack height, exit velocity, and temperature could be designed for each boiler and included in resource consent conditions. The resource consents could also require additional contaminant treatment not included in a permitted rule such as afterburners, baghouses, and cyclones. Dispersion modelling would use local meteorological data and other variables like building downwash to develop appropriate consent conditions. Stacks can be designed to control for contaminants of concern in the specific geographic area (e.g. PM_{10} in Rotorua and SO_2 in Mount Maunganui) rather than assuming a general geographic approach. Option 4 could include applying the requirements retrospectively to existing boilers. Under this approach an estimated 40 permitted boilers in the region would be required to apply for consent. Many of these boilers will have been in place before the NESAQ was released and were designed to meet more lenient air quality limits. To ensure the NESAQ limits are met, additional mitigation may be required (e.g. increased stack height) to reduce effects of contaminant discharges from existing boilers. *Feasibility* The management of discharges of contaminants to air is specifically listed as a function of the Regional Council (s30(1)(f)) therefore these provisions are within the powers and responsibilities of Council. Implementation of this option would require a large number of resource consent applications,	

diminishing over time over time as the existing boilers came into the consent regime. Monitoring and enforcement would be ongoing. More funding would be required for compliance and enforcement.

Acceptability

This option would impose the same level of management for smaller operators with minor effects, as for the larger sites that present a greater probability for adverse effects. This impacts more on smaller operators with increased costs.

The community is unlikely to support this more stringent option and it is unlikely to have political support.

Summary of effectiveness: 2

Efficiency

Benefits	**Costs**
Environmental Some further improvement in air quality from stricter controls on discharges from existing and new boilers. Eliminates new boilers as new source of PM_{10} discharging to Rotorua Airshed, although much of this can be achieved with a less restrictive approach. Reduces environmental effects from existing boilers. *Economic* Potentially reduced health costs resulting from better air quality. *Social* Better air quality and increased recreational opportunities, amenity values, health, and overall reduced effects on the community and personal property. Fewer discharges to air lead to better air quality, encouraging recreation, improving amenity values, health, and reducing negative impacts on the community and personal property. *Cultural* Environmental benefits enhance the mauri of air. Well managed air quality increases opportunity to enjoy the lifestyle that kiwis expect – the ability to enjoy the outdoors without adverse effects on heath or well-being. Encourages cultural shift towards better industrial practices. Reduced contaminants benefits the mauri of air	*Environmental* Nil identified. *Economic* Increases costs to community and Council to process resource consent applications and monitor compliance. Much of this cost would be unnecessary because the impacts of smaller boilers are relatively small, particularly if they are not located in close proximity and if the chimney heights are sufficient for dispersing discharges. Introduces unbudgeted capital costs as well as consent processing costs to many existing businesses. Many of the businesses operating small to medium boilers currently permitted are small businesses or educational facilities unlikely to be able to afford the additional costs. This can be mitigated by Council financial support, but that would increase costs to Council and the community. *Social* Possible loss of businesses from increased costs, subsequent loss of jobs. *Cultural* Nil identified.

Summary of efficiency: 1

7.7.5 Risk of acting or not acting

Council must assess the risk of acting or not acting if there is uncertain or insufficient information about the subject matter of the provisions (s32(2)(c)).

The risk of not acting to change the current situation is that:

(1) There is currently the ability of individuals and businesses to co-locate boilers within the permitted size discharging contaminants from burning oil, coal and wood. Our research shows that the costs to human health and the environment are high. The permitted levels we have are out of step with other councils.

(2) There is a risk to air quality in the gazetted airshed in respect to offsets. This risk, if realised, would be costly to the council in not achieving air quality targets, and to the community in terms of health impacts.

There is little risk in acting. Council has done sufficient research to identify the appropriate chimney heights and requirements, and the level of capacity that require discretionary status.

Council has taken precautionary approach in line with AQ P5. Minimum stack heights are set sufficiently high to manage the discharge of contaminants from permitted boilers.

7.7.6 Justification of provisions stricter than national standards

Where provisions of the Plan Change are more restrictive than national standards, Council must examine whether the restriction is justified given the circumstances of the region (s32(4)).

AQ P12 sets out the requirements for offsets within the Rotorua Airshed. This policy is based on the Offsets Guidance for the Rotorua Airshed which was prepared for use by industry wishing to establish in the Rotorua Airshed or existing industry looking to increase their emissions of PM_{10}. Although there are many sources of PM_{10}, boilers are the most likely source to require a consent, and will need to provide offsets.

The offsets guidance and AQ P12 is consistent with Regulation 17 of the NESAQ and the Users' Guide to the revised NESAQ. There are two areas where the policy is stricter than the NESAQ.

Regulation 17(3)(b) requires offsets to be in place for the duration of the consent while AQ P12(e) requires emissions used as offsets to be permanently removed from the Rotorua Airshed.

Permanent removal is required by the Plan Change as the intent of Regulation 17 is for no net increase of PM_{10} to the airshed. Temporary offsets do not serve this purpose, particularly when a consent may be replaced by a new consent once the original expires. The best way to ensure that offsets remain effective is to ensure they are permanent.

The suite of rules for Rotorua burners also provides assurance that offsets will be permanent by restricting the types of burners that can be used in homes. Therefore, once a burner has been taken out for offsets purposes, a new burner will be restricted to zero emission appliances or pellet burners only.

Regulation 17(3)(b) requires offsets to take effect within 12 months after the consent is granted while AQ P12(k) requires emissions used as offsets to be removed before the consent takes effect.

This ensures that there is no overlap of emissions where the community is exposed to increased emissions of PM_{10} and subsequent health effects for 12 months.

7.7.7 Summary of assessment

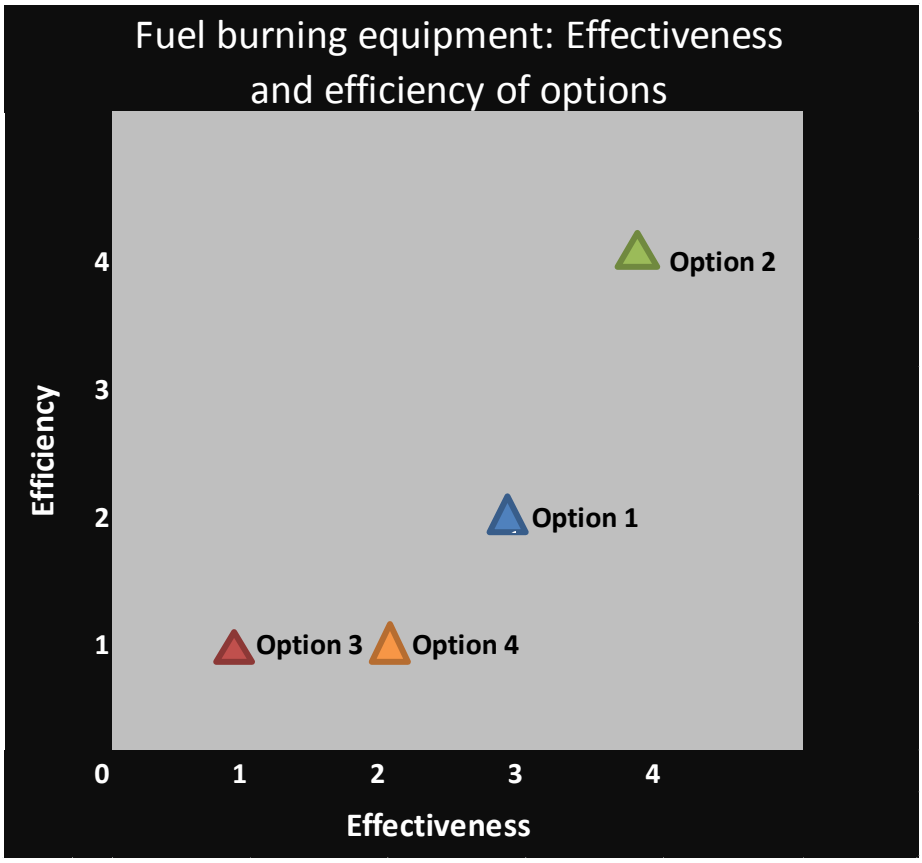
The assessment shows Option 2, the proposed Plan Change to be the most effective and efficient option to achieve the objectives. Option 2 updates stack heights into line with standard practice. It addresses potential issues of clustering of permitted boilers creating a situation where the emissions are beyond national standards, and addresses the specific Rotorua Airshed issues and the requirement for offsets in that airshed.

Option 3 is too lenient and will not provide effective or efficient management of these contaminants to achieve the objectives.

Option 1 remains an effective and efficient option for the present, but as the long term implications of NESAQ set in, it is unlikely not continue to be so. Across the region Option 1 enables permitted boilers to be established in ways where the cumulative emissions may breach national standards. Option 1 allows additional sources of PM_{10} to establish in the Rotorua Airshed without the requirement for offsets, and does not restrict the installation of several permitted boilers on one site.

While Option 4 is the most effective, it is not as efficient. It provides a marginal benefit relative to Option 2, but the additional costs incurred by small businesses and to the Council are not considered to be justified. A similar environmental gain can be achieved by Option 2, without imposing the additional costs on the community or council. Boilers up to a specified size can be adequately managed with general conditions such as those in Options 1 or 2 without resorting to resource consents for all.

Option 2 provides general conditions that can apply to all small to medium boilers as permitted activities, without the need for dispersion modelling or consents, but will still effectively manage the effect of contaminants on local and ambient air quality. It provides for environmental benefits, while minimising costs. It is the most appropriate option to achieve the objectives.



Having regard to this information, and taking into account the benefits and costs and the risks of acting or not acting, the most appropriate way of contributing to the achievement of objectives AQ O1, AQ O2 and AQ O3 is by implementing policies AQ P1, AQ P2, AQ P3, AQ P4, and AQ P10 and rules AQ R10, and AQ R18.

7.8 Topic 5 – Methyl bromide and fumigation

Provisions in Topic 5 manage the use of fumigants, including methyl bromide, for quarantine or pre-shipment applications. It does not manage fumigants used for other purposes, for example, control of insects in buildings.

7.8.1 Baseline

Methyl bromide is a broad spectrum pesticide used as a fumigant to control pest insects, nematodes, weeds, pathogens and rodents. Methyl bromide is also used for storage of durable commodities such as grains and timber, and perishable commodities such as fresh vegetables, flowers, and disinfestations of structures (e.g. buildings, ships and aircraft).[87]

Methyl bromide is odourless and colourless which makes it difficult to measure and monitor and can make it particularly hazardous.

Methyl bromide is also a greenhouse gas and ozone-depleting substance and was widely used as a soil fumigant in developed countries prior to the phase-out under the Montreal Protocol. New Zealand is a signatory to the Montreal Protocol and phased out non-quarantine use of methyl bromide in 2007. Methyl bromide for the purpose of quarantine and pre-shipment is exempt from the phase-out programme on the proviso:[88]

> *That production and consumption, if any, of methyl bromide for critical uses should be permitted only if:*
>
> *i. All technically and economically feasible steps have been taken to minimise the critical use and any associated emission of methyl bromide;*
>
> *ii. Methyl bromide is not available in sufficient quantity and quality from existing stocks of banked or recycled methyl bromide, also bearing in mind the developing countries' need for methyl bromide;*
>
> *iii. It is demonstrated that an appropriate effort is being made to evaluate, commercialise and secure national regulatory approval of alternatives and substitutes, taking into consideration the circumstances of the particular nomination and the special needs of Article 5 Parties[89]…Non-article 5 Parties must demonstrate that research programmes are in place to develop and deploy alternatives and substitutes…*

The Vienna Convention for the Protection of the Ozone Layer (the Convention) is a Multilateral Environmental Agreement. The Montreal Protocol on Substances that Deplete the Ozone Layer (the Protocol) is an international treaty designed to protect the ozone layer by phasing out the production of substances that are responsible for ozone depletion.

The Vienna Convention for the Protection of the Ozone Layer (the Convention) followed by the Montreal Protocol on Substances that Deplete the Ozone Layer (the Protocol) required use of methyl bromide to be phased out to zero by January 2015, except for quarantine and pre-shipment application.[90] New Zealand ratified the Protocol in 1987.

[87] OECD (2013).
[88] United Nations Environmental Programme (2017).
[89] Article 5 countries are developing countries.
[90] United Nations Environment Programme (1989).

New Zealand use of methyl bromide

In New Zealand, fumigation by methyl bromide is used as a biosecurity measure, protecting New Zealand from the invasion of pest species. Exports fumigated by methyl bromide include logs and timber products, kiwifruit, dried food product and general goods. Imports fumigated include vehicles, vehicle parts and tyres. Fumigation of logs and timber for export constitutes about 90% of methyl bromide use in New Zealand. The remaining 10% is for imported goods to protect NZ from exotic pests and diseases.

New Zealand uses about 6.2% of the world production of methyl bromide and is the fifth highest user of methyl bromide in the world, with annual use of 522-565 tonnes.[91] Nationally the use of methyl bromide tends to rise and fall with increases and reductions in log exports.[92]

Use of methyl bromide in Tauranga

Methyl bromide is used as a fumigant at Port of Tauranga and other ports throughout New Zealand to fumigate containers, ships holds, and log shipments. The latter are generally fumigated via a tent or tarpaulin on the Port. After treatment the residue is released into the air (apart from the >20% recaptured, rising to 60% in April 2018).

In the year to June 2015 Port of Tauranga used 182.8 tonnes of methyl bromide. Methyl bromide use in Tauranga has decreased since 2013. Average daily use fell by 40% from 2013 to 2015 (Table 7.13):

Table 7.13: Average weekly and daily use of methyl bromide in Tauranga, 2012-2015

Year	Average kg (tonnes) per week	Average kg per day
2012	5,071kg (5.1t)	722kg (0.7t)
2013	5,862kg (5.9t)	835kg (0.8t)
2014	3,983kg (4.0t)	567kg (0.6t)
2015	3,516kg (3.5t)	501kg (0.5t)

Annual monitoring reports provided to the EPA reveal that Port of Tauranga and Northport[93] use the greatest quantities of methyl bromide (Figure 7.17). In the year to June 2015 Port of Tauranga used 182.8 tonnes. This had reduced from the high of 304.8 tonnes in 2013. 2015 was the first year that Northport exceeded Port of Tauranga.

In 2015 the majority of methyl bromide used at Port of Tauranga (85%, 154.5 tonnes) was used under tarpaulins (tarps) to fumigate logs. Of the balance, 10% (17.7 tonnes) was used to fumigate ship's holds, and 6% (10.6 tonnes) to fumigate containers. By contrast, in Northland 65% (189.5 tonnes) was used to fumigate logs under tarps, and 35% (101.3 tonnes) to fumigate ship's holds.

[91] Ministry for Primary Industries (2017)
[92] STIMBR (2017)
[93] Northport is at Marsden Point, about 20km south-east of Whangarei city.

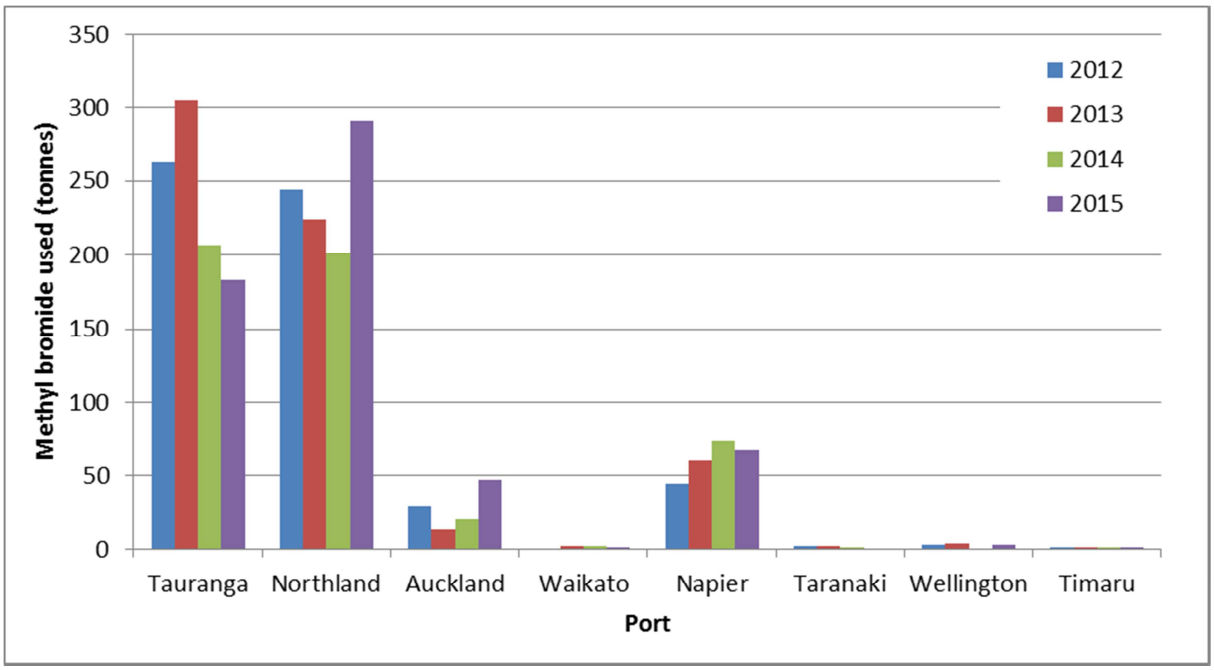


Figure 7.17 Tonnes of methyl bromide used at New Zealand ports 2012-2015

National regulation

The use of methyl bromide is regulated in New Zealand by the Ozone Layer Protection Act 1996 (OLPA) and the Ozone Layer Protection Regulations 1996 (OLPR). These regulations give effect to New Zealand's obligations under the Convention and the Protocol to phase out ozone depleting substances by January 2005 except for critical uses. Under these regulations the importation of methyl bromide is prohibited except for quarantine and pre-shipment purposes.

In 2010, the Environmental Risk Management Authority, now the Environmental Protection Authority (EPA), reassessed the use of methyl bromide due to concerns with a possible link between motor neurone disease in people who had worked in the Port Nelson area. This posed a considerable dilemma, as "on the one hand, New Zealand must protect itself from the invasion of pest species and it must meet the requirements of those countries it trades with to continue to be allowed to trade. On the other hand methyl bromide is a highly toxic substance with known health effects if not used and managed properly."[94]

The EPA approved the continued use of methyl bromide despite considerable concern from the community because it was considered there is no practical alternative. In its hazard summary, the EPA states:

> *Methyl bromide is used as a fumigant and pesticide. Exposure may occur during fumigation activities. Methyl bromide is highly toxic. Studies in humans indicate that the lung may be severely injured by the acute (short-term) inhalation of methyl bromide. Acute and chronic (long-term) inhalation of methyl bromide can lead to neurological effects in humans. Neurological effects have also been reported in animals. Degenerative and proliferative lesions in the nasal cavity developed in rats chronically exposed to methyl bromide by inhalation. Chronic inhalation exposure of male animals has resulted in effects on the testes at high concentrations.*[95]

[94] Environmental Risk Management Authority (2010).
[95] Environmental Protection Agency (2017)

The EPA describes the controls on methyl bromide as being among the toughest on any chemical, and cover its importation, transport, storage, use and disposal. The controls include requiring:[96]

- A special licence to possess methyl bromide
- Compliance with a chronic and short term Tolerable Exposure Limits (TEL) (Table 7.14)
- Erection of signs at sites where it is used
- Prior and post-notification of fumigation activities
- Emergency plans
- Personal protective equipment to be worn when working with it
- Tracking of methyl bromide at all stages of its life cycle.

In addition to these controls, the EPA has set requirements for:

- Minimum buffer zones[97]
- Air quality monitoring and annual reports
- Notification

Signage

All sites using more than 500kg methyl bromide in a calendar year must submit annual monitoring reports to the Environmental Protection Agency, unless using recapture. The EPA requires that unintentional releases of methyl bromide are also reported.

Minimum buffer distances

The HSNO minimum buffer distance is the distance from which the public must be excluded during fumigation. The required buffer distance depends on the type fumigation and amount of methyl bromide used (Table 7.14).

The resource consent held by Genera Limited[98] to use methyl bromide at the Port of Tauranga requires larger buffer distances for tent fumigation and for containers (Table 7.14).

Table 7.14: Minimum buffer distances around methyl bromide fumigations

Type of use	**Minimum buffer distances (metres)**	
	HSNO	**Genera resource consent**
Ship's hold (1000kg or more per 24 hours)	100	
Ship's hold (<1000kg or more per 24 hours)	50	
Tent fumigation (under sheets/tarpaulins)	50	100
Containers (volume of 77m^3 or more per hour)	25	25
Containers (< 77m^3)	10	25

[96] Environmental Risk Management Authority (2010).
[97] If methyl bromide is recaptured (rather than vented to air) the minimum buffer distances do not apply.
[98] Bay of Plenty Regional Council Resource Consent 62719. Conditions 5.4 and 5.5.

Tolerable exposure limits

TELs[99] are designed to protect the public from adverse effects of exposure to methyl bromide.[100] TELs are maximum allowable exposures of methyl bromide in the air at, and beyond, the edge of the minimum buffer zone (Table 7.15). These limits are considered to have no adverse effects on health over the time period shown. For example an exposure of 3.9mg/m^3 is considered safe if the exposure time is an hour or less.

The Workplace exposure standard of 5ppm is the allowable limit as an 8-hour average, and so potentially allows for more exposure than the one hour average provided for the public under the TEL.

Table 7.15: HSNO regulations – maximum allowable levels of methyl bromide at or beyond the minimum buffer distances

Tolerable exposure limits (parts per million)		
1 hour	1 ppm	3.9 mg/m^3
24 hour	0.333 ppm	1.3 mg/m^3
Chronic (annual average)	0.13ppm	0.05 mg/m^3
Workplace exposure standards (WES)		
8 hour	5ppm	19 mg/m^3

Recapture technology

When putting in place strict controls on methyl bromide use for fumigation in 2010, the Environmental Risk Management Authority (ERMA) noted there was no single practical alternative for methyl bromide for pre-export quarantine fumigation of logs and cut timber. A 10-year limit was set for recapture as "appropriate and necessary" for New Zealand to meet its obligations under the Montreal Protocol. From October 2020 all methyl bromide fumigations must use recapture technology.[101]

The resource consent held by Genera Limited for the Port of Tauranga requires recapture of methyl bromide, with the amount recaptured depending on the type of fumigation (container or logs/timber) and increases over time (Condition 5C.1):

- 15% of all container fumigations by 30 April 2015
- 40% of all container fumigations by 30 April 2016
- 100% of all container fumigations by 30 April 2018
- 15% of all log and timber fumigations by 30 April 2016
- 60% of all log and timber fumigations by 30 April 2018
- 100% of all log and timber fumigations by 30 April 2019

The 2010 ERMA decision noted that although the 'recapture of methyl bromide for shipping container fumigations [was] technically proven and operational in some circumstances, making it mandatory in places where large numbers of containers

[99] Environmental Protection Authority (2011a).
[100] Department of Labour (2010).
[101] Environmental Risk Management Authority (2010).

are fumigated would have significant logistical and economic impacts.' In 2010 there was no equipment available to recapture methyl bromide in ship hold fumigations and no technology for recapture of MB from fumigations under tarpaulins. For this reason the 10-year limit was put in place, with the expectation that it would create an incentive to develop new technologies.

Some advances have been made in recapture of methyl bromide. Genera has developed a proprietary system and now over 20% of log stacks have recapture applied. Nordiko, a company specialising in cargo fumigation solutions for shipping, has provided activated carbon units which Genera uses for methyl bromide recapture from containers, and is working towards recapture from log fumigation. Genera have also trialled their recapture system on ship hold recapture.

Alternatives to methyl bromide

Stakeholders in Methyl Bromide Reduction Inc. (STIMBR) is an industry group with representatives of major businesses and organisations involved in exporting logs and timber products from New Zealand.[102] STIMBR is coordinating research into sustainable and effective alternative phytosanitary treatments to replace methyl bromide. A review of alternatives to methyl bromide identified ethanedinitrile[103] as 'promising' in respect to its fumigation efficacy, and of equivalent toxicity to methyl bromide.[104] The findings for ethanedinitrile were that there were no significant technical issues, and the efficacy for three forest pest insect species is being tested.

Ethanedinitrile is a toxic and flammable gas. EDN concentrations for fumigation are above 'no-effects' levels, and therefore require procedures to safeguard workers, by-standers and the general public. The EPA notes that 'Overall, EDN appears to be no more acutely toxic than methyl bromide or phosphine'.[105]

The review identified sulphuryl fluoride as a 'distant second choice' to ethanedinitrile, and the only other fumigant that was worth further consideration. Fumigants were either less effective, unsuitable for logs, or more toxic (such as methyl iodide). The review included non-chemical options. These were reported to be expensive, logistically challenging, or untested.

The Ministry of Primary Industries is negotiating the use of ethanedinitrile as an alternative to methyl bromide with trading partners and are working with the chemical company (Draslovka) on registering EDN with the EPA for use in New Zealand.

Phosphine is an alternative to methyl bromide. Described as 'cheap and easily applied' phosphine can be used as in-transit fumigation in ships holds. Phosphine can be released at sea and breaks down within 24 hours to harmless phosphates. However, like other fumigants, phosphine is toxic. It can react with moisture in the lungs to form phosphoric acid, which can result in serious health consequences or death.[106]

Growing export volumes mean that more logs are carried on ship decks, and not all markets accept phosphine fumigation (China accepts phosphine-treated logs, but India does not).[107] In addition, insects can develop resistance to phosphine.[108]

[102] Stakeholders in Methyl Bromide Reduction (2017).
[103] EDN is registered in Australia for the disinfestation treatment of logs and sawn timber.
[104] Armstrong, J, Brash, D, Waddell, B. (2014).
[105] Environmental Risk Management Authority (2010, p.15).
[106] Workplace Health and Safety Queensland (2017)
[107] Laird, L (2017).
[108] Environmental Protection Authority (2011b).

Methyl bromide in the current plan

The use of methyl bromide is currently a discretionary activity under Rule 19(z) of the current plan.

Rule 19 Discretionary Activity – Specified Activities

The discharge of contaminants into air from the following activities is a discretionary activity:

> *(z) Any activity that cannot comply with the conditions set out in Permitted Activity Rules 1-17 and which is not a controlled activity or a prohibited activity.*

This is the "catch-all" rule to cover discharges of any contaminants not specifically managed by any other rule in the plan.

Genera Limited is the only operator currently fumigating using methyl bromide at the Port of Tauranga.[109] They hold resource consent number 62719 (issued in June 2005) and expiring in April 2020. The consent was reviewed in May 2014 and includes conditions that phase in recapture technology by April 2019.

Council commissioned an investigation of methyl bromide at the Port of Tauranga The recommendation was to require resource consents for methyl bromide (as required by current plan), except where recapture technology is used where it would be a controlled, non-notified activity[110].

In 2015, a second operator, Envirofume Limited, applied for a consent to fumigate using methyl bromide at the Port of Tauranga (consent application 68152). This application was declined by the Hearings Commissioner Rob van Voorthuysen for the following reasons[111]:

a) There is no certainty that the proposed discharge of methyl bromide to air will meet (not exceed) the mandatory Tolerable Exposure Limits (TELs), set by the EPA, at the landward boundary of the Port of Tauranga site.

b) There is no certainty that members of the public can be effectively excluded from that part of the adjoining coastal marine area within which the TELs will be exceeded.

c) Consequently significant adverse and potentially fatal effects on human health are not avoided. Any such adverse effects, should they occur, cannot be remedied or mitigated.

d) The application is inconsistent with significant provisions of the Operative Regional Policy Statement and the Operative Regional Air Plan.

e) The purported positive effects of the application were not supported by qualified evidence.

f) The proposed discharge of methyl bromide to air is contrary to Part 2 of the RMA and so the purpose of the RMA would be best achieved by declining the application.

[109] Genera Limited also hold another consent issued in 2006 (Consent 63371) for fumigating in other area within the Bay of Plenty Region.
[110] Opus International Consultants Limited (2015).
[111] Bay of Plenty Regional Council (2016).

This decision was appealed in April 2016. The Environment Court (the Court) confirmed the decision of the Hearings Commissioner and dismissed the appeal. Reasons for dismissing the appeal were[112]:

- The Court was not satisfied that the grant of the consent would lead to the reduction of emissions of methyl bromide. There is a risk that in granting the consent there will be an increase in the overall discharge of emissions at the Port of Tauranga. There is no basis for a reduction in discharge unless the volume of logs reduced.
- The discharge is contrary to Part 2 of the RMA and does not fit with the exceptions provided with the Montreal Protocol, New Zealand Coastal Policy Statement, Regional Policy Statement or the Regional Air Plan.
- Overall, little was done to address the issues raised by the Hearings Commissioner and the parties failed to address important documents particularly the Tauranga Iwi/Hapū Management Plan.

In the current plan methyl bromide use is not specifically listed as discretionary under Rule 19. This has not caused any issues regarding whether it requires resource consent as the conditions of Rule 17 were clear enough to exclude methyl bromide use as permitted.

However, the community has been concerned with this matter for some time, expressing their concern in submissions to the RPS in 2010. The local tangata whenua are considerably concerned with the use of methyl bromide in this area and would prefer its use to be prohibited (as set out in the Tauranga Moana Iwi Management Plan). Following the Envirofume consent application, Tauranga Moana Fumigation Action Group was set up as a community group concerned with fumigation.

The Regional Council is establishing a comprehensive and expanded monitoring network in the Port/Mount area. This involves additional monitoring equipment at existing sites and the commissioning of four new sites within the industrial areas at Sulphur Point and Mount Maunganui. The equipment will monitor methyl bromide as well as a suite of other contaminants (discussed in section 7.7).

Methyl bromide in Iwi Management Plans

The Tauranga Moana Iwi Management Plan[113] specifically recognises air quality with an objective stating:

> *The mauri of the air within Tauranga Moana is protected and where possible enhanced. This means the air we breathe is clean and our wellbeing is not impacted by the discharge of contaminants to air.*

In their Iwi Management Plan the Tauranga Moana iwi record their preferences for:

- Prohibition of methyl bromide because of impacts on the environment and human health; a safe practice plan and emergency procedures; and a stringent monitoring of chemical releases into Te Awanui (Policy 12.1g)
- Involvement of iwi and hapū in resource consent processes for industrial air discharges close to marae, papakāinga, kura kaupapa or kohanga reo (Policy 24.1)
- Working with Toi te Ora (Public Health Service) and Bay of Plenty Regional Council to advocate for more air quality monitoring sites, compliance audits of permitted discharges, a review of current rules, and enforcement of non-

[112] Environment Court Decision (2017) *Envirofume Limited v Bay of Plenty Regional Council* Decision No. [2017] NZEnvC 12, February 2017

[113] Tauranga Moana Iwi Management Plan 2016-2026. A joint environmental plan for Ngāti Ranginui, Ngāi Te Rangi and Ngāti Pukenga https://www.boprc.govt.nz/media/554748/tauranga-moana-imp-2016_final.pdf

compliance – particularly those near the marae, papakāinga, kura kaupapa, kohanga reo or dwellings (Policy 24.2)
- Sound protocols for the management and disposal of hazardous waste from commercial and industrial premises (Policy 26.2).

Overall the community has been concerned with this matter for some time, starting with submissions to the RPS in 2010. After the Enviofume consent application, the Tauranga Moana Fumigation Action Group was set up as a concerned group.

7.8.2 Relevant objectives

Discharges to air from fumigation have an adverse effect on local air quality therefore AQ O3 is the most relevant objective to this topic.

AQ O3 Manage discharges of contaminants to air according to their adverse effects on human health, cultural values, amenity values and the environment.

This may then lead to significant adverse effects on the mauri of air, human health, and the environment therefore AQ O1 also applies.

AQ O1 Protect the mauri of air and human health from adverse effects of anthropogenic contaminant discharges to air, and enhance air quality where degraded.

7.8.3 Options considered

Four options are considered to manage fumigation.

Option 1: Status quo – Rely on ozone protection legislation, EPA requirements, Regional Policy Statement, and policies and rules in current plan

Option 2 Plan Change – Provide updated policy and rules to manage fumigation in addition to ozone protection legislation, EPA requirements, and the Regional Policy Statement

Option 3 Less stringent – Have no specific policies or rules in Plan Change, rely on general rules AQ R1 and AQ R2, RMA, and EPA requirements.

Option 4 More stringent – Further restrictions on fumigation

Option	Description	Relevant provisions
Option 1 **Status Quo**	Under the status quo, the import and use of methyl bromide and other fumigants are regulated by other Acts while the discharge to air is discretionary. The Ozone Layer Protection Regulations 1996 (OLPR) (under the Ozone Layer Protection Act 1996) prohibit the importation of methyl bromide except for quarantine and pre-shipment purposes. The EPA management regime for methyl bromide includes Tolerable Exposure Limits, air quality monitoring and reporting, and minimum buffer zones. The regime also requires all methyl bromide	OLPR – Regulation 7 EPA (formerly ERMA) reassessment of methyl bromide RPS – Objective 1, Policy AQ 2A, Method 2, Objective 11, Policy IR 1B, Policy IR 5B, Objective 17, Policy IW 5B NZCPS Objectives 3, 4, 5

Option	Description	Relevant provisions
	fumigations to be subject to recapture by 2020. The NESAQ does not address emissions of methyl bromide. The RPS has air quality policies to manage the adverse effects of odours, chemicals and particulates. The main method for these policies is regional plan implementation. The NZCPS and the proposed Regional Coastal Environment Plan also apply in respect of the coastal environment particularly regarding integrated management, providing for activities at the Port, allowing for public access and avoiding, remedying and mitigating adverse effects on human health and cultural values. The current plan has policies to avoid, remedy mitigate adverse effects of discharges to air, particularly hazardous substances and requires resource consent for methyl bromide discharge as a discretionary activity.	Policies 1, 3, 4, 23 Proposed Regional Coastal Environment Plan Objectives 1, 12, 14, 16, 17, 48 Policies IW 1, CD 1, PZ 5 Air Plan Objective 2 Air Plan Policies – 1-4 Air Plan Rules – Rule 19(z)
Option 2 **Plan Change**	Under the Plan Change, fumigation for quarantine or pre-shipment of exports and imports: • Using methyl bromide with recapture is a discretionary activity • Using methyl bromide without recapture is a non-complying activity • Using other fumigants is a discretionary activity. These changes will not affect existing resource consents, but will apply as new consents are granted and as existing consents are renewed. The requirements under the OLPR, EPA management regime and RPS are the same as for the status quo.	OLPR – Regulation 7 EPA (formerly ERMA) reassessment of methyl bromide RPS – Objective 1, Policy AQ 2A, Method 2, Objective 11, Policy IR 1B, Policy IR 5B, Objective 17, Policy IW 5B NZCPS Objectives 3, 4, 5 Policies 1, 3, 4, 23 Proposed Regional Coastal Environment Plan Objectives 1, 12, 14, 16, 17, 48 Policies IW 1, CD 1, PZ 5 PC 13 Policies – AQ P1-4, AQ P9 PC 13 Rules –, AQ R20–AQ R21
Option 3 **Less stringent**	With no specific management of the discharge from specific rules, fumigation would default to the general policies and rules. General discharges are permitted provided certain conditions are met, otherwise they are discretionary. The requirements under the OLPR, EPA management regime and RPS are the same as for the status quo.	OLPR – Regulation 7 EPA (formerly ERMA) reassessment of methyl bromide RPS – Objective 1, Policy AQ 2A, Method 2, Objective 11, Policy IR 1B, Policy IR 5B, Objective 17, Policy IW 5B NZCPS Objectives 3, 4, 5

Option	Description	Relevant provisions
		Policies 1, 3, 4, 23 Proposed Regional Coastal Environment Plan Objectives 1, 12, 14, 16, 17, 48 Policies IW 1, CD 1, PZ 5 PC 13 Policies – AQ P1-4 PC 13 Rules – AQ R1-2
Option 4 **More stringent**	Option 4 may involve prohibiting the discharge of methyl bromide.	OLPR – Regulation 7 EPA (formerly ERMA) reassessment of methyl bromide RPS – Objective 1, Policy AQ 2A, Method 2, Objective 11, Policy IR 1B, Policy IR 5B, Objective 17, Policy IW 5B NZCPS Objectives 3, 4, 5 Policies 1, 3, 4, 23 Proposed Regional Coastal Environment Plan Objectives 1, 12, 14, 16, 17, 48 Policies IW 1, CD 1, PZ 5 PC 13 – prohibited rule

7.8.4 Evaluation of provisions to manage methyl bromide and fumigation

The scale and significance of this topic is rated as high.

The following table summarises the effectiveness and efficiency of the policy options to manage discharges from fumigation:

Option 1:Status quo
Effectiveness
Relevance – how effective are the provisions in achieving the objective/s The purpose of the Ozone Layer Protection Act and the Ozone Layer Protection Regulations are to protect human health from adverse effects of ozone layer modification and to phase out ozone depleting substances. They do not protect human health from the adverse effects of the discharge of methyl bromide and so are not effective at achieving the objectives. The EPA reassessment for methyl bromide set out additional requirements for its use (buffer distances, monitoring, TELs, recapture). It is up to the user to ensure they meet these requirements. The Resource Legislation Amendment Act 2017 removed the requirement for regional councils to prevent or mitigate any adverse effects of the storage, use, disposal, or transportation of hazardous substances previously included in Section 30 (RMA). Guidance on the amendments issued by Ministry for the Environment indicates that the intent of the change is to remove the perception that councils must always place controls on hazardous substances under the RMA, and to ensure councils only place additional controls on hazardous substances if they are necessary to control effects under the

RMA that are not covered by HSNO.

The HSNO Act does not manage the discharge of hazardous substances to air, and the Ozone Layer Protection Regulations do not protect human health from the adverse effects of the local discharges. This regulatory gap requires provisions in a regional plan to manage the potential adverse effects of the local discharge to air, on human health.

Some of the discharges of methyl bromide or fumigants occur either in the coastal marine area or in a location where discharges will most likely reach the coastal marine area. Therefore the NZCPS and Proposed Coastal Environment Plan (PCEP) applies.

The NZCPS requires maintenance and enhancement of public open space and public use and enjoyment of the coastal environment, and to recognise the role of tangata whenua as kaitiaki and provide for their involvement in management of the coastal environment.

The Proposed Coastal Environment Plan gives effect to the NZCPS by including provisions for integrated management, providing for activities at the Port, providing for tangata whenua involvement providing for public access to the coast and avoiding, remedying and mitigating adverse effects on human health and cultural values

However the rules of the Regional Coastal Environment Plan do not manage discharge of contaminants to air in the coastal marine area. This function falls to the regional air plan, otherwise there is a regulatory gap where discharges may cause adverse effects.

The Regional Council retains responsibility for achieving integrated management and to control the discharge of contaminants into air. The most effective way to do this is through regulations in a regional plan. Therefore the EPA requirements on their own are not sufficient to ensure good management of methyl bromide discharges and are not effective at achieving the objectives.

There are no specific policies or methods to manage methyl bromide in either the RPS or the current plan. The current plan has a permitted activity rule (Rule 17). The use of methyl bromide does not comply with the permitted activity conditions therefore it is a discretionary activity and requires a consent under Rule 19(z). Despite relying on the “default” rule, these provisions have effectively managed the discharge of methyl bromide to achieve the objectives.

However the determination of whether methyl bromide discharge is a discretionary activity relies on its inclusion in Schedule 3 of the current plan. The list in the Schedule was based on the AAQGs from 1994 and is over 20 years old. Currently, the two main fumigants (methyl bromide and phosphine) are included on this list. In the future an alternative fumigant, not on the list, may be derived to replace methyl bromide. Under the current rule, this could result in the use of an alternative fumigant as a permitted activity.

The use of general “default” rules to manage the discharge of large volumes of a hazardous substance goes beyond the intent of a general rule. The intent of general rules is to manage adverse effects from activities not anticipated when the plan was drafted. Once an activity is occurring at a frequency and/or scale where the potential for adverse effects increases if not well managed, a specific rule in the plan is more effective.

Finally, the current provisions predated the New Zealand Coastal Policy Statement, the second generation RPS and recent iwi/hapū management plans (in particular the Tauranga Moana Iwi Management Plan 2016-2026). Therefore, policies and community concerns included in those documents were not taken into account when the current plan was drafted.

Feasibility – whether the provisions are within council’s powers, responsibilities and resources and ability to implement, monitor and enforce

The management of discharges of contaminants to air is listed as a function of the Regional Council (S30(1)(f)) therefore these provisions are within the powers and responsibilities of Council.

The current provisions have effectively managed the discharge of methyl bromide and were used to successfully decline an additional application to discharge; this was upheld by the Environment Court.

Acceptability – whether the provisions have a fair distribution of impacts and level of political and community acceptance

There is considerable concern over the use and discharge of methyl bromide. During development of the second generation RPS there were 23 submissions on methyl bromide (most were *pro forma*). Submitters were concerned with the toxicity of methyl bromide, and asked for strict controls to reduce emissions, use of alternative fumigants, and recapture technology. The Port sits within the city of Tauranga, on both sides of a main thoroughfare for recreational boating, close to two busy marinas,

and immediately adjacent to one of New Zealand's most popular beaches. The position of the Port makes its activities very visible. Maintaining the status quo is unlikely to be acceptable to the community.

Following the Environment Court decision against Envirofume Limited, the community has become more aware of and concerned about methyl bromide discharge. Policy 12 of the Tauranga Moana Iwi Management Plan 2016-2026 states "a preference for the use of methyl bromide to be prohibited for the health of the environment, the community and staff involved in fumigation processes."

The recently formed Tauranga Fumigant Action Group (a community group) is also calling for stricter controls on methyl bromide and other fumigants used at the Port. The community and iwi are unlikely to find the current "discretionary by default" rule acceptable.

Summary of effectiveness: 3

Efficiency

Benefits	**Costs**
Environmental Provides protection to the New Zealand environment and that of trading partners with respect to release of pest insects and plants. *Economic* Provides protection to the New Zealand economy and that of trading partners where fumigation keeps out pest species that would affect our ability to trade with other nations (i.e. provides biosecurity). Benefits to Port of Tauranga and the local economy where the regulation is more favourable than competing ports, such as Northland. *Social* The use of fumigants on incoming goods can provide protection to NZ natural environment and threatened species *Cultural* The use of fumigants on incoming goods can provide protection to NZ natural environment and threatened species	*Environmental* Contributing to greenhouse gas effects and reducing the ozone layer *Economic* Potential for health-related costs and chronic health issues in cases where people are exposed to fumigants. This includes working in a job that requires handling of fumigants, or through accidental releases which can and do occur in unexpected wind gusts, for example.[114] Other fumigants may be introduced in the future. For example, ethanedinitrile, which breaks down to hydrogen cyanide and cyanate in water[115], is under investigation as a replacement for methyl bromide. The EPA describes it as 'no more acutely toxic' than methyl bromide.[116] *Social* The community has expressed concerns about the public bad effects such as the impact on the environment and on human health (in submissions on the Plan Change). Health and wellbeing issues associated with the use of methyl bromide and other fumigants. This is likely to be of particular importance to Port workers and their families. Risk to community health through accidental releases. The consequences of accidental releases as a result of unexpected wind gusts could be relatively low because of rapid dilution, and so would be unlikely to result in a breach of the TEL. However, the proximity of the Port to places where people live, work and play, such as Sulphur Point Marina, Bridge Marina, the harbour, and Pilot Bay understandable raises community concern.

[114] Refer annual reports on methyl bromide use at Environmental Protection Agency http://www.epa.govt.nz/about-us/monitoring/methyl-bromide-reports/read_mbr_reports/Pages/default.aspx
[115] Australian Government (2013).
[116] Environmental Risk Management Authority (2010, p.15).

	Cultural The Tauranga Iwi Management Plan expresses concern about the mauri of the air with respect to contaminants, and specifically refers to the use of methyl bromide at the Port of Tauranga.
Summary of efficiency: 2	
Option 2: Plan Change	
Effectiveness	
Relevance The purpose of the Ozone Layer Protection Act and Ozone Layer Protection Regulations are to protect human health from adverse effects of ozone layer modification and to phase out ozone depleting substances. They do not protect human health from the adverse effects of the discharge of methyl bromide and on their own are not effective at achieving the objectives of the Plan Change. The Resource Management Amendment Act 2017 removed the requirement for regional councils to prevent or mitigate any adverse effects of the storage, use, disposal, or transportation of hazardous substances previously included in s30 (RMA). Guidance on the amendments issued by Ministry for the Environment indicates that the intent of the change is to remove the perception that councils must always place controls on hazardous substances under the RMA, and to ensure councils only place additional controls on hazardous substances if they are necessary to control effects under the RMA that are not covered by HSNO. The HSNO Act does not manage the discharge of hazardous substances to air, and the Ozone Layer Protection Regulations do not protect human health from the adverse effects of the local discharges. This regulatory gap requires provisions in a regional plan to manage the potential adverse effects of the local discharge to air, on human health. The EPA reassessment for methyl bromide set out additional requirements for methyl bromide use (buffer distances, monitoring, TELs, recapture by 2020). While it is up to the user to ensure they meet these requirements, the Regional Council is responsible for ensuring discharges to air are well managed. The most effective way to do this is by regulations in a regional plan. Therefore the EPA requirements are not sufficient to ensure good management of methyl bromide discharges and are not effective at achieving the objectives on their own. Some of the discharges of methyl bromide or fumigants occur either in the coastal marine area or in a location where discharges will most likely reach the coastal marine area. Therefore the NZCPS and Proposed Coastal Environment Plan (PCEP) apply. The NZCPS requires maintenance and enhancement of public open space and public use and enjoyment of the coastal environment, and to recognise the role of tangata whenua as kaitiaki and provide for their involvement in management of the coastal environment. The Proposed Coastal Environment Plan gives effect to the NZCPS by including provisions for integrated management, providing for activities at the Port, providing for tangata whenua involvement providing for public access to the coast and avoiding, remedying and mitigating adverse effects on human health and cultural values However the rules of the Regional Coastal Environment Plan do not manage discharge of contaminants to air in the coastal marine area. This function falls to the regional air plan, otherwise there is a regulatory gap where discharges may cause adverse effects. While the current policies and rules have been effective at managing methyl bromide discharge, they are outdated and do not take into account a number of developments that have occurred in the meantime. Fumigation operations carried out at the Port of Tauranga were investigated in January 2015 to determine the best way of managing these discharges given the current regulatory landscape. The recommendation was to manage methyl bromide as a controlled, non-notified activity provided it was recaptured. For operations where recapture wasn't used, the activity would be discretionary. The intent of this tiered management was to provide an easier pathway to consent as an incentive for operators to use recapture technologies. The rules in the Plan Change are a more stringent version of this tiered management. The discharge of	

methyl bromide using recapture is a discretionary activity. The discharge of methyl bromide without recapture is non-complying.

This option addresses some of the community concern about methyl bromide use and discharge. During development of the second generation RPS there were 23 submissions on methyl bromide (note that most were *pro forma*). Submitters were concerned with the toxicity of methyl bromide and called for strict controls to reduce emissions, use of alternative fumigants and recapture technology.

Policy 12 of the Tauranga Moana Iwi Management Plan 2016-2026 states "a preference for the use of methyl bromide to be prohibited for the health of the environment, the community and staff involved in fumigation processes". Following the Environment Court decision against Envirofume Limited in 2017, the community became even more concerned with methyl bromide discharge.

As well as increased community concern, the 2020 deadline for recapture set by the EPA review is fast approaching. The review stated that recapture technology would be consistent with the Montreal Protocol (i.e. would reduce the discharge of ozone depleting substances) and would reduce the risk of adverse effects on operators and general public by minimising potential exposure to methyl bromide. Any discharge of methyl bromide that is not recaptured after 2020 is in breach of the revised management regime set out in the review.

Unless logging exports decline sharply, any fumigant used for pre-shipment or quarantine purposes is likely to be used at the Port of Tauranga in large volumes. Fumigants used for these purposes are, by their nature, harmful to insects, fungi, weeds, rodents and humans. Therefore a replacement of methyl bromide with another fumigant will only reduce the adverse effects to the wider environment (ozone layer) and still be a risk to human health. The Plan Change includes the discharge of other fumigants used for pre-shipment or quarantine purposes as a discretionary activity to ensure that any similar activity is covered.

Feasibility

The management of discharges of contaminants to air is specifically listed as a function of the Regional Council (s30(1)(f)) therefore these provisions are within the powers and responsibilities of Council.

The main issue with feasibility is the development of recapture technology. At the time of the EPA review in 2010, the date for full capture was set at 2020. This was due to the technology for recapture of methyl bromide from fumigations under sheets still being developed. The review allowed ten years for technology to be developed.

The Genera consent to discharge methyl bromide was reviewed in 2014 and introduced conditions that required an increasing percentage of discharges to be recaptured. The consent expires in 2020 by which time 100% of methyl bromide must be recaptured.

Despite the 10 years given to develop recapture technology and the commitment through resource consent conditions to increase recapture rates, it is unlikely that full recapture will be achieved by the deadline. At this stage any discharge of methyl bromide that is not recaptured would become non-complying. The Regional Council may grant consent for non-complying activities according to Section 104D of the RMA which includes that the activity will not be contrary to the objectives and policies of the relevant plan. The most relevant policies in the Plan Change are general policies AQ P1, P2, P3, and P4 and one policy specific to fumigation (AQ P9). These policies refer to management by use of best practicable options and do not refer specifically to recapture. Therefore other methods to manage methyl bromide discharge remain a feasible option to achieve the objectives.

Acceptability

The Tauranga Moana Iwi and community have called for methyl bromide use to be prohibited and may find the discretionary/non-complying activity insufficient. The current consented user of methyl bromide, Genera, will most likely find the requirements too stringent. Therefore full acceptability of any scenario by all parties is unlikely. However, this option represents a compromise. Discharge of methyl bromide is more stringently managed but may still be granted a consent.

Summary of effectiveness: 4
Efficiency

Benefits	**Costs**

Environmental Provides protection to the New Zealand environment and that of trading partners with respect to release of pest insects and plants. The protection provided by the existing approach is not reduced by this option. *Economic* Provides protection to the New Zealand economy and that of trading partners where fumigation keeps out pest species that would affect our ability to trade with other nations. Incentivises recapture technology development through the tiered consenting system. New Zealand is seen to be doing its part with regard to reducing greenhouse gases. *Social* The use of fumigants on incoming goods can provide protection to NZ natural environment and threatened species This option puts in place a system that will start to address community concerns about the impact on the environment (through incentivising recapture technology and encouraging users to utilise recapture technology when it is available). *Cultural* The use of fumigants on incoming goods can provide protection to NZ natural environment and threatened species Encouraging recapture technology goes some way to addressing concerns raised in the Tauranga Iwi Management Plan with regard to air quality.	*Environmental* Contributing to greenhouse gas effects and reducing the ozone layer. Recapture will reduce the impacts from current levels. *Economic* Potential for health-related costs on chronic health issues where people are impacted from contamination. People working directly with the gas are most at risk, but it may also affect other people in the locality when accidental releases occur. Recapture technology is unlikely to reduce this risk. *Social* The risk to community health through accidental releases continues to be an issue for people who use the area close to the Port of Tauranga. *Cultural* Concerns raised in the Tauranga Iwi Management Plan called for a prohibition on methyl bromide use which this option will not provide.
Summary of efficiency: 3	
Option 3: Less stringent	
Effectiveness	
Relevance The purpose of the Ozone Layer Protection Act and Ozone Layer Protection Regulations are to protect human health from adverse effects of ozone layer modification and to phase out ozone depleting substances. They do not protect human health from the adverse effects of the discharge of methyl bromide and on their own are not effective at achieving the objectives of the Plan Change. The Resource Management Amendment Act 2017 removed the requirement for regional councils to prevent or mitigate any adverse effects of the storage, use, disposal, or transportation of hazardous substances previously included in Section 30 (RMA). Guidance on the amendments issued by Ministry for the Environment indicates that the intent of the change is to remove the perception that councils must always place controls on hazardous substances under the RMA, and to ensure councils only place additional controls on hazardous substances if they are necessary to control effects under the RMA that are not covered by HSNO. The HSNO Act does not manage the discharge of hazardous substances to air, and the Ozone Layer Protection Regulations do not protect human health from the adverse effects of the local discharges. This regulatory gap requires provisions in a regional plan to manage the potential adverse effects of	

the local discharge to air, on human health.

The EPA reassessment for methyl bromide set out additional requirements for methyl bromide use (buffer distances, monitoring, TELs, recapture by 2020). While it is up to the user to ensure they meet these requirements, the Regional Council is responsible for ensuring discharges to air are well managed. The most effective way to do this is by regulations in a regional plan. Therefore the EPA requirements on their own are not sufficient to ensure good management of methyl bromide discharges and are not effective at achieving the objectives on their own.

Some of the discharges of methyl bromide or fumigants occur either in the coastal marine area or in a location where discharges will most likely reach the coastal marine area. Therefore the NZCPS and Proposed Coastal Environment Plan (PCEP) apply.

There are a number of objectives and policies under the NZCPS Coastal Plan that allow for public access and to avoid, remedy and mitigate adverse effects on human health and cultural values. Rules in the Proposed Regional Coastal Environment Plan do not apply to discharges of contaminants to air in the coastal marine area.

The NZCPS requires maintenance and enhancement of public open space and public use and enjoyment of the coastal environment, and to recognise the role of tangata whenua as kaitiaki and provide for their involvement in management of the coastal environment.

The Proposed Coastal Environment Plan gives effect to the NZCPS by including provisions for integrated management, providing for activities at the Port, providing for tangata whenua involvement providing for public access to the coast and avoiding, remedying and mitigating adverse effects on human health and cultural values

However the rules of the Regional Coastal Environment Plan do not manage discharge of contaminants to air in the coastal marine area. This function falls to the regional air plan, otherwise there is a regulatory gap where discharges may cause adverse effects.

Without specific policies or rules in the Plan Change, the discharge of fumigants including methyl bromide, defaults to general rules AQ R1 and AQ R2. This is a similar situation to the status quo (Rule 17 and Rule 19(z). However Rule 17 in the current plan contains a limit on emission rate of discharges and link to a hazardous air pollutants list. This specifically excluded methyl bromide use as a permitted activity, ensuring consent required under Rule 19(z).

In the Plan Change, general permitted activity AQ R1 is intended to manage adverse effects from activities either not expected to cause adverse effects in most cases (e.g. domestic compost heaps) or not anticipated when the plan was prepared. Once an activity is occurring at a frequency and/or scale where the potential for adverse effects increases, a specific rule in the plan is more effective.

For reasons discussed further in Section 7.10 (Topic 7) the general permitted rule (AQ R1) no longer contains a link to a schedule of hazardous substances. AQ R1 was drafted to work alongside all other rules in the Plan Change, including the specific rules for fumigation and methyl bromide. Without the specific rules and policies that list fumigation as discretionary or non-complying, the Plan Change relies on the general conditions of AQ R1. There is a possibility (although unlikely) that use of methyl bromide and other fumigants could end up as a permitted activity would not achieve the objectives.

Feasibility

The management of discharges of contaminants to air is specifically listed as a function of the Regional Council (s30(1)(f)) therefore these provisions are within the powers and responsibilities of Council.

Most regional plans in the country have general rules that act as defaults for activities not otherwise specified in the plan; therefore it is a feasible option. As a means of managing a large, known discharge, it would not be the most effective option.

Acceptability

This, less stringent option is unlikely to be accepted by the community. There is considerable concern over the use and discharge of methyl bromide. During development of the second generation RPS there were 23 submissions on methyl bromide (note that most were *pro forma*). Submitters were concerned with the toxicity of methyl bromide and called for strict controls to reduce emissions, use of alternative fumigants and recapture technology.

Following the Environment Court decision against Envirofume Limited, the community has become more concerned with methyl bromide discharge. Policy 12 of the Tauranga Moana Iwi Management Plan 2016-2026 states *"a preference for the use of methyl bromide to be prohibited for the health of*

the environment, the community and staff involved in fumigation processes."

Although the "discretionary by default" approach for methyl bromide has been effective under the current plan (discussed in Option 1) it is unlikely to be acceptable to those parties calling for stricter controls. With the added risk under this option that methyl bromide discharge could fall through and not require a consent, it is unlikely to be accepted.

Summary of effectiveness: 1

Efficiency

Benefits	**Costs**
Environmental Provides protection to the New Zealand environment and that of trading partners with respect to release of pest insects and plants. *Economic* Provides protection to the New Zealand economy and that of trading partners where fumigation keeps out pest species that would affect our ability to trade with other nations. *Social* The use of fumigants on incoming goods can provide protection to NZ natural environment and threatened species *Cultural* The use of fumigants on incoming goods can provide protection to NZ natural environment and threatened species	*Environmental* Contributing to greenhouse gas effects and reducing the ozone layer. *Economic* New Zealand cannot be seen to be doing its part with regard to reducing greenhouse gases. Potential for health-related costs on chronic health issues where people are impacted from contamination. People working directly with the gas are most at risk, but it may also affect other people in the locality when accidental releases occur. *Social* The risk to community health through accidental releases continues to be an issue for people who use the area close to the Port of Tauranga. *Cultural* This option does not address concerns raised in the Tauranga Iwi Management Plan with regard to air quality.

Summary of efficiency: 1

Option 4: More stringent

Effectiveness

Relevance

The purpose of the Ozone Layer Protection Act and Ozone Layer Protection Regulations are to protect human health from adverse effects of ozone layer modification and to phase out ozone depleting substances. They do not protect human health from the adverse effects of the discharge of methyl bromide and on their own are not effective at achieving the objectives of the Plan Change.

The Resource Management Amendment Act 2017 removed the requirement for regional councils to prevent or mitigate any adverse effects of the storage, use, disposal, or transportation of hazardous substances previously included in s30 (RMA). Guidance on the amendments issued by Ministry for the Environment indicates that the intent of the change is to remove the perception that councils must always place controls on hazardous substances under the RMA, and to ensure councils only place additional controls on hazardous substances if they are necessary to control effects under the RMA that are not covered by HSNO.

The HSNO Act does not manage the discharge of hazardous substances to air, and the Ozone Layer Protection Regulations do not protect human health from the adverse effects of the local discharges. This regulatory gap requires provisions in a regional plan to manage the potential adverse effects of the local discharge to air, on human health.

Some of the discharges of methyl bromide or fumigants occur either in the coastal marine area or in a location where discharges will most likely reach the coastal marine area. Therefore the NZCPS and Proposed Coastal Environment Plan (PCEP) applies.

The NZCPS requires maintenance and enhancement of public open space and public use and enjoyment of the coastal environment, and to recognise the role of tangata whenua as kaitiaki and provide for their involvement in management of the coastal environment.

The Proposed Coastal Environment Plan gives effect to the NZCPS by including provisions for integrated management, providing for activities at the Port, providing for tangata whenua involvement providing for public access to the coast and avoiding, remedying and mitigating adverse effects on human health and cultural values

However the rules of the Regional Coastal Environment Plan do not manage discharge of contaminants to air in the coastal marine area. This function falls to the regional air plan, otherwise there is a regulatory gap where discharges may cause adverse effects.

The EPA reassessment for methyl bromide set out additional requirements for its use (buffer distances, monitoring, TELs, recapture by 2020). While it is up to the user to ensure they meet these requirements, the Regional Council is responsible for ensuring discharges to air are well managed. The most effective way to do this is by regulations in a regional plan. Therefore the EPA requirements are not sufficient to ensure good management of methyl bromide discharges and are not effective at achieving the objectives on their own.

This option would take the EPA requirements one step further and prohibit the discharge of methyl bromide and any other fumigant to air. Fumigant use could still continue provided there was no discharge to air. This would drive the development and use of recapture and/or reuse technologies and would achieve the relevant objectives.

An unintended consequence of this is that prohibited activities cannot apply for or be granted consents. Without consent conditions the Regional Council has no mechanism to manage any discharge of fumigants except to monitor and prosecute in the event of a discharge. For discharges that may result in an effect on amenity value (such as dust and odour) this may be an appropriate response. However, with fumigants and the serious adverse health effects that they may cause it is more effective to prevent adverse effects, rather than prosecute after the harm is done.

Therefore, although it is counter intuitive, it is more effective to manage an activity using strict consent conditions (that can be monitored for compliance) rather than prohibit it, removing all ability to consent and manage the activity. The only mechanism remaining is for the Regional Council to carry out monitoring at the community's expense, to ensure that no discharge does occur.

Feasibility

The management of discharges of contaminants to air is specifically listed as a function of the Regional Council (s30(1)(f)) therefore these provisions are within the powers and responsibilities of Council.

Fumigation activities are still feasible in theory under this option as fumigation could still be carried out provided there was no discharge to air of the fumigant. This would involve reuse or full recapture of any fumigant, with no alternative methods possible. The cost involved to build these types of facilities would be substantial and could impact on the ability of users to provide adequate fumigation. This in turn would put the income earned from exports at risk, and be a threat to biosecurity.

Acceptability

A complete ban on the discharge of fumigants including methyl bromide would be acceptable to those members of the community that are calling for it to be a prohibited activity. However it will not be acceptable to users of fumigants at the Port of Tauranga, importers and exporters, and biosecurity.

Summary of effectiveness: 1

Efficiency

Benefits	**Costs**
Environmental The limited ability to recapture fumigants would result in a reduction in greenhouse gases	*Environmental* Could lead to reduced fumigation and increased biosecurity risks both for New Zealand and for

because of reduced use of methyl bromide and other fumigants. *Economic* Would drive research and development of recapture and reuse technologies, and possibly into other ways of managing biosecurity risk. *Social* Halt in deterioration of air quality caused by this source, and the associated risks of health issues. *Cultural* A halt in deterioration of local air quality from this source.	trading partners. *Economic* Most NZ use of methyl bromide (and any fumigant that may replace it) is for forest products and is a condition of export. A very strict regulatory regime could compromise the ability of NZ to export some goods – particularly lumber and whole logs. This would result in job losses and have a negative impact on the economy. *Social* Less choice in products imported that may be harbouring insect pests. For example animal products, plant products (e.g. fresh flowers and foliage), stock food and wood products.[117] *Cultural* Biosecurity risk
Summary of efficiency: 2	

7.8.5 **Risk of acting or not acting**

Council must assess the risk of acting or not acting if there is uncertain or insufficient information about the subject matter of the provisions (s32(2)(c)). This is also consistent with Policy IR 1B of the RPS, to take a precautionary approach when uncertain.

Methyl bromide is a greenhouse gas and is highly toxic in the environment (both locally and to the ozone) and to human health. There is no doubt about this.[118] Methyl bromide is currently used as a fumigant for imports and exports. Described by the OECD[119] as a 'low cost fumigant', methyl bromide is also an effective fumigant. It is not the only method of fumigation; another chemical (ethanedinitrile) is currently under investigation. There is potential for non-chemical options for pest management. Debarking is one such option, although it is described as 'more expensive [and] logistically challenging'.[120]

The risk of acting or not acting is about where to make the trade-off between the benefits of trade (industry, jobs, consumer goods) to New Zealanders (with the associated biosecurity costs) , against the effects (costs) of the biosecurity method on the environment and human health. At the local level the risk of acting is that fumigation may move to ports with more relaxed conditions, such as Northland where large-scale log fumigation is still a permitted activity. The extent to which this happens will depend on factors including additional costs of transport and handling. All regional councils will have to adhere to the EPA requirements to recapture methyl bromide by 2020, so shifting to another port would provide only short term benefits to industry. The risk of not acting is associated with the local environment and health impacts. This includes the proximity of the Port to the local population, including the Tauranga Moana Iwi. Council considers that Option 2 is an appropriate response.

[117] Ministry for Primary Industries (2012).
[118] Environmental Protection Agency (2017). website
[119] OECD (2013).
[120] Armstrong, Brash and Waddell (2017).

A key area of uncertainty is the adverse effects of other fumigants that may replace methyl bromide in the future. It is likely that any chemical fumigant (pesticide) used for the purpose of pre-shipment and quarantine will have adverse effects on human health. This suggests that a precautionary approach is appropriate and the provisions include controls on other fumigants to cover this uncertainty.

7.8.6 Justification of provisions stricter than national standards

Where provisions of the Plan Change are more restrictive than national standards, Council must examine whether the restriction is justified given the circumstances of the region (s32(4)).

There is no national environment standard for management of fumigants therefore this section does not apply. However, the EPA review of methyl bromide includes a management regime and the provisions of the Plan Change are consistent with this regime.

7.8.7 Summary of assessment

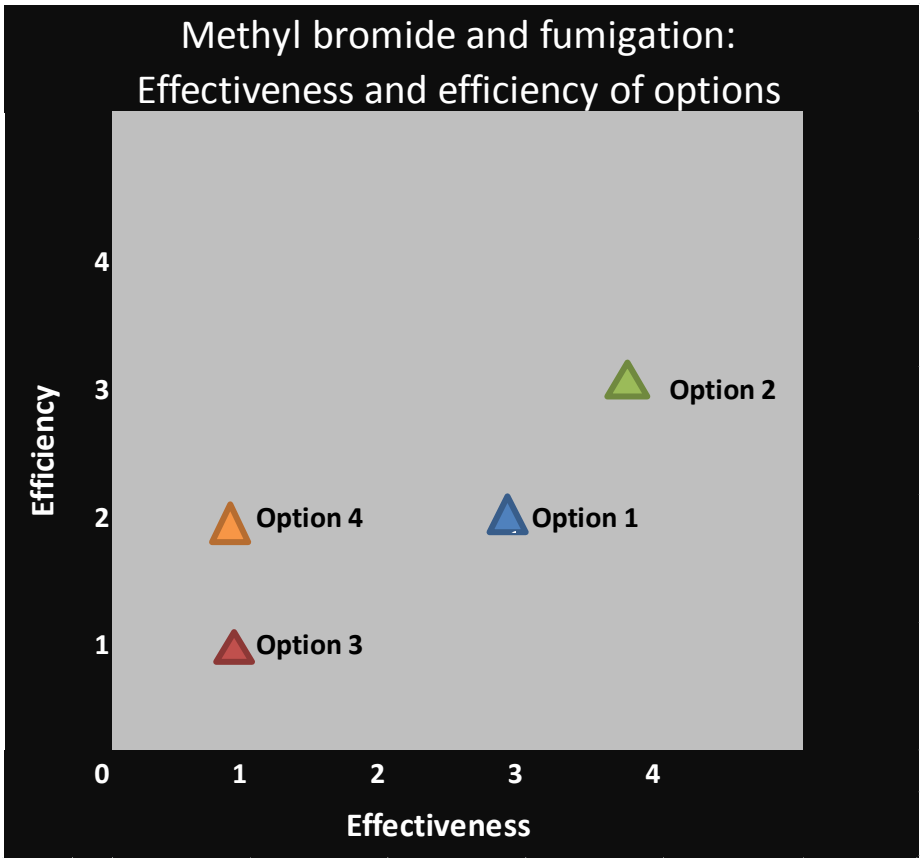
Although there are a number of Acts, policy statements, requirements and regional plans that overlap in the regulation of hazardous substances the coastal environment, a regional air plan is where discharges of contaminants to air in the coastal marine area is regulated.

Option 1, the current plan has successfully managed methyl bromide to date. However, the rule does not cover new fumigants that may be introduced in the near future. There is considerable community concern regarding fumigation activities and the current default rule is no longer the appropriate way to manage these discharges.

Option 3 is too lenient, with a risk that no consent may be required for the activity which is not appropriate given the potential for health effects and community concern.

Option 4 would be effective, reducing health impacts but is not efficient as it would lead to considerable economic costs.

Option 2 provides a balance, where fumigation activities are strictly controlled through a specific rule, and where recapture is encouraged. It is most appropriate option being both effective and efficient.



Having regard to this information, and taking into account the benefits and costs and the risks of acting or not acting, the most appropriate way of contributing to the achievement of objective AQ O3 is by implementing policies AQ P1, AQ P2, AQ P3, AQ P4, and AQ P9, and rules AQ R20 and AQ R21.

7.9 Topic 6 – Mount Maunganui area

Topic 6 discusses the discharges of contaminants to air from operations in the Port of Tauranga, Mount Maunganui and Sulphur Point area ('the Mount Maunganui area'). Methyl bromide is also discharged in this area but is covered in Topic 5 (Section 7.8) so is not included in this part of the evaluation.

Topic 6 is related to other topics already evaluated, in particular Topics 4 (boilers) and 5 (fumigation). Topic 6 also relates to the Topic 7 (general discharges).

7.9.1 Baseline

The Port of Tauranga and the Mount Maunganui industrial area is a complex area with heavy industry, port activities and mixed land use (Figure 7.18). It has a history of air quality issues and complaints to Council. Complaints identify potential sources but accurate source identification is often not possible.

Figure 7.18: Aerial view of Port of Tauranga and Mount Maunganui industrial area (2015)

Dust and particulates

In 2012, Council commissioned dust investigations to identify the main sources in the Mount Maunganui area. The investigations included grab samples, a depositional dust monitoring programme, and continuous particulate (PM_{10}) monitoring at the Totara Street air quality monitoring station. The Totara Street air quality monitoring station provides ongoing data on total suspended particulate (TSP) and SO_2 emissions.

The main findings from the 2012 investigation were:

- Of over 30 grab samples examined over six years to 2012, four samples provided clear evidence of dust impacts from the coal handling facilities at the Port. However, these samples all preceded the improvements made to the coal handling equipment in mid-2006.

- Significant quantities of palm kernel dust were identified in six grab samples. Since then the handling and storage practices of this material have been modified by the Port of Tauranga.

- Wood and bark material was found in six of the grab samples. Significant amounts were often present in the collected samples. On-going sealing of log storage areas in and around the port and improved yard management will see reductions in material from these sources.

- The levels of suspended particulate matter are acceptable for an urban area, although are moderately higher than levels recorded in other less developed parts of the region.

- All other grab samples contained various mixtures of typical urban dust particles, including soil and sand, tyre wear, cenospheres (from combustion) and other combustion-related materials, pollens and other plant matter, man-made fibres, paint flakes and particles, rust flakes and possibly welding residues.

- A Visual Impact Monitoring Programme in 2008[121] showed that the greatest dust impacts occurred at sites closest to the main port area at Mount Maunganui. Much of the dust impact was attributed to the same materials noted in the point above. A few of the samples collected downwind of specific locations showed evidence of the palm kernel and log handling activities.

Overall the results show that the Mount Maunganui and Sulphur Point areas experience elevated levels of dust under certain meteorological conditions. The dust comes from a range of sources. The volume of heavy traffic supporting the port operations, and commercial and industrial activities can also contribute to elevated levels of dust.

The TSP monitor at the Totara Street monitoring site indicates that although all sites are a source of dust, the port area has a higher percentage (Figure 7.19).

[121] The Visual Impact Monitoring Programme was part of the programme of work reported on in the 2012 report.

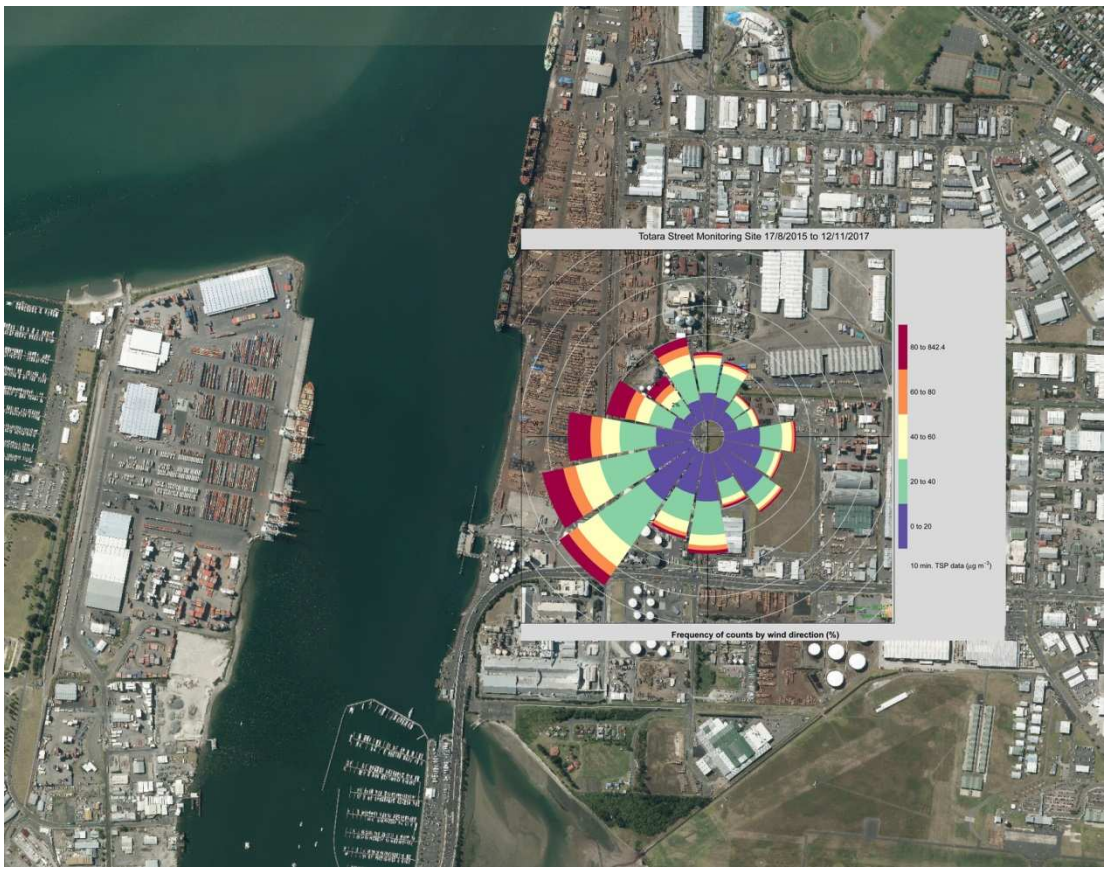


Figure 7.19: TSP frequency of counts by wind direction (%) at Totara Street monitoring site 17 August 2015 to 12 November 2017

In 2016 the Council carried out a dust audit due to ongoing dust issues. The audit focused on the Port and associated operations[122]. Field work was carried out during a dry windy week in October 2016. The conditions were ideal; air discharges could be seen emanating from a large number of activities undertaken on Port land. The audit concluded that the levels of dust in this area most likely exceed the ambient standard for PM_{10}. Under Regulation 15 of the NESAQ, the Regional Council is required to monitor any contaminant where it is likely to breach.

The main sources and activities contributing to dust were:

- Bulk cargo handling - transferring product from ship hold to hoppers, overfilling hoppers, overfilling trucks, spilt product on the wharf, and working in high winds.
- Log handling – about 45 hectares of the Port area is used for storage and log handling. Logs are handled several times and generate fugitive dust emissions.
- Open spaces – Most port-owned land is sealed[123] which reduces wind-borne dust. Sealed log yards still require sweeping. Heavy vehicle movements, log debris from trucks, diesel smoke, and tyre and brake wear contribute to airborne particulate matter.
- Vehicles and cargo handling equipment – discharges from diesel combustion, tyre wear, hopper and cargo crane movements and general vehicular wear and tear. At least five log/cargo trains arrive and depart from the Port daily, with associated diesel locomotion emissions. About 10.9 ha of KiwiRail-owned, unsealed rail sidings surround the rail tracks and produce dust emissions.

[122] Emission Impossible Limited (2017)
[123] About 1.4ha remains unsealed.

Shipping is probably the greatest volumetric contributor to air pollution of any port activity (particulates and gases). The Resource Management (Marine Pollution) Regulations 1998 manages discharges from shipping emissions and states that no rules may be included in a regional plan to manage discharges that are part of normal operations of ships.[124] This means that the Regional Council cannot manage shipping emissions using the Plan Change.

Sulphur dioxide

Sulphur dioxide is a colourless, soluble gas with a characteristic pungent smell (burnt matches) which forms sulphurous acid when combined with water.

Sulphur dioxide is produced mainly from the combustion of fossil fuels that contain sulphur, such as coal and oil (for example, coal burnt for heating, diesel-powered vehicles). Sulphur dioxide is also produced from some industrial processes, such as fertiliser manufacturing, aluminium smelting and steel making.

The SO_2 emission source situation at Mount Maunganui is complex with a number of source types. Industry is the largest single source and consents are issued for these activities. There is also a contribution from traffic, shipping, and train activity[125].

Industrial sources include:

- Ballance Agri Nutrients Ltd (BOPRC Consent No. 64800). Produces super-phosphate fertiliser. The main source is the acid plant stack. The manufacturing plant stack also discharges SO_2.
- Lawter (NZ) Limited (BOPRC Consent No. 61693). Refines pulp by-products by distillation. SO_2 is one of the combustion gases generated by the high temperature (HT) furnaces.
- Waste Management NZ Limited (BOPRC Consent No. 64391) operates an oil collection and disposal facility. Discharges include SO_2, steam, particulates, and other combustion gases, discharged to a 6 m high flue.
- Allied Asphalts Ltd (BOPRC Consent No. 62740) operates an asphalt plant.
- Higgins Contractors Ltd (BOPRC Consent No. 63317) operates an asphalt plant.

Although the Mount Maunganui airshed is largely industrial, there is residential housing in close proximity including a community of five papakāinga, 10 privately owned family homes, the Whareroa Marae in Taiaho Place and a kohanga reo early childhood centre in the marae grounds (Figure 7.20).

Ngāi Tukairangi and Ngāti Kuku of Ngāi Te Rangi are the primary hapū for the Whareroa Marae.

In their Iwi Management Plan, Ngāi Te Rangi, Ngāti Ranginui and Ngāti Pūkenga express concerns about the impact of land use activities on the health of air, human health and wellbeing, and their way of life.[126]

Key policies relating to air quality are the management of the effects of air discharges on the health and wellbing of their people in the following ways:

- By a review of air discharge rules, particularly buffer distances from marae, Papakāinga, kura kaupapa, kohanga reo and dwellings.
- Involvement of iwi and hapu in resource consent processes for industrial are discharges close to marae, Papakāinga, kura kaupapa or kohanga reo.

Matters in the Iwi Management Plan outside the scope of the plan change are:

[124] Refer Appendix 12.
[125] Bay of Plenty Regional Council (2011).
[126] Conroy and Donald (2017).

- Advocating for more monitoring sites
- Compliance audits for permitted discharges to air
- Enforcement action for non-compliance of consented air discharges.

*Figure 7.20: Key sources of sulphur dioxide emissions and monitoring locations near Whareroa Marae. (*The arc shows the wind direction angle discussed later in this report)

Sulphur dioxide has a distinctive odour, and has potential human health effects, including a reflex cough, irritation and a feeling of chest tightness which may lead to narrowing of the airways. Asthmatics are considered the most sensitive group to concentrations of SO2. People exercising are also very sensitive to the gas.[127]

The Regional Council receives odour complaints from residents and workers in this industrial area. Concerns have been raised about the health effects of gaseous discharges from surrounding industries on young children and elderly residents in the housing units surrounding the marae. Complainants describe symptoms consistent with exposure to SO_2 including irritation to eyes, nose and throat.

To collect more information about adverse air quality that may be affecting the health of residents around the Marae, the Regional Council contracted Watercare Laboratory Services to install an air quality monitoring trailer at the marae site. The location selected was on the northern boundary fence of the kohanga reo.

Monitoring equipment was installed on 25 September 2015 and has run continuously since.[128]

The NESAQ sets the ambient guideline for sulphur dioxide is currently set at 120 micrograms per cubic metre. When New Zealand set that level it was the same as the World Health Organisation guideline. However, since then the WHO has revised its guideline to 20 micrograms per cubic metre. New Zealand's ambient guideline remains at 120.[129] NESAQ concentration limits are 350 micrograms per cubic meter (expressed as a 1-hour mean), with nine allowable exceedances in a 12-month period, and an absolute limit of 570 micrograms per cubic metre (expressed as a 24-hour mean) (Table 7.16).

Hourly levels of SO_2 measured at Whareroa Marae between 26 September 2015 and 31 October 2017 shows that breaches of the upper limit (570 µg/m^3) NES for sulphur dioxide occurred on: 27 February 2016 (628 µg/m^3); and 5 March 2016 (751 µg/m^3) (Table 7.16 and Figure 7.21). There have been eight exceedances of the lower limit (350 µg/m^3) NES for sulphur dioxide.

Table 7.16: Data summary for the period of record 25 September 2015 to 31 October 2017 with a focus on NESAQ and Ambient Air Quality Guideline (NZAAQG) values.

Contaminant	NESAQ concentration limits	Permissible excess	Recorded concentration (µg/m^3)	Date / time of exceedance
Sulphur dioxide (SO_2)	350 micrograms per cubic metre expressed as a 1-hour mean	9 allowable in a 12-month period	453 396 628 439 751 363 471 392	Thurs 21/1/2016 10:00 Fri 22/1/2016 11:00 Sat 27/2/2016 10:00 Fri 4/3/2016 11:00 Sat 5/3/2016 12:00 Sat 26/3/2016 12:00 Sun 27/3/2016 14:00 Mon 9/5/2016 13:00
	570 micrograms per cubic metre expressed as a 1-hour mean	Not to be exceeded at any time	628 751	Sat 27/2/2016 10:00 Sat 5/3/2016 12:00
	120 micrograms per cubic metre expressed as a 24-hour mean	NZ ambient guideline	121	Fri 2/10/2015

[127] Ministry for the Environment (2003).
[128] Bay of Plenty Regional Council (2016).
[129] Ministry for the Environment (2014).

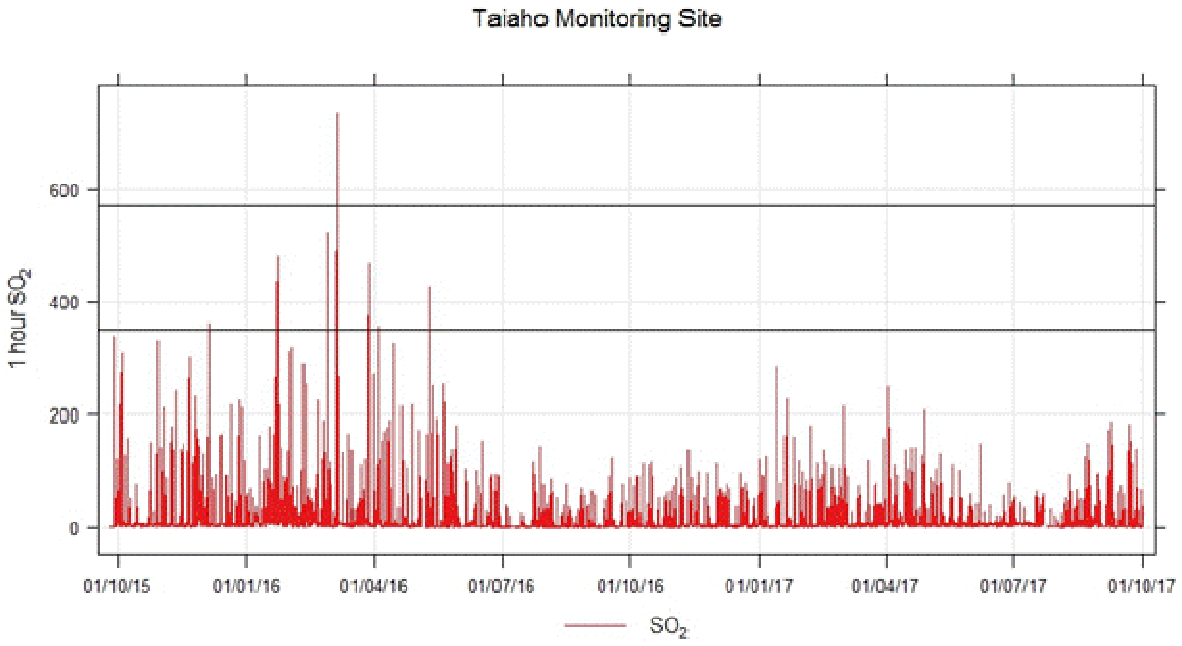


Figure 7.21: Ambient levels of sulphur dioxide (µg/m^3, 1-hour average) measured at Whareroa Marae between 26 Sept 2015 and 31 Oct 2017

When the wind direction is taken into account, wind blowing in the quadrant of 310-340^o (NW-NNW) (see Figure 7.22 for this arc) shows a clear SO_2 correlation to Ballance Agri-Nutrients site.

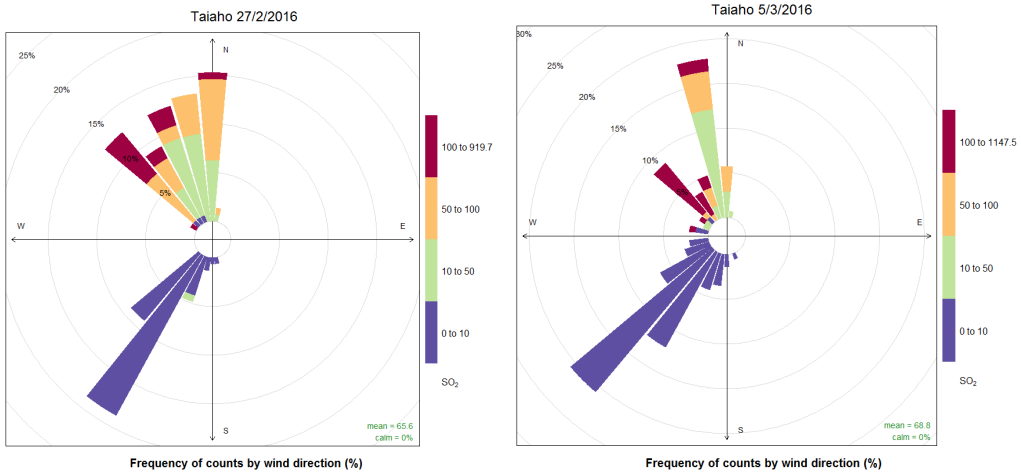


Figure 7.22: Pollution roses for the two 570 µg/m^3 events showing highest levels of SO_2 are detected when wind direction is NW-NNW

The monitoring data collected to date at the marae site indicates it is more likely than not that discharges from Ballance Agri-Nutrients (in particular the Acid Plant stack) are the source of the NES breaches for SO_2.

Stack emission data supplied by Ballance Agri-Nutrients (24/03/2016) shows no breach of conditions of their consent which allows for an emission of SO_2. The consented SO_2 limit was determined by the use of dispersion modelling information that was presented as part of the consent application. The modelling results showed that the consented limit on the Acid Plant stack would not cause exceedances of the NESAQ.

Hydrogen sulphide

H_2S is responsible for the characteristic 'rotten eggs' odour that most people associate with geothermal areas. The odour can be detected at low concentrations and the level at which this first occurs is referred to as the odour threshold. This threshold varies from one person to the next, depending on individual sensitivities, age, state of health, and the conditions under which the odour is assessed.

The odour threshold set out in the Ambient Air Quality Guidelines is 7µg/m^3 (1 hour average). The odour can be offensive and can generate complaints to the Council.

Figure 7.23 shows a pollution rose for the data collected at Taiaho Place. Higher values are associated with winds from the north-easterly quadrant. This captures discharges from the Waste Management oil refinery site which currently holds consent to discharge $H_2S$from its industrial processes (Figure 7.24).

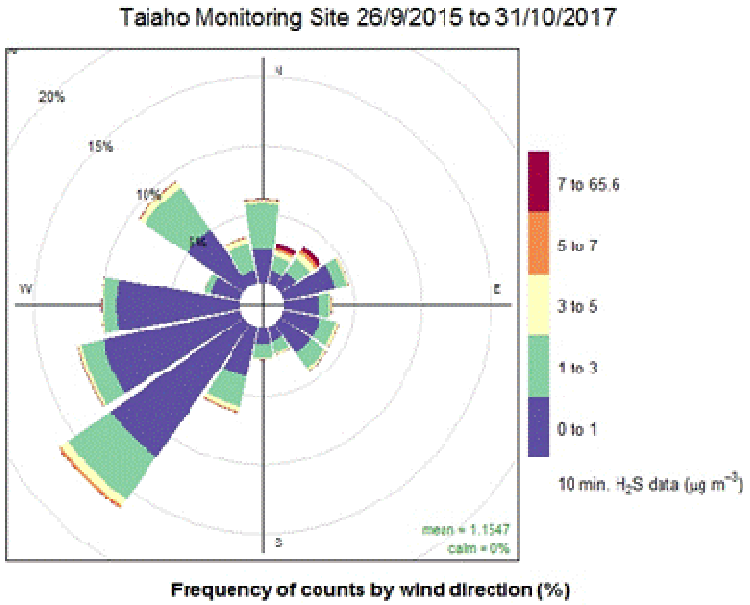


Figure 7.23: Pollution rose of H_2S values (1 hour average) recorded at Taiaho Place

Figure 7.24: North east quadrant from which high H_2S values are recorded.

Some elevated levels are also recorded when the wind direction is from the southerly quarter, this is not surprising as earlier work undertaken by Council has shown that decomposing organic matter (e.g. sea lettuce) in an anaerobic setting can produce H_2S.

Exceedances of the H_2S standard are shown in Figure 7.25.

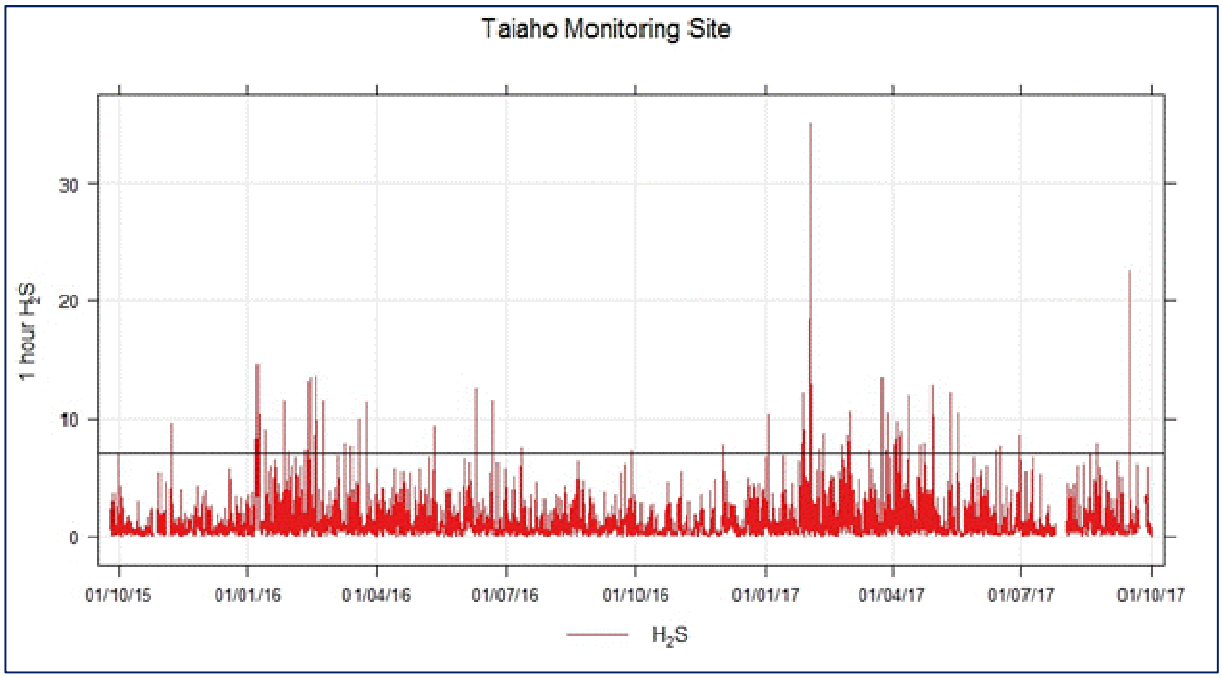


Figure 7.25: Exceedances of the H2S 1 October 2015 to 1 October 2017

The issue of resource consent conditions and compliance with the AAQGs is a consenting and compliance matter. Provided the air plan continues to require consents for activities that discharge H_2S, no change is necessary.

Natural sources of contaminants (e.g. decomposting sea lettuce on the beach) are not addressed by the Plan Change.

Other contaminants

A number of other contaminants are discharged from industries and processes such as carbon monoxide, oxides of nitrogen, and volatile organic compounds.

Additional monitoring

As a result of the Port of Tauranga Dust Audit, the sulphur dioxide exceedances and ongoing issues with various contaminants, the Regional Council is establishing a comprehensive and expanded monitoring network in the Port/Mount area. This involves additional monitoring equipment at existing sites and the commissioning of four new sites within the industrial areas at Sulphur Point and Mount Maunganui.

The equipment will monitor TSP (dust), PM_{10} (coarse particulates), $PM_{2.5}$ (fine particulates), SO_2 (sulphur dioxide), H_2S (hydrogen sulphide), HF (hydrogen fluoride), and a full suite of meteorological parameters.

Status as an airshed

The Port/Mount Maunganui industrial area is not currently a gazetted airshed. Gazetted airsheds are defined by legal boundaries and notified by the Minister for the Environment in the *New Zealand Gazette.* Regardless of whether the Port/Mount Maunganui area is a gazetted airshed, once an ambient standard has been breached, regulations of the NESAQ take effect.

If the expanded monitoring network in the Port/Mount Maunganui area records an exceedance for the PM_{10} standard, a number of regulations in the NESAQ will apply. Many of these target PM_{10} from domestic burners and are not relevant to this area. However, Regulation 17 does apply, where the Regional Council must decline a resource consent application for a new or increased discharge of PM_{10} unless the applicant can reduce the PM_{10} discharge from another source in the area (offset) by the same amount. A "polluted" airshed is defined by Regulation 17 and is not necessarily the same as a gazetted airshed.

Due to the exceedances of SO_2 recorded in this area, Regulation 21 (NESAQ) currently applies. Under Regulation 21 the Regional Council must decline a consent application to discharge SO_2 into air if the discharge is likely cause the concentration to breach the ambient standard. The source of the SO_2 must be the cause.[130]

The Regional Council may opt to gazette the Port/Mount Maunganui airshed, but there is no legal requirement to do so, and this does not change the requirements under the NESAQ. A gazetted airshed has a defined boundary and can be used as a management tool to focus improvements in ambient air quality within that locale.

7.9.2 Relevant objectives

Discharges to air from activities in this area may have an adverse effect on local air quality therefore AQ O3 is the most relevant objective to this topic.

AQ O3 — Manage discharges of contaminants to air according to their adverse effects on human health, cultural values, amenity values and the environment.

However, there are situations where the discharge may lead to exceedances of ambient air quality standards and guidelines and can contribute to poor ambient air quality therefore AQ O2 also applies.

AQ O2 — The region's ambient air quality meets the National Environmental Standards for Air Quality (2004) and the Ambient Air Quality Guidelines (2002).

Finally, discharges of the contaminants in this area that have adverse effects on local air quality and/or ambient air quality may have a significant adverse effect on health therefore AQ O1 is relevant to this topic.

AQ O1 — Protect the mauri of air and human health from adverse effects of anthropogenic contaminant discharges to air, and enhance air quality where degraded.

[130] Ministry for the Environment (2014).

7.9.3 Options considered

Four options are considered to manage discharges in the Mount Maunganui area:

Option 1: Status quo – National standards, regional policy statement, policies and rules in current plan

Option 2 Plan Change – National standards, regional policy statement, updated policies and rules in Plan Change, non-regulatory method to develop a Mount Maunganui area air management framework

Option 3 Less stringent – National standards, regional policy statement, non-regulatory method to develop a Mount Maunganui area air management framework, less stringent policies and rules in Plan Change.

Option 4 More stringent – National standards, regional policy statement, non-regulatory method to develop a Mount Maunganui area air management framework, more stringent policies and rules in Plan Change, additional monitoring

Option	Description	Relevant provisions
Option 1 **Status Quo**	The current plan has no rules applying specifically to the air quality issues in the Port/Mount Maunganui. The status quo option would retain the policies and rules of the current plan to manage discharges of contaminants to air in the Mount Maunganui area. These policies and rules apply to the entire region, including the Mount Maunganui area, and have been assessed as part of the topic area analyses (particularly Boilers and General Discharges) and amended in the Plan Change. No rules in the current plan apply specifically to the issues in the Port/Mount Maunganui area. The policies and rules of the current plan are no longer relevant, either to the region or to the Mount Maunganui area. Therefore the status quo option has not been assessed for this topic.	NESAQ – Regulations 20, 21 RMMPR – Regulations 15, 16 NZCPS – Objectives 3, 4, 6, Policies 1, 3, 4, 23. AAQGs – Table 1 Health based guideline values RPS – Objective 1, Policy AQ 2A, AQ 3A, Method 2, Objective 10, Objective 11, Policy IR 1B, Policy IR 5B, Objective 17, Policy IW 5B Proposed Regional Coastal Environment Plan Objectives 1, 12, 14, 16, 17, 48 Policies IW 1, CD 1, PZ 5 Air Plan Policies – 1(a), 1(b), 2, 3, 8 Air Plan Rules – 3, 4, 17, 19
Option 2 **Plan Change**	The NESAQ restricts the granting of resource consents for particular contaminants where breach of the ambient air quality standards will or may occur. The Resource Management (Marine Pollution) Regulations 1998 (RMMPR) manage discharges to air from shipping emissions and exclude regional plans from targeting shipping emissions. The New Zealand Coastal Policy Statement 2010 (NZCPS) contains objectives and policies relevant to	NESAQ – Regulations 20, 21 RMMPR – Regulations 15, 16 NZCPS – Objectives 3, 4, 6, Policies 1, 3, 4, 23. RPS – Objective 1, Policy AQ 2A, AQ 3A, Method 2,

Option	Description	Relevant provisions
	activities in the coastal marine area. The Ambient Air Quality Guidelines 2002 (AAQGs) contain health based guideline values for 15 different contaminants, including H_2S. The RPS has air quality policies to manage the adverse effects of odours, chemicals and particulates. The main method for these policies is regional plan implementation. The Plan Change would: • Use the policies and rules of Plan Change that apply to the whole region to manage discharges into the Mount Maunganui area. • Develop a Mount Maunganui area air management framework including an expanded air monitoring network (as described in 7.9.1) an air emissions inventory, modelling, audits, and resource consent condition reviews (if necessary). This framework is a non-regulatory method not included in the plan. AQ R1 retains the restrictive presumption of the RMA where discharges from industrial and trade premises cannot discharge without a consent, unless the plan otherwise allows. AQ R1 reverses the restrictive presumption of the RMA for discharges into the CMA, which are permitted provided they meet the conditions of this rule.	Objective 10, Objective 11, Policy IR 1B, Policy IR 5B, Objective 17, Policy IW 5B Proposed Regional Coastal Environment Plan Objectives 1, 12, 14, 16, 17, 48 Policies IW 1, CD 1, PZ 5 AAQGs – Table 1 Health based guideline values PC 13 Policies – AQ P1-4. PC 13 Rules – various, but most relevant AQ R1, AQ R2, AQ R18, AQ R21 Non-regulatory method outside the Plan Change - Mount Maunganui area framework
Option 3 **Less stringent**	The NESAQ, RMMPR, and NZCPS requirements set out in Option 2 also apply to this option. Include specific, less stringent policies and rules that apply only to the Mount Maunganui area These rules may include: • Permitted discharges of contaminants, removing the need for to apply for resource consents • Less stringent permitted activity conditions for discharges of contaminants in this area	NESAQ – Regulations 20, 21 RMMPR – Regulations 15, 16 NZCPS – Objectives 3, 4, 6, Policies 1, 3, 4, 23. AAQGs – Table 1 Health based guideline values RPS – Objective 1, Policy AQ 2A, AQ 3A, Method 2, Objective 10, Objective 11, Policy IR 1B, Policy IR 5B, Objective 17, Policy IW 5B Proposed Regional Coastal Environment Plan Objectives 1, 12, 14, 16, 17, 48 Policies IW 1, CD 1, PZ 5 PC 13 Policies and Rules less stringent
Option 4 **More stringent**	The NESAQ, RMMPR, and NZCPS requirements set out in Option 1 also apply to this option. This option would include specific, more stringent policies and rules that apply only to the Mount Maunganui area (similar to the solid fuel burner rules	NESAQ – Regulations 20, 21 RMMPR – Regulations 15, 16 NZCPS – Objectives 3, 4,

Option	Description	Relevant provisions
	for the Rotorua Airshed) The rules may include: • Requiring resource consent for all discharges of contaminants including PM_{10}, SO_2, and H_2S	6, Policies 1, 3, 4, 23. AAQGs – Table 1 Health based guideline values RPS – Objective 1, Policy AQ 2A, AQ 3A, Method 2, Objective 10, Objective 11, Policy IR 1B, Policy IR 5B, Objective 17, Policy IW 5B Proposed Regional Coastal Environment Plan Objectives 1, 12, 14, 16, 17, 48 Policies IW 1, CD 1, PZ 5 PC 13 Policies and Rules more stringent

7.9.4 Evaluation of provisions to manage the Mount Maunganui area

The scale and significance of this topic is rated as moderate.

The following table summarises the effectiveness and efficiency analysis of the policy options to manage discharges in the Mount Maunganui area:

Option 1: Status quo – Not assessed
Option 2: Plan change
Effectiveness
Relevance – how effective are the provisions in achieving the objective The NESAQ states that a regional council must decline a consent application to discharge contaminants if the discharge is likely to cause a breach of the ambient air quality standard (except for PM_{10} where offsets may be provided). For this to have any effect, these discharges must be controlled, discretionary, restricted discretionary or non-complying activities in a regional plan – that is they must have a resource consent. The NESAQ relies on the policies and rules in a regional plan and is not effective on its own. Some of the discharges within the Mount Maunganui area are carried out in the coastal marine area therefore the NZCPS and Proposed Coastal Environment Plan (PCEP) apply. The NZCPS requires maintenance and enhancement of public open space and public use and enjoyment of the coastal environment, and to recognise the role of tangata whenua as kaitiaki and provide for their involvement in management of the coastal environment. The Proposed Coastal Environment Plan gives effect to the NZCPS by including provisions for integrated management, providing for activities at the Port, providing for tangata whenua involvement providing for public access to the coast and avoiding, remedying and mitigating adverse effects on human health and cultural values However the rules of the Regional Coastal Environment Plan do not manage discharge of contaminants to air in the coastal marine area. This function falls to the regional air plan, otherwise there is a regulatory gap where discharges may cause adverse effects. The Plan Change contains policies and rules that apply to the entire region, including the Mount Maunganui area. Key changes to the rules that improve their effectiveness are: • New permitted boilers (AQ R18) are smaller and must meet stricter emissions control requirements (e.g. higher stack height)

- AQ R1 retains the restrictive presumption for industrial and trade premises under the RMA. If a discharge from this type of activity is not covered by a specific rule, it defaults to discretionary under AQ R2 rather than permitted as under the current plan.
- Additional activities are listed as discretionary in AQ R21.

These policies and rules have been assessed as part of the evaluation as the most effective option.

The key part of this evaluation is whether these regional rules are the most effective way to achieve the objectives in the Mount Maunganui area.

For many of the activities in the Mount Maunganui area there are clear rules for specific activities e.g. boilers (permitted by AQ R18 with conditions) and fertiliser manufacture (which automatically requires a resource consent under AQ R21).

Other discharges, like dust and odour, rely on general rules AQ R1 to assess whether they are permitted or not. The general activity rule is designed to manage discharges either not anticipated at the time of plan drafting, or not expected to be sufficiently significant to require a specific rule (e.g. coffee roasters). The general rule is not intended to manage large scale sources, hazardous substance discharges or cumulative effects from diffuse sources (such as fugitive dust emissions). This is the current situation in Mount Maunganui.

General conditions in AQ R1 such as (a) "the discharge must not be noxious or dangerous. . ." can be difficult to prove and enforce in these situations and the burden of proof usually falls to the Regional Council. The monitoring and analysis required for this proof is expensive and time consuming. By contrast, a specific condition in a permitted activity is easy to prove, for example that a boiler stack is 12 metres high.

The second part of condition (a) also requires that "the discharge must not be…offensive or objectionable…" This allows for situations where the discharge may not necessarily be noxious or dangerous but has an effect on cultural or amenity values. A condition regarding the offensiveness and objectionableness of discharges is still best practice and discussed further in Topic 7.

Scientific investigations and audits have provided extensive information regarding emission sources, but an air emissions inventory of the area has not been completed. In particular, shipping emissions, most likely a significant source of PM_{10} and $SO_{2,}$ have not been quantified. The air management framework for the Mount Maunganui area (a non-regulatory method) will build the science base and improve knowledge of emissions in the area.

The provisions in the Plan Change are sufficient to address known issues. If the Regional Council requires consents for discharges of concern in order to achieve the objectives, the rules in the Plan Change will be effective and sufficient to enforce compliance. Where consent conditions need to be reviewed in order to achieve the ambient air standards, s128 of the RMA will apply, and so further provisions are not required in the Plan Change.

The Coastal Marine Area (CMA)

Some sections of the Mount Maunganui area are subject to s15B of the RMA which manages discharges of contaminants to air in the CMA. These discharges must be permitted by regulations, a regional plan or a resource consent.

Some activities, in particular offloading cargo of ships, occur in the CMA and an exception for this activity is not provided in the Resource Management (Marine Pollution) Regulations. In the absence of a permitted activity rule in the regional plan these activities would be discretionary and require a resource consent. This would essentially divide the Port areas into two classifications – those activities in the CMA (discretionary) and those not (permitted).

There is no advantage to retaining this restrictive presumption. All air discharges in this area, regardless of whether they are in the CMA or not, contribute to poor ambient air quality and should be managed equally. . Managing the discharges differently could also cause confusion which reduces the effectiveness. Therefore AQ R1 reverses the restrictive presumption under s15B permitting discharges to air in the CMA, provided the discharge meets the conditions of the rule.

These provisions will achieve the objectives of the Plan Change.

Feasibility – whether the provisions are within council's powers, responsibilities and resources and ability to implement, monitor and enforce

The management of discharges of contaminants to air is specifically listed as a function of the Regional Council (S30(1)(f)) therefore these provisions are within the powers and responsibilities of Council.

Section 63 (RMA) allows regional councils to prepare regional plans to assist with carrying out this function, and to have rules (section 68 RMA) that classify activities accordingly (Section 77A RMA).

The provisions do not target shipping emissions and are within Regional Council's powers.

Option 2 does not increase increases consent processing requirements and ongoing compliance. This is within the Regional Council's ability, but places a greater demand on resources.

Acceptability – whether the provisions have a fair distribution of impacts and level of political and community acceptance

This option targets those sources of contaminants known to have the most impact on air quality and requires additional consideration and controls through resource consents. Does not target smaller operations with additional impacts associated with consenting and ongoing compliance.

Shifts the impacts away from the affected community and onto the large scale polluters however some sectors of the community who seek a much more stringent response may not find this option acceptable.

There may be some sectors of the community who have long suffered from the adverse effects from many of the contaminants in this area who will be seeking a more stringent approach and who may not find this option acceptable.

A key assumption for the effectiveness of this approach is that the Regional Council will resource the establishment of the monitoring framework, and continue resource its operation. Further, the effectiveness relies of enforcement action in response to non-compliance identified through monitoring. Effectiveness also relies on identification of polluters.

Summary of effectiveness: 4

Efficiency

Benefits	**Costs**
Environmental Improved air quality, particularly in levels of SO_2 and particulates. Levels should be down to NESAQ guidelines. *Economic* The health costs for GP visits that accrue to individuals and families as a result of poor air quality are likely to be reduced. These costs can be quite small, but can be a significant part of a household budget. Where poor air quality results in hospitalisation (e.g. asthma attack) benefits will accrue to taxpayers if air quality is improved and hospitalisation is avoided. Damage to privately owned infrastructure, such as corrosion on housing, can be reduced or avoided, lessening costs to households. *Social* Health and wellbeing improvements enable a better quality of life for people living in the areas most affected by discharges from industries in the Mount Maunganui area. *Cultural* Improvements increase the mauri of air. The marae, Papakāinga housing, kohanga reo have cultural connections that will benefit from improvements in air quality in this area.	*Environmental* Nil identified. *Economic* The discretionary activity status is likely to result in more resource consent applications, and additional staff hours may be required. Costs to Council with setting up monitoring and ongoing monitoring. This is estimated to cost about $500,000/year. Ongoing monitoring can be automated. Costs of monitoring can be passed on to consent holders. Enforcement activity is likely to be required at times. *Social* Nil identified. *Cultural* Nil identified.

Summary of efficiency: 3

Option 3: Less stringent

Effectiveness

Relevance – how effective are the provisions in achieving the objective/s

The NESAQ states that a regional council must decline a consent application to discharge contaminants if the discharge is likely to cause a breach of the ambient air quality standard (except for PM_{10} where offsets may be provided). In order for this to have any effect, these discharges must be controlled, discretionary, restricted discretionary or non-complying activities in a regional plan – that is they must have a resource consent. The NESAQ relies on the policies and rules in a regional plan and is not effective on its own.

Some of the discharges within the Mount Maunganui area are carried out in the coastal marine area therefore the NZCPS and Proposed Coastal Environment Plan (PCEP) applies.

The NZCPS requires maintenance and enhancement of public open space and public use and enjoyment of the coastal environment, and to recognise the role of tangata whenua as kaitiaki and provide for their involvement in management of the coastal environment.

The Proposed Coastal Environment Plan gives effect to the NZCPS by including provisions for integrated management, providing for activities at the Port, providing for tangata whenua involvement providing for public access to the coast and avoiding, remedying and mitigating adverse effects on human health and cultural values

However the rules of the Regional Coastal Environment Plan do not manage discharge of contaminants to air in the coastal marine area. This function falls to the regional air plan, otherwise there is a regulatory gap where discharges may cause adverse effects.

To apply a less stringent approach to the Mount Maunganui area, specific policies and rules would need to target discharges only in this area. This option would allow more discharges as permitted, and/or have more lenient conditions on permitted activities.

The Regional Council is investigating the Mount Maunganui area and sources of discharges. Work to date and discussions with the community shows a significant air quality issue, with contaminants, either as single discharges, or cumulative discharges. Poor air quality has resulted in negative health effects and is a concern to the community, and particularly because of proximity to the marae, papakainga, kohanga reo, and other housing. There have been several breaches of the SO_2 ambient air standard. The levels of TSP indicate possible exceedances of the PM_{10} ambient air standard.

The current plan is not achieving the objectives; this less stringent option would be less likely to meet the objectives.

Feasibility – whether the provisions are within council's powers, responsibilities and resources and ability to implement, monitor and enforce

The control of discharges of contaminants to air (in the CMA and other areas) and the allocation of the capacity of air to assimilate discharges of contaminants is specifically listed as a function of the Regional Council (s30(1)(f)) therefore these provisions are within the powers and responsibilities of Council.

Section 63 (RMA) allows regional councils to prepare regional plans to assist with carrying out this function, and to have rules (s68 RMA) that classify activities accordingly (s77A RMA).

Option 3 does not classify activities appropriately in order to assist the Regional Council to carry out its functions. It does not sufficiently control discharges of contaminants to air or allocate the capacity of air to assimilate discharge of contaminants.

Acceptability – whether the provisions have a fair distribution of impacts and level of political and community acceptance

Option 3 reduces requirements of polluters (fewer conditions, consent applications, controls) and instead the impact of the air quality is felt by local residents, workers, commercial activities, and the community who use the area for recreation. This is an example of a negative externality, where the negative consequences of an economic activity are visited on other external (and uncompensated) parties. As such, it is a market failure, and there is a role for regulation to address this.

This approach might hold some attraction to some industry as it lowers cost, although the visible social

costs may be a deterrent to supporting such an approach.

Summary of effectiveness: 0

Efficiency

Benefits	**Costs**
Environmental Nil identified. *Economic* Activities that have not been identified as contributing to the air quality problem will not require a consent, resulting in lower costs. *Social* Nil identified. *Cultural* Nil identified.	*Environmental* Permitted activities increase air discharges and the NESAQ has no ability to manage, resulting in a deterioration of air quality *Economic* Allowing permitted activities rather than discretionary means the costs of monitoring must fall on the wider community. Ongoing costs to individuals and households as a result of poor air quality – GP visits and hospitalisation for example. Costs to the wider community associated with public health care. *Social* Negative effects on health and wellbeing impact on ability to enjoy life. *Cultural* Continuing degradation of air, and negative impacts on the nearby community which includes the papakāinga, marae, and kohanga reo.

Summary of efficiency: 1

Option 4: More stringent

Effectiveness

Relevance – how effective are the provisions in achieving the objective/s

The NESAQ states that a regional council must decline a consent application to discharge contaminants if the discharge is likely to cause a breach of the ambient air quality standard (except for PM_{10} where offsets may be provided). In order for this to have any effect, these discharges must be controlled, discretionary, restricted discretionary or non-complying activities in a regional plan – that is they must have a resource consent. The NESAQ relies on the policies and rules in a regional plan and is not effective on its own.

Some of the discharges within the Mount Maunganui area are carried out in the coastal marine area therefore the NZCPS and Proposed Coastal Environment Plan (PCEP) apply.

The NZCPS requires maintenance and enhancement of public open space and public use and enjoyment of the coastal environment, and to recognise the role of tangata whenua as kaitiaki and provide for their involvement in management of the coastal environment.

The Proposed Coastal Environment Plan gives effect to the NZCPS by including provisions for integrated management, providing for activities at the Port, providing for tangata whenua involvement providing for public access to the coast and avoiding, remedying and mitigating adverse effects on human health and cultural values

However the rules of the Regional Coastal Environment Plan do not manage discharge of contaminants to air in the coastal marine area. This function falls to the regional air plan, otherwise there is a regulatory gap where discharges may cause adverse effects.

To apply a more stringent approach to the Mount Maunganui area, specific policies and rules would need to target discharges only in this area. This option would require resource consents for any discharge of the contaminants of concern including PM_{10}, SO_2, and H_2S. Many activities that discharge these contaminants already require resource consents. Under Option 4 this restriction would extend to all boilers and smaller operations such as abrasive blasting.

Option 4 would also retain the restrictive presumption under s15B of the RMA that automatically requires consents for discharges to air in the Coastal Marine Area (CMA). Loading or unloading ship cargo occurs in the CMA and an exception for this activity is not provided in the Resource Management (Marine Pollution) Regulations. Loading and unloading some cargoes is a source of TSP.

Requiring resource consents for all discharges of key air contaminants would allow for tailored conditions for each activity and better management of discharges. This would be effective at meeting the objectives.

Feasibility – whether the provisions are within council's powers, responsibilities and resources and ability to implement, monitor and enforce

The control of discharges of contaminants to air is specifically listed as a function of the Regional Council (s30(1)(f)) therefore these provisions are within the powers and responsibilities of Council.

Section 63 (RMA) allows regional councils to prepare regional plans to assist with carrying out this function, and to have rules (section 68 RMA) that classify activities accordingly (Section 77A RMA).

Option 4 increases consent processing requirements and ongoing compliance and enforcement action which is within the Regional Council's powers. It places a greater demand on resources which can impact on the Regional Council's ability to effectively monitor and enforce.

Acceptability – whether the provisions have a fair distribution of impacts and level of political and community acceptance

Smaller operators contributing less proportionally less to the air quality issue could be disproportionately impacted with greater costs and stricter controls. Further, the Regional Council would need to increase resources in this area on consenting and monitoring emissions from small operators.

Operators discharging a significant proportion of contaminants would be required to obtain and comply with resource consents.

Option 4, with strict controls on polluters is the approach used for Rotorua to manage discharges of PM_{10}. The policies and rules for Rotorua (Topic 2, Section 7.5) were developed following several years of monitoring and analysis including surveys, source apportionment, air emissions inventory, and modelling. The provisions were designed to target the main sources of pollution.

In the Mount Maunganui area, where extensive research has not yet been carried out, a more stringent approach is unlikely to be acceptable to industrial and commercial operators in the Mount Maunganui area.

Summary of effectiveness: 4

Efficiency

Benefits	**Costs**
Environmental Similar to Option 2 *Economic* Similar to Option 2 *Social* Similar to Option 2 *Cultural* Similar to Option 2	*Environmental* Nil identified. *Economic* High costs to Regional Council associated with Schedule 1 process because this is a more contentious approach and lacks solid evidence to support it. The discretionary activity status is likely to result in more resource consent applications, and additional staff hours may be required. Small operators face increased costs through consent application, additional controls, ongoing

	consent charges. Costs to Council with setting up monitoring and ongoing monitoring. Ongoing monitoring can be automated. Costs of monitoring can be passed on to consent holders. Enforcement activity is likely to be required at times. *Social* Nil identified. *Cultural* Nil identified.
Summary of efficiency: 2	

7.9.5 Risk of acting or not acting

Council is required to consider the risk or acting or not acting if there is insufficient information about the subject matter of the policies, rules and other methods (s32(4)(b) RMA).

There is sufficient evidence to establish that there is an air quality issue in this area, and that a response is required. However, there is not enough evidence to support the introduction of strict rules for the Mount Maunganui area.

Council considers that there is little risk associated with acting as described in Option 2. The actions enable better management of air discharges through resource consents where discretionary activity status applies, and better enforcing conditions in existing consents through provision of an effective monitoring network. These actions are expected to have a relatively small impact on the costs for businesses, except where they are found to be non-compliant with consent conditions.

The risk of not acting is associated with degradation of the environment and the impacts of that on human health and wellbeing. At this time there is not sufficient evidence to take a stronger stance than that proposed in Option 2.

7.9.6 Justification of provisions stricter than national standards

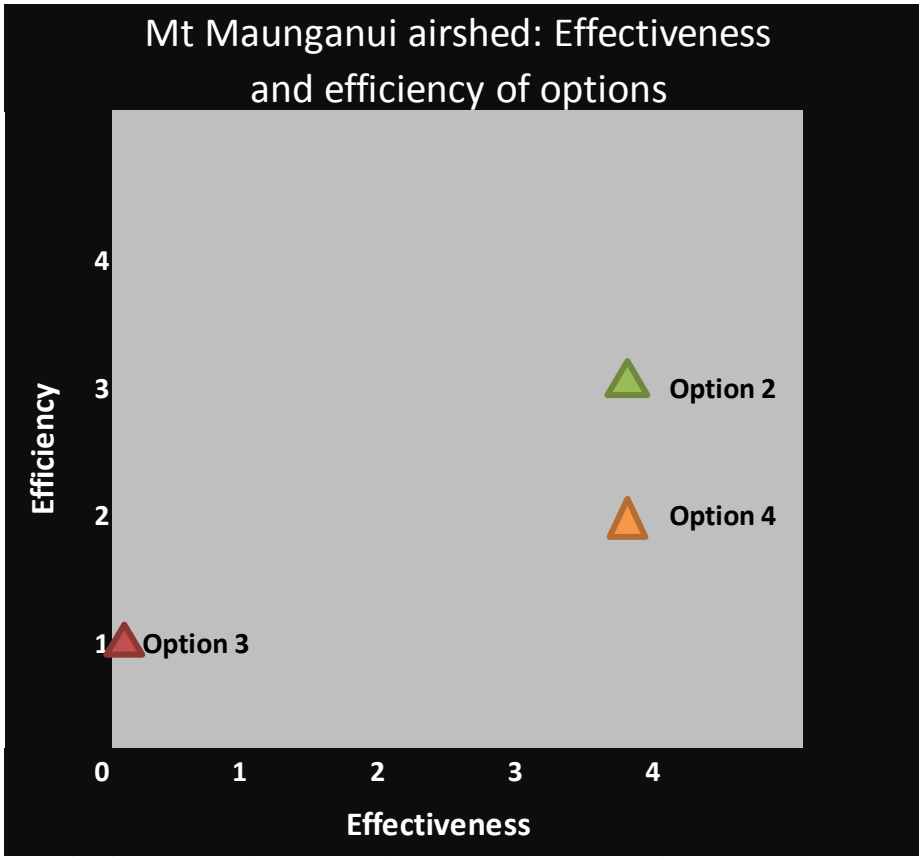
Where provisions of the Plan Change are more restrictive than national standards, Council must examine whether the restriction is justified given the circumstances of the region (Section 32 (4)).

There are no restrictions more restrictive than any national standards in this topic are, therefore no justification is necessary.

7.9.7 Summary of assessment

Council has carried out monitoring of SO_2 and particulate matter at the Mount Maunganui area, and has undertaken dust audits. The area is of particular importance because of its proximity to the Whareroa Marai, Whareroa kohanga reo, papakāinga housing, and other residential housing. In addition, the area is central to areas where locals and visitors live, work and play. The actions in this Plan Change that apply specifically to businesses are largely non-regulatory, and will provide data on emissions that will enable enforcement of current and future resource consents.

A key role of this approach is that it will inform and provide evidence for future regulation of air quality in this area.



Having regard to this information, and taking into account the benefits and costs and the risks of acting or not acting, the most appropriate way of contributing to the achievement of objectives AQ O1, AQ O2 and AQ O3 is by implementing policies AQ P1, AQ P2, AQ P3 and AQ P4, and rules AQ R1, AQ R2, AQ R18 and AQ R21. Other rules also apply.

7.10 Topic 7 – General activities and listed discretionary activities

This section assesses the general policies, the general activity "catch all" rules and the listed specified discretionary activities.

The assessment in this section does not include an assessment of the appropriateness of these regulations for managing discharges in the Mount Maunganui area, which is assessed in Section 7.9.

7.10.1 Baseline

The current plan contains a number of general policies that are broad enough to manage a range of discharges and activities across the region.

To implement the policies, in addition to the range of permitted and controlled activities otherwise included in the plan, there is one general permitted activity rule, Rule 17, designed to cover activities not anticipated when the plan was prepared, but considered to have no more than minor effects in most cases. These activities include a large range of activities such as coffee roasters, laboratory fume cupboards, and backyard composting.

For a general activity to be permitted, it must meet the conditions which include compliance with the Ringelmann Standard (measure of opacity of smoke), maximum concentrations for certain hazardous air pollutants, and a mass emission limit. It also contains the bottom line conditions that there shall be no harmful concentrations and no offensive or objectionable discharges beyond the boundary.

Rule 19 is the specified discretionary activities rule which contains a list of activities that automatically require a resource consent. This includes discharges from industrial or trade premises, commercial processes and waste management or processing.

Rule 19 also contains as part of the list, a "catch all" discretionary rule where any activity or discharge not otherwise covered by the plan, and not permitted by Rule 17, is discretionary.

Rule 17 reverses the restrictive presumption for industrial and trade premises under the RMA. If not for Rule 19, many industrial or trade premises may fall through a loophole and only need to comply with the general conditions for a permitted activity of Rule 17. Many discharges have been anticipated and listed in Rule 19, however there are some exceptions, in particular:

- ***Crematoria*** – Cremation is a practice used in many cultures to deal with the death of human beings and it is also used to process animal remains, either by pet owners or organisations such as the Society for the Prevention of Cruelty to Animals (SPCA).

  The particulates and gases from the combustion process are discharged though a stack. Contaminants include nitrogen oxides (NOx), carbon monoxide (CO), sulphur dioxide (SO_2), particulates, mercury, polychlorinated dibenzo-p-dioxins (PCDD), polychlorinateddibenzofurans (PCDF), and polychlorinated biphenyls (PCB), therefore there is a health risk.

  The location and design of a crematorium considers a number of matters including the amenity of the area to provide a peaceful, pleasant area. For

this reason crematoria are generally not located in zones with industrial combustion activities. Instead crematoria may be located in urban areas, close to residential zones, eating establishments, public amenity areas, and schools. Apart from the health effects of the discharges, there may be some cultural sensitivity to proximity of crematoria. The height requirement of the stack, intended to safeguard health, may also have an effect on visual amenity

The current plan has no specific rule on crematoria and this activity has been managed using the general permitted activity Rule 17. This rule is adequate, but does not provide sufficient detail for plan users to assess or manage the adverse effects from crematoria.

- ***Pulp and paper mills*** – The Bay of Plenty region has two large pulp and paper mills: Carter Holt Harvey in Whakatāne, and Norske Skog in Kawarau. These are large scale, heavy industry located in small towns where highly visible discharges to air can cause considerable concern to the community.

  These operations are managed through comprehensive resource consents, regular monitoring, and compliance checks. Discharge issues or complaints are dealt with under these consents and amendments are made to conditions if appropriate.

  Currently, pulp and paper mills are not listed as discretionary under Rule 19. This has not caused any issues in the past as all operations are of a scale and nature that they do not comply with Rule 17, therefore default automatically to discretionary under Rule 19(z).

  However, this may create confusion for plan users if a large scale process is seemingly omitted from the list therefore the Plan Change includes this activity in the list.

- ***Pet food manufacture*** – pet food processing was the cause of almost 50 complaints during 2015 due to odour. This activity is currently not listed as a discretionary activity. However, as a large scale activity that produces offensive or objectionable odour, it may be better managed through resource consents and has been included in the list in the Plan Change.

7.10.2 Relevant objectives

Discharges to air from general activities are mostly about managing the effects on local air quality therefore AQ O3 is the most relevant objective to this topic.

AQ O3	Manage discharges of contaminants to air according to their adverse effects on human health, cultural values, amenity values and the environment.

When not managed well, these discharges can also have an effect on ambient air quality covered by AQ O2. This may then lead to significant adverse effects on the mauri of air, human health, and the environment therefore AQ O1 also applies.

AQ O1	Protect the mauri of air and human health from adverse effects of anthropogenic contaminant discharges to air, and enhance air quality where degraded.

AQ O2 The region's ambient air quality meets the National Environmental Standards for Air Quality (2004) and the Ambient Air Quality Guidelines (2002).

7.10.3 Options considered

Four options are considered to manage general discharges.

Option 1: Status quo – Rely on national environmental standards, national policy statements, RMA, RPS and policies and rules in current plan

Option 2 Plan Change – Provide updated policy and rules to manage general activities in addition to national environmental standards, national policy statements, RMA and RPS.

Option 3 Less stringent – Less stringent policies and rules

Option 4 More stringent – Include additional policies to manage general discharges

Option	Description	Relevant provisions
Option 1 **Status Quo**	The RPS has air quality policies to manage the adverse effects of odours, chemicals and particulates. The main method to implement these policies is regional plan implementation. The National Environmental Standards for Plantation Forestry 2017 (NES-PF) commences on 1 May 2018 and contains regulations that apply to plantation forests and the associated activities, including discharge of dust from within the plantation forestry but not generated outside the site (e.g. dust discharges from logging trucks on roads). There are seven general policies and in the current plan to manage general discharges of contaminants to air according to the potential for adverse effects. Where adverse effects can be managed with general standard conditions, the activity is permitted by Rule 17. Rule 19 lists specific activities that require resource consent. Any activity not otherwise covered by the rules is discretionary under Rule 19(z).	RPS – Objective 1, Policy AQ 2A, Method 2, Objectives 10-11, Policy IR 1B, Policy IR 5B, Objective 17, Policy IW 5B Air Plan Policies – 1(a), 1(b), 2, 3, 8, 9 Air Plan Rules – 17, 19(z)
Option 2 **Plan Change**	Requirements under the RPS are the same as the status quo. The National Environmental Standards for Plantation Forestry 2017 (NES-PF) commences on 1 May 2018 and contains regulations that apply to plantation forests and the associated activities, including discharge of dust from within the plantation forestry but not generated outside the site (e.g. dust discharges from logging trucks on roads). These activities have been excluded from the rules in the Plan Change. The Plan Change: • Retains the restrictive presumption under the RMA where for industrial and trade premises default to discretionary unless a rule in the Plan Change	NES-ETA – Regulations 4, 25, 26, 27, 39 NES-PF – Regulation 100-101 RPS – Objective 1, Policy AQ 2A, Method 2, Objectives 10-11, Policy IR 1B, Policy IR 5B, Objective 17, Policy IW 5B PC 13 Policies and rules – AQ P1-4, AQ R1-2

Option	Description	Relevant provisions
	states otherwise. • Expands the list of specified activities that automatically require consent to include activities known to cause issues or to provide clarity in the Plan Change As with the status quo, the Plan Change includes policies and rules to manage general discharges of contaminants to air.	
Option 3 **Less stringent**	Requirements under the RPS and NES-PF are the same as the status quo. This option may involve: • More lenient conditions for the permitted activity • Fewer activities listed in the specific discretionary activity rule	NES-ETA – Regulations 4, 25, 26, 27, 39 NES-PF – Regulation 100-101 RPS – Objective 1, Policy AQ 2A, Method 2, Objective 10-11, Policy IR 1B, Policy IR 5B, Objective 17, Policy IW 5B PC 13 Policies – AQ P1-4 PC 13 Rules – less stringent
Option 4 **More stringent**	Requirements under the RPS and NES-PF are the same as the status quo. This option may include: • More stringent conditions for the permitted activity • More activities listed in the specific discretionary activity rule	NES-ETA – Regulations 4, 25, 26, 27, 39 NES-PF – Regulation 100-101 RPS – Objective 1, Policy AQ 2A, Method 2, Objectives 10-11, Policy IR 1B, Policy IR 5B, Objective 17, Policy IW 5B PC 13 Policies – AQ P1-4, PC-6 PC 13 Rules – more stringent

7.10.4 Evaluation of provisions to manage general discharges

The scale and significance of this topic is rated as low.

The following table summarises the effectiveness and efficiency of the policy options to manage general discharges:

Option 1:Status quo
Effectiveness
Relevance – how effective are the provisions in achieving the objectives The key area where effectiveness of the current provisions is reduced is the general permitted Rule 17 and its interaction with Rule 19. Rule 17 reverses the restrictive presumption of the RMA (where a

resource consent is needed for discharges from industrial or trade premises unless a regional rule states otherwise). This risk is mitigated with by Rule 19, which lists specific activities as discretionary. Rule 17 also sets a maximum emission limits on the discharge of dust, and an emission limit for hazardous air pollutants listed in Schedule 3. This approach is effective provided the emission limits are sufficient list, the list of hazardous air pollutants in Schedule 3 is up to date and the list of activities in Rule 19 is complete.

An assessment of Rule 17 showed that this may not be the case:

- Schedule 3, the hazardous air pollutants list is based on a list in the 1994 Ministry for the Environment AAQGs, which were in turn based on a list in the US Clean Air Act 1963. The list in Schedule 3 also includes the 320 confirmed or suspected carcinogens as classified by the International Agency for Research on Cancer (IARC) in 1994. This list is out of date as there are now almost 500 chemicals on the IARC list. Although it is difficult to determine how often this list has been referred to and/or of use in the 14 years since the current plan has been operative, reports from consent and pollution prevention officers indicates that the list is rarely used. The two most recent examples of the list's use are to assess discharges of methyl bromide and a new crematorium.
- The hazardous mass emission limits (0.01 and 1) included in this rule do not have documented science behind them and are a one-size-fits-all approach. It is unlikely that the emission limits will be appropriate for all 500 pollutants on the list.
- The dioxins emission limit (0.02 grams toxic equivalents per year) is relatively high. To put this into context, all industrial oil and gas combustion in New Zealand (i.e. nationally) emitted 0.019 grams toxic equivalents per year in 2008[131].
- The mass concentration limit for dust is high. For example the 24 hour limit of TSP is 150$\mu g/m^3$. Depending on the source, the proportion of PM_{10} in TSP could be anything from 50% to 100% 75-150$\mu g/m^3$). The ambient limit for PM_{10} is 50$\mu g/m^3$ therefore the best case scenario for a source that complied with the current limit would 75$\mu g/m^3$, well over the limit (and from a single source).
- The rule references the Ringelmann standard. This standard is difficult to use in practice (due to the impact of background, sunlight, line of sight, etc.) and has never been used as the basis for enforcement.

These issues will be reducing the effectiveness of the rule and its ability to meet the objectives.

Rule 17 requires that "there must be no harmful concentrations of contaminants beyond the boundary." This one of the most used and effective conditions, protecting against adverse effects on health or property damage (e.g. corrosion, damage to crops) However, there are issues with the term "harmful concentration" as it is not used in the RMA, has not been defined in case law or used in any other regional air plan in the country. The effectiveness of this condition could be improved by using terms more consistent with the RMA and environmental case law.

Rules 17 also requires that "no offensive or objectionable discharges beyond the boundary". This protects against adverse effects on amenity values. The test of whether something is offensive or objectionable is subjective, and depends upon the receiver. This makes assessing these effects difficult, particularly odour which is highly subjective. The difficulty of defining and assessing offensive or objectionable is discussed further in Appendix 12. The best method to ensuring this condition is most effective is through implementation. The Ministry for the Environment has provided three Good Practice Guides, developed in consultation with regional councils, to provide consistency when assessing dust and odour. This is the best practice, most effective condition to manage these effects.

Rule 19(z) categorises any activity that isn't otherwise covered by other rules as discretionary. This ensures that any activity not anticipated by the plan that could result in adverse effects, defaults to requiring a resource consent and is effective.

Feasibility – whether the provisions are within council's powers, responsibilities and resources and ability to implement, monitor and enforce

The control of discharges of contaminants to air is specifically listed as a function of the Regional Council (s30(1)(f)) therefore these provisions are within the powers and responsibilities of Council.

Assessing "harmful concentrations" beyond the boundary can be difficult to implement (for prosecution purposes) as it is not a term used elsewhere.

Containing a list of activities that require resource consents removes doubt in the mind of the plan user

[131] Ministry for the Environment (2011b).

and assists with implementation, increasing the ability to meet the objectives. *Acceptability – whether the provisions have a fair distribution of impacts and level of political and community acceptance* The provisions fairly distribute impacts by targeting activities most likely to have discharges that cause adverse effects, and automatically requiring resource consents. Activities that have no more than minor effects are not significantly impacted by provisions in this option. Due to the identified gaps in this option, there may be ongoing issues and complaints. This would not be acceptable particularly to those affected by poorly managed discharges.	
Summary of effectiveness: 3	
Efficiency	
Benefits	**Costs**
Environmental Provides adequate management of adverse off-site effects *Economic* Allows some activities to be carried out without consent, reducing costs for businesses. *Social* Nil identified *Cultural* Nil identified	*Environmental* Some conditions too lenient to effectively manage adverse effects in all cases. In some cases the conditions are outdated and do not manage adverse effects adequately. Allows discharges without consents which can have adverse effects. *Economic* Nil identified *Social* In cases were activities fall into the permitted status, but would be better managed with specific conditions under a resource consent, there may be social costs such as those described in complaints to council (e.g. odour or amenity). *Cultural* As for social costs.
Summary of efficiency: 2	
Option 2: Plan Change	
Effectiveness	
Relevance – how effective are the provisions in achieving the objectives This option uses the same structure as Option 1 with some changes to address issues and improve effectiveness. The term “harmful concentrations” has been replaced by “noxious or dangerous”, which is consistent with the RMA and environmental case law. This does not necessarily improve effectiveness, but ensures the Plan Change is consistent with the RMA. The term “offensiveness or objectionable” has not been amended as this condition is still the most effective way to manage adverse effects on amenity values or well-being. General activity Rule 1 has been amended from Rule 17 in the current plan. The Ringelmann Standard, reference to the hazardous air pollutants (Schedule 3), and the dust limit has been removed as these conditions were outdated, rarely used and not effective. There is a risk that by removing the reference to Schedule 3, hazardous substances may be discharged as a general permitted activity. For this reason, AQ R1 contains a condition that excludes discharges from industrial or trade premises (that are otherwise not managed by any other rule) from	

the general permitted activity rule. This ensures that the restrictive presumption of Section 15 of the RMA regarding industrial and trade premises remains in force.

The list of discretionary activities in AQ R21 has been expanded to further strengthen AQ R1, and ensures that any discharge likely to have significant adverse effects requires a resource consent. These additions include agrichemical manufacture, crematoria, chemical manufacture, composting, pet food manufacture (using heat), pulp and paper mills, cement manufacture, and free range farms.

Addressing these identified issues improves the ability of the Plan Change to meet the objectives.

Feasibility – whether the provisions are within council's powers, responsibilities and resources and ability to implement, monitor and enforce

The control of discharges of contaminants to air is specifically listed as a function of the Regional Council (s30(1)(f)) therefore these provisions are within the powers and responsibilities of Council.

Using the terms "noxious or dangerous" as used by other regional councils, in case law and in the RMA keeps the Plan Change consistent with best practice and improves implementation and increases the ability to meet the objectives.

Containing a list of activities that require resource consents removes doubt in the mind of the plan user and assists with implementation, increasing the ability to meet the objectives.

Acceptability – whether the provisions have a fair distribution of impacts and level of political and community acceptance

During consultation on the draft plan, feedback was concerned with ensuring existing crematoria did not need to apply for retrospective resource consents, and with the definitions for free range farms and intensive farms. There was also a request for additional items to be added to the discretionary list for clarification, and to ensure the rules were consistent with the NES-ETA. These matters have been addressed. Other than these issues, the rules were widely accepted by the community.

The provisions fairly distribute impacts by targeting activities most likely to have discharges that cause adverse effects, and automatically requiring resource consents. Activities that have no more than minor effects are not significantly impacted by provisions in this option.

Summary of effectiveness: 4

Efficiency

Benefits	**Costs**
Environmental Improvement in environmental outcomes through better management of economic activities *Economic* Receiving fewer air quality complaints would reduce Council costs in responding to complaints. *Social* Potential improvement in amenity values through better management of economic activities (i.e. reduction in negative externalities) *Cultural* As for social benefits.	*Environmental* Nil identified *Economic* May increase business costs where they were previously a permitted activity. However, it is anticipated that this change will affect only a small number of businesses or business types. *Social* Nil identified *Cultural* Nil identified

Summary of efficiency: 4

Option 3: Less stringent

Effectiveness

Relevance – how effective are the provisions at achieving the objectives

A less stringent option would involve either more lenient conditions for permitted rules and/or fewer discharges requiring consent as listed in AQ R21.

This option would increase the likelihood of discharges causing adverse effects and not be as effective at achieving the objectives.

Feasibility – whether the provisions are within council's powers, responsibilities and resources and ability to implement, monitor and enforce

The control of discharges of contaminants to air is specifically listed as a function of the Regional Council (s30(1)(f)) and Council may set out provisions in a regional plan to do this.

These provisions are within the powers and responsibilities of Council.

Less stringent provisions make it more difficult for Council to manage air discharges as it limits the ability to mitigate effects through permitted activity conditions and resource consent conditions.

Acceptability – whether the provisions have a fair distribution of impacts and level of political and community acceptance

Less stringent provisions shift the impact of the provisions to fall on those affected by poorly managed discharges while those discharging have fewer impacts.

It is unlikely that an option that would most likely expose the community to adverse effects would receive political or community support.

Summary of effectiveness: 2

Efficiency

Benefits	**Costs**
Environmental Nil identified *Economic* Economic benefits to business for activities which should be managed under a resource consent, but instead sit under a permitted regime. *Social* Nil identified *Cultural* Nil identified	*Environmental* Poorer environmental outcomes because the effects of economic activities are inadequately managed *Economic* Increased complaints to Council about air quality issues, leading to increases resourcing for responding to complaints. *Social* Loss of amenity values, frustration with poor management that results in negative externalities for the community *Cultural* Loss of mauri of air

Summary of efficiency: 2

Option 4: More stringent

Effectiveness

Relevance

A more stringent option would involve either stricter conditions for permitted rules and/or more discharges requiring consent as listed in AQ R19.

As discussed in Option 3, the status quo set out in Option 1 is effective in most cases, with some updating and amendments required. Following more than 10 years' experience with current rules, monitoring, research, consent application processing and complaints, provisions have been prepared

as discussed in Option 2. These provisions provide for the community to discharge contaminants to air with minimal bureaucracy, while ensuring that activities more likely to cause adverse effects are discretionary and need to apply for resource consent. This balance effectively achieves the objectives.

A more stringent approach would increase the number of activities that needed to apply for consent, and would result in more resource consents overall. While consent conditions tailored for each activity appear to be the most effective way to achieve the objectives, they result in a lot of duplication and increased resource.

Requiring consents for too many activities may also result in the unintended consequence of reduced effectiveness. Small scale operations managed as permitted activities have an element of common sense and self-policing in most cases. In these cases, most activities comply with the permitted activity conditions and need no further follow up by the Regional Council. If they were all to require a consent, this places a burden on the Council to check compliance with conditions for all activities, rather than focusing on discharges with actual, or greater potential for, adverse effects. This disperses resources and leads to reduced effectiveness.

Feasibility

The management of discharges of contaminants to air is specifically listed as a function of the Regional Council (s30(1)(f)) therefore these provisions are within the powers and responsibilities of Council.

However, more stringent provisions would overload the Council and community with needless bureaucracy which would not be effective, making it less feasible.

Acceptability

Discharges from most sources managed in this topic area can be managed effectively through appropriate conditions as developed for Option 2, the Plan Change. There is no increase in effectiveness and greater likelihood of reduced ability to meet the objectives through administrative overload.

The community is unlikely to support this more stringent option and it is unlikely to have political support.

Summary of effectiveness: 2

Efficiency

Benefits	**Costs**
Environmental Improvement in environmental outcomes through better management of economic activities *Economic* Receiving fewer air quality complaints would reduce Council costs in responding to complaints. *Social* Potential improvement in amenity values through better management of economic activities (i.e. reduction in negative externalities) *Cultural* As for social benefits.	*Environmental* Nil identified *Economic* May increase business costs where they were previously a permitted activity. As a stricter option than option 2, this would potentially impose costs on a greater number of businesses or business types. *Social* Nil identified *Cultural* Nil identified

Summary of efficiency: 1

7.10.5 Risk of acting or not acting

Council must assess the risk of acting or not acting if there is uncertain or insufficient information about the subject matter of the provisions (s32(2)(c)).

Council considers it has sufficient information about the issue and policy implementation to respond to the issues identified in Topic 7.

7.10.6 Justification of provisions stricter than national standards

Where provisions of the Plan Change are more restrictive than national standards, Council must examine whether the restriction is justified given the circumstances of the region (s32(4)).

There are no restrictions more restrictive than any national standards in this topic are, therefore no justification is necessary.

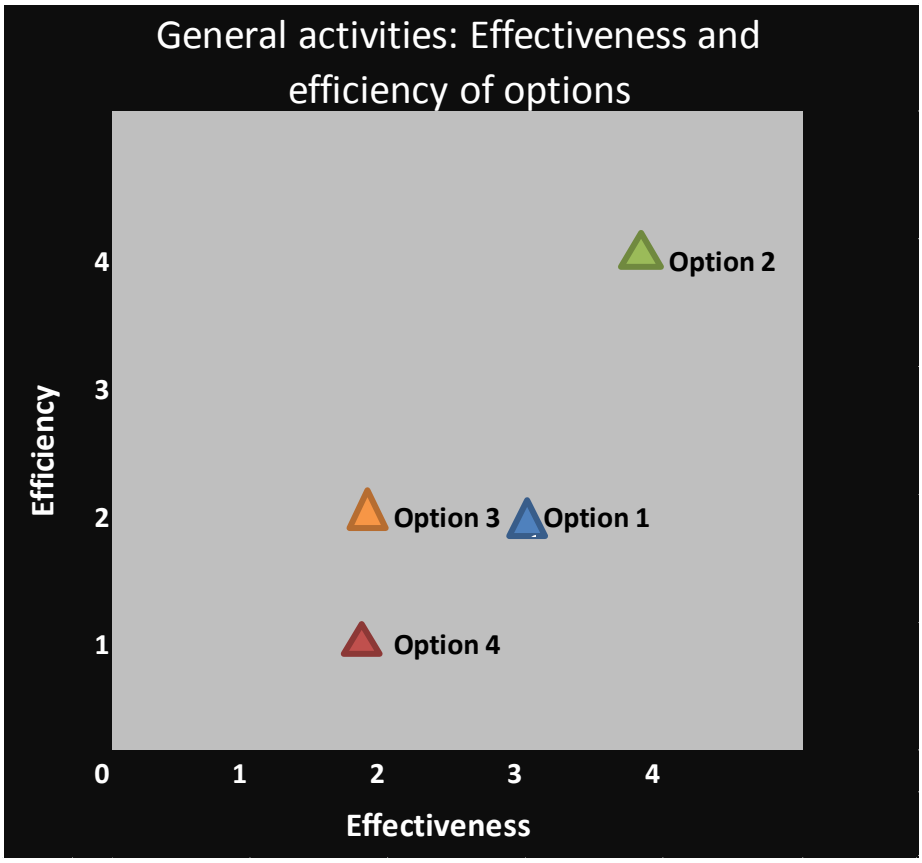
7.10.7 Summary of assessment

Option 1 is still an effective and efficient approach, but has some issues that can be resolved through minor changes to some permitted activity conditions, and the addition of some activities to the discretionary activity rule.

Option 3 does not provide sufficient detail to be able to interpret and implement the plan effectively to meet the objectives.

Option 4 would require consents for activities that can be managed appropriately with a set of specific, well-designed permitted activity conditions. While Option 4 would be effective in achieving the objectives, it is not efficient because the costs are higher than those of Option 2, which is also effective.

The assessment shows Option 2 to be the most effective and efficient option to achieve the objectives. Option 2 has built on the lessons learned from implementation of Option 1, and resolves some of the issues to make a more efficient and effective set of provisions.



Having regard to this information, and taking into account the benefits and costs and the risks of acting or not acting, the most appropriate way of contributing to the achievement of objectives AQ O1, AQ O2 and AQ O3 is by implementing policies AQ P1, AQ P2, AQ P3 and AQ P4 and rules AQ R1 and AQ R2.

7.11 Topic 8 – Remaining minor activities

This section assesses the remaining provisions to manage the air discharge from minor activities not otherwise assessed.

7.11.1 Baseline

The current plan contains a number of general policies that are broad enough to manage a range of discharges and activities across the region.

Many of these discharges are small scale, unlikely to have adverse effects beyond the boundary, and/or can be managed with a standard set of conditions. The current plan manages these activities with a series of permitted activity rules:

- Abrasive blasting – permitted with conditions requiring booths and covers to manage dust and particulates from blasting operations and site
- Vehicles and aircraft – permitted with minimal conditions
- Spray irrigation of liquid waste – permitted with conditions to manage spray drift to neighbouring properties or waterbodies
- Unsealed roads – permitted
- Ventilation of liquid storage tanks and tankers – permitted with conditions to manage odour
- Venting of geothermal gas or steam (from bores and soakage holes) – permitted with conditions requiring vents with minimum heights to manage steam and odour

Abrasive blasting

An investigation into dust complaints received by Council between 2011 and 2016 showed that 33 of dust complaints were due to abrasive sand blasting. Abrasive blasting can cover a range of scenarios from small to large operators and can been located in industrial or residential areas. Table 7.17 provides a summary of complaints from nine sites in Tauranga, Rotorua and Te Puke. One site drew multiple complaints (25 of the 33 complaints)[132].

Table 7.17 Assessment of complaints regarding sandblasting and abrasive blasters

	2011	2012	2013	2014	2015	2016	Total
Total complaints	148	113	175	244	176	112	968
Dust complaints	136	103	161	231	166	100	897
% of total complaints	92%	91%	92%	95%	94%	89%	93%
Sandblasting complaints	2	2	3	16	2	8	33
Sandblasting as % of dust	1.5%	2.0%	1.9%	6.9%	1.2%	8.0%	3.7%
*Repeat offenders			2	14	1	8	25

*One repeat offender – name and location redacted.

[132] Emission Impossible Limited (2016)

Otherwise permitted without conditions, or would fall under the general permitted activity rule where a number of conditions apply

Spraypainting

Spraypainting with diisocyanates is listed as a discretionary activity in the current plan. This type of activity is a high risk to on-site workers, but not necessarily to those off-site and beyond the boundary.

New environmental standards

Two environmental standards have been introduced since the current plan became operative:

1) Resource Management (National Environmental Standards for Electricity Transmission Activities) Regulations 2009 (NES-ETA) contain regulations that apply to blasting and applying protective coatings to support structures. The rules in the plan do not make any allowance for these activities.

2) Resource Management (National Environmental Standards for Plantation Forestry) Regulations 2017 commence on 1 May 2018 and contain regulations that apply to on-site dust associated with a plantation forestry activity.

7.11.2 **Relevant objectives**

Discharges to air from these activities are mostly about managing the effects on local air quality. Therefore AQ O3 is the most relevant objective to Topic 8.

AQ O3	Manage discharges of contaminants to air according to their adverse effects on human health, cultural values, amenity values and the environment.

When not managed well, these discharges can also have an effect on ambient air quality covered by AQ O2. This may then lead to significant adverse effects on the mauri of air, human health, and the environment therefore AQ O1 also applies.

AQ O1	Protect the mauri of air and human health from adverse effects of anthropogenic contaminant discharges to air, and enhance air quality where degraded.
AQ O2	The region's ambient air quality meets the National Environmental Standards for Air Quality (2004) and the Ambient Air Quality Guidelines (2002).

7.11.3 **Options considered**

Four options are considered to manage general discharges.

Option 1:	Status quo – Rely on national environmental standards, national policy statements, RMA, RPS and policies and rules in current plan

Option 2 Plan Change – Provide updated policy and rules to manage general activities in addition to national environmental standards, national policy statements, RMA and RPS.

Option 3 Less stringent – Less stringent policies and rules

Option 4 More stringent – Include additional policies to manage general discharges

Option	Description	Relevant provisions
Option 1 **Status Quo**	The National Environmental Standards for Electricity Transmission Activities (2009) (NES-ETA) contains regulations that apply to abrasive blasting and applying protective coatings to support structures. These regulations were not in place when the current plan was developed and made operative; the rules in the current plan do not make any allowance for these activities. The National Environmental Standards for Plantation Forestry 2017 (NES-PF) commences on 1 May 2018 and contains regulations that apply to plantation forests and the associated activities, including discharge of dust within the plantation forestry, but not off-site dust discharges e.g. from logging trucks. The RPS has air quality policies to manage the adverse effects of odours, chemicals and particulates. The main method of implementation of these policies is through the regional plan. There are seven general policies in the current plan to manage general discharges of contaminants to air according to the potential for adverse effects. Where adverse effects can be managed with standard conditions the activity is permitted with standard conditions. Otherwise the activity status is controlled or discretionary.	NES-ETA – Regulations 4, 25, 26, 27, 39 NES-PF – Regulations 100-101 RPS – Objective 1, Policy AQ 2A, Method 2, Objectives 10-11, Policy IR 1B, Policy IR 5B, Objective 17, Policy IW 5B Air Plan Policies – 1(a), 1(b), 2, 3, 6, 8, 9 Air Plan Rules – 1, 2, 6, 7, 14-16
Option 2 **Plan Change**	Requirements under the RPS and NES-ETA and the NES-PF are the same as the status quo. Rules exclude activities managed under NES-ETA from plan. Option 2 is not a change to the approach, but does change the status of two activities under this approach. As with the status quo (Option 1), there are policies and rules in the Plan Change to manage general discharges of contaminants to air. Changes in activity status from the current plan are: • Spray painting which was discretionary under the current plan is a permitted activity, provided specific conditions are complied with.	NES-ETA – Regulations 4, 25, 26, 27, 39 NES-PF – Regulations 100-101 RPS – Objective 1, Policy AQ 2A, Method 2, Objectives 10-11, Policy IR 1B, Policy IR 5B, Objective 17, Policy IW 5B PC 13 Policies and rules – AQ P1-4, AQ R3-5, AQ R16-17, AQ R19
Option 3 **Less stringent**	This option may involve; • More lenient conditions for permitted activities • Fewer discharges requiring consent as listed in AQ R21	NES-ETA – Regulations 4, 25, 26, 27, 39 RPS – Objective 1, Policy AQ 2A, Method 2, Objectives 10-11, Policy IR 1B, Policy IR 5B, Objective 17, Policy IW

Option	Description	Relevant provisions
		5B PC 13 Policies – AQ P1-4 PC 13 Rules – less stringent
Option 4 **More stringent**	This option may include: • Consents required for more activities • Stricter conditions on permitted activities	NES-ETA – Regulations 4, 25, 26, 27, 39 RPS – Objective 1, Policy AQ 2A, Method 2, Objectives 10-11, Policy IR 1B, Policy IR 5B, Objective 17, Policy IW 5B PC 13 Policies – AQ P1-4 PC 13 Rules – more stringent

7.11.4 Evaluation of provisions to manage general discharges

The scale and significance of this topic is rated as low.

The following table summarises the effectiveness and efficiency of the policy options to manage general discharges:

Option 1:Status quo
Effectiveness
Relevance – how effective are the provisions in achieving the objectives Abrasive blasting was shown by the investigation to be managed effectively as a permitted activity with only one repeat offender, which is being dealt with through enforcement actions outside the Plan Change.[133] Spraypainting (with diisocyanates) is a discretionary activity that requires a consent, an approach which has been effective at achieving the objectives. Both abrasive blasting and spraypainting in the current plan do not take into account the changes to these activities relating to transmission line support structures (pylons) managed by the NES-ETA. These changes do not significantly reduce the effectiveness of the current plan, but may reduce the effectiveness of the national standards as plan users may not know to check. *Feasibility – whether the provisions are within council's powers, responsibilities and resources and ability to implement, monitor and enforce* The control of discharges of contaminants to air is specifically listed as a function of the Regional Council (s30(1)(f)) therefore these provisions are within the powers and responsibilities of Council. *Acceptability – whether the provisions have a fair distribution of impacts and level of political and community acceptance* The impacts are mostly fairly distributed. However, spraypainters need to apply for resource consent and pay ongoing compliance fees to carry out an activity with fewer potential adverse effects than other similar activities such as abrasive blasting.
Summary of effectiveness: 3

[133] Emission Impossible Limited (2016)

Efficiency	
Benefits	**Costs**
Environmental Provides adequate management of adverse off-site effects *Economic* Allows some activities to be carried out without consent, reducing costs for community and Council. *Social* Control of air discharges leads to better air quality and higher amenity value, fewer effects on personal property. *Cultural* As for social benefits	*Environmental* Some conditions too lenient and outdated to effectively manage adverse effects in all cases. Allows discharges without consents which could have adverse effects. *Economic* Economic costs to business that require a consent where activity could be managed through permitted activity conditions. *Social* Nil identified *Cultural* Nil identified
Summary of efficiency: 3	
Option 2: Plan Change	
Effectiveness	
Relevance – how effective are the provisions in achieving the objectives Overall, Option 1 has been effective. This option has made some changes to the existing rules based on the identified issues, to improve effectiveness. Rules with similar conditions have been bundled into one rule AQ R3. This rule includes activities previously managed by separate rules in the current plan, and activities that are also managed in other sections of the RNRP according to their potential effects on water and land (earthworks and contaminated land remediation). This rule ensures that the airborne discharges from these activities are managed as well as the potential effects on land and water. Rule AQ R4 manages discharges from vehicles and roads. These rules are very similar to the equivalent rules in the current plan which has worked effectively and will continue to achieve the objectives in the Plan Change. There is a change to the discharge from vehicles (from 10 seconds to 5 seconds) which keeps this rule consistent with the Land Transport Act. A permitted activity rule AQ R15 for spraypainting with diisocyanates has been included with a set of conditions designed to manage the discharges from this activity. The coatings listed have been expanded to include organic plasticisers and spray on anti-fouling paint that may also cause adverse effects. The adverse effects of this type of discharge can be managed through a set of common consent conditions applicable to all sites carrying out this activity. Therefore it may be equally effective as a permitted activity. There is a risk that without the need to apply for a consent, these operations may not be as vigilant about meeting the conditions. This is unlikely to happen as removing these emission controls is a workplace health and safety issue. The rules for spraypainting and abrasive blasting have been amended to exclude these activities carried out on transmission line support structures as these discharges are managed under the NES-ETA. *Feasibility – whether the provisions are within council's powers, responsibilities and resources and ability to implement, monitor and enforce* The management of discharges of contaminants to air is specifically listed as a function of the Regional Council (s30(1)(f)) therefore these provisions are within the powers and responsibilities of Council.	

Making spraypainting a permitted activity reduces the resources required to administer consents.

Acceptability – whether the provisions have a fair distribution of impacts and level of political and community acceptance

Impacts are fairly distributed by ensuring activities with a low potential for causing adverse effects are managed with a set of standard conditions that minimises process and costs, while protecting the community from discharges.

During consultation there was a request to ensure the rules were consistent with the NES-ETA. These matters have been addressed. Other than these issues, the rules were widely accepted by the community.

Summary of effectiveness: 4

Efficiency

Benefits	**Costs**
Environmental Provides adequate managed of off-site effects *Economic* Fewer costs for spraypainters (usually small sized businesses) to apply for consents and pay compliance costs *Social* Nil identified *Cultural* As for social costs	*Environmental* Allows discharges without consents which can have adverse effects. *Economic* Nil identified *Social* In cases were activities fall into the permitted status, but would be better managed with specific conditions under a resource consent, there may be social costs such as those described in complaints to council (e.g. odour or amenity). *Cultural* As for social costs.

Summary of efficiency: 3

Option 3: Less stringent

Effectiveness

Relevance – how effective are the provisions at achieving the objectives

AQ R4(b) permits vehicle movements on unsealed roads as a permitted activity without additional conditions, therefore this is the least stringent option.

For other rules the less stringent option would be to have fewer or no conditions for the activities.

Without specific conditions to control the contaminants of concern, plan users would rely on the general conditions (no dangerous, noxious, objectionable, offensive discharges beyond the boundary). This makes it more difficult to implement the plan as specific condition are more easily checked (e.g. the vent on a geothermal steam discharge is 6 metres high). If even the general conditions are removed for these activities there are no conditions to enforce and these activities may cause adverse effects, which will not achieve the objective.

Feasibility – whether the provisions are within council's powers, responsibilities and resources and ability to implement, monitor and enforce

The management of discharges of contaminants to air is specifically listed as a function of the Regional Council (s30(1)(f)) and Council may set out provisions in a regional plan to do this. These provisions are within the powers and responsibilities of Council.

However, less stringent provisions would make it more difficult for Council to manage air discharges as it limits the ability to mitigate effects through permitted activity conditions and resource consent

conditions.

Complaints would likely increase requiring more enforcement resources.

Acceptability – whether the provisions have a fair distribution of impacts and level of political and community acceptance

This option unfairly loads the impacts of discharges onto the community, with little to no controls over those discharging contaminants.

It is unlikely that an option that would most likely expose the community to adverse effects would receive political or community support.

Summary of effectiveness: 1

Efficiency

Benefits	**Costs**
Environmental Nil identified *Economic* In the short term businesses may be better off through not requiring consents and more relaxed permitted activity conditions. *Social* Nil identified *Cultural* Nil identified	*Environmental* Increase in discharges and potential effects *Economic* Increases monitoring and compliance costs *Social* Increased impact on amenity value from odour and dust *Cultural* As for social costs

Summary of efficiency: 2

Option 4: More stringent

Effectiveness

Relevance

A more stringent option would be to require consents for spraypainting, abrasive blasting and discharges to air associated with geothermal energy use. Each activity would have tailored consent conditions to manage discharges and this would achieve the objectives.

The remaining activities have conditions less stringent than the general rule therefore would be more stringent if the specific activity rule was removed and the activity fell under the general activity conditions. This could increase effectiveness, as more conditions must be complied with. However, the specific activity rules have conditions designed to manage the discharge from that activity, and without this tailored approach, ability to meet the objectives may decrease.

Feasibility – whether the provisions are within council's powers, responsibilities and resources and ability to implement, monitor and enforce

The control of discharges of contaminants to air is specifically listed as a function of the Regional Council (s30(1)(f)) therefore these provisions are within the powers and responsibilities of Council.

Small scale operations managed as permitted activities have an element of common sense and self-policing in most cases. In these cases, most activities comply with the permitted activity conditions and need no further follow up by the Regional Council. Requiring consents for too many activities places a burden on the Council to check compliance with conditions for all activities, rather than focusing on discharges with actual, or greater potential for, adverse effects. This disperses resources and leads to reduced effectiveness. may also result in the unintended consequence of reduced effectiveness

An example of this is abrasive blasters. Investigation into the complaints about abrasive blasters showed that there is only one operation causing ongoing adverse effects. If all abrasive blasters were

to require consents, Council staff would spend resources assessing and processing consents for all operations in the region, then checking compliance with the conditions, with little increase in effectiveness from targeting operations already complying. This reduces the resources available to focus on the single operation that most likely does need a consent. *Acceptability – whether the provisions have a fair distribution of impacts and level of political and community acceptance* Impacts are unfairly distributed onto what are usually domestic operations and small businesses with low potential to cause adverse effects in most cases. The community is unlikely to support this more stringent option and it is unlikely to have political support.	
Summary of effectiveness: 3	
Efficiency	
Benefits	**Costs**
Environmental Nil identified *Economic* Nil identified *Social* Nil identified *Cultural* Nil identified	*Environmental* Nil identified *Economic* While consent conditions tailored for each activity appear to be the most effective way to achieve the objectives, they result in a lot of duplication requiring more resources and increase costs to business unnecessarily. *Social* Nil identified *Cultural* Nil identified
Summary of efficiency: 1	

7.11.5 Risk of acting or not acting

Council must assess the risk of acting or not acting if there is uncertain or insufficient information about the subject matter of the provisions (s32(2)(c)).

Council considers it has sufficient information about the issue and policy implementation to respond to the issues identified in Topic 8.

7.11.6 Justification of provisions stricter than national standards

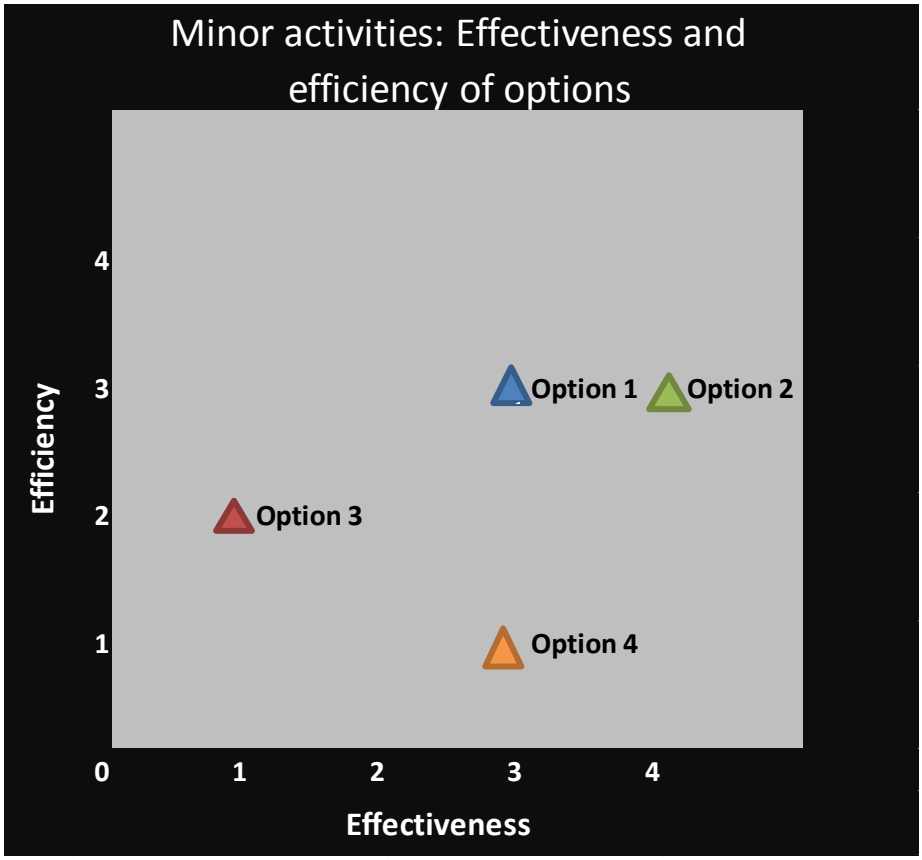
Where provisions of the Plan Change are more restrictive than national standards, Council must examine whether the restriction is justified given the circumstances of the region (s32(4)).

There are no restrictions more restrictive than any national standards in this topic are, therefore no justification is necessary.

7.11.7 Summary of assessment

The change to minor activities is not a change in the approach, but is a change to two activities under that approach. The change to spraypainting shifts it from discretionary activity status to permitted status. This shift provides standard conditions for compliance with the activity status. Where these commercial activities cannot comply with the conditions set out in the rules, they default to discretionary status.

The change in activity status represents an increase in efficiency – these activities can be managed through a set of standard conditions, and the effectiveness in achieving the air quality objectives is not compromised by this change.



Having regard to this information, and taking into account the benefits and costs and the risks of acting or not acting, the most appropriate way of contributing to the achievement of objectives AQ O1, AQ O2 and AQ O3 is by implementing policies AQ P1, AQ P2, AQ P3 and AQ P4, and rules AQ R3, AQ R4, AQ R5, AQ R16, AQ R17, and AQ R 19.

Part 8: Non-regulatory methods and implementation

8.1 Non-regulatory methods

This chapter discusses "methods" which, for the purposes of this section refers to non-regulatory methods.

Section 67 RMA sets out the required and optional contents of regional plans. Regional plans must state objectives, policies and rules (if any) to implement the policies. Regional plans may also include non-regulatory methods to implement the policies.

Non-regulatory methods make up the vast majority of all provisions in the operative regional plans of the Bay of Plenty Regional Council. In the past, these methods have been commonly misinterpreted as enforceable requirements to bind the Regional Council to carry out certain actions. The Regional Council has been involved in costly Environment Court appeals based solely on methods. These appeals could have been avoided had the provisions been located outside of the statutory plan.

This has led to the Regional Council reassessing the inclusion of methods in the regional plan.

Consideration of any non-regulatory method included in a regional plan uses the same process as is carried out for proposed policies and rules where the provisions are assessed according to their effectiveness and efficiency to achieve the objectives. There is no consideration of cost, priority, timing or whether the method (or any other provisions) is necessary when compared with other council projects.

For example, the most efficient and effective way to achieve objective AQ O2, may be to include a non-regulatory method alongside the rules. The method would be for the Regional Council to provide a replacement heating appliance for every home in the airshed that currently uses a non-compliant burner. For 8,550 homes at about $4,000 per appliance this would cost $34 million. This cost would be outweighed by the health benefits of a community with better indoor and outdoor air quality, and warmer homes, and would be assessed as the most appropriate option.

Once viewed outside the isolation of the Section 32 evaluation, this option has several implications. It sets a precedent that the Regional Council will pay to stop discharges when a general environmental principle is polluter pays. It also provides infrastructure that benefits one part of the community at the remaining community's cost. In addition, there is an opportunity cost as the $34 million could have been used in another area of the region to address an issue of higher priority.

The Regional Council still provides financial support for the Rotorua community to encourage conversion to clean heating, and to mitigate the effects of regulations. These financial incentives are developed and amended according to the needs of various sectors of the community. The incentives package is then considered alongside all other council priorities and expenditure in the Long Term Plan required by the Local Government Act 2002 (LGA).

Methods involving significant expenditure should be introduced outside the statutory regional plan to allow this process to occur.

Other methods simply state actions that the Regional Council will take such as monitoring air quality, giving feedback to Central Government on national policy

direction and working with territorial authorities. These matters are required by the RMA, or a part of good resource management, and are therefore carried out under business-as-usual by the Regional Council.

Many other methods set out operational methods such as “maintain a compliance monitoring programme for air discharge permits and permitted activities” (Method 36 current plan). Operational methods, particularly implementation actions do improve the efficiency and effectiveness of policies and rules to achieve the objectives. However, they are more appropriately located in an implementation plan (see section 8.2).

Council’s policy is to include methods where appropriate but built on a position that is clear to the community, submitters and the Environment Court. This would be based on clear criteria that set out the Council’s view of inclusion or exclusion of methods.

The default position is that a method should only be included if:

a. necessary to set out a non-regulatory approach for a known, significant issue that does not have a regulatory response and where no method would leave an obvious gap in the management of the resource and/or

b. it is determined by an extensive and inclusive consultative or collaborative process (i.e. it represents a greater public interest)

Methods should not be included if:

c. They state what is already required under the RMA.

d. They require the Regional Council to carry out business as usual (e.g. providing feedback to Central Government).

e. They set out detailed operational methods (unless consistent with a or b).

Plan Change 13 is the first regional plan to be proposed using these criteria.

There are two non-regulatory methods, not included in the Plan Change but discussed in the topic area assessments:

- Rotorua Airshed – incentives, good wood, education and awareness (section 7.5)

- Mount Maunganui Area air management framework - air emissions inventory, dispersion modelling, air quality audits, ambient air quality monitoring, resource consent reviews (section 7.9)

These methods are part of work programmes either included in the current Long Term Plan 2015-2025 and/or for inclusion in the upcoming Long Term Plan 2018-2028. Their appropriateness in implementing the policies to achieve the objectives are discussed in the relevant topic areas.

8.2 Implementation plan

Many non-regulatory methods are implementation methods. Once included in a regional plan, there is no flexibility without going through the Schedule 1 process. These types of methods need to be more agile to adapt to the ongoing challenges of implementation.

These types of methods can be included in an implementation plan. The implementation plan would include:

- Identification of implementation issues – system constraints, operational and capital costs, staff resources.
- Action steps to address implementation issues – including responsibility and timelines.
- Communication plan –increase awareness in the community.
- Compliance strategy – where to expect increased or decreased complaints, overall compliance approach, additional staff resources.
- User guide – explanation of intent of policies and rules, guidance on implementing each rule, templates as required (e.g. spray risk management plan).
- Guidance documents – provided for areas where highly specific guidance required for air discharge activities, for example open burning.

The implementation plan is discussed here as if it is one single document, but will most likely consist of several documents.

Part 9: Other air quality issues

Part 9 includes a number of other air quality issues that have not been included in the Plan Change and therefore not evaluated in the s32 report. They are discussed briefly here.

9.1 Minamata Convention on Mercury

In October 2013, New Zealand signed up to the Minamata Convention on Mercury[134]. This is a global treaty that seeks to protect human health and the environment from the adverse effects of mercury.

The Convention draws attention to mercury that, while naturally occurring, has broad uses in everyday objects and is released to the atmosphere, soil and water from a variety of sources. Controlling the anthropogenic releases of mercury throughout its lifecycle has been a key factor in shaping the obligations under the Convention.

Major highlights of the Minamata Convention include a ban on new mercury mines, the phase-out of existing ones, the phase out and phase down of mercury use in a number of products and processes, control measures on emissions to air and on releases to land and water, and the regulation of the informal sector of artisanal and small-scale gold mining. The Convention also addresses interim storage of mercury and its disposal once it becomes waste, sites contaminated by mercury as well as health issues

Central Government has not yet provided any direction or next steps to implement the treaty. The Plan Change contains no provisions specifically relating to mercury. However, discharges from anthropogenic processes that discharge mercury (such as crematoria or large scale geothermal power generation) require resource consents under the provisions of the Plan Change. The Regional Council will therefore assess these discharges on a case by case basis, taking into account the Minamata Convention and any requirements that Central Government develop.

9.2 Use of 1080

Aerial application of sodium fluoroacetate (1080) is carried out in New Zealand to control mammalian pests such as possums and rats. The poison is applied in carrots or cereal pellet baits and dropped to the target area by helicopter.

The use of 1080 is controversial. This section does not discuss reasons for and against the use of 1080, only matters related to discharge of contaminants to air.

Previously, the use of 1080 was managed under the air plan. Although the discharge is primarily to land and or water, physical abrasion from transport and loading of the carrots or bait may generate dust particles which could become airborne. This was an area of uncertainty and so the precautionary approach was used and it was assumed that there was an air discharge.

A recent scoping study investigated whether 1080 dust did become suspended in air and therefore had the potential to cause off-site effects. The study found that any suspended particulate generated from 1080 aerial application is in small quantities and will not cause an adverse effect[135] off-site. This is a scoping study, therefore if

[134] United Nations Environment Programme (2013)
[135] Institute of Environmental Science and Research Limited (2016)

any future studies present evidence that there may be an adverse effect from 1080 use, this position will be reconsidered.

9.3 Dust on unsealed roads

About 40% of New Zealand's roading network is unsealed roads. Many of these unsealed roads are used to service sparsely populated rural areas. However, recently these rural areas are being divided into smaller lifestyle blocks with new houses built close to the road to minimise cost of power and phone supply. Health boards and local residents are concerned with the effects of high levels of dust exposure from unsealed roads.

Northland Regional Council carried out monitoring in 2013 which indicated that the national standard for PM_{10} in the NESAQ was exceeded during dry conditions and high traffic volume. Additional monitoring was carried out in February, March, and April of 2015 on Mataraua Road near Kaikohe in the Far North District. The monitoring results indicated that dust discharges from untreated unsealed roads have the potential to cause adverse effects on human health[136].

Central Government has set up a Special Interest Group to investigate the impact of road dust on health and develop a national strategy and policy to mitigate the effects. This work is in its early stages.

At this stage there has been no change to the provisions for unsealed roads from what is in the current plan. Council will monitor the research and findings from this area and reconsider provisions if necessary.

[136] Bluett, Gimson, & de Aguiar (2016).

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Appendix 1 – Section 32 Resource Management Act

Section 32 of the RMA, as referred to in Part 1 and throughout this report is reproduced in full here.

Section 32 – Requirements for preparing and publishing evaluation reports

(1) An evaluation report required under this Act must—

(a) examine the extent to which the objectives of the proposal being evaluated are the most appropriate way to achieve the purpose of this Act; and

(b) examine whether the provisions in the proposal are the most appropriate way to achieve the objectives by—

(i) identifying other reasonably practicable options for achieving the objectives; and

(ii) assessing the efficiency and effectiveness of the provisions in achieving the objectives; and

(iii) summarising the reasons for deciding on the provisions; and

(c) contain a level of detail that corresponds to the scale and significance of the environmental, economic, social, and cultural effects that are anticipated from the implementation of the proposal.

(2) An assessment under subsection (1)(b)(ii) must—

(a) identify and assess the benefits and costs of the environmental, economic, social, and cultural effects that are anticipated from the implementation of the provisions, including the opportunities for—

(i) economic growth that are anticipated to be provided or reduced; and

(ii) employment that are anticipated to be provided or reduced; and

(b) if practicable, quantify the benefits and costs referred to in paragraph (a); and

(c) assess the risk of acting or not acting if there is uncertain or insufficient information about the subject matter of the provisions.

(3) If the proposal (an amending proposal) will amend a standard, statement, regulation, plan, or change that is already proposed or that already exists (an existing proposal), the examination under subsection (1)(b) must relate to—

(a) the provisions and objectives of the amending proposal; and

(b) the objectives of the existing proposal to the extent that those objectives—

(i) are relevant to the objectives of the amending proposal; and

(ii) would remain if the amending proposal were to take effect.

(4) If the proposal will impose a greater or lesser prohibition or restriction on an activity to which a national environmental standard applies than the existing prohibitions or restrictions in that standard, the evaluation report must examine whether the prohibition or restriction is justified in the circumstances of each region or district in which the prohibition or restriction would have effect.

(4A) if the proposal is a proposed policy statement, plan, or change prepared in accordance with any of the processes provided for in Schedule 1, the evaluation report must—

(a) Summarise all advice concerning the proposal received from iwi authorities under the relevant provisions of Schedule 1; and

(b) Summarise the response to the advice, including any provisions of the proposal that are intended to give effect to the advice.

(5) The person who must have particular regard to the evaluation report must make the report available for public inspection—

(a) as soon as practicable after the proposal is made (in the case of a standard or regulation); or

(b) at the same time as the proposal is publicly notified.

(6) In this section,—

objectives means,—

(a) for a proposal that contains or states objectives, those objectives:

(b) for all other proposals, the purpose of the proposal

proposal means a proposed standard, statement, regulation, plan, or change for which an evaluation report must be prepared under this Act

provisions means,—

(a) for a proposed plan or change, the policies, rules, or other methods that implement, or give effect to, the objectives of the proposed plan or change:

(b) for all other proposals, the policies or provisions of the proposal that implement, or give effect to, the objectives of the proposal.

Appendix 2 – “Offensive or objectionable”

Almost every rule in the Plan Change, contains a “bottom line” condition that states:

“. . .the discharge must not be **noxious or dangerous**, **offensive or objectionable** beyond the boundary of the subject property,”

or similar wording. This condition ensures that in the absence of any other condition, the discharge is managed to reduce adverse effects on health and well-being (including amenity values and cultural values).

These terms are used in the RMA but are not defined. The Plan Change defines “noxious or dangerous”, as a discharge that causes and adverse effect on the environment. This is a broad brush, but the definition then lists examples which include human health effects, contaminant of water, damage to paintwork etc. These are all effects which are measurable, either through testing, monitoring or visual inspection.

“Offensive or objectionable” are not defined, either in the RMA or the Plan Change. As a bottom line condition, this lacks certainty for plan users. Unfortunately the use of this term is unavoidable, as many dust discharges and almost all odour discharges (including smoke) do not usually directly affect health, but have an impact on amenity values and cultural values.

It is a subjective assessment, as is the perception of the discharge. Odour in particular is a difficult air discharge to assess and resolve as its perception varies greatly depending on the receiver. Odour has a psychological component – once exposed to an unpleasant odour, a receiver will detect it, and find it offensive and objectionable, at a far lower concentration than another receiver. It can lead to “odour worry” where a receiver can smell something and is concerned that their health is being affected.

The FIDOL factors introduce some objectivity to these assessments.

- Frequency – how often an individual is exposed to the odour
- Intensity – the strength of the odour
- Duration – the length of exposure
- Offensiveness/character – the hedonic tone of the odour (pleasant, neutral, unpleasant)
- Location – the type of land use and nature of human activities in the vicinity of an odour source

There is extensive literature on the FIDOL factors and the Ministry for the Environment has published two Good Practice Guides (for Assessing and Managing Odour, and for Assessing and Managing Dust) that sets out the analysis process.

There is no definition provided for “offensive or objectionable” in the Plan Change, or in any other regional air plan. Caselaw establishes what may be offensive or

objectionable when the Environment Court makes a discretionary judgment standing in the shoes of the community. Therefore the terms cannot be defined.

Appendix 3 – Key sections of the RMA

Additional text from the RMA, as discussed in Part 3 is included here.

Section 5 – Purpose

(1) The purpose of this Act is to promote the sustainable management of natural and physical resources.

(2) In this Act, sustainable management means managing the use, development, and protection of natural and physical resources in a way, or at a rate, which enables people and communities to provide for their social, economic, and cultural wellbeing and for their health and safety while-

  (a) Sustaining the potential of natural and physical resources (excluding minerals) to meet the reasonably foreseeable needs of future generations; and

  (b) Safeguarding the life-supporting capacity of air, water, soil, and ecosystems; and

  (c) Avoiding, remedying, or mitigating any adverse effects of activities on the environment.

Section 6 – Matters of national importance

In achieving the purpose of this Act, all persons exercising functions and powers under it, in relation to managing the use, development, and protection of natural and physical resources, shall recognise and provide for the following matters of national importance

(a) the preservation of the natural character of the coastal environment (including the coastal marine area), wetlands, and lakes and rivers and their margins, and the protection of them from inappropriate subdivision, use, and development:

(b) the protection of outstanding natural features and landscapes from inappropriate subdivision, use, and development:

(c) the protection of areas of significant indigenous vegetation and significant habitats of indigenous fauna:

(d) the maintenance and enhancement of public access to and along the coastal marine area, lakes, and rivers:

(e) the relationship of Maori and their culture and traditions with their ancestral lands, water, sites, waahi tapu, and other taonga:

(f) the protection of historic heritage from inappropriate subdivision, use, and development:

(g) the protection of protected customary rights.

Section 7 – Other matters

In achieving the purpose of this Act, all persons exercising functions and powers under it, in relation to managing the use, development, and protection of natural and physical resources, shall have particular regard to

(a) Kaitiakitanga:

(aa) The ethic of stewardship:

(b) The efficient use and development of natural and physical resources:

(ba) the efficiency of the end use of energy:

(c) The maintenance and enhancement of amenity values:

(d) Intrinsic values of ecosystems:

(e) [Repealed]

(f) Maintenance and enhancement of the quality of the environment:

(g) Any finite characteristics of natural and physical resources:

(h) The protection of the habitat of trout and salmon:

(i) The effects of climate change:

(j) The benefits to be derived from the use and development of renewable energy.

Section 8 – Treaty of Waitangi

In achieving the purpose of this Act, all persons exercising functions and powers under it, in relation to managing the use, development, and protection of natural and physical resources, shall take into account the principles of the Treaty of Waitangi (Te Tiriti o Waitangi).

Section 15 – Discharge of contaminants into environment

(1) No person may discharge any—

(c) contaminant from any industrial or trade premises into air. . .

unless the discharge is expressly allowed by a national environmental standard or other regulations, a rule in a regional plan as well as a rule in a proposed regional plan for the same region (if there is one), or a resource consent.

(2) No person may discharge a contaminant into the air, or into or onto land, from a place or any other source, whether moveable or not, in a manner that contravenes a national environmental standard unless the discharge—

(a) is expressly allowed by other regulations; or

(b) is expressly allowed by a resource consent; or

(c) is an activity allowed by section 20A.

(2A) No person may discharge a contaminant into the air, or into or onto land, from a place or any other source, whether moveable or not, in a manner that contravenes a regional rule unless the discharge—

(a) is expressly allowed by a national environmental standard or other regulations; or

(b) is expressly allowed by a resource consent; or

(c) is an activity allowed by section 20A.

Section 15A – Restrictions on dumping and incineration of waste or other matter in coastal marine area

(1) No person may, in the coastal marine area,—

(b) incinerate any waste or other matter in any marine incineration facility—

unless the dumping or incineration is expressly allowed by a resource consent.

Section 15B – Discharge of harmful substances from ships or offshore installations

(1) No person may, in the coastal marine area, discharge a harmful substance or contaminant, from a ship or offshore installation into water, onto or into land, or into air, unless—

(a) the discharge is permitted or controlled by regulations made under this Act, a rule in a regional coastal plan, proposed regional coastal plan, regional plan, proposed regional plan, or a resource consent; or

(c) the harmful substance or contaminant, when discharged into air, is not likely to be noxious, dangerous, offensive, or objectionable to such an extent that it has or is likely to have a significant adverse effect on the environment.

Section 30 – Functions of regional councils under this Act

(1) Every regional council shall have the following functions for the purpose of giving effect to this Act in its region:

(a) the establishment, implementation, and review of objectives, policies, and methods to achieve integrated management of the natural and physical resources of the region:

(d) in respect of any coastal marine area in the region, the control (in conjunction with the Minister of Conservation) of—

(iv) discharges of contaminants into or onto land, air, or water and discharges of water into water:

(iva) the dumping and incineration of waste or other matter and the dumping of ships, aircraft, and offshore installations:

(f) the control of discharges of contaminants into or onto land, air, or water and discharges of water into water:

(fa) if appropriate, the establishment of rules in a regional plan to allocate any of the following:

(iv) the capacity of air or water to assimilate a discharge of a contaminant:

(4) A rule to allocate a natural resource established by a regional council in a plan under subsection (1)(fa) or (fb) may allocate the resource in any way, subject to the following:

(a) the rule may not, during the term of an existing resource consent, allocate the amount of a resource that has already been allocated to the consent; and

(b) nothing in paragraph (a) affects section 68(7); and

(c) the rule may allocate the resource in anticipation of the expiry of existing consents; and

(d) in allocating the resource in anticipation of the expiry of existing consents, the rule may—

(i) allocate all of the resource used for an activity to the same type of activity; or

(ii) allocate some of the resource used for an activity to the same type of activity and the rest of the resource to any other type of activity or no type of activity; and

(e) the rule may allocate the resource among competing types of activities; and

(f) the rule may allocate water, or heat or energy from water, as long as the allocation does not affect the activities authorised by section 14(3)(b) to (e).

Appendix 4 – National planning instruments under the RMA

Table A4 details how national environmental standards, policy statements, regulations and guidelines are considered and given effect to in the Plan Change.

Table A4: Consideration of planning instruments

Document	Consideration in the Plan Change
National Environmental Standards – regulations issued under Section 43 of the RMA. They provide a nationally consistent approach and decision-making process. Each council must enforce the same standard and in some circumstances can impose stricter standards. Regional plans cannot duplicate or be in conflict with a national environmental standard. Regional rules may be more stringent, but only where the standard specifically allows this. Where a regional plan is more stringent, justification must be provided.	
National Environmental Standard for Air Quality 2004 (NESAQ) The NESAQ contains: • Seven activity standards banning activities that discharge significant quantities of dioxins and other toxics into the air. • Five ambient air quality standards for carbon monoxide (CO), particulate matter less than 10 micrometres in diameter (PM_{10}), nitrogen dioxide (NO_2), sulphur dioxide (SO_2), and ozone (O_3). • A design standard and thermal efficiency standard for new woodburners installed in urban areas. • A standard prohibiting the discharge from indoor open fires in certain airsheds.	The NESAQ is a key feature of the Plan Change, with AQ O2 specifically requiring ambient air in the region to comply with the standards. There are general policies (AQ P3, AQ P4) designed to ensure compliance including a policies to consider the gazetted airsheds, the ambient air quality standards, and cumulative effects. A specific policy (AQ P7) targets domestic burners within the Rotorua Airshed. This airshed regularly exceeds the ambient air quality standard for PM_{10}, caused mainly by domestic burners. Rules AQ R12, AQ R13, AQ R14 all target domestic burners within the Rotorua Airshed in order to meet the PM10 standard. These policies and rules are more stringent than the standard and this is justified in Part 7 where relevant. The Mount Maunganui area has experienced breaches of the SO_2 standard in the past and will potentially exceed the PM_{10} standard. The Plan Change has taken this into account and considered policies and rules targeting this area – discussed in Part 7 where relevant.
National Environmental Standard for Sources of Drinking Water (2007) NES-SDW This standard sets out national standards for granting of water permits or	The NES-SDW allows for a regional rule or resource consent to be more stringent than the NES-SDW however this has not been deemed necessary. The regulations of the NES-SDW have been considered during the preparation of

discharge permits upstream of a water source used for human drinking water supply and requires regional councils to ensure that effects of activities on drinking water sources are considered in decisions on resource consents and regional plans. Specifically regional councils are required to be satisfied that permitted activities in regional plans will not result in community drinking water supplies being unsafe for human consumption following existing treatment.	the Plan Change. Public water supplies are listed as a sensitive activity which need to be considered when discharging to air (AQ P4). Avoiding discharges of contaminants into water is specifically included as a condition where this may occur (AQ R1, AQ R3, AQ R15) to avoid flow into areas used for sources of drinking water.
National Environmental Standards for Electricity Transmission Activities (2009) NES-ETA These regulations apply to transmission lines in the National Grid. It includes permitted, controlled, and restricted discretionary activities specifically related to discharges from blasting and applying protective coatings to support structures. These activities involve discharges to air, and therefore any regional air plan must be consistent with these regulations.	The regulation does not allow for any regional rule to be more stringent. This leaves the Plan Change with little room to move when regulating discharges to air from blasting and applying protective coatings to support structures. Therefore, these activities have been excluded from the corresponding rules in the Plan Change (AQ R16, AQ R17), with advice notes directing plan users to the NES-ETA.
National Environmental Standards for Plantation Forestry (2017) NES-PF These regulations apply to plantation forests and the associated activities with including afforestation, earthworks, forestry quarrying, harvesting, and replanting in relation to on-site activities. It includes discharges of dust to air from the plantation forestry site, therefore any regional air plan must be consistent with these regulations.	The regulation allows for regional rules to be more stringent in specific circumstances. These do not apply to rules in the Plan Change therefore this activity has been excluded from the corresponding rule in the Plan Change (AQ R1) with an advice note directing plan users to the NES-PF.
National Environmental Standard for Assessing and Managing Contaminants in Soil to Protect Human Health (2011) NES for Contaminated Soil. This regulation ensures land affected by contaminants in soil is appropriately identified and assessed when soil disturbance and/or land development activities take place. Regulation 4(b) states that the regulations do not deal with regional council functions, therefore discharges of contaminants to air from disturbance of contaminated soil are not covered. This gap in regulations	The current RNRP contains rule for the disturbance contaminated land. Where the potential for adverse effects is no more than minor, the activity is permitted, otherwise it is discretionary. The rules are precautionary, only permitting disturbance of a very narrow category of contaminated land. Any air discharge from this activity is also unlikely to cause effects more than minor. Therefore the permitted activity rules in the Plan Change, AQ R3, links to LM R1, LM R2 and LM R3 in the current plan, with any other discharge defaulting to discretionary under AQ R2.

has been considered when preparing the Plan Change.	
There are five other National Environmental Standards in place, or in development: • Ecological Flows and Water Levels (proposed) • Telecommunications Facilities (2008). • Plantation Forestry. • Marine Aquaculture (proposed) • Outdoor Storage of Tyres (proposed)	These documents do not have any requirements relevant to air discharges managed by the Plan Change.
National Policy Statements (NPS) are an instrument issued under Section 52(2) of the RMA which state objectives and policies for matters of national significance relevant to achieving the purpose of the RMA	
National Policy Statement on Electricity Transmission (2008) NPS-ET This statement (NPS-ET) is the overarching policy for the NES-ETA to manage the effects of and on the network. Policy 2 requires decision-makers to recognise and provide for the effective operation, maintenance, upgrading and development of the electricity transmission network.	Policy 2 is implemented through regulations in the NES-ETA (discussed above). Preparation of the Plan Change considered the potential adverse effects of discharges of contaminants to air on the network, for example through the discharge of corrosive chemicals causing damage. This has been taken into account in the Plan Change, in particular the definitions of “noxious or dangerous” and policies AQ P3(d), AQ P4(e).
New Zealand Coastal Policy Statement 2010 (NZCPS) The purpose of this statement is to promote the sustainable management of resources in relation to the coastal environment. The objectives and policies manage various issues such as declining coastal species and habitats, loss of natural character and landscape, poor and declining coastal water quality, and demand for coastal sites for infrastructure. • Objective 3 requires Regional Council to take into account the principles of the Treaty of Waitangi, recognise the role of tangata whenua as kaitiaki and provide for their involvement in management of the coastal environment. • Objective 4 requires maintenance and enhancement of the public open space qualities and recreational opportunities of the coastal environment.	These objectives and policies apply to air discharges from activities carried out within the coastal marine area at the Port of Tauranga. This is discussed in detail in Part 7 topics 5 and 6.

• Objective 6 enables people to provide for their social, economic, and cultural well-being and health and safety through use of the coastal environment recognising a number of factors including that the protection of the values of the coastal environment does not preclude use and development in appropriate places and within appropriate limits. • Policy 1 recognises that the coastal environment includes a number of features including islands, coastal marine area, coastal vegetation, and built facilities including infrastructure. • Policy 2 requires the principles of the Treaty of Waitangi, and kaitiakitanga to be taken into account in relation to the coastal environment. • Policy 3 adopts a precautionary approach towards activities whose effects on the coastal environment are uncertain or unknown but potentially significantly adverse. • Policy 4 provides for the integrated management of natural and physical resources in the coastal environment and particular consideration of situations where public use and enjoyment of public space in the coastal environment is affected, of is likely to be affected. • Policy 9 requires recognition of the need for an efficient network of safe ports • Policy 23 requires operators of ports to take all practicable steps to avoid contamination of coastal ecosystems and habitats that is more than minor	
National Policy Statement on Urban Development Capacity 2016 (NPS-UDC) This statement aims to ensure that planning decisions enable the supply of housing needed to meet demand and ensure affordability of housing. The theme of the NPS-UDC is that planning decisions must actively enable development in urban environments in a way that maximises wellbeing now and in the future.	Although the NPS-UDC is implemented primarily by territorial authorities there is some relevance to the Plan Change. The need for adequate urban development capacity has been considered and taken into account during the development of the Plan Change.

There are three other national policy statements in place or in development: • Freshwater Management 2014 • Renewable Electricity Generation 2011 • Indigenous Biodiversity (proposed)	These documents do not have any requirements relevant to air discharges managed by the Plan Change
Other national regulations – are regulations under section 360 of the RMA made by the Governor-General for various purposes including exemptions from any provision of section 15 and prescribing any operations of a ship, aircraft or offshore installation as a normal operation	
Resource Management (Marine Pollution) Regulations 1998 These regulations manage the discharge of substances to the coastal marine area, permitting the discharge of contaminants from shipping and stating that regional plans cannot contain rules to manage the discharges.	A regional coastal plan may form part of a regional plan where it is considered appropriate in order to promote integrated management of a coastal marine area (CMA) and any related part of the coastal environment. (Section 64(2) RMA). Therefore any provision in the current plan or proposed Plan Change 13 that applies to the coastal marine area is technically a provision of a 'regional coastal plan' (although it can be included in the regional plan for integrated management reasons). This effectively means that the Regional Council cannot include rules in any plan that manages shipping emissions, which are covered by the Regulations.
Guidelines –prepared to assist with the sustainable management of resources.	
Ambient Air Quality Guidelines 2002 (AAQGs) The Ambient Air Quality Guidelines (AAQGs) were first released in 1994, and updated in 2002. The purpose of the guidelines is to promote sustainable management of the air resource in New Zealand. The document includes health based values and guidance on how to use them to manage air quality under the RMA. The health based values are the minimum requirement that outdoor air quality should meet in order to protect human health and the environment. The document states that the guideline values are not to be used as limits to pollute up to. The 15 contaminants listed in the guidelines are: Carbon monoxide, particulates (PM_{10} and $PM_{2.5}$), nitrogen oxide, sulphur dioxide, ozone, lead, hydrogen sulphide, acetaldehyde, benzene, 1,3-Butadiene.	The AAQGs are a key feature of the Plan Change, with AQ O2 specifically requiring compliance with the guidelines. General policies (AQ P3, AQ P4) designed to ensure compliance with health based values of the ambient air quality guidelines.

formaldehyde, benzo(a)pyrene, mercury, chromium, and arsenic. The guidelines do not have the force of law like the NESAQ. However, the guidelines cover the contaminant standards from the NESAQ, and an additional 11 contaminants not currently included in the NESAQ.	

Appendix 5 – Giving effect to the Regional Policy Statement

Table A5 details how the Plan Change gives effect to the RPS.

Table A5: Giving effect to the RPS

Provision	Discussion
Air quality	
Objective 1 The adverse effects of odours, chemical emissions and particulates are avoided, remedied or mitigated so as to protect people and the environment.	This objective forms the basis of the entire Plan Change and has been carried through as the objectives of the Plan Change. The three objectives include a high level objective to protect and enhance (where degraded) (AQ O1) and two objectives to ensure ambient air quality meets targets (AQ O2) and local air quality is managed (AQ O3).
Policy AQ 1A: Discouraging reverse sensitivity associated with odours, chemicals and particulates. Actively discourage: (a) Locating new sensitive activities near activities that discharge offensive and objectionable odours, chemical emissions of particulates; and (b) Locating new activities that discharge offensive and objectionable odours, chemical emissions or particulates near sensitive activities.	This policy discourages reverse sensitivity issues through urban planning instruments by appropriately locating activities and therefore relates more directly to territorial authority functions. The current air plan has several policies to reduce the adverse effects from reverse sensitivity. These were found to be ineffective as the territorial authorities only have to "have regard to" provisions in a regional plan. Establishment of lifestyle blocks and residential areas next to farms and industrial areas has continued regardless of provisions in the air plan. Regardless, a Policy AQ P4 includes as matters to have particular regard to, incompatible activities and reverse sensitivity, at least where the Regional Council's functions allow.
Policy AQ 2A: Managing adverse effects from the discharge of odours, chemicals, and particulates. Protect people's health and the amenity values of neighbouring areas from discharges of offensive and objectionable odours, chemical emissions and particulates.	This policy captures the essence of the entire Plan Change and is particularly given effect to by policies AQ P1, AQ P2, AQ P3, and AQ P4.
Policy AQ 3A: Managing adverse effects of fine particulate contamination. Manage activities that generate fine particulate contamination within airsheds.	The NESAQ ambient standard for fine particulates is regularly exceeded in Rotorua therefore this is a key focus for the Plan Change. AQ O2 has been included in the Plan Change specifically to ensure this standard is met, and there

Provision	Discussion
	are several other policies and rules designed to achieve the objective (AQ P7, AQ P10, AQ R6, AQ R12, AQ R13, AQ R14). The Mount Maunganui area may exceed the ambient air quality standard for PM_{10}. This has been considered when assessing and preparing the Plan Change.
Coastal Environment	
Objective 2 Preservation, restoration and where appropriate, enhancement of the natural character and ecological functioning of the coastal environment. **Policy CE 6B:** Protecting indigenous biodiversity. Use the criteria in Policy 11 of the NZCPS to identify and protect areas of indigenous biological diversity in the coastal environment requiring protection under that policy. **Policy CE 9B:** Safeguarding the life-supporting capacity of coastal ecosystems. Safeguard the life-supporting capacity of coastal and marine ecosystems by maintaining or enhancing: (a) Any area within the inter-tidal or sub-tidal zone that contains unique, rare, distinctive or representative marine and avian species or habitats; (b) Areas used by marine mammals as breeding, feeding or haul-out sites; (c) Habitats in the coastal environment that are important during the vulnerable life stages of indigenous species or any life stage of species listed as threatened or at risk by the Department of Conservation; (d) Any areas that contain indigenous coastal ecosystems and habitats that are particularly vulnerable to modification – such as estuaries, lagoons, coastal wetlands, dunelands, rocky reef systems and salt marshes; (e) The integrity, functioning and resilience of physical and ecological processes; and (f) Promoting water quality in the coastal marine area that sustains healthy aquatic ecosystems. **Policy CE 10B:** Managing adverse effects of land-based activities in the coastal environment on marine water quality Manage adverse effects, including cumulative effects, from land based activities in the coastal environment on marine water quality by: (a) Requiring that subdivision, use and development does not result in a significant contribution to sedimentation in the coastal marine area or other water bodies within the coastal environment;	The coastal environment objectives and policies in the RPS seek to provide integrated management across the interface of land and water and manage the adverse effects of land-based activities in the coastal environment and on marine water quality. The emphasis of these provisions is on land and water in the coastal environment, not on air. The Regional Coastal Environment Plan gives effect to these provisions. Because the emphasis of the RPS provisions is on land and water, Plan Change 13 does not give effect to these provisions. The RPS provisions on air quality are broad and were not intended to cover air discharges in the CMA separately to any other air discharge in the region. Air quality at the Port of Tauranga (and in the Mount Maunganui area) has been identified as an issue that is assessed in this report (section 7.9). At this stage, air discharges in this area are covered by the same rules as any other air discharge in the region, with no specific provision for discharges to the CMA. Provisions in the plan change require no adverse effects beyond the boundary of the subject property. This applies whether the boundary is adjacent to land or to the CMA. This approach manages adverse effects on air quality in the CMA.

Provision	Discussion
(b) Minimising the creation of impervious surface areas; (c) Minimising contaminants in stormwater that discharges into water or onto land that may enter water, including discharges to existing and new stormwater infrastructure. (d) Minimising the risk of releasing contaminants and avoiding releasing discharges from contaminated land; (e) Adopting water-sensitive design and management principles; (f) Adopting on-site management techniques that will improve the quality of stormwater and/or wastewater prior to discharge; (g) Establishing, replacing, retaining and/or enhancing riparian and catchment vegetation for the purpose of promoting setbacks and ecological buffer areas around wetland areas; and (h) Assessing treatment alternatives for discharges and adopting the best practicable option for treatment. **Policy CE 14B:** Providing for ports Recognise the national and regional significance of the Port of Tauranga and the need for it to be located within the coastal environment by: (a) Safeguarding the capacity and efficiency of: (i) Current port operations; (ii) Activities that have a functional need to be located in and around the port; (iii) The strategic road, rail and sea routes to the port; and (b) Providing as appropriate, in the regional coastal plan, for future port operations and capacity; and (c) Having regard to potential adverse effects on the environment, providing for the need to maintain shipping channels and to renew/replace structures as part of ongoing maintenance; and (d) Avoiding activities in areas that may compromise port operations.	
Integrated Resource Management	
Objective 10 Cumulative effects of existing and new activities are appropriately managed. **Policy IR 5B:** Assessing cumulative effects. Give regard to the cumulative effects of a proposed activity in contributing to:	Cumulative discharges of contaminants to air lead to degraded ambient air quality. Ambient air quality is a key focus for this Plan Change with AQ O2 specifically focused on ensuring ambient air quality meets the NESAQ and AAQGs. There are several policies and rules to achieve AQ O2 and give effect to this policy of the RPS, including AQ P3, AQ P4, AQ P7, AQ P10, AQ R12, AQ R13, AQ R14, AQ R18, and AQ R20.

Provision	Discussion
(a) Incremental degradation of values of sites identified as having high natural character (b) Incremental degradation of matters of significance to Māori including cultural effects (e) Incremental degradation of scenic values, amenity, open space, recreation and the general use and enjoyment by the public. (j) Effects on the function, efficiency and safety of infrastructure; and (k) Social and economic well-being.	
Objective 11 An integrated approach to resource management issues is adopted by resource users and decision makers. **Policy IR 1B:** Applying a precautionary approach to managing natural and physical resources. Apply a precautionary approach to the management of natural and physical resources, where there is scientific uncertainty and a threat of serious or irreversible adverse effects on the resource and the built environment.	Adverse effects on the air resource can quickly lead directly to adverse effects on human health, particularly with large discharges of contaminants. For this reason the Plan Change is precautionary, setting a high level of resource management with "protect", and "avoid" used frequently throughout the provisions. When considering the effectiveness and efficiency of the provisions in this Section 32 analysis, the precautionary approach has been used.
Objective 12 The timely exchange, consideration of and response to relevant information by all parties with an interest in the resolution of a resource management issue. **Policy IR 4B:** Using consultation in the identification and resolution of resource management issues. Encourage the timely exchange, consideration of, and response to, relevant information by all parties with an interest in the resolution of a resource management issue by: (a) Consulting as widely as practicable in the preparation, implementation and review of policy statements and plans; (b) Consulting all potentially affected parties and interest groups in the planning, implementation and review of councils' own operational activities in relation to the use, development and protection of natural and physical resources; and (c) Encouraging all parties undertaking resource use, development and protection activities to consult with others who may be affected.	The Council has carried out extensive and timely consultation. This is set out in detail in Part 4.

Provision	Discussion
Iwi Resource Management	
Objective 13 Kaitiakitanga is recognised and the principles of Te Tiriti o Waitangi are systematically taken into account in the practice of resource management. **Policy IW 3B:** Recognising the Treaty in the exercise of functions and powers under the Act. Exercise the functions and powers of local authorities in a manner that: (a) Takes into account the principles of the Treaty of Waitangi; (b) Recognises that the principles of the Treaty will continue to evolve and be defined; (c) Promotes awareness and understanding of councils' obligations under the Act regarding the principles of the Treaty, tikanga Māori and kaupapa Māori, among council decision makers, staff and the community; (d) Recognises that tāngata whenua, as indigenous peoples, have rights protected by the Treaty and that consequently the Act accords iwi a status distinct from that of interest groups and members of the public; and (e) Recognises the right of each iwi to define their own preferences for the sustainable management of natural and physical resources, where this is not inconsistent with the Act.	Policy IW 3B requires the Regional Council to recognise the Treaty of Waitangi in the exercise of functions and powers under the Act, including when preparing regional plans. The principle of active protection involves activity protecting what is important to Māori. This has been recognised by including Objective 1 which seeks to protect the mauri of air from significant adverse effects of discharges of contaminants. The principle of tribal autonomy is where Māori have the right to manage, control and enjoy their resources and taonga in accordance with their cultural preferences. These preferences are generally set out and included in iwi and hapū resource management plans which have been taken into account according to Policy IW 4B (see below). The principles include a duty to consult with Māori on matters of importance to them. Method 45 of the RPS builds on this by directing the Regional Council to involve iwi and hapū in the development of Regional Plans. The Regional Council has consulted extensively with iwi and hapu on the provisions of the Plan Change and is discussed further in Part 4.
Objective 17 The mauri of water, land, air, and geothermal resources is safeguarded and where it is degraded, where appropriate, it is enhanced over time. **Policy IW 2B:** Recognising matters of significance to Māori. Proposals which may affect the relationship of Māori and their culture and traditions must: (a) Recognise and provide for: (i) Traditional Māori uses and practices relating to natural and physical resources such as mahinga mātaitai, waahi tapu, papakāinga and taonga raranga;	According to Policy IW 4B staff consulted all iwi management plans currently lodged with the Regional Council, in particular those with air quality provisions. The air provisions in the iwi and hapū management plans have been taken into account in the draft air plan. The Regional Council carried out extensive consultation with Māori on the draft air plan. These concerns have been taken into account when developing the Proposed Plan Change. Further details are included in Part 4.

Provision	Discussion
(ii) The role of tāngata whenua as kaitiaki of the mauri of their resources; (iii) The mana whenua relationship of tāngata whenua with, and their role as kaitiaki of, the mauri of natural resources; (iv) Sites of cultural significance identified in iwi and hapū resource management plans; and (b) Recognise that only tāngata whenua can identify and evidentially substantiate their relationship and that of their culture and traditions with their ancestral lands, water, sites, waahi tapu and other taonga. **Policy IW 4B:** Taking into account iwi and hapū resource management plans. Ensure iwi and hapū resource management plans are taken into account in resource management decision making processes. **Policy IW 5B:** Adverse effects on matters of significance to Māori When considering proposals that may adversely affect any matter of significance to Māori recognise and provide for avoiding, remedying or mitigating adverse effects on: (a) The exercise of kaitiakitanga; (b) Mauri, particularly in relation to fresh, geothermal and coastal waters, land and air; (c) Mahinga kai and areas of natural resources used for customary purposes; (d) Places sites and areas with significant spiritual or cultural historic heritage value to tāngata whenua; and (e) Existing and zoned marae or papakāinga land.	

Appendix 6 – National Environmental Standards for Air Quality

This appendix contains the regulations of the Resource Management (National Environmental Standards for Air Quality) Regulations 2004 referenced in relevant topics.

Open burning

6 Lighting of fires and burning of waste at landfill

(1) The lighting of fires and the burning of waste at a landfill are prohibited.

(2) Subclause (1) does not apply if—

(a) the lighting of a fire is to control gas formed at the landfill; and

(b) the landfill complies with the requirements of regulations 25 to 27.

7 Burning of tyres

(1) The burning of tyres is prohibited.

(2) Subclause (1) does not apply if the tyres are burnt at industrial and trade premises that have—

(a) a resource consent for the discharge produced; and

(b) emission control equipment that is designed and operated to minimise emissions of dioxins and other toxics from the process.

8 Burning of bitumen

The burning of bitumen on a road is prohibited.

9 Burning of coated wire

(1) The burning of wire coated with any material is prohibited.

(2) Subclause (1) does not apply if the wire is—

(a) burnt at industrial and trade premises that have—

(i) a resource consent for the discharge produced; and

(ii) emission control equipment that is designed and operated to minimise emissions of dioxins and other toxics from the process; or

(b) part of a building that is burnt for the purpose of training firefighters.

10 Burning of oil

(1) The burning of oil in the open air is prohibited.

(2) Subclause (1) does not apply if—

(a) the burning is for creating special smoke and fire effects for the purposes of producing films; or

(b) the burning is for the purpose of training firefighters; or

(c) *[Revoked]*

(d) the burning is—

(i) done by means of a flare; and

(ii) for the purpose of undertaking health and safety procedures in the petroleum exploration and production industry or the petrochemical industry; and

(iii) expressly allowed by a resource consent.

(3) For the avoidance of doubt, subclause (1) does not apply if a discharge from the burning of oil is directed to the open air by a stack, chimney, or exhaust pipe (for example, emissions from a motor vehicle).

Offsets

17 Certain applications must be declined unless other PM10 discharges reduced

(1) A consent authority must decline an application for a resource consent (the **proposed consent**) to discharge PM_{10} if the discharge to be expressly allowed by the consent would be likely, at any time, to increase the concentration of PM10 (calculated as a 24-hour mean under Schedule 1) by more than 2.5 micrograms per cubic metre in any part of a polluted airshed other than the site on which the consent would be exercised.

(2) However, subclause (1) does not apply if—

(a) the proposed consent is for the same activity on the same site as another resource consent (the **existing consent**) held by the applicant when the application was made; and

(b) the amount and rate of PM_{10} discharge to be expressly allowed by the proposed consent are the same as or less than under the existing consent;

and

(c) discharges would occur under the proposed consent only when discharges no longer occur under the existing consent.

(3) Subclause (1) also does not apply if—

(a) the consent authority is satisfied that the applicant can reduce the PM_{10} discharged from another source or sources into each polluted airshed to which subclause (1) applies by the same or a greater amount than the amount likely to be discharged into the relevant airshed by the discharge to be expressly allowed by the proposed consent; and

(b) the consent authority, if it intends to grant the proposed consent, includes conditions in the consent that require the reduction or reductions to take effect within 12 months after the consent is granted and to then be effective for the remaining duration of the consent.

Contaminants

20 Resource consents for discharge of carbon monoxide, oxides of nitrogen, and volatile organic compounds

(1) A consent authority must decline an application for a resource consent to discharge carbon monoxide into air if the discharge to be expressly allowed by the resource consent—

(a) is likely, at any time, to cause the concentration of that gas in the airshed to breach its ambient air quality standard; and

(b) is likely to be a principal source of that gas in the airshed.

(2) A consent authority must decline an application for a resource consent to discharge oxides of nitrogen or volatile organic compounds into air if the discharge to be expressly allowed by the resource consent—

(a) is likely, at any time, to cause the concentration of nitrogen dioxide or ozone in the airshed to breach its ambient air quality standard; and

(b) is likely to be a principal source of oxides of nitrogen or volatile organic compounds in the airshed.

(3) In this regulation, volatile organic compound—

(a) means a hydrocarbon based compound with a vapour pressure greater than 2 millimetres of mercury (0.27 kilopascals) at a temperature of 25℃; but

(b) does not include methane.

21 Resource consents for discharge of sulphur dioxide

A consent authority must decline an application for a resource consent to discharge sulphur dioxide into air if the discharge to be expressly allowed by the resource consent is likely, at any time, to cause the concentration of sulphur dioxide in the airshed to breach its ambient air quality standard.

Domestic burners

22 Discharge from woodburners installed on certain properties after 1 September 2005 prohibited

(1) The discharge of particles to air from a woodburner installed after 1 September 2005 in a building on a property with an allotment size of less than 2 hectares is prohibited.

(2) Subclause (1) does not apply if the discharge from the wood-burner complies with—

(a) the design standard in regulation 23; and

(b) the thermal efficiency standard in regulation 24.

23 Design standard

(1) The design standard for a woodburner is a discharge of less than 1.5 gram of particles for each kilogram of dry wood burnt.

(2) The discharge must be measured in accordance with—

(a) the method specified in Australian/New Zealand Standard AS/NZS 4013:2014, Domestic solid fuel burning appliances—Method for determination of flue gas emission; or

(b) for a woodburner excluded from that method, another method that is functionally equivalent.

24 Thermal efficiency standard

(1) The thermal efficiency standard for a woodburner—

(a) is the ratio of useable heat energy output to energy input (thermal efficiency);

and

(b) must be not less than 65%.

(2) The thermal efficiency must be calculated in accordance with—

(a) the method specified in Australian/New Zealand Standard AS/NZS 4012:2014, Domestic solid fuel burning appliances—Method for determination of power output and efficiency; or

(b) for a woodburner excluded from that method, another method that is functionally equivalent.

24A Discharge from certain open fires prohibited

(1) A regional council must give public notice the first time that the PM10 standard is breached in an airshed in its region on or after 1 September 2011.

(2) The public notice must—

(a) state that subclauses (3) and (4) of this regulation will prohibit the discharge of particles from domestic solid-fuel burning open fires installed in the relevant area on or after a certain date (the date of the ban); and

(b) specify as the date of the ban the day that is 12 months after the day of the breach; and

(c) specify the airshed whose area the notice applies to; and

(d) be given at least 6 months before the date of the ban; and

(e) be given in accordance with the Act.

(3) Subclause (4) applies to a domestic solid-fuel burning open fire that is installed in the area of an airshed specified in a notice under subclause (2) on or after the date of the ban specified in the notice.

(4) The discharge of particles into any airshed from the open fire is prohibited.

Appendix 7 – Regional Policy Statement

This appendix contains the provisions of the Bay of Plenty Regional Policy Statement 2014 relevant to the Plan Change and referenced throughout the report.

Air Quality

Objective

Objective 1 – The adverse effects of odours, chemical emissions and particulates are avoided, remedied or mitigated so as to protect people and the environment.

Policies

Policy AQ 1A – Discouraging reverse sensitivity associated with odours, chemicals and particulates.

Actively discourage:

(a) Locating new sensitive activities near activities that discharge offensive and objectionable odours, chemical emissions of particulates; and

(b) Locating new activities that discharge offensive and objectionable odours, chemical emissions or particulates near sensitive activities

Implemented by methods 3, 6, 24.

Policy AQ 2A – Managing adverse effects from the discharge of odours, chemicals, and particulates.

Protect people's health and the amenity values of neighbouring areas from discharges of offensive and objectionable odours, chemical emissions and particulates

Policy AQ 3A – Managing adverse effects of fine particulate contamination.

Manage activities that generate fine particulate contamination within airsheds.

Methods

Method 2 – Regional plan implementation – regional plans shall give effect to policy AQ 2A, AQ 3A.

Method 3 – Policy 1A shall be given effect to when preparing, changing, varying or reviewing a regional plan or a district plan, and had regard to when considering a resource consent or notice of requirement.

Coastal Environment

Objective 2

Preservation, restoration and where appropriate, enhancement of the natural character and ecological functioning of the coastal environment.

Policy CE 6B: Protecting indigenous biodiversity.

Use the criteria in Policy 11 of the NZCPS to identify and protect areas of indigenous biological diversity in the coastal environment requiring protection under that policy.

Policy CE 9B: Safeguarding the life-supporting capacity of coastal ecosystems.

Safeguard the life-supporting capacity of coastal and marine ecosystems by maintaining or enhancing:

(a) Any area within the inter-tidal or sub-tidal zone that contains unique, rare, distinctive or representative marine and avian species or habitats;

(b) Areas used by marine mammals as breeding, feeding or haul-out sites;

(c) Habitats in the coastal environment that are important during the vulnerable life stages of indigenous species or any life stage of species listed as threatened or at risk by the Department of Conservation;

(d) Any areas that contain indigenous coastal ecosystems and habitats that are particularly vulnerable to modification – such as estuaries, lagoons, coastal wetlands, dunelands, rocky reef systems and salt marshes;

(e) The integrity, functioning and resilience of physical and ecological processes; and

(f) Promoting water quality in the coastal marine area that sustains healthy aquatic ecosystems.

Policy CE 10B: Managing adverse effects of land-based activities in the coastal environment on marine water quality

Manage adverse effects, including cumulative effects, from land based activities in the coastal environment on marine water quality by:

(a) Requiring that subdivision, use and development does not result in a significant contribution to sedimentation in the coastal marine area or other water bodies within the coastal environment;

(b) Minimising the creation of impervious surface areas;

(c) Minimising contaminants in stormwater that discharges into water or onto land that may enter water, including discharges to existing and new stormwater infrastructure.

(d) Minimising the risk of releasing contaminants and avoiding releasing discharges from contaminated land;

(e) Adopting water-sensitive design and management principles;

(f) Adopting on-site management techniques that will improve the quality of stormwater and/or wastewater prior to discharge;

(g) Establishing, replacing, retaining and/or enhancing riparian and catchment vegetation for the purpose of promoting setbacks and ecological buffer areas around wetland areas; and

(h) Assessing treatment alternatives for discharges and adopting the best practicable option for treatment.

Policy CE 14B: Providing for ports

Recognise the national and regional significance of the Port of Tauranga and the need for it to be located within the coastal environment by:

(a) Safeguarding the capacity and efficiency of:

  (i) Current port operations;

  (ii) Activities that have a functional need to be located in and around the port;

  (iii) The strategic road, rail and sea routes to the port; and

(b) Providing as appropriate, in the regional coastal plan, for future port operations and capacity; and

(c) Having regard to potential adverse effects on the environment, providing for the need to maintain shipping channels and to renew/replace structures as part of ongoing maintenance; and

Avoiding activities in areas that may compromise port operations.

Integrated resource management

Objectives

Objective 10 – Cumulative effects of existing and new activities are appropriately managed.

Objective 11 – An integrated approach to resource management issues is adopted by resource users and decision makers.

Policies

Policy IR 1B – Applying a precautionary approach to managing natural and physical resources.

Apply a precautionary approach to the management of natural and physical resources, where there is scientific uncertainty and a threat of serious or irreversible adverse effects on the resource and the built environment

Policy IR 5B – Assessing cumulative effects.

Give regard to the cumulative effects of a proposed activity in contributing to:

(a) Incremental degradation of values of sites identified as having high natural character

(b) Incremental degradation of matters of significance to Māori including cultural effects

(c) Incremental degradation of scenic values, amenity, open space, recreation and the general use and enjoyment by the public.

(d) Effects on the function, efficiency and safety of infrastructure; and Social and economic well-being.

Iwi resource management

Objective 17 – The mauri of water, land, air, and geothermal resources is safeguarded and where it is degraded, where appropriate, it is enhanced over time

Policy IW 5B – Adverse effects on matters of significance to Māori

When considering proposals that may adversely affect any matter of significance to Māori recognise and provide for avoiding, remedying or mitigating adverse effects on:

(a) The exercise of kaitiakitanga;

(b) Mauri, particularly in relation to fresh, geothermal and coastal waters, land and air;

(c) Mahinga kai and areas of natural resources used for customary purposes;

(d) Places sites and areas with significant spiritual or cultural historic heritage value to tāngata whenua; and

(e) Existing and zoned marae or papakāinga land

Appendix 8 – Regional Air Plan policies

This appendix contains the policies and relevant methods of the Operative Bay of Plenty Regional Air Plan 2003.

Policies

Policy 1(a) Significant adverse effects of discharges of contaminants into air should be avoided.

Policy 1(b) Adverse effects of discharges into air of contaminants that cannot be practicably avoided should be remedied or mitigated.

Policy 2 When the effects of discharges of contaminants into air are not adequately understood or are unknown, the discharges should be avoided, and if the discharges cannot reasonably be avoided, they should be monitored so that the effects become known, understood and effectively managed.

Policy 3 Discharges into air of contaminants identified as hazardous air pollutants or carcinogens (Schedule 3 – *Hazardous Air Pollutants*) are to be avoided, or where avoidance is not possible, the quantity of discharge is to be reduced using best management practice to acceptable levels, which are relevant national or international standards or guidelines.

Policy 4 Promotion of the use of the best practicable option approach including the efficient use of resources e.g. raw materials and energy, whenever it is the most efficient and effective means of preventing or minimising adverse effects on air quality.

Policy 5 Separation of new activities from existing activities when the activities are incompatible due to sensitivity or reverse sensitivity, to the discharge of contaminants into air.

Policy 6 Disposal and storage of waste should be undertaken in a manner that avoids, remedies or mitigates adverse effects on air quality.

Policy 7 Encouragement of other organisations to meet their management responsibilities to reduce the adverse effects on air quality.

Policy 8 Cumulative and/or synergistic effects of discharges into air are to be considered when assessing the environmental effects of activities.

Policy 9 Encourage the development of land use and transport network design to assist in the promotion of energy efficiency and the reduction of discharges of contaminants into air.

Policy 10 Research and development by Environment Bay of Plenty of a comprehensive information database on actual or potential effects of discharges into air.

Policy 11 Adverse effects on air quality that occur as a result of insufficient public awareness are to be reduced.

Policy 12 Provide for the involvement of tangata whenua as kaitiaki (guardians) in the management of the mauri of air.

Relevant Methods

Land Use Planning

Environment Bay of Plenty will:

Method 29 Make submissions as appropriate on all draft and proposed district plans, advocating the separation of activities likely to be incompatible due to sensitivity or reverse sensitivity to the discharge into air.

Method 30 Make comments or submissions as appropriate on subdivision or land use consent applications received from district councils for comment, advocating the separation of activities likely to be incompatible due to sensitivity or reverse sensitivity to the discharge into air.

District/City Councils will:

Method 33 Use provisions in district plans to separate new activities likely to be incompatible due to sensitivity or reverse sensitivity to the discharge of contaminants into air.

Method 34 Consider potential incompatibilities due to sensitivity or reverse sensitivity to the discharge of contaminants into air, when considering applications for subdivision or land use consents.

Appendix 9 – Rotorua Lakes Council Air Quality Control Bylaw

This appendix contains the relevant definitions from Part Two, and parts three and four from the Rotorua Lakes Council Air Quality Control Bylaw 2017.

PART TWO: INTERPRETATION

In this Bylaw, unless the context otherwise requires:

"Coal burner:" means a solid fuel burner designed to burn coal, which has the following design features:

(a) under fuel combustion air supplies with separate controls

(b) grate in the base of the firebox

(c) ash pan under the grate.

"Dwelling house" means any building, whether permanent or temporary, that is occupied, or is intended to be occupied, in whole or in part, as a residence; and includes any structure or outdoor living area that is accessory to, and used wholly or principally for the purposes of, the residence, but does not include the land upon which the residence is sited.

"Emission rate" means the amount of particles (in grams) discharged from a solid fuel burner for each kilogram of dry wood burnt. The discharge must be measured in accordance with:

(a) the method specified in Australian/New Zealand Standard AS/NZS 4013:2014, Domestic solid fuel burning appliances – Method for determination of flue gas emission; or

(b) for a woodburner excluded from that method, another method that is functionally equivalent.

"I**ndoor open fire"** means an appliance or a structure in a dwelling house or building that can burn solid fuel but cannot effectively control the rate of air supply to the combustion zone. It includes a fireplace that has a cover or doors that cannot effectively control the rate of air supply to the combustion chamber, but excludes any solid fuel burner where the firebox is enclosed with a regulated supply of air to the fire.

"Inoperable" in relation to an indoor open fire means an indoor open fire where at least one of the following actions has rendered the indoor open fire permanently incapable of use:

(a) the firebricks and masonry have been removed,

(b) the chimney has been permanently blocked off,

(c) the indoor open fire has been permanently boarded over,

(d) an alternative heating appliance (not including solid fuel burners) has been permanently installed into the fireplace

"Multifuel burner" means a solid fuel burner designed to burn wood and/or coal, which has the following design features:

(a) fuel combustion air supplies with separate controls

(b) grate in the base of the firebox

(c) ash pan under the grate.

“Non-complying solid fuel burner” means:

(a) any woodburner installed before 1 September 2005 OR

(b) any coal burner, or multifuel burner, OR

(c) any solid fuel burner with an emission rate greater than 1.5g/kg and a thermal efficiency less than 65%.

“Pellet burner” means any solid fuel burning appliance that burns manufactured pellets of compressed wood sawdust, and where the pellets and air are mechanically delivered to an enclosed combustion chamber at a controlled rate. Excludes woodburners, coal burners and multifuel burners.

“Replace or Replaced” in relation to solid fuel burners means the complete physical removal (taking out, taking away or cause to be no longer present) of the solid fuel burner from the dwelling house or building and installation of a new solid fuel burner that complies with this Bylaw.

“Remove or Removed” in relation to the removal of solid fuel burners means the complete physical removal (taking out, taking away or cause to be no longer present) of the solid fuel burner from the dwelling house or building.

"Rotorua airshed" means the area of Rotorua specified by the Minister for the Environment as a separate airshed, by notice in the *New Zealand Gazette*

“Solid Fuel” means a solid substance that releases useable energy when burnt and includes wood, coal and its derivatives, and manufactured fuel pellets.

“Solid Fuel Burner” means a small-scale solid fuel burning appliance, where combustion of the solid fuel occurs within a firebox, and where there may be a regulated supply of air to the fire. It includes (but is not limited to) indoor open fires, freestanding or built in woodburners, pellet burners, potbelly stoves coal ranges, coal burners, chip heaters, water heaters or central heating units, multifuel burners, and similar appliances. It excludes small-scale domestic devices for smoking food, any portable unflued heaters fueled by gas, alcohol or other liquid fuels, gas hobs or gas ranges used for cooking, and any fuel burning appliance installed in a boat, caravan or motor home.

“Space Heater” means a domestic appliance designed for use within a building to generate warmth for human comfort. It includes solid fuel burners with water heating capabilities as a secondary purpose and appliances designed to heat water for space heating (for example via radiators). It excludes cooking fires, ranges, and chip heaters where the primary purpose of the fire is to cook or heat water.

“Thermal efficiency” means the ratio of useable heat energy output to energy input. The thermal efficiency must be calculated in accordance with:

(a) the method specified in Australian/New Zealand Standard AS/NZS 4012:2014, Domestic solid fuel burning appliances – Method for determination of power output and efficiency; or

(b) for a woodburner excluded from that method, another method that is functionally equivalent.

“Transfer of ownership” does not include:

(a) a transaction in which a person who was a registered proprietor of the dwelling house at the date this Bylaw comes into force who remains or becomes a registered proprietor (whether or not the only registered proprietor) of that dwelling house after the transfer; or

(b) a transaction in which the transferee is a trustee of a trust and one or more of the transferors is a beneficiary of that same trust.

"Woodburner" means a type of domestic solid fuel burner that burns wood, where combustion of wood occurs within a firebox, and where there is a regulated supply of air to the fire. It excludes indoor open fires, pellet burners, coal burners, multifuel burners, and also excludes cooking fires, ranges, and chip heaters where the primary purpose of the fire is to cook or heat water

PART THREE: RESTRICTIONS ON SOLID FUEL BURNERS

3.1 SOLID FUEL BURNER CHANGE REQUIRED AT POINT OF SALE

3.1.1 Any indoor open fire not permitted under 4.1.1 must be rendered inoperable and any other non-complying solid fuel burner situated in a dwelling house or building must be replaced or removed by the vendor, before a registered transfer of ownership of the dwelling house in which the non-complying solid fuel burner is located takes place.

3.1.2 Vendors affected by 3.1.1 must provide the Council with written/photographic evidence of compliance with 3.1.1, within 3 days following the registered transfer of ownership of the dwelling house or building in which the non-complying solid fuel burner was located.

3.2 RESTRICTION ON INSTALLATION OF SOLID FUEL BURNERS

3.2.1 The installation of any:

(a) solid fuel burner, or

(b) multi-fuel burner, or

(c) coal burner

is not permitted in any dwelling house or building after the date of commencement of this Bylaw except where the installation is of a pellet burner or woodburner with an emission rate equal to or less than 0.6g/kg and a thermal efficiency of no less than 65%, or where 3.2.2 applies.

3.2.2 Where the installation is of a woodburner that replaced a coal burner, multifuel burner, or a woodburner used primarily as a space heater, in a dwelling house or building, the woodburner must have an emission rate equal to or less than 0.6 g/kg and a thermal efficiency of no less than 65%.

PART FOUR: BAN ON DISCHARGES FROM INDOOR OPEN FIRES

4.1 INDOOR OPEN FIRES

4.1.1 No person shall discharge contaminants into the air from any indoor open fire except:

(a) from industrial or trade premises where the open fire is used exclusively for the smoking and cooking of food for wholesale or retail sale, or

(b) where the indoor open fire is located within a building which has been entered onto the Heritage List by Heritage NZ.

Appendix 10 – New Zealand Coastal Policy Statement

The New Zealand Coastal Policy Statement 2010 (NZCPS) contains objectives and policies relevant to activities in the coastal marine area. The following are relevant to this report:

- **Objective 3** requires Regional Council to take into account the principles of the Treaty of Waitangi, recognise the role of tangata whenua as kaitiaki and provide for their involvement in management of the coastal environment.

- **Objective 4** requires maintenance and enhancement of the public open space qualities and recreational opportunities of the coastal environment.

- **Objective 6** enables people to provide for their social, economic, and cultural well-being and health and safety through use of the coastal environment recognising a number of factors including that the protection of the values of the coastal environment does not preclude use and development in appropriate places and within appropriate limits.

- **Policy 1** recognises that the coastal environment includes a number of features including islands, coastal marine area, coastal vegetation, and built facilities including infrastructure.

- **Policy 3** adopts a precautionary approach towards activities whose effects on the coastal environment are uncertain or unknown but potentially significantly adverse.

- **Policy 4** provides for the integrated management of natural and physical resources in the coastal environment and particular consideration of situations where public use and enjoyment of public space in the coastal environment is affected, or is likely to be affected.

- **Policy 23** requires operators of ports to take all practicable steps to avoid contamination of coastal ecosystems and habitats that is more than minor.

Appendix 11 – Proposed Regional Coastal Environment Plan

Relevant objectives and policies from the Proposed Regional Coastal Environment Plan referred to in the report are included here.

Objective 1 Achieve integrated management of the coastal environment by:

(a) Providing a consistent, efficient and integrated management framework

(b) Adopting a whole of catchment approach to management of the coastal environment

(c) Recognising and managing the effects of land uses and freshwater-based activities (including discharges) on the coastal marine area

(d) Enabling kaitiakitanga

(e) Planning for and managing

(i) Cumulative effects

(ii) The effects of climate change

(a) Promoting the sustainable management of the Bay of Plenty coastal fisheries and

(b) Providing for the future urban growth management areas identified in Appendix E of the RPS without compromising other regionally significant values of the coastal environment

Objective 12 The active involvement of tangata whenua in management of the coastal environment when activities may affect their interests and values.

Objective 14 The protection of those taonga, sites, areas, features, resources or attributes of the coastal environment (including the Coastal Marine Area) which are either of significance or special value to tangata whenua (where these are known).

Objective 16 Where appropriate, cultural health indicators are used that recognise and express Māori values, and tangata whenua are involved in monitoring the state of the coastal environment and impacts of consented activities

Objective 17 Appropriate mitigation or remediation is undertaken when activities have an adverse effect on the mauri of the coastal environment, areas of cultural significance to tangata whenua or the relationship of tangata whenua and their customs and traditions with the coastal environment.

Objective 48 The current operational needs of the Port of Tauranga are provided for as a matter of priority while avoiding, remedying or mitigating the effects of those activities on cultural values and the environment.

Policy IW 1 Proposals which may affect the relationship of Māori and their culture and traditions must recognise and provide for:

(a) Traditional Māori uses, practices and customary activities relating to natural and physical resources of the coastal environment such as mahinga kai, mahinga mataitai, wahi tapu, ngā toka taonga, tauranga waka, taunga ika and taiapure in accordance with tikanga Māori.

(b) The role and mana of tangata whenu as kaitiaki of the region's coastal environment and the practical demonstratons of kaitiakitanga

(c) The right of tangata whenua to express their own preferences and exhibit matauranga Māori in coastal waters and

(d) Areas of significant cultural value identified in Schedule 6 and other areas or sites of significant cultural value identified by Statutory Acknowledgments, iwi and hapū resource management plans or by evidence produced by tangata whenua and substantiated by Pūkenga, kuia and/or kaumatua and

(e) The importance of Māori cultural and heritage values through methods such as historic heritage, landscape and cultural impact assessments.

Policy CD 1 Discharges to the coastal marine area must

(a) Avoid significant adverse effects, including cumulative effects, on aquatic life, habitats, feeding grounds, kaimoana (including shellfish gathering), ecosystmes, contact recreation and amenity values in the coastal marine area after reasonable mixing

(b) Minimise adverse effects on the life-supporting capacity of water within the mixing zone

(c) Avoid the discharge of persistent toxic contaminans into the environment, and where avoidance cannot be practically achieved, the adverse effects of such discharges must be mitigated or remedied

(d) Avoid, remedy or mitigate adverse effects on the stability of the coastal environment, including localised erosion and scour resulting from the discharge

(e) Maintain or enhance the physical characteristics of receiving waters (including salinity) that contribute to their life-supporting capacity, including their ability to support indigenous flora and fauna and kaimoana beds and

(f) Be of a quality that has particular regard to

(iii) The sensitivity of the receiving environment

(iv) The capacity of the receiving environment to assimilate contaminants and

(v) The nature of the contaminants to be discharged, the concentration of contaminants needed to achieve the required water quality in the receiving environment, and the risks if that concentration of contaminants is exceeded.

Policy PZ 5 Provide for activities that are consistent with the purpose of the Port Zone, which is to

(a) Enable efficient use of existing port area, so that the regional community may meet its social and economic needs

(b) Concentrate major new structural development in an area already modified, so that development is guided away from other coastal areas of higher natural character, natural landscape, recreational value and cultural value

(c) Minimise potential conflict between port activities or port related activities and other activities and

(d) Enable efficient and ongoing storage of vessels in the Tauranga Bridge Marina

Activities that will significantly conflict with the achievement of the purpose or compromise Port operations should be avoided.

Appendix 12 – Other key legislation

Relevant objectives, policies, and regulations from other key legislation referred to in the report are included here.

Ozone Layer Protection Regulations 1996

Prepared under the Ozone Layer Protection Act 1996

3 Prohibition on importation of certain bulk controlled substances

Subject to regulation 4, the importation into New Zealand of any bulk CFC, halon, carbon tetrachloride, methyl chloroform, HBFC, HCFC, or bromochloromethane is hereby prohibited.

5 Conditional prohibition on importation of methyl bromide

(1) The importation into New Zealand of methyl bromide is prohibited.

(2) Despite subclause (1), methyl bromide may be imported into New Zealand if it is imported—

(a) from a party or a complying country; and

(b) under the authority of a quarantine and pre-shipment permit granted under regulation 7.

7 Quarantine and pre-shipment permits

(1) A wholesaler may apply to the EPA in the approved form for a permit to import methyl bromide for quarantine or pre-shipment applications.

(2) Any such application shall specify—

(a) the quantity of methyl bromide that is to be imported; and

(b) any other information which the EPA may require to ensure that the methyl bromide is to be used for a legitimate quarantine or pre-shipment application.

(3) Any wholesaler may apply for a permit to import methyl bromide necessary to replace any legally imported methyl bromide which has been used for legitimate quarantine and pre-shipment applications.

(4) Any such application shall specify—

(a) the amount of methyl bromide that was used for legitimate quarantine and pre-shipment applications; and

(b) any other information which the EPA may require to ensure that that methyl bromide was used for those purposes; and

(c) the quantity of methyl bromide that is to be imported.

National Policy Statement on Urban Development Capacity 2016

Objectives

OA1: Effective and efficient urban environments that enable people and communities and future generations to provide for their social, economic, cultural and environmental wellbeing.

OC1: Planning decisions, practices and methods that enable urban development which provides for the social, economic, cultural and environmental wellbeing of people and communities and future generations in the short, medium and long-term.

OD1: Urban environments where land use, development, development infrastructure and other infrastructure are integrated with each other.

Policies

PB1: Local authorities shall, on at least a three-yearly basis, carry out a housing and business development capacity assessment that:

a) Estimates the demand for dwellings, including the demand for different types of dwellings, locations and price points, and the supply of development capacity to meet that demand, in the short, medium and long-terms; and

b) Estimates the demand for the different types and locations of business land and floor area for businesses, and the supply of development capacity to meet that demand, in the short, medium and long-terms; and

c) Assesses interactions between housing and business activities, and their impacts on each other.

Resource Management (National Environmental Standard for Electricity Transmission Activities) 2009.

4 Regulations apply only to certain activities relating to existing transmission lines

(1) These regulations apply only to an activity that relates to the operation, maintenance, upgrading, relocation, or removal of an existing transmission line, including any of the following activities that relate to those things:

(a) a construction activity:

(b) a use of land or occupation of the coastal marine area (within the meanings of use and occupy given by section 2(1) of the Act):

(c) an activity relating to an access track to an existing transmission line:

(d) undergrounding an existing transmission line.

(2) However, these regulations do not apply to—

(a) the construction or use of a bridge or culvert to access an existing transmission line; or

(b) the control of the use of land for the purpose of the prevention or mitigation of any adverse effects of the storage, use, disposal, or transportation of hazardous substances; or

(c) the refuelling of a vehicle or equipment; or

(d) the use of land as a landing area for helicopters; or

(e) an activity carried out in relation to an electricity substation; or

(f) earthworks to the extent that they are subject to a regional rule.

25 Permitted activities

(1) Blasting a transmission line support structure of an existing transmission line, or preparing the structure to receive protective coatings, is a permitted activity if all of the applicable conditions in subclauses (3) to (9) are complied with.

(2) Applying protective coatings to a transmission line support structure of an existing transmission line is a permitted activity if the condition in subclause (10) is complied with.

Conditions

(3) Blasting must not be done within 50 metres of a water body or the coastal marine area.

(4) Blasting must not be done—

(a) within 50 metres of a public road; or

(b) within 100 metres of an occupied building.

(5) Abrasive material used in abrasive blasting must contain no more than 5% free silica by dry weight.

(6) Waste and debris resulting from abrasive blasting must be removed from the site of the blasting to the extent practicable.

(7) Dry abrasive blasting—

(a) must be done no more than 1 metre above ground level; and

(b) may be done only if covers or screens are used to mitigate the effects of any contaminants discharged by the blasting.

(8) If abrasive blasting is done on a tower coated with lead-based paint, the waste and debris (including abrasive material) resulting from the blasting must be captured and removed by using geotextile material of a filter quality or by any equivalent method.

(9) The following substances must not be used for surface preparation: paint strippers (unless used on a solvent rag to degrease a surface), fungicides, acids, alkalis, sodium hypochlorite, or any other oxidising agent.

(10) Protective coatings must be applied—

(a) by hand; or

(b) by pressurised spray used no more than 1 metre above ground level.

26 Controlled activities

(1) Blasting a transmission line support structure of an existing transmission line, or preparing the structure to receive protective coatings, is a controlled activity if—

(a) it is not done over a water body or the coastal marine area; and

(b) the applicable conditions in regulation 25(4) and (7) are complied with; and

(c) 1 or both of the following apply:

(i) it is done within 50 metres of a water body or the coastal marine area:

(ii) 1 or more of the conditions in regulation 25(5), (6), (8), and (9) are breached.

(2) Applying protective coatings to a transmission line support structure of an existing transmission line is a controlled activity if the condition in regulation 25(10) is breached.

Matters over which control reserved

(3) Control is reserved over the following matters in relation to a controlled activity under this regulation:

(a) the effects on water quality and ecologically-sensitive receiving environments; and

(b) the effects on occupied buildings; and

(c) the risk of contamination of soil; and

(d) the effects on health.

27 Restricted discretionary activities

(1) Blasting a transmission line support structure of an existing transmission line, or preparing the structure to receive protective coatings, is a restricted discretionary activity if—

(a) it is done over a water body or the coastal marine area; or

(b) 1 or both of the conditions in regulation 25(4) and (7) are breached.

Matters to which discretion restricted

(2) Discretion is restricted to the following matters in relation to a restricted discretionary activity under this regulation:

(a) the effects on water quality and ecologically-sensitive receiving environments; and

(b) the effects on occupied buildings and use of public roads; and

(c) the risk of contamination of soil; and

(d) the effects on health.

39 Discretionary activities

An activity to which these regulations apply (under regulation 4) is a discretionary activity if it is not described in these regulations as a permitted activity, controlled activity, restricted discretionary activity, or non-complying activity.

Resource Management (Marine Pollution) Regulations 1998

15 Discharges made as part of normal operations of ship or offshore installation

Any person may discharge, in the coastal marine area, a contaminant that is incidental to, or derived from, or generated during, the operations listed in Schedule 4 as the normal operations of a ship or offshore installation, except a contaminant that is garbage and for which no exception is provided in regulation 13A.

16 Regional rules or resource consents for discharges

No rule may be included in any regional coastal plan, or proposed regional coastal plan, nor any resource consent granted relating to a discharge to which regulations 9, 10, 12, 13, 14, and 15 apply.

Schedule 4 Normal operations of ship or offshore installation

1 Ship propulsion.

2 Heat exchange systems, including engine cooling systems, air conditioning, refrigeration, and condensers.

3 Stormwater drainage from systems and scuppers, except from those areas used for the storage of any harmful substance.

4 The use of washing facilities in the accommodation areas producing greywater from showers, handbasins, baths, galleys, dishwashers, and laundries but does not include use of any dispensary, sick bay, or other medical premises.

5 The cleaning of the ship or offshore installation, except for the exterior of the hull below the load line or parts of the ship used for carrying cargo.

6 The incineration of waste or other matter generated from a ship or offshore installation.

7 Firefighting.

8 The operation of a weapon system on any ship of the New Zealand Defence Force