BAY OF PLENTY REGIONAL COUNCIL

Review of the Agrichemical Spray Rules

Final Report

August 2011
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EXECUTIVE SUMMARY

This report considers the provisions in the Bay of Plenty Regional Air Plan relating to the discharge of agrichemicals and evaluates their effectiveness at managing the adverse effects resulting from agrichemical spraying activities.

Rules 10 – 13 of the Regional Air Plan deal with discharges from agrichemical spraying and provide for these activities to be undertaken as a permitted activity, subject to compliance with a number of conditions. These conditions ensure the adverse effects of agrichemical spraying are managed by requiring that spray applicators are appropriately qualified, potentially affected neighbours are notified and there are no harmful effects beyond the property boundary.

The assessment addresses a series of questions regarding the effectiveness of the current provisions and whether the rules are working as intended. In order to help identify the key issues an Evaluation Group was established to provide a range of perspectives on agrichemical spraying. Interviews with the group members as well as Regional Council staff provided a broad picture of the problem areas. This was supplemented with an analysis of the Regional Council’s complaints database.

The assessment indicates that, in general, the current approach appears to be reasonably successful. Discussions with the Evaluation Group and analysis of the complaints database have identified a number of problem areas, however, which should be further investigated and addressed.

The most significant issues identified relate to notification. This is evident in the high proportion of complaints received by the Regional Council that concern inadequate or lack of notification of neighbours that spraying is proposed. Spray drift is another significant area of concern. A range of other issues have been identified with the way the current rules work in practice.

Most of the issues can be addressed through rewording conditions to provide greater clarity, reduce the potential for misinterpretation and assist enforcement. Several issues are challenging and require further investigation to identify solutions. Spraying on public land, such as roadside areas is one such issue that presents a number of problems. Recognising and providing for the differing sensitivities of land uses to the effects of agrichemicals is another area that needs to be addressed through changes to the current conditions.

A plan change process will be the primary method of addressing the identified issues and would be most efficiently progressed in conjunction with another plan change or as part of a full plan review process. Increased use of non-regulatory methods such as education and advocacy is recommended to improve the awareness and level of understanding of the requirements.
1.0 INTRODUCTION

1.1 PURPOSE

Agrichemicals are used by horticulturalists, farmers, local authorities and contractors in the Bay of Plenty Region to control plant pests and weeds and diseases.

The Bay of Plenty Regional Air Plan (Air Plan’) contains objectives, policies and rules that provide for the control of agrichemical discharges. Rules 10 to 13 of the Air Plan (the “spray rules”) allow agrichemical spraying to occur as a permitted activity provided that a number of conditions are met. These conditions relate to appropriate notification, compliance with NZS8409:1999, relevant certification and training requirements for applicators and a duty to avoid adverse effects beyond the property boundary.

However, during the application of agrichemicals, spray droplets can drift beyond the intended target area to non-target receptors including water, plants, animals and property. This can be due to weather conditions, the chosen application method or the landscape. In some instances, off-target spray drift can be harmful to human and animal health, sensitive crops and property.

Concerns have also been raised about the lack of or poor notification by applicators about when spraying is to occur.

In addressing these concerns, the Bay of Plenty Regional Council (‘Regional Council’ or ‘BOPRC’) has engaged Harrison Grierson to assess the current agrichemical spray rules of the Air Plan to determine whether they are working as intended and achieving the policies and objectives of the Plan.

Specifically, these are Rules 10 to 13 of the Air Plan which are set out in full in Appendix 1. Rule 9 which concerns liquid waste is excluded from this assessment.

1.2 ISSUES

Complaints records, anecdotal evidence and discussion with Regional Council staff indicate that the agrichemical spray rules may not be working as intended.

There are four main issues that have been identified by the Regional Council:

1. Sprayers consider that the conditions of the rules are excessive and onerous, making it difficult to comply in many situations.

2. Neighbouring properties often complain to the council that they have received inadequate notification of spraying (if any) and/or that spray drift/dust has entered their property.
3. The rules can be difficult for the public and council staff to interpret.

4. Council officers find the rules difficult to enforce.

1.3 TASK

The purpose of this project is to determine whether the abovementioned issues are significant and widespread enough to require some form of action. This investigation will address the following questions:

- Do the spray rules reduce adverse effects of discharging agrichemicals to air?
- Are the conditions excessive or not restricted enough?
- Can the public/sprayers understand the rules and conditions?
- Do those carrying out spraying clearly and easily understand what is required to comply with the conditions of the rules?
- Are the rules protecting the rights of neighbouring property owners?
- Are the rules straightforward for council staff to interpret and enforce?
- Do the spray rules achieve the policies and objectives of the Air Plan?

1.4 METHODOLOGY

This project has been divided into two phases (a full methodology is attached as Appendix 2). The first phase focused on accurately defining the problem and it involved:

- Reviewing of all relevant background information on agrichemical spraying in the Region including the Regional Council's complaints database.
- Surveying industry groups, Regional Council staff and interested parties using questionnaires and interviews. Collectively these parties were referred to as the Evaluation Group.
- Analysing the survey results and assessing the current provisions in the plan to define the problems (if any) with the current rules.

The above matters were considered in the Phase 1 report entitled 'Problem Definition', which was submitted to the Regional Council in May 2011.

Phase 2 of the project built on the findings from Phase 1 and involved:
Further analysis of the feedback against the agrichemical rule provisions.

The development of initial options for improvement and an assessment of the costs and benefits of each option.

Recommendations (if any) for change.

This report covers both phases of the assessment and is the key output for the project.

2.0  THE AGRICHEMICAL SPRAY RULES

2.1  BAY OF PLENTY REGIONAL AIR PLAN

The Regional Air Plan controls the discharge of contaminants into air for the whole of the Bay of Plenty region, including the coastal marine area. The focus of the Plan is to:

- Maintain, and where practical enhance, air quality.
- Ensure that adverse effects on air quality are avoided, remedied or mitigated.
- Enable activities with minor effects on the Region’s air quality to operate with fewer regulative controls.
- Provide a basis for consistent action by Bay of Plenty Regional Council staff and other regulatory agencies including enforcement action.
- Monitor existing air quality to determine whether new activities will affect the local air resource.

2.2  ISSUES, OBJECTIVES, POLICIES AND METHODS RELEVANT TO AGRICHEMICAL SPRAYING

The Air Plan contains issues, objectives and policies and methods to implement the objectives and policies that are relevant to agrichemical spraying.

2.2.1  Issues

Issue 5 in the Regional Air Plan identifies that:

*The discharge of agrichemicals into air particularly on to non-target areas beyond the boundary of the subject property may adversely affect the...*
environment, crops, human health, amenity values, cultural values, and the maori of natural and physical resources.

2.2.2 Objectives

Issue 5 is to be addressed through Objectives 1, 2, 3 and 4. These 'general' four objectives aim to manage the discharge of contaminants into air and to protect the region's ambient air quality from adverse effects and to enable people and communities to provide for their well-being.

<table>
<thead>
<tr>
<th>Objective</th>
<th>Policy and Rules</th>
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<tr>
<td>1. Maintain and protect high air quality in the Bay of Plenty region and in instances or areas where air quality is degraded, to enhance it by specifically addressing discharges into air of gases, particulates, chemicals, agrichemicals, combustion and odour.</td>
<td>Policies: 1, 2, 4, 7 and 8 Rules: 10, 11, 12 and 13</td>
</tr>
<tr>
<td>2. Avoid, remedy or mitigate the adverse effects of all discharges of contaminants into air on the environment which includes the effects on: ecosystems, human health and safety, crops and livestock, amenity values, cultural values, the maori of natural and physical resources and the global environment.</td>
<td>Policies: 1, 2, 4, 5, 7 and 8 Rules: 10, 11, 12 and 13</td>
</tr>
<tr>
<td>3. The community achieves a high level of awareness of the adverse effects on the environment of discharges of contaminants into air.</td>
<td>Policies: 2, and 7 Rules: 10, 11, 12 and 13</td>
</tr>
<tr>
<td>4. Provide for activities that have predictable and minor effects on the environment as permitted activities subject to compliance with conditions designed to ensure that the effects are avoided, remedied or mitigated.</td>
<td>Policies: Rules: 10, 11, 12 and 13</td>
</tr>
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</table>

2.2.3 Policies

The relevant policies to implement the objectives in relation to agrichemical spraying aim to:

- Avoid and where unavoidable, remedy or mitigate the adverse effects of agrichemical spraying using the best practicable option (Policies 1 and 4).

- Separate incompatible activities to manage sensitivity or reverse sensitivity effects (Policy 5).

- Encourage other organisations to meet their management responsibilities (Policy 7).
- Consider cumulative effects in assessing the effects of agrichemical spraying (Policy 8).

The policies are achieved using a variety of methods, which are discussed in the following sub-sections.

### 2.2.4 Rules

Rules 10 to 13 provide for agrichemical spraying as a permitted activity where certain standards are met. These standards pertain to:

- Applicators holding appropriate certification (i.e. GROWSAFE®).
- A requirement to spray in accordance with NZS 8409:1999 – Code of Practice for the Management of Agrichemicals.
- Notification.
- Avoiding harmful concentrations of agrichemicals discharging beyond the boundary of the subject property or into water.

The parameters associated with these conditions vary depending on the method of agrichemical application (i.e. aerial, non-motorised hand-held or other techniques).

Where the discharge of contaminants into air from agrichemical spraying cannot comply with the conditions set out in Rules 10 to 13 the activity requires resource consent as a discretionary activity (Rule 19(z)).

### 2.2.5 Other Methods

Along with rules, the Regional Air Plan provides for the following methods to achieve the objectives and policies that are relevant to agrichemical spraying:

#### Education

- The provision of information of the appropriate use of agrichemicals to ground based application contractors and operators and domestic users and by promoting of the GROWSAFE® training system (or equivalent) (Method 5).

#### Advocacy

- Regional Council to advocate research into the effects on health of community exposure to agrichemicals (Method 16).
- Regional Council to support initiatives aimed at better targeting and more efficient use of agrichemicals (Method 17).
• Regional Council to support the development of industry codes of practice which seek to avoid, remedy or mitigate adverse effects on air quality (Method 23).

• Regional Council to encourage organisations to meet their air quality targets (Method 25).

• Regional Council to encourage district councils to use provisions in their plans to separate new activities that are likely to be incompatible due to reverse sensitivity to the discharge of contaminants to air and to consider such issues when determining applications for subdivision and land use consent (Methods 30, 31 and 32).

Air Monitoring

• Regional Council to develop and maintain a compliance monitoring programme for permitted activities (Method 36).

2.3 RESOURCE CONSENTS

As noted in section 2.2.4 above, where an activity does not meet one or more of the permitted activity conditions in Rules 10 – 13 a resource consent is required.

There are no known instances where a resource consent has been sought to spray agrichemicals.

3.0 ASSESSMENT OF AGRICHEMICAL SPRAY RULES EFFECTIVENESS

Phase 1 of this project involved gaining a better understanding of the type of issues associated with agrichemical spraying in the region. This was undertaken in three parts as follows:

• Analysis of Regional Council’s complaints database;

• Interviews with key Regional Council staff members; and

• Interviews with Evaluation Group members.

The investigation was aimed at answering the key questions outlined in section 1.3 of this report.

3.1 REGIONAL COUNCIL COMPLAINTS DATABASE

The Regional Council’s Pollution Prevention Team is tasked with monitoring and ensuring compliance with the agrichemical spray rules. Complaints related to
agricultural spraying are recorded in a complaints database. An overview of the complaints process is provided in **Appendix 4**.

While there were limitations in the ability to extract useful information from the database, it provided a good overview of the key issues which are summarised in sub-sections 3.1.1 to 3.1.3 below.

The complaints reviewed as part of this assessment were recorded between January 2009 and December 2010 and provide a representative sample of the nature of the complaints received by the Regional Council in relation to agricultural spraying.

### 3.1.1 Timing of Complaints

The majority of complaints are received in August. This is primarily due to Hydrogen Cyanamide (Hi-Cane®) an agricultural chemical used by kiwifruit orchardists to promote budbreak which is typically applied at this time of the year.

There was a spike in complaints in November 2010. This is most likely due to the discovery of a bacterial disease called *Pseudomonas syringae pv actinidiae* (PSA) in a number of kiwifruit orchards in Te Puke. A spraying programme was initiated to attempt to prevent it spreading throughout the region.

### 3.1.2 Location of Complaints

The majority of agricultural spraying complaints relate to agricultural spraying in the Katikati (21 complaints), Te Puke (23 complaints) and Te Puna (22 complaints) areas. A large number of kiwifruit and avocado orchards are located in these three areas.

### 3.1.3 Type of Offence

The key offences for which a complaint was made to the Regional Council relate to inadequate (or lack of) notification to adjoining properties that spraying was going to occur, or the adverse effects of agricultural spray drift.

The complaints made related to both aerial and ground application methods.

### 3.2 PERSPECTIVES ON EFFECTIVENESS OF AGRICHEMICAL SPRAY RULES

To further our understanding of the key issues a series of interviews were undertaken with Regional Council staff and Evaluation Group members. The Evaluation Group comprised of relevant industry groups, spray contractors and other interested parties. A full list of the members is provided in **Appendix 5**.

All participants were asked their perspectives about:

- Awareness of the Regional Air Plan agrichemical rules.
- GROWSAFE®.
- Notification.
- Signage.
- Terms and definitions.

The outcome of these interviews provided a clear indication that there are issues with the spray rules that need addressing. **Appendix 6** contains an analysis of the survey and interview findings from this process.

There are mixed views on the success of the current spray rules in the Regional Air Plan. Although the interviewees represented a variety of viewpoints, there were a number of areas where the perceived issues across all parties were similar.

### 4.0 QUESTIONS

As noted in Section 1.3 above, the investigation was aimed at addressing the following questions:

- Do the spray rules reduce adverse effects of discharging agrichemicals to air?
- Are the conditions excessive or not restricted enough?
- Can the public/sprayers understand the rules and conditions?
- Do those carrying our spraying clearly and easily understand what is required to comply with the conditions of the rules?
- Are the rules protecting the rights of neighbouring property owners?
- Are the rules straightforward for council staff to interpret and enforce?
- Do the spray rules achieve the policies and objectives of the Air Plan?

These questions are considered in detail in the following sections.

### 4.1 DO THE SPRAY RULES REDUCE ADVERSE EFFECTS OF DISCHARGING AGRICHEMICALS TO AIR?

The Regional Air Plan aims to reduce the adverse effects of discharging agrichemicals through the requirement to comply with the permitted activity conditions listed in Rules 10 to 13 of the plan. These conditions are discussed in the following sections.
The specific requirements of these conditions vary depending on the method of agrichemical application (i.e. aerial, non-motorised hand-held or other techniques).

4.1.1 Applicators must be suitably qualified

Members of the Evaluation Group generally supported the requirement for agrichemical applicators to hold a current GROWSAFE® Certificate. This was due to the fact that such certification ensured that certificate holders had a theoretical and practical understanding of agrichemicals including their safe application and potential effects. There was, however, general consensus that the programme could be improved (i.e. tailoring courses to crops and separating pastoral farming from orchards).

A key concern with the GROWSAFE® Certification programmes related to the content and delivery of the courses. Sprayers and industry organisations noted that the content varied depending primarily on the course instructors and any current contentious issues.

It is worthwhile noting that a GROWSAFE® Introductory Certificate is required by orchardists and growers to comply with both the New Zealand GAP and GLOBAL GAP quality assurance programmes. The use of agrichemicals on orchards by a person who does not hold a current GROWSAFE® certificate can result in penalties being handed down by the respective industry organisation. For example, in some cases the AIC may revoke a grower’s export licence for up to two years.

4.1.2 Adherence with NZS 8409:2004

The agrichemical rules require applicators to ensure that agrichemical spraying is undertaken in accordance with NZS 8409:1999 (‘Standard’).

NZS 8409:1999 has since been revised and superseded by NZS 8409:2004. The key changes relate to the application of the new Hazardous Substances and New Organisms (‘HSNO’) Regulations and include the provision of new information on emergency preparedness and the sale of agrichemicals.

The majority of the members of the Evaluation Group supported the Standard and agreed that applicators should spray agrichemicals in accordance with the Standard.

Many considered that there was no need to reference the entire Standard in the Regional Air Plan. Instead, only the relevant sections of the Standard should be referenced.
One member stated that the terminology and definitions used in the Regional Air Plan should be better aligned with the Standard to ensure certainty for agrichemical applicators.

4.1.3 Notification

The lack of notification or poor notification of the occupiers of adjoining properties was identified as one of the key issues by participants. It was also one of the key reasons for a complaint being made to the Regional Council in terms of agrichemical spraying.

Most participants did not consider that there were any serious deficits with the actual requirement to notify persons prior to spraying. Rather the participants raised concerns as to whether or not appropriate notification was occurring in practice. The following discussion is divided into four sections based on the requirements of the notification rules:

- Who should be notified?
- When should the occupiers of the adjoining properties be notified?
- Spraying on land that adjoins a public road or place.
- Spraying on public land

**Who should be notified?**

In terms of identifying *who* should be notified, both the industry and spray evaluation group members considered that the notification requirements were generally appropriate. The interested parties group considered that the distance should be greater (i.e. doubled).

The key points raised through the investigation were:

- When determining who is an adjoining property, where do you measure the distance from?
- Whether or not all occupiers within 50m (and 200m for aerial applications) should be notified regardless of whether they adjoin the property where the agrichemical is being used.

**When should the occupiers of adjoining properties be notified?**

All respondents considered that the requirement for notification to be undertaken 'no earlier than 20 days' in advance of agrichemical spraying was impractical.
There was confusion as to whether spraying could occur at any time within the 20 days, or if spraying had to occur on the 20th day after notification.

With regard to the first interpretation, the rule was considered to create too much uncertainty for adjoining property owners as to when spraying would actually occur.

For sprayers, the second interpretation was problematic as it is not possible to determine 20 days in advance that the weather conditions would be suitable for agrichemical spraying.

There were mixed responses by the participants in regard to the requirement that notification should be undertaken no later than 12 hours before the agrichemical use. However, most participants stated that notification should occur between 12 and 24 hours before the agrichemical spraying occurred.

Agrichemical sprayers noted that they would not know until the evening prior to spraying if they would spray the following day. This is due primarily to variable weather conditions in the region.

It was suggested that applicators should also notify the occupiers of adjoining properties if spraying was cancelled or postponed.

All participants agreed that the amount of (if any is required) notification is generally dependent on the occupier of the adjoining property. Most participants considered that the amount and form of notification is a matter that should be discussed and determined on a case-by-case basis with the occupier of the adjoining property on a regular basis (i.e. annually).

Participants considered that poor relationships and inadequate and irregular communication between an orchardist/farmer and the occupier of the adjoining property was the key cause for contention in terms of agrichemical spraying.

The provision of better information to neighbours about agrichemical spraying at the outset of the ‘season’ or year including the chemicals that could be used could also serve to alleviate concerns and reduce the number of complaints.

**Spraying on land that adjoins public land**

All participants agreed that the signage requirements for spraying agrichemicals on land which adjoins a public road or place were generally appropriate, but could be improved. For example, it was suggested that signs should be placed at the start and end of that part of the property boundary where the agrichemical was being used as well as at the property. One participant also suggested that the signs be placed at a set distance prior to the start of the property boundary.
With regard to the content and size of signs, some participants suggested that these could be standardised to provide both applicators and the public with greater certainty.

With regard to the length of time that signs should be erected for, participants considered that this should depend on the agrichemical being applied. Furthermore, it was noted that the requirement for the ‘applicator’ to remove the signage could be problematic in some instances.

Industry organisations are also developing and promoting ‘better’ signage methods. For example, in 2010 NZKGI initiated a ‘yellow-bag’ scheme in which a plastic yellow bag was placed over the mailbox of that property where Hi-cane® was being applied to alert passersby. While there are both benefits and detriments to this scheme it highlights industry’s willingness to proactively address issues around notification.

**Spraying on public land (including roads and railways)**

As with other notification requirements, the general approach is supported by the evaluation group. However, in practice there are a number of challenges in providing effective notification for this type of spraying. One of the main difficulties is in providing adequate signage as a typical roadside spraying operation might involve several kilometres of roadside. Another issue is that there is no limit on how early notification can be undertaken.

**4.1.4 Avoiding the discharge of harmful concentrations beyond the boundary**

The term ‘harmful concentration’ is defined in the Regional Air Plan as meaning:

> (A) Concentration of contaminants that causes or is likely to cause injury to the health of humans or animals, or adversely affect water, soil or plants.

Approximately half of the participants considered that this definition was ‘clear and understandable’.

In terms of knowing whether or not a ‘harmful concentration’ has been received, it was noted that this would be dependent on the type of agrichemical used (i.e. fungicide, pesticide or herbicide).

Most participants considered that an investigation would need to be undertaken by Regional Council compliance staff to determine whether or not the spraying had resulted in a ‘harmful concentration’ of agrichemicals beyond the property boundary and the extent of its effect. Compliance staff have indicated that there is some difficulty in gathering evidence to determine whether the harmful concentration threshold has been met. This is a particular issue in terms of effects on human health.
4.2 ARE THE CONDITIONS EXCESSIVE OR NOT RESTRICTED ENOUGH?

The majority of participants considered that the requirements of the agrichemical rules were appropriate. However, they also considered that a number of amendments could be made to improve their effectiveness and application.

For industry organisations and sprayers, the rules are generally considered to be restrictive enough. These groups consider education to be the most effective method to increase the awareness of growers and farmers of their responsibilities and requirements around agrichemical use. This is considered to be a more effective approach than any significant amendments or further restrictions to the rules.

Most participants also considered that it was necessary to raise awareness of the realities of living in the countryside to those occupiers of adjoining properties and in particular those who reside on 'lifestyle' properties.

Amending the terminology and length of the rules would improve the level of understanding by those who are not planning professionals.

4.3 CAN THE PUBLIC/SPRAYERS UNDERSTAND THE RULES AND CONDITIONS?

In general, it is considered that awareness of the specific requirements of the agrichemical spray rules and conditions amongst growers and pastoral farmers is variable.

One of the key reasons for this is due to the average age of the grower or farmer being between 50 and 60 years (interview with AIC). In other regions throughout New Zealand, a lack of awareness is also due to language barriers (i.e. a burgeoning population of Asian growers) which may become more of an issue in the future.

To counter the above factors, industry organisations have developed resources and information and use alternative education methods to enhance the understanding and awareness amongst their growers/members. For example, horticulture industry organisations hold regular field days and provide information to members in the form of newsletters and factsheets.

The point that orchardists/farmers only needed to 'notify' the occupiers of adjoining properties and not obtain their 'written approval' was raised in several interviews.
4.4 DO THOSE CARRYING OUT SPRAYING CLEARLY AND EASILY UNDERSTAND WHAT IS REQUIRED TO COMPLY WITH THE CONDITIONS OF THE RULES?

In general, it is considered that the understanding of the specific requirements of the agrichemical spray rules and conditions amongst growers and pastoral farmers is variable.

Industry organisations such as AIC, NZKGI, Horticulture NZ and Zespri consider that their growers/members are made aware of the need to adhere to the rules through other requirements including industry self-regulation systems such as New Zealand GAP, Global GAP and Export Management Strategies all of which tend to be more stringent and have harsher penalties (i.e. loss of ability to export product).

The BOPRC-produced guidelines which outline the responsibilities of those applying agrichemicals are considered to be 'useful' although the content and format could be tailored and amended to specific industries or groups and their technical capabilities and level of understanding.

Agrichemical spray contractors have an active role to play in ensuring that their clients are made aware of the notification requirements in the Regional Air Plan.

4.5 ARE THE RULES PROTECTING THE RIGHTS OF NEIGHBOURING PROPERTY OWNERS?

The feedback in terms of this question varied significantly between industry organisations and sprayers and interested parties.

Industry organisations and sprayers generally considered that the agrichemical spray rules did protect the rights of neighbouring property owners. Furthermore, they generally considered that the conditions associated with the rules were restrictive enough. However, minor amendments could improve the workability and clarity of the rules.

Interested parties generally considered that the rules did not protect the rights of neighbouring property owners. A key reason for this viewpoint related to the actual distances that agrichemical sprays can drift and to their being no requirement in the Air Plan for applicators to have to clean up spray residues that extend beyond their property boundary.

4.6 ARE THE RULES STRAIGHTFORWARD FOR COUNCIL STAFF TO INTERPRET AND ENFORCE?

There were a number of general comments about the lack of enforcement action being taken by the Regional Council against those sprayers who did not comply
with the agrichemical rules. Almost all participants considered that the Regional Council should be more active in prosecuting serious or repeat offenders.

Industry organisations signalled a (continued) willingness to be informed by the Regional Council and involved in any subsequent processes when a complaint about agrichemical spraying was made against one of their growers/members.

Some participants raised questions over the enforceability of the rules and they considered that there were a number of reasons for a lack of action. Typically it was considered that the rules were difficult to ‘objectively’ interpret i.e. it is difficult to prove that a particular spraying activity had resulted in harmful concentration of agrichemicals beyond the boundary of the subject property due to time lags between the event and the manifestation of harm (i.e. up to six weeks).

4.7 DO THE SPRAY RULES ACHIEVE THE OBJECTIVES AND POLICIES OF THE AIR PLAN?

The objectives and policies of the Air Plan which are relevant to agrichemical spraying are attached as Appendix 3 to this Report.

The linkages provided in the Air Plan between the objectives, policies and methods are too general to identify the particular objectives and policies that each rule is intended to achieve. It is therefore difficult to analyse the effectiveness of the agrichemical spray rules in isolation from the other rules and methods in the Air Plan. To do this and to provide a comprehensive answer to this question, a full assessment of all implementation methods listed in the Air Plan would be necessary.

Notwithstanding this, the objectives and policies that have been linked to the agrichemical spray rules are discussed below.

4.7.1 Objectives

The relevant objectives seek to:

- To maintain and protect air quality (Objective 1)
- To avoid, remedy, or mitigate the effects of agrichemical spraying (Objective 2)
- Achieve a high level of community awareness of the adverse effects of spray discharges (Objective 3)
- To provide for activities with predictable and minor effects as a permitted activity subject to compliance with conditions that ensure the effects are avoided, remedied, or mitigated (Objective 4)
The agrichemical spray rules are based on the premise that agrichemical spraying activities will have predictable and minor effects on the environment if they are undertaken in compliance with specified conditions. The rules are primarily giving effect to Objective 4 and also contributing to meeting Objectives 1 and 2.

The spray rules have been linked to Objective 3, however education and advocacy regarding the adverse effects of spray discharges are the primary methods of achieving this objective. The requirement for applicators to hold appropriate qualifications is one means of raising awareness.

4.7.2 Policies

The relevant policies seek to:

- Avoid and where unavoidable, remedy or mitigate the adverse effects of agrichemical spraying using the best practicable option (Policies 1 & 4)

- Separate incompatible activities to manage sensitivity or reverse sensitivity effects (Policy 5)

- Encourage other organisations to meet their management responsibilities (Policy 7)

- Consider cumulative effects in assessing the effects of agrichemical spraying (Policy 8)

Policies 1 and 4 relate to avoiding, remedying and mitigating the adverse effects of agrichemical use. The question of whether the current rules achieve these policies has largely been answered by previous sections of this report.

Policy 5 is difficult to achieve through permitted activity rules. There is a potential opportunity for notification requirements to recognise sensitive sites thereby contributing to the achievement of this policy.

As discussed above, the spray rules are not the most appropriate method for achieving education and advocacy-focused policies, such as Policy 7.

The requirement to ensure spraying activities do not cause harmful concentrations to be discharged beyond the boundary enables the consideration of cumulative effects as required by Policy 8.

Overall, it is difficult to answer this question in a detailed manner as the objectives and policies are very general and the ability to measure their success is limited.

In a general sense the rules provide a framework for ensuring the adverse effects of agrichemical spraying are minimised. The comments provided by the
evaluation group and an analysis of the complaints received by BOPRC suggest that the overall framework is appropriate. The enforcement statistics do not indicate major problems with the effectiveness of the permitted activity conditions. A number of opportunities to improve and clarify aspects of the conditions have been identified. However, this is essentially refining the existing provisions rather than undertaking significant changes to the current approach.

5.0 KEY FINDINGS

Our key findings in regard to the effectiveness of the spray rules are summarised as follows:

- There is general support for all agrichemical spray applicators to be GROWSAFE® certified. However, there are concerns regarding the variability of the content of the course and instructors.

- There is a lack of readily identifiable alternative ‘equivalent’ courses.

- The Air Plan references NZS8409:1999 which has since been superseded by a 2004 version.

- NZS8409:1999 is written as a guideline and reference to all sections including those that are not applicable to the application of agrichemicals in the Air Plan is not necessary. It would be more appropriate to reference the specific provisions that are relevant to ensure clarity and certainty for plan users.

- The current notification requirements are one of the key issues of contention amongst industry, sprayers, interested parties and the Regional Council.

- The requirements for notification are generally considered reasonable. Amendments to how and when notification is to be given and to whom needs to be refined to reflect increases in knowledge and awareness about agrichemical sprays and spraying.

- The requirements around the provision of signage where spraying occurs on a property that adjoins a public space or place need to be altered to ensure consistent standards and requirements that achieve meaningful notification.

- There may be a need to include additional regulatory controls for agrichemical spraying which occurs in proximity to a ‘sensitive site’.

- The existing definitions of ‘harmful concentration’ and ‘adjoining property’ need to be clarified.
The current objective and policy framework in the Air Plan does not provide specific enough guidance in regard to the use of agrichemicals.

Simplification of, and amendments to the Regional Council’s complaints system and database are needed to ensure that information is gathered in a form that is useful and can be used to analyse and evaluate the effectiveness of the Air Plans.

6.0 APPROACHES IN OTHER REGIONS

As part of the assessment of the potential options to address the identified issues with the spray rules, a review of the approaches used by other regional councils was undertaken.

The following Regional Plans were reviewed:

- Taranaki Regional Air Quality Plan ('Taranaki Air Plan')
- Consolidated Regional Policy Statement, Regional Plan and Regional Coastal Plan for the Manawatu-Wanganui Region ('One Plan')
- Hawke's Bay Regional Resource Management Plan ('HBRMMP')

A detailed comparison of each regional council's approach is provided in Appendix 7. The key similarities and differences between the regions are outlined below.

6.1 OBJECTIVES AND POLICIES

In relation to agrichemicals, none of the three regional plans analysed provided a specific objective relating to agrichemical discharges.

Both the Taranaki Air Plan and the One Plan contain specific policies relating to agrichemical discharges.

6.2 AGRICHEMICAL SPRAY RULES

Agrichemical spraying is a permitted activity in all three regions subject to compliance with the relevant permitted activity standards, terms and conditions.

The rules contained in the Taranaki Air Plan distinguish between agrichemical discharges on productive land and discharges in public areas. The One Plan distinguishes between agrichemical discharges from hand-held appliances and all other agrichemical discharges. The rules contained in the HBRMMP distinguish between small-scale (i.e. hand-held) and wide-scale applications.
All three regions contain permitted activity standards relating to notification, appropriate qualifications and compliance with NZS8409:2004 (or part of). These are discussed further in section 6.3 below.

6.3 PERMITTED ACTIVITY CONDITIONS

6.3.1 NZS8409:2004 Management of Agrichemicals

Only parts of NZS8409:2004 are referenced in all three regional plans. Sections 2 and 5 are the key sections referenced. The Taranaki Air Plan and the HBRRMP also reference Section 6 of the Standard.

6.3.2 Manufacturers Requirements

All three plans require applicators to undertake spraying in accordance with the manufacturer's specifications.

6.3.3 Adverse Effects Beyond the Property Boundary

The Taranaki Air Plan and the HBRRMP contain specific provisions requiring applicators not to generate an adverse effect beyond the boundary of the target property.

6.3.4 Sensitive Sites

Provision is made in the Taranaki Air Plan and the One Plan for 'sensitive' sites/areas.

6.3.5 Certification

All three regional plans require applicators to hold the relevant GROWSAFE® Certification or be under the direct supervision of a person who does.

There are no references to 'equivalent' qualifications in any of the three regional plans.

6.3.6 Notification

The Taranaki Air Plan and the HBRRMP require notification to occur prior to the agrichemical spraying.

Taranaki Region – Private Land

Notification can be verbal or written and can be undertaken either as:

- General notice to be given to 'adjoining properties' at the start of the season. However, this does not preclude a request from the adjoining property to be notified prior to each individual application; or
Not less than two hours and not more than four weeks prior to spraying.

For ground applications, notification must be given to all occupied dwellinghouses, owners or occupiers of properties, sensitive crops or farming systems and places of public assembly within 30m of the area to be sprayed. For aerial applications, this distance is increased to 100m.

Notification must include information about the areas that are to be sprayed, the dates and times of spraying and any factors that will determine when spraying occurs; the agrichemicals that are to be used and the measures that will be adopted to minimise spray drift from the target area.

Taranaki Region – Public Land

Where spraying occurs on public land, the landowner, manager or contractor must give public notice of the intention to spray prior to carrying out the spraying. Public notice is to take place not less than four weeks and not more than six months prior to spraying.

Signs must be placed at points where the public commonly have entry to the area being sprayed and include the words ‘CAUTION – SPRAYED AREA’. The signs must remain in place until the re-entry period for that particular chemical has expired.

Where spraying occurs along the verges of roads, vehicles associated with the spraying must display signs stating ‘CAUTION – SPRAYING IN PROGRESS’.

Hawke's Bay Region – Private Land

In instances, where spraying occurs on any land within 50m of an adjacent property twice within any 12 month period and where spray drift cannot be avoided, a property spray plan is to be prepared at the beginning of the season. This plan shall be prepared in accordance with Appendix M4 of NZS8409:2004 and shall be available on request to the owner or occupier of any adjacent property.

Where an application is on private land, signs shall be used to clearly indicate the use of any agrichemicals within 10m of public land where there is a shelter belt or within 30m of public land where no shelter belt is provided.

Hawke's Bay Region – Public Land

Notification shall be given in newspapers or door-to-door advice to land occupiers adjacent to the intended application at the beginning of the spray season, not more than six months prior to application and in any case not less than one month prior to spraying.
6.3.7 Agrichemical Spraying in Water

The eradication, modification and control of unwanted aquatic plants are specifically provided for in the One Plan and the HBRRMP. For the Taranaki region, this activity is controlled through provisions in the Regional Freshwater Plan.

6.3.8 Agrichemical Spray Plans and Diaries

All three regional plans require that records are kept of agrichemical spraying activities (i.e. a Spray Diary).

The HBRRMP requires that the spray plan should be developed in accordance with Appendix M4 of NZS8409:2004.

6.3.9 Definitions

All three regional plans contain a definition of ‘agrichemical’ and ‘public land’. However, the length and content of the definitions varies between the regions.

‘Agrichemical spray drift’ is defined in the HBRRMP.

7.0 OPTIONS AND RECOMMENDATIONS

7.1 OPTIONS

Based on the discussion in sections 5 and 6 above, a number of options have been identified to address the issues raised. These options are set out in the table included as Appendix 8 along with an assessment of the costs and benefits of each option and the proposed implementation method.

The options deal with specific issues identified in relation to individual conditions, or parts of conditions, as well as more general changes to improve the overall effectiveness of the provisions of the plan in managing the effects of agrichemical spraying.

7.2 RECOMMENDATIONS

The analysis of a range of potential options has led to the development of a number of recommendations to address the identified issues with the current provisions. A number of the recommendations will require further detailed investigation and analysis prior to implementation and should therefore be treated as matters for consideration.

The recommendations are set out in the following sub-sections:
7.2.1 NZS8409:1999

The current references to NZS8409:1999 should be replaced with references to the specific sections in NZS8409:2004 that are relevant. Consideration should also be given to the way the standard is referenced in recognition of the fact that the standard is written as a set of guidelines and as such the language used can make enforcement difficult.

7.2.2 Notification

Notification is the single most contentious issue relating to agrichemical spraying. A number of recommendations have been put forward to address the issues raised regarding the current notification provisions and are outlined below. It is recognised, however, that there are a number challenges in balancing the need for neighbours to have accurate and timely advance notice of spraying with the spray applicators need to efficiently undertake their notification obligations and maintain the flexibility necessary to work around suitable weather conditions.

- The buffer distances referenced in the plan should be reviewed to determine whether they are relevant. This should include checking consistency with NZS8409:2004.

- The requirement to notify the “occupier of any adjoining property” should be amended to require notification of the occupiers of all dwellings within the specified buffer distance.

- The time period for notifying neighbours should be reviewed and in particular consideration should be given to narrowing the period within which notification is required.

- Promote the use of a variety of notification methods and reaching agreements with neighbours regarding notification expectations.

- Standardise the signage requirements for spraying on private and public land, particularly in terms of size and location of signs.

- Investigate possible improvements to the notification requirements for roadside spraying activities.

- Update guideline documents for agrichemical spraying and increase the use of education and advocacy as methods to improve the understanding of the requirements for undertaking agrichemical spraying activities targeting both neighbours and spray applicators.
7.2.3 Sensitive Sites

The current provisions do not give consideration to the sensitivity of adjoining land uses to the effects of agrichemical spraying. This results in a reliance on the “hazardous concentration” provision, which is difficult for spray applicators to determine and Regional Council officers to enforce. A more effective approach would be to identify specific requirements relating to spraying in the vicinity of sensitive sites. These provisions could include increased buffer distances and/or specific notification requirements. The term sensitive site would need to be clearly defined.

7.2.4 Certification

Further investigation is required to determine whether alternative courses to GROWSAFE® exist and, if so, what the equivalent qualifications would be.

The reference to the relevant GROWSAFE® certifications should be reviewed to ensure they are relevant and up to date.

In order to ensure a high level of compliance with the requirement to hold current qualifications it is recommended that the Regional Council work with training organisations to ensure training courses are well advertised and held regularly throughout the region.

7.2.5 Definitions

The definition of “harmful concentration” needs to be refined to ensure it can be clearly understood and measured. This may include providing a clear explanation of some of the terms used within the definition, for example “injury or harm to others”.

As discussed previously, “sensitive site” should be defined.

7.2.6 Complaints Database

The complaints database should be reviewed to enable it to assist in monitoring the effectiveness of the provisions controlling agrichemical spraying activities.

7.2.7 General Format, Layout, and Terminology

Potential opportunities to improve the overall way the plan is set out should be considered in order to ensure the provisions are straightforward and easily understood. Consistency in the use of terminology with NZS8409 may assist in this regard.
7.2.8 Objectives and Policies

Currently there is no specific policy relating to agrichemical spraying activities. Introducing such a policy would provide a clear linkage between the objectives and the rules and other methods. The linkages listed in the plan should also be refined.

7.3 IMPLEMENTATION

The assessment of the spray rules has determined a number of issues with the current provisions and as a result a variety of changes are recommended to address these issues. Implementing the majority of these changes will require a plan change to the Regional Air Plan. Overall, the assessment has not identified major shortcomings that require urgent attention. It would be appropriate to group the changes proposed to address the agrichemical spray provisions with any other changes that may be required to the Regional Air Plan if possible, rather than undertake a specific plan change process to amend the spray rules. Alternatively, a full review of the Air Plan will be due in 2013 and this will provide an opportunity to implement the recommendations of this report.

8.0 LIMITATIONS

8.1 GENERAL

This report is for the use by Bay of Plenty Regional Council only, and should not be used or relied upon by any other person or entity or for any other project.

This report has been prepared for the particular project described to us and its extent is limited to the scope of work agreed between the client and Harrison Grierson Consultants Limited. No responsibility is accepted by Harrison Grierson Consultants Limited or its directors, servants, agents, staff or employees for the accuracy of information provided by third parties and/or the use of any part of this report in any other context or for any other purposes.
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APPENDIX 1

Rules 10 - 13 and 19(z) of the Bay of Plenty Regional Air Plan (Agrichemical Spray Rules)
Rule 10  Permitted Activity – Use of agrichemicals for the eradication or management of organisms declared unwanted under Sections 143 and 144 of the Biosecurity Act 1993.

The discharge of agrichemical into air for the eradication or management of organisms declared unwanted under Sections 143 and 144 of the Biosecurity Act 1993 is a permitted activity provided the following conditions are complied with:

(a) Any contractor using or applying any agrichemical by ground based application methods shall hold a minimum of a current GROWSAFE® Registered Chemical Applicators Certificate or equivalent.

(b) Any person, other than any contractor provided for in (a) above, using or applying an agrichemical identified either on its product label, or in the First or Second Schedule of the Toxic Substances Regulations 1983 as containing a compound rated as either a:

"DANGEROUS POISON"; or

"DEADLY POISON",

shall hold a minimum of a current GROWSAFE® Introductory Certificate or equivalent.

(c) Any person, other than any contractor provided for in (a) above, using or applying an agrichemical identified on its product label as containing a compound rated as either a:

• "POISON"; or

• "CAUTION",

or is listed in the Third or Fourth Schedules to the Toxic Substances Regulations 1983 as a:

• "STANDARD POISON"; or

• a “HARMFUL SUBSTANCE”,

shall hold a minimum of a current GROWSAFE® Introductory Certificate or equivalent or be under the direct supervision of a person holding a current GROWSAFE® Applied Certificate or equivalent.

(d) The agrichemical must be used under the direction of the Department whose responsibilities are adversely affected by the unwanted organism or Environment Bay of Plenty where unwanted organisms are managed.

(e) There must be no harmful concentrations of agrichemical beyond the boundary of the subject property or into water.

(f) When ground based application methods are used the occupier of any adjoining properties must be notified of the agrichemical use. Notification must be no earlier than 20 days and no later than 12 hours before the
agricultural use unless agreement on an alternative manner of notification can be reached with the adjoining occupier.

(g) Agrichemical use from aircraft must be publicly notified not earlier than 20 days and no later than 12 hours before the agrichemical use.

(h) Notwithstanding the requirements of this rule any person applying agrichemicals from an aircraft shall comply with Rule 13 of this plan.

**Rule 11 Permitted Activity – Use of Agrichemicals – Non-Motorised Hand-held Application**

The discharge of contaminants into air from the non-motorised hand-held application of agrichemical is a permitted activity provided the following conditions are complied with:

(a) (i) Any contractor using or applying any agrichemical by ground based application methods shall, within twelve months of this plan becoming operative (15 December 2003), hold a current GROWSAFE® Registered Chemical Applicators Certificate or equivalent.

(ii) Any person using or applying agrichemicals for commercial purposes (other than a contractor provided for in (a)(i) above) when using or applying an agrichemical identified on its product label, or in the First or Second Schedule of the Toxic Substances Regulations 1983 as containing a compound rated as either a:

• "DANGEROUS POISON"; or

• "DEADLY POISON",

shall within twelve months of this plan becoming operative (15 December 2003), hold a minimum of a current GROWSAFE® Introductory Certificate or equivalent or be under the direct supervision of a person holding a current GROWSAFE® Introductory Certificate or equivalent.

(b) All persons discharging agrichemicals under this rule shall ensure that:

(i) The agrichemical is discharged in a manner that does not contravene any requirement specified in the manufacturer’s instructions.


(c) The agrichemical use must not result in any harmful concentration of agrichemical beyond the boundary of the subject property or into water.

**Note:** Extra care should be exercised when applying any phenoxy based herbicide. In particular, 2, 4-D butyl ester herbicide sprays have the potential to travel long distances through the air. Although
butyl ester herbicide has not been manufactured since 1997, existing stocks can still legally be applied. Further information on spray drift hazard is included in Appendix Y of NZS 8409: 1999 Code of Practice for the Management of Agrichemicals.

(d) Where agrichemical is applied on public land, public roads or railways, notification of that agrichemical use must comply with the requirements of Schedule 2.

**Rule 12**  
**Permitted Activity – Use of Agrichemicals from Aircraft**

The discharge of contaminants into air from the use of agrichemicals from aircraft is a permitted activity provided the following conditions are complied with:

(a) The discharge must not result in any harmful concentration of agrichemical beyond the boundary of the subject property or into water.

(b) The applicator must hold a minimum of a:

   (i) Pilot Chemical Rating (Civil Aviation Authority) (aerial application) and;

   (ii) GROWSAFE® Pilots Agrichemical Rating Certificate or equivalent.

(c) The agrichemical must be used in a manner complying with NZS 8409:1999 Code of Practice for the Management of Agrichemicals.

(d) The owner/occupier or agent must notify the occupier of any adjoining properties within 200m of that agrichemical use. If an agreed form of notification has not been reached, such as an annual spray or application plan and individual notification of certain chemicals to be used, notification must be no earlier than 20 days and no later than 12 hours before the agrichemical use. This condition does not apply to agrichemical use on public land or land used for road or rail purposes. The property owner or agent acting on behalf of the property owner must advise the aerial applicator that notification has occurred before the aerial application of any agrichemical is undertaken. Notification must include the following:

   (i) the site of proposed application;

   (ii) the date of proposed application;

   (iii) name and type of agrichemical to be applied;

   (iv) name, address, phone number and registration number of applicator.

**Note:** Extra care should be exercised when applying any phenoxy based herbicide. In particular, 2, 4-D butyl ester herbicide sprays have the potential to travel long distances through the air. Although butyl ester herbicide has not been manufactured since 1997, existing stocks can still legally be applied. Further information on spray drift hazard is included in Appendix Y of NZS 8409: 1999 Code of Practice for the Management of Agrichemicals.
(e) Where agrichemicals are applied to land adjoining public roads and places, signs must be placed on the road boundary 24 hours before the time of application and removed by the applicator when safe for re-entry. The signs must include the following information:

(i) The agrichemical used;

(ii) The time of application;

(iii) The time for safe re-entry;

(iv) The name and contact details of the applicator.

(f) The applicator must notify Environment Bay of Plenty immediately in the event of any discharge of agrichemical beyond the boundary of the subject property.

Rule 13

Permitted Activity – Use of Agrichemicals – Other Application Techniques (Excluding Non-Motorised Hand-held and Aerial Application)

The discharge of contaminants into air from the use of agrichemicals, excluding non-motorised hand-held or aerial application, is a permitted activity provided the following conditions are complied with:

(a) The discharge must not result in any harmful concentration of agrichemical beyond the boundary of the subject property or into water.

(b) (i) Any contractor using or applying any agrichemical by ground based application methods shall, within twelve months of this plan becoming operative (15 December 2003) hold a current GROWSAFE® Registered Chemical Applicators Certificate or equivalent.

(ii) Any person using or applying agrichemicals for commercial purposes (other than a contractor provided for in (b)(i) above) when using or applying an agrichemical identified on its product label, or in the First or Second Schedule of the Toxic Substances Regulations 1983 as containing a compound rated as either a:

"DANGEROUS POISON" or

"DEADLY POISON",

shall within twelve months of this plan becoming operative (15 December 2003) hold a minimum of a current GROWSAFE® Introductory Certificate or equivalent or, be under the direct supervision of a person holding a current GROWSAFE® Applied Certificate or equivalent.

(c) All persons discharging agrichemicals under this rule shall ensure that the agrichemical is used in a manner that complies with NZS 8409:1999 Code of Practice for the Management of Agrichemicals.

(d) The owner/occupier or agent must notify the occupier of any adjoining properties within 50m of that agrichemical use. Except that where agrichemicals are applied using a motorised boom, which meets the
following design conditions, notification is only required when the agrichemical application occurs within 10m of an adjoining property. The design conditions are:

(i) the liquid pressure through the boom is less than 3 bar;

(ii) the height of the discharge point on the boom is less than 1 metre from the ground;

(iii) the nozzles point down;

(iv) the nozzles are designed to create coarse droplets of greater than 250 microns in diameter.

If an agreed form of notification has not been reached, such as an annual spray or application plan and individual notification of certain chemicals to be used, notification must be no earlier than 20 days and no later than 12 hours before the agrichemical use. This condition does not apply to agrichemical use on public land, or land used for road or rail purposes (see Rule 13 condition (e)). Notification must include the following:

(v) the site of proposed application;

(vi) the date of proposed application;

(vii) name and type of agrichemical to be applied;

(viii) name, address and phone number of applicator.

**Note:** Extra care should be exercised when applying any phenoxy based herbicide. In particular, 2, 4-D butyl ester herbicide sprays have the potential to travel long distances through the air. Although butyl ester herbicide has not been manufactured since 1997, existing stocks can still legally be applied. Further information on spray drift hazard is included in Appendix Y of NZS 8409: 1999 Code of Practice for the Management of Agrichemicals.

(e) Where agrichemical is applied on public land, public roads, or railways, notification of that agrichemical use must comply with the requirements of Schedule 2.

(f) Where agrichemicals are applied to land adjoining public roads and places, signs must be placed on the road boundary 24 hours before the time of application and removed by the applicator when the land is safe for re-entry.

Where agrichemicals are applied using a boom the signs are only required when the application occurs within 6m of a public road or place, or if the boom does not meet the following design features:

(i) the liquid pressure through the boom is less than 3 bar;

(ii) the height of the discharge point on the boom is less than 1 metre from the ground;
(iii) the nozzles point down;

(iv) the nozzles are designed to create coarse droplets of greater than 250 microns in diameter.

The signs must include the following information:

(v) The agrichemical used;

(vi) The time of application;

(vii) The time for safe re-entry;

(viii) The name and contact details of the applicator.

**Note:** There are statutes that must be complied with when considering the use of agrichemicals. Compliance with the rules for the use of agrichemicals in the Bay of Plenty Regional Air Plan should not be construed as absolving users from complying with relevant statutes.

Environment Bay of Plenty strongly recommends that any person using or applying any agrichemical under this Rule, other than either a “dangerous poison” or a “deadly poison”, should hold a minimum of a current GROWSAFE® Introductory Certificate or equivalent or be under the direct supervision of a person holding a current GROWSAFE® Introductory Certificate or equivalent. Any person using or applying either a “dangerous poison” or a “deadly poison” must comply with the certification requirements of Rule 13(b).

**Rule 13**  
**Permitted Activity – Use of Agrichemicals – Other Application Techniques (Excluding Non-Motorised Hand-held and Aerial Application)**

The discharge of contaminants into air from the use of agrichemicals, excluding non-motorised hand-held or aerial application, is a permitted activity provided the following conditions are complied with:

(a) The discharge must not result in any harmful concentration of agrichemical beyond the boundary of the subject property or into water.

(b) (i) Any contractor using or applying any agrichemical by ground based application methods shall, within twelve months of this plan becoming operative (15 December 2003) hold a current GROWSAFE® Registered Chemical Applicators Certificate or equivalent.

**Rule 19**  
**Discretionary Activity – Specified Activity**

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.
APPENDIX 2

Project Methodology
OVERVIEW

To fulfil the project objectives we consider that the project has two main phases. The first being “problem definition” and the second phase “assessment and recommendations”.

PHASE 1: PROBLEM DEFINITION

Step 1  Project Inception

A meeting between the consultant and the Council project team will be held at the commencement of the project to clarify roles, communication protocols and finalise a project plan. This meeting will also be used to confirm the type and form of existing information that the Council has in regard to this matter and to confirm the extent of stakeholder consultation. Taking into account the project budget, an “evaluation group” methodology is likely to be the most pragmatic and effective means of obtaining feedback on this matter.

Step 2  Review Background Information

In addition to the inception meeting, which will provide a better understanding of the matter from the perspective of Council staff, a review of relevant background information will be undertaken.

Step 3  Quantitative and Qualitative Assessments

In addition to the “base information” available we consider that the robustness of the project would be greatly assisted by the analysis of Council’s database of spray-related complaints. To facilitate the project we would expect Council staff to be able to provide data manipulations to produce useable base data. This would be used to quantify the level of complaint, potentially to consider if there are locational trends and by examining the data, qualify the information outputs. Relying on numerical statistics alone is unlikely to provide an accurate representation of the issue. For example there may be one particular neighbourly dispute that has generated a multitude of complaints.

Step 4  Preparation of Evaluation Group Material

Following the inception meeting and information review, Harrison Grierson will prepare a questionnaire to be used for interviews with the evaluation group members. These questions will be forwarded to the Council project manager for approval. It is anticipated that the base questions in the tender document will provide a nucleus for the questionnaire. These questions will be focussed on thoroughly investigating concerns and identifying specific evidence about the scale of any issues regarding the spray rules.

For this process we envisage the evaluation group will involve a cross section of representatives of key stakeholders. It is anticipated that this would include industry representatives such as Horticulture NZ, Federated Farmers; community action groups; territorial authorities experienced with “spray issues” such as Western Bay of Plenty District Council and Bay of Plenty Regional Council. Depending on the number of interested parties, it may be necessary to select representatives who will provide a perspective that is likely to be consistent with the general view of similar parties.
During the preparation of this material, contact will also be made with the proposed evaluation group members to confirm their willingness to be involved in the project.

**Step 5  Consultation with the Evaluation Group**

Planners from Harrison Grierson’s Whakatane and Tauranga Offices will conduct individual interviews with the group members. Where resources and time allow these initial interviews will be face to face, otherwise they will be undertaken by way of phone conference. By carrying out interviews we are able to ensure that meaningful responses are obtained.

**Step 6  Preparation and Finalisation of Draft Phase One Report**

The information gathered from the background analysis and ‘ground-truthed’ with actual interviews will be summarised into a report, which will clearly identify the problem definition for phase 2. We anticipate that a meeting will be held with the Council project manager/team to review the draft report. This will then provide a firm basis to carry out Phase 2 of the project.

**PHASE TWO: ASSESSMENT AND RECOMMENDATIONS**

**Step 7  Phase 2 Inception Meeting**

The meeting undertaken in Step 6 will also serve as an “inception meeting” for Phase 2. This will ensure that there is a “level of comfort” with how the project is proceeding and to identify, based on Phase 1 feedback, the priority matters for assessment and investigation.

**Step 8  Option Development and Feedback**

Based on the findings in Phase 1, we will consider the feedback against the actual rules being used and will develop a series of initial options. This will include assessing approaches used in other regions and review of any relevant international initiatives. These options will be circulated to the evaluation group for their review and feedback.

Feedback from the group will be incorporated into the finalisation of the draft options, which will then be further discussed with the Council project team. Following this we will provide a draft report which will set out the methodology, results and conclusions. The report will include an evaluation of the various pros and cons of the respective options considered. This will conform to the requirement in the tender document (Output 1).

**Step 9  Option Refinement**

It is envisaged that the draft report and feedback will result in the need for further refinement of options and report details.

**Step 10  Preparation and Finalising Phase Two Report**

Having refined the report we would then proceed to prepare a final report which will be provided to the Council in both electronic and hard copy format (Output 2).
APPENDIX 3

Relevant Issues, Objectives, Polices and Methods for Agrichemical Spraying in the Bay of Plenty Regional Air Plan
Issue 5: The discharge of agrichemicals into air particularly on to non-target areas beyond the boundary of the subject property may adversely affect the environment, crops, human health, amenity values, cultural values, and the maori of natural and physical resources.

Explanation: An agrichemical is any substance, whether inorganic or organic, man-made or naturally occurring, modified or in its original state, that is used in any agriculture, horticulture or related activity, to eradicate, modify or control flora and fauna. For the purposes of this plan, it includes agricultural compounds.

Activities that use agrichemicals include:

- Horticulture;
- Agriculture;
- Forestry;
- Eradication or management of organisms declared unwanted under the Biosecurity Act 1993;
- Park, reserve (including road reserves) and garden maintenance.

OBJECTIVES

| Table 1: Relevant Regional Air Plan Objectives for Agrichemical Spraying |
|-------------------------------------------------|-----------------------------|
| **Objective 1** | Maintain and protect high air quality in the Bay of Plenty region and in instances or areas where air quality is degraded, to enhance it by specifically addressing discharges into air of gases, particulates, chemicals, agrichemicals, combustion and odour. | **Policy and Rules** Policies: 1, 2, 4, 7 and 8 Rules: 10, 11, 12 and 13 |
| **Objective 2** | Avoid, remedy or mitigate the adverse effects of all discharges of contaminants into air on the environment which includes the effects on: ecosystems, human health and safety, crops and livestock, amenity values, cultural values, the maori of natural and physical resources and the global environment. | **Policy and Rules** Policies: 1, 2, 4, 5, 7 and 8 Rules: 10, 11, 12 and 13 |
| **Objective 3** | The community achieves a high level of awareness of the adverse effects on the environment of discharges of contaminants into air. | **Policy and Rules** Policies: 2, and 7 Rules: 10, 11, 12 and 13 |
| **Objective 4** | Provide for activities that have predictable and minor effects on the environment as permitted activities subject to compliance with conditions designed to ensure that the effects are avoided, remedied or mitigated. | **Policy and Rules** Policies: Rules: 10, 11, 12 and 13 |
### Relevant Regional Air Plan Policies for Agrichemical Spraying

<table>
<thead>
<tr>
<th>Policies</th>
<th>Rules and Methods</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Policy 1(b)</strong></td>
<td>Adverse effects of discharges into air of contaminants that cannot be practicably avoided should be remedied or mitigated.</td>
</tr>
<tr>
<td><strong>Policy 2</strong></td>
<td>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.</td>
</tr>
<tr>
<td><strong>Policy 4</strong></td>
<td>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.</td>
</tr>
<tr>
<td><strong>Policy 5</strong></td>
<td>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.</td>
</tr>
<tr>
<td><strong>Policy 7</strong></td>
<td>Encouragement of other organisations to meet their management responsibilities to reduce the adverse effects on air quality.</td>
</tr>
<tr>
<td><strong>Policy 8</strong></td>
<td>Cumulative and/or synergistic effects of discharges into air are to be considered when assessing the environmental effects of activities.</td>
</tr>
</tbody>
</table>

### Relevant Methods

**Method 5**
Provide information on the appropriate use of agrichemicals to ground based application contractors and operators, and domestic users, and as appropriate promote the GROWSAFE® training system or equivalent.

**Method 15**
Advocate research into the effects on health of community exposure to agrichemicals.

**Method 16**
Support initiatives aimed at better targeting and more efficient use of agrichemicals, including the development of alternative methods and the adoption of integrated pest management systems.

**Method 22**
Actively promote the development of industry codes of practice in order to avoid, remedy or mitigate adverse effects on air quality from their operations. Where
industry codes of practice are developed and they involve environmental management practices that are relevant to environmental protection, Environment Bay of Plenty will consider the code of practice when processing resource consent applications.

**Method 24** Encourage other organisations to meet their air quality management responsibilities.

**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.

**Method 31** Provide information on discharges of contaminants to air requested by prospective property purchasers and encourage, where appropriate, district councils to provide any relevant air discharge information held by them on the subject property (e.g. Land Information Memorandum).

**Method 36** Develop by June 2000 and maintain a compliance monitoring programme for air discharge permits and permitted activities.
APPENDIX 4

Review and Analysis of BOPRC
Agrichemical Spraying Complaints
Database
ANALYSIS OF THE AGRICHEMICAL SPRAYING COMPLAINTS DATABASE

The Regional Council records all complaints relating to agrichemical spraying in a ‘Complaints Database’.

As part of Phase 1 assessment, Harrison Grierson reviewed and analysed those complaints regarding agrichemical spraying that were recorded between January 2009 and December 2010. Although there were limitations in the ability to extract useful information from the database, it provided a good overview of the key issues.

Below is a summary of the complaints process as well as an analysis of the database and the key findings.

• **Complaints Process**

  During core business hours (i.e. generally 8 am to 5 pm, Monday to Friday) complaints in relation to agrichemical spraying are received and managed by the Council’s Water Administration Team. The complaints are lodged directly into the database and then forwarded onto a Council Compliance Officer for action.

  Complaints which are made outside of core business hours are received and managed by security contractors. On-call Compliance Officers are alerted about a complaint through a paging system. The complaint is lodged in the database by administration staff on the next business day.

(2) **Review and Analysis of the Complaints Database**

The key aspects of the complaints database database to obtain a better understanding of the key issues regarding agrichemical spraying in the Region. The key aspects analysed included:

• The date the complaint was received

• Location of the complaint

• Type of offence

(i) **Date Complaint Received**

The following graph illustrates the number of agrichemical spraying-related complaints that the Regional Council received in 2009 and 2010.
Analysis:

Between the months of January to July complaints received by the Council average at four to five per month. The number of complaints at the end of each year (September to December) is generally higher than the earlier months of the year.

The majority of complaints are received in August. There were 19 complaints received by Council in August 2009 and 30 complaints received in August 2010. This is most likely due to Hydrogen Cyanamide (Hi-Cane®) an agrichemical used by kiwifruit orchardists to promote budbreak which is typically applied at this time of the year.

There was a spike in complaints in November 2010. This is most likely due to the discovery of a bacterial disease called *Pseudomonas syringae py actinidiae* (PSA) in a number of kiwifruit orchards in Te Puke. A spraying programme was initiated to attempt to prevent it spreading throughout the region.

(ii) Location of Complaint

The following graph illustrates the location of those complaints received by Regional Council in relation to agrichemical spraying in 2009 and 2010.
Location of Agrichemical Spraying Related Complaints (2009-2010)

Analysis:

The majority of agrichemical spraying complaints received by the Regional Council in 2009 and 2010 relate to agrichemical spraying in the Katikati (21 complaints), Te Puke (23 complaints) and Te Puna (22 complaints) areas. A large number of kiwifruit and avocado orchards are located in these three areas.

(iii) Type of Offence

The key offences for which a complaint was made to the Regional Council relate to inadequate or lack of notification to adjoining properties that spraying was going to occur or the adverse effects of agrichemical spray drift. However, it was difficult to ascertain the exact number of complaints that were made in relation to each type of offence. In some instances a single complaint related to multiple offences.

The complaints made related to both aerial and ground application methods.
APPENDIX 5

Evaluation Group Membership
EVALUATION GROUP

To provide different perspectives on the issues an "evaluation group" was formed. The group was broadly comprised of industry representatives, sprayers and interested parties as follows:

(a) Industry Group Members

- Avocado Industry Council of New Zealand
- Federated Farmers of New Zealand (Bay of Plenty and Whakatane Provinces)
- Horticulture New Zealand
- New Zealand Kiwifruit Growers Incorporated
- Zespri Group Limited

(b) Sprayers

- Oceania Helicopters Tauranga Limited
- Ranfurly Orchard Services Limited

(c) Interested Parties

- Spraywatch
- Spraywatchers
- Tania Davies
- Piririakau
APPENDIX 6

Summary of Key Findings from Interviews with Regional Council and Evaluation Group
OVERVIEW

As part of Phase 1, Harrison Grierson interviewed key Regional Council Staff and members of the Evaluation Group to ascertain their perceptions of the issues associated with the agrichemical spray rules.

The questions and topics covered in the interviews were:

- Agrichemical Spraying – General questions and application methods.
- Awareness and knowledge of the Regional Air Plan requirements for agrichemical spraying.
- GROWSAFE® Certification requirements in the Regional Air Plan.
- Notification requirements in the Regional Air Plan including methods of notification and signage.
- Complaints and enforcement.
- Terms and definitions.

An analysis and the findings of those interviews are provided below.

(a) Bay of Plenty Regional Council Staff

The staff interviewed from the Bay of Plenty Regional Council ranged from policy analysts, pollution prevention officers and senior level managers.

| Summary of Bay of Plenty Regional Council Responses to Interview Questions |
|--------------------------------------------------|-------------------------------------------------------------|
| **Topic**                                         | **Comments**                                                |
| Agrichemical Spraying - General                   | Vapour drift is considered to be an issue that is not adequately covered by the current agrichemical spray rules. It is noted that vapour drift is very hard to control. |
| Awareness of Regional Air Plan Agrichemical Rules | The distribution of information about the agrichemical spray rules is considered by Council to be the responsibility of both Council and industry organisations. Information could also be provided at the point of sale of agrichemicals. Some industry organisations have been effective at disseminating good information on agrichemical spraying. |
| GROWSAFE®                                       | A number of the BOPRC’s Pollution Prevention Officers have GROWSAFE® Certificates. In their experience, this qualification is widely held by applicators. It is not clear what an acceptable ‘equivalent’ course would be. The linkage to a specific qualification raises potential issues if the content of the course were to change. |
| **Methods of Notification** | The notification requirements are considered to be too ‘open’ and enable sprayers to simply tell neighbours that spraying will occur over a ‘range of dates’ to allow for suitable weather conditions. This has lead to uncertainty for neighbours who would like to be notified as precisely as possible when spraying is to occur.

If spraying is to be delayed, then neighbours should be re-notified of the revised schedule.

It is noted that the onus is on the property owner, occupier or agent to ensure that notification has occurred. It was suggested that it would be helpful if there was a form that could be completed by the person responsible for notification and provided to the applicator to confirm that this had occurred.

For properties that adjoin a public space and do not have a shelter belt along the length of this boundary, the notification setback distances should be greater (refer to Rule 13(f)). |
| --- | --- |
| **Determining who should be notified** | There is a need for ‘internally’ affected parties to be notified (i.e. those that live on the property where the agrichemical spraying is to occur) as these parties are not always part of the ‘farming operation’.

All properties within 50m (or 200m for aerial applications) should be notified regardless of whether or not they ‘adjoin’ the property where agrichemical spraying is being undertaken.

There should be a specific requirement to notify the occupiers or users of ‘sensitive sites’.

Rule 12(e) should refer to ‘road boundaries’ as opposed to ‘road boundary’ as often properties have multiple road boundaries. |
| **Signage** | There are no size requirements for signage in the Regional Air Plan. It was suggested that a generic format for signage would be useful. Signs should also be more specific in terms of the location of spraying and provide more warning.

Signage should include details about ‘safe re-entry’.

The onus is on the ‘applicator’ to remove the signage (Rule 12(e)). This should be altered to include owners, occupiers and agents as sometimes it is not practicable for the applicator to return to the site.

The requirements for signage should align with other similar regulations i.e. HSNO. |
<p>| <strong>NZS 8409:2004 Code of Practice for the Management of Agrichemicals</strong> | The 1999 Standard is out of date. There are useful sections within the 2004 Standard that should be referenced and/or included in the Air Plan. For example those sections that provide information on buffer zones, wind speeds/direction and shelter. |</p>
<table>
<thead>
<tr>
<th>Terms and Definitions</th>
<th>It is noted that this Standard is only a guideline and not that helpful in terms of enforcement.</th>
</tr>
</thead>
<tbody>
<tr>
<td>– ‘Harmful Concentration’</td>
<td>It is difficult for the Regional Council to obtain evidence that agrichemical use has resulted in an adverse effect on human health and safety and/or the environment. The definition needs to be improved and in particular there is a need to also define what is ‘injury or harm to others’.</td>
</tr>
<tr>
<td>Terms and Definitions</td>
<td>In conjunction with the requirement to notify sensitive sites (see above), the term ‘sensitive site’ should be defined in the Regional Air Plan.</td>
</tr>
<tr>
<td>– ‘Sensitive Site’</td>
<td>Complaints Process and Database</td>
</tr>
<tr>
<td>Enforcement Action</td>
<td>The decision as to whether or not enforcement action will occur is decided on a ‘case-by-case’ basis. One of the factors that is considered is the previous history of the offender. For notification non-compliances, generally an infringement notice is issued. It is unlikely that a prosecution would ensue.</td>
</tr>
<tr>
<td>Bay of Plenty Regional Water and Land Plan</td>
<td>There are some inconsistencies between the Air Plan and the Water and Land Plan with regard to discharges to water.</td>
</tr>
</tbody>
</table>

(B) Industry Organisations

Five industry organisation groups were interviewed as part of this process. They were the Avocado Industry Council of New Zealand (‘AIC’), Federated Farmers of New Zealand
('Federated Farmers'), Horticulture New Zealand ('Horticulture NZ'), the New Zealand Kiwifruit Growers Incorporated ('NZKGI') and Zespri Group Limited ('Zespri').

<table>
<thead>
<tr>
<th>Summary of Industry Responses to Interview Questions</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Topic</strong></td>
</tr>
<tr>
<td><strong>Agrichemical Spraying - General</strong></td>
</tr>
<tr>
<td><strong>Agrichemical Application Methods</strong></td>
</tr>
<tr>
<td><strong>Awareness of Regional Air Plan Agrichemical Rules</strong></td>
</tr>
<tr>
<td><strong>GROWSAFE®</strong></td>
</tr>
</tbody>
</table>


<table>
<thead>
<tr>
<th><strong>Awareness of the Notification Requirements in the Regional Plan</strong></th>
<th>The industry organisations considered that the level of awareness of the notification requirements in the Regional Plan were variable. However, for the horticulture organisations, it was considered that despite a perceived lack of awareness of the specific requirements of the rules, most growers/members are providing appropriate notification in accordance with industry guidelines which contain a requirement to comply with the relevant regional plan. It is considered that most growers/members adhere to the notification requirements.</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Methods of Notification</strong></td>
<td>Industry organisations tend to encourage and promote notification to occur no less than 12 hours before or greater than one week prior to the agrichemical application. Twenty days is considered too far in advance for the notification to be useful (i.e. weather conditions could change). The form of notification that a sprayer gives his neighbour will depend on the individual neighbour. All industry groups encourage their members/growers to discuss and tailor notification to each individual neighbour at the outset of the season/year.</td>
</tr>
<tr>
<td><strong>Determining who should be notified</strong></td>
<td>Industry considered that for ground-based application properties within 50m of the agrichemical spraying should be notified. AIC considered that it was ‘good practice’ to notify all adjoining properties regardless of the distance from the application. For aerial applications, 200m was considered to be an appropriate distance. In terms of where this distance would be measured from, most stated that it was from the boundary of the area that they were spraying i.e. paddock fence boundary.</td>
</tr>
<tr>
<td><strong>Signage</strong></td>
<td>Industry considered that the signage requirements where appropriate and encouraged and promoted growers/members to erect signage when spraying agrichemicals on their property. In many cases, industry promoted the erection of signage at the property gate and at either end of that part of the property that fronts the public place. Zespri have also been encouraging growers to place bright yellow plastic bags over the property’s mailbox when spraying Hi-cane®. The amount and type of signage would also be dependent on the property boundary (i.e. shelter along the road frontage or other physical or spatial barriers).</td>
</tr>
<tr>
<td>NZS 8409:2004 Code of Practice for the Management of Agrichemicals</td>
<td>All of the industry organisations support the Code of Practice. The standard is very broad and it was considered that only parts of the standard need to be referenced in the Air Plan rules. Horticulture NZ considered that the terminology, definitions, requirements and content of the Air Plan rules should better align with NZS 8409:2004 to ensure consistency and provide greater certainty to growers.</td>
</tr>
<tr>
<td>Complaints</td>
<td>The majority of complaints are considered to be in relation to poor or lack of notification and agrichemical spray drift. Industry generally considered that given the amount of agrichemical spraying that occurs every year there were very few complaints made. This is considered to be a result of industry’s efforts to increase members/growers awareness of the Regional Plan requirements and the promotion of ‘good practice’. It was noted that despite the efforts that have been made by industry and will continue to be made, there will always be people that complain (i.e. reverse sensitivity effects or due to poor neighbour relationships).</td>
</tr>
<tr>
<td>Enforcement</td>
<td>General comments were made about the lack of enforcement action being taken by Council in instances where serious harm or damage had occurred. A ‘three-strike’ approach was also suggested whereby an offender would be given two warnings followed by the relevant enforcement action. Industry organisations generally wanted to be informed when complaints had been lodged against one of their members/growers and to be involved in the mediation/remediation/enforcement process.</td>
</tr>
<tr>
<td>Terms and Definitions – ‘Harmful Concentration’</td>
<td>There were mixed responses as to what ‘harmful concentration’ meant and how one would know if their spraying activities had resulted in a harmful concentration discharging beyond the boundary. A common response was that it would depend on the agrichemical being used as to what would constitute a ‘harmful concentration’ i.e. herbicide, pesticide or fungicide. It was suggested that any terms and definitions should be consistent with NZS8409:2004.</td>
</tr>
</tbody>
</table>
### Terms and Definitions
- **‘Sensitive Site’**
  
  Industry organisations are aware of what constitutes a 'sensitive site' and would generally like to see this defined in the Regional Air Plan.

---

**(c) Sprayers**

Two sprayers were interviewed as part of this process representing aerial and land-based applicators. These were Oceania Helicopters Tauranga Limited (‘OHTL’) and Ranfurly Orchard Services Limited (‘ROSL’).

<table>
<thead>
<tr>
<th>Topic</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Agrichemical Spraying - General</strong></td>
<td>Both contractors undertake work all year around.</td>
</tr>
<tr>
<td></td>
<td>For aerial applications, it is noted that there is the added effect of noise.</td>
</tr>
<tr>
<td><strong>Awareness of Regional Air Plan Agrichemical Rules</strong></td>
<td>Both contractors are well aware of the Regional Air Plan requirements around the application of agrichemicals.</td>
</tr>
<tr>
<td></td>
<td>With regard to their clients (i.e. orchardists), they consider that the level of knowledge and understanding of the rule varies. However, both contractors endeavour to ensure that clients are well-informed prior to spraying especially in terms of notification.</td>
</tr>
<tr>
<td><strong>GROWSAFE®</strong></td>
<td>Both contractors and their employers are GROWSAFE® certified. It is noted that industry standards/regulations require that all applicators hold GROWSAFE® Certification. Therefore, it is necessary that the contractors hold a current Certificate.</td>
</tr>
<tr>
<td></td>
<td>The certification courses were considered to be 'variable' and depended on the instructor and content that was being covered.</td>
</tr>
<tr>
<td><strong>Awareness of the Notification Requirements in the Regional Plan</strong></td>
<td>Both contractors are well aware of the notification requirements and discuss these with their clients prior to spraying.</td>
</tr>
<tr>
<td><strong>Methods of Notification</strong></td>
<td>The contractors generally inform the client of their responsibility to notify all relevant neighbours prior to the agrichemical application. Written confirmation that this has occurred is usually obtained.</td>
</tr>
<tr>
<td></td>
<td>In some instances, the contractor will contact the neighbour (i.e. especially where the neighbour has been problematic in the past) to ensure that notification is provided.</td>
</tr>
<tr>
<td></td>
<td>Contractors encourage orchardists/property owners to discuss notification requirements with individual neighbours at the outset of the season.</td>
</tr>
<tr>
<td></td>
<td>Consider that notification should occur the evening before the spraying operation to allow sufficient time for notification.</td>
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</tbody>
</table>
(i.e. weather dependent). Notification twenty days prior to spraying is considered too long. Both contractors are aware of and have used the ‘Spraywatch’ system and consider that it is useful in some circumstances.

### Determining who should be notified
Generally considered that adjoining properties within 50m of any ground-based agrichemical spraying should be notified and for aerial applications 200m is generally sufficient. It was considered that this should be measured from the boundary of the area where the agrichemical spraying is occurring.

### Signage
Signage is used to signify if spraying is occurring on a property or part of a property that adjoins a public road. The amount of signage will depend on the spatial and physical barriers between the area being sprayed and the public place. However, both contractors are increasingly placing signs at either end of that part of the property boundary which adjoins the public place as well as at the property entrance.

### NZS 8409:2004 Code of Practice for the Management of Agrichemicals
Both contractors are aware of the Standard.

### Complaints
Both contractors had had complaints made against them to the Regional Council. In these instances, the matters were resolved. They noted that despite taking all reasonable measures to prevent spray drift and to ensure that appropriate notification occurred, there would always be complainants (i.e. reverse sensitivity and neighbour conflicts). It was also noted that some complaints were in relation to the smell of the spray which in itself is not necessarily harmful. It was also noted that sometimes a contractor can be ‘caught in the middle’ of a neighbour dispute and blamed. As a result the contractor has established methods to prevent (or reduce the likelihood) of this reoccurring i.e. written confirmation that notification of all relevant neighbours had occurred.

### Terms and Definitions
- **‘Harmful Concentration’**
  This term is generally easy to understand and will depend on the agrichemical being used as to what constitutes a ‘harmful concentration’. Testing of the ‘affected area’ would determine whether or not the property or person had been harmed by the agrichemical spray.

- **‘Sensitive Site’**
  Both contractors are aware of what constitutes a ‘sensitive site’ and take measures to ensure that extra care is taken around these areas (i.e. schools, bus routes, catteries and
kennels, gardens).
It was considered that it would be helpful if this term was
defined.

(d) Interested Parties

A number of other parties who have an interest in the assessment of the agrichemical spray rules were also interviewed as part of this process.

<table>
<thead>
<tr>
<th>Summary of Sprayers Responses to Interview Questions</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Topic</strong></td>
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<tr>
<td>Agrichemical Spraying - General</td>
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<tr>
<td>Awareness of Regional Air Plan Agrichemical Rules</td>
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<tr>
<td>Awareness of the Notification Requirements in the Regional Plan</td>
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<tr>
<td>Methods of Notification</td>
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</tbody>
</table>
potentially resolve a number of issues around the notification requirements.

One party noted that despite a requirement for notification, sprays still drifted across boundaries and created inconveniences for these properties (i.e. residue).

<table>
<thead>
<tr>
<th><strong>Determining who should be notified</strong></th>
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<tbody>
<tr>
<td>The drift associated with agrichemicals can extend a long way. Therefore, at least all adjoining properties should be notified regardless of the distance between them and the area that is being sprayed. The distances provided in the Air Plan for notification of adjoining properties should be doubled (i.e. 100m for ground-based application methods and 400m for aerial application methods).</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>Signage</strong></th>
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<tbody>
<tr>
<td>Signage is good but could be improved. For example, it was suggested that signs (detailing the chemical being used, the time for safe re-entry, etc) should be placed well beyond each end of that part of the property that adjoins a public space. This would ensure that anyone entering such an area is provided warning well in advance. To be more effective and to serve its purpose, all signage should stay erected until it is actually safe to re-enter the site.</td>
</tr>
</tbody>
</table>

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<thead>
<tr>
<th><strong>Complaints</strong></th>
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<tbody>
<tr>
<td>Complaints about agrichemical spraying had been made by all interested parties to the Regional Council. Opinions about the process were varied with some considering that the Regional Council’s response was good while others considered that they were not helpful. General recognition that it is difficult to prove that a sprayer has not complied with the spray rules (i.e. had to wait for the plant to die). It was also noted that the rules made it difficult for the Council to enforce.</td>
</tr>
</tbody>
</table>

| **Terms and Definitions**  
- ‘Harmful Concentration’ |
<table>
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<tbody>
<tr>
<td>There is a general understanding of what the term ‘harmful concentration’ means. It is difficult to prove that a particular spray ‘event’ has resulted in a particular consequence (i.e. death of a plant). This is primarily due to the fact that the length of time between the spraying and the death of the plant is generally four to eight weeks.</td>
</tr>
</tbody>
</table>

| **Terms and Definitions**  
- ‘Sensitive Site’ |
<table>
<thead>
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<tbody>
<tr>
<td>A definition of ‘sensitive sites’ should be provided in the Regional Air Plan. It was suggested by one party that specific rules should also be introduced to control agrichemical spraying around such sites (i.e. restrictions on days and times of the day when spraying can occur).</td>
</tr>
</tbody>
</table>
APPENDIX 7

Analysis of Other Regional Council Approaches for Controlling Agrichemical Discharges
As part of Phase Two, Harrison Grierson undertook an assessment of the approaches employed in the Horizons, Hawke's Bay and Taranaki regions to control any adverse effects associated with agrichemical discharges.

The following analysis provides an overview of the objective and policy framework used in these regions along with the conditions associated with permitted activity rules.

<table>
<thead>
<tr>
<th></th>
<th>Horizons Regional Council</th>
<th>Taranaki Regional Council</th>
<th>Hawke's Bay Regional Council</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Plan</strong></td>
<td>The Consolidated Regional Policy Statement, Regional Plan and Regional Coastal Plan for the Manawatu-Wanganui Region (‘One Plan’)</td>
<td>Regional Air Quality Plan for Taranaki</td>
<td>Hawke's Bay Regional Resource Management Plan</td>
</tr>
<tr>
<td><strong>Plan Status</strong></td>
<td>Proposed – subject to appeals.</td>
<td>Proposed – subjects to appeals.</td>
<td>Air quality section of the RRMP is subject to Plan Change 2 (relating to NES), which remains subject to appeal.</td>
</tr>
<tr>
<td><strong>Objectives</strong></td>
<td>One generic objective that applies to all discharges to air in the Region (Objective 14-1)</td>
<td>Four generic objectives that seek to maintain or enhance ambient air quality, safeguard the life-supporting capacity of air, provide for activities discharging to air and to avoid, remedy or mitigate adverse effects (3.3.1-3).</td>
<td>Single generic objective that aims to ensure that a standard of ambient and local air quality which is not detrimental to human health, amenity values or the life-supporting capacity of air is maintained (Objective 39).</td>
</tr>
<tr>
<td><strong>Policies</strong></td>
<td>One specific policy provided in relation to agrichemical discharges to air (Policy 14-1) which guides decision making on resource consent applications and setting of conditions for discharges of agrichemicals that fail to meet the permitted activity rules.</td>
<td>Three specific policies provided in relation to agrichemical discharges to air or land including: Use of good management practices (Policy 8.1) – refer also to Appendix V which contains ‘Good agrichemical spray management practices’ and is based on NZS 8409:2004. Actual or potential effects that require particular consideration (Policy 8.2). Matters to be taken into account when assessing the effects of an agrichemical discharge (Policy 8.3).</td>
<td>Two generic policies which require that effects of discharging activities to be managed and implemented in accordance with environmental guidelines. Policies 69 and 70).</td>
</tr>
<tr>
<td><strong>Rules</strong></td>
<td>Horizons Regional Council</td>
<td>Taranaki Regional Council</td>
<td>Hawke’s Bay Regional Council</td>
</tr>
<tr>
<td>---</td>
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</tr>
<tr>
<td>Three rules are listed in the Regional Plan to control the discharge of agrichemicals. Rule 14-1 provides for discharges of agrichemicals into air or onto land from the use of a hand-held appliance as a permitted activity. Rule 14-2 provides for discharges of agrichemicals into air or onto land or into water except as permitted under Rule 14-1 as a permitted activity. Non-compliance with Rules 14-1 and 14-2 will render the activity discretionary under Rule 14-3.</td>
<td>Three rules are listed in the Regional Plan to control the discharge of agrichemicals. Rule 51 provides for the discharge of agrichemicals on production land. Rule 52 provides for the discharge of agrichemicals onto public amenity areas or roadside or railside verges. Activities that do not comply with Rules 51 or 52 are rendered a restricted discretionary activity under Rule 53.</td>
<td>The rules are divided into ‘small-scale application of agrichemicals’ (Rule 9) and the ‘widespread application of agrichemicals’ (Rule 10). Rule 9 applies to the use of agrichemicals for domestic purposes, licensed animal remedies and applications using ‘hand-held’ appliances (permitted activity). Rule 10 relates to all other agrichemical discharges not covered by Rule 9 (permitted activity). Non-compliance with Rules 9 and 10 renders the activity a discretionary activity under Rule 52.</td>
<td></td>
</tr>
</tbody>
</table>

| Permitted Activity Conditions | Permitted activity conditions are provided in association with Rules 14-1 and 14-2. | Permitted activity conditions are provided for Rules 51 and 52. | Permitted activity conditions are provided for Rules 9 and 10. |

<p>| Restricted Discretionary Activity – Matters of Discretion | N/A. | Duration of consent. Best practicable option to prevent or minimise off-site or non-target effects. Notification. Meteorological conditions. Type and performance of spray equipment. Spray pressures. Height of discharge of aerial spraying. Training. Effects. Record keeping, monitoring, review of conditions, administrative charges and financial contributions. | N/A. |</p>
<table>
<thead>
<tr>
<th><strong>Hand-held Applications</strong></th>
<th>Horizons Regional Council</th>
<th>Taranaki Regional Council</th>
<th>Hawke's Bay Regional Council</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Less stringent conditions compared with 'other methods' including compliance with manufacturer's instructions, adverse effects associated with off-target spray drift, no discharge into water or within any rare, threatened or at-risk habitat and where used on public land it must comply with sections 2 and 5 of the Standard.</td>
<td>Requires compliance with mandatory requirements set out in section 2, 5 and 6 of the Standard including notification requirements listed in the standard (14-2(d)).</td>
<td>Less stringent conditions compared with those provided in Rule 10 and include: Compliance with manufacturer's instructions. No discharge or drift beyond property boundary or into a water body. Where the application is for 'non-domestic' purposes, it is to occur in accordance with Sections 2, 5 and 6 of NZS 8409:2004.</td>
</tr>
</tbody>
</table>

**Other Applications – Permitted Activity Conditions**

| **NZS 8409:2004** | Requires compliance with mandatory requirements set out in section 2, 5 and 6 of the Standard including notification requirements listed in the standard (14-2(d)). | Requires compliance with mandatory requirements set out in section 2, 5 and 6 of the Standard and relevant appendices listed in the Standard. |

**Spraying to be undertaken in accordance with the manufacturer’s Requirements**

<table>
<thead>
<tr>
<th>Horizons Regional Council</th>
<th>Taranaki Regional Council</th>
<th>Hawke's Bay Regional Council</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes (Rule 14-2(a)).</td>
<td>Yes (Rule 51(a)).</td>
<td>Yes.</td>
</tr>
</tbody>
</table>

**Adverse Effects beyond Property Boundary**

<table>
<thead>
<tr>
<th>Horizons Regional Council</th>
<th>Taranaki Regional Council</th>
<th>Hawke's Bay Regional Council</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes.</td>
<td>Yes.</td>
<td>Yes including condition requiring that the discharge shall not result in agrichemical being deposited on any roof or other structure used for water supply.</td>
</tr>
</tbody>
</table>

**Sensitive Sites**

<table>
<thead>
<tr>
<th>Horizons Regional Council</th>
<th>Taranaki Regional Council</th>
<th>Hawke's Bay Regional Council</th>
</tr>
</thead>
<tbody>
<tr>
<td>Spraying shall not occur within 50 metres of a 'sensitive site'.</td>
<td>Reference to water supply (51(g)), river, lake, wetland, other surface water body including a drain (51(e)</td>
<td></td>
</tr>
</tbody>
</table>

**Certification**

<table>
<thead>
<tr>
<th>Horizons Regional Council</th>
<th>Taranaki Regional Council</th>
<th>Hawke's Bay Regional Council</th>
</tr>
</thead>
<tbody>
<tr>
<td>GROWSAFE®</td>
<td>GROWSAFE®. Appendix V contains the training qualification required for agrichemical applicators.</td>
<td>GROWSAFE®</td>
</tr>
</tbody>
</table>

**Certification - For ground-based applications, the applicator**

<table>
<thead>
<tr>
<th>Horizons Regional Council</th>
<th>Taranaki Regional Council</th>
<th>Hawke's Bay Regional Council</th>
</tr>
</thead>
<tbody>
<tr>
<td>GROWSAFE®</td>
<td>GROWSAFE®.</td>
<td>GROWSAFE®</td>
</tr>
<tr>
<td>Ground-Based</td>
<td>Horizons Regional Council</td>
<td>Taranaki Regional Council</td>
</tr>
<tr>
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</tr>
<tr>
<td></td>
<td>must hold an ‘Introductory Certificate’ or be under the direct supervision of a person holding an ‘Applied Certificate’.</td>
<td>must hold an ‘Introductory Certificate’ or be under the direct supervision of a person holding an ‘Applied Certificate’ or ‘Registered Chemical Applicators Certificate’ (51(f)).</td>
</tr>
<tr>
<td>Certification – Aerial</td>
<td>For aerial applications, the applicator must hold a ‘Pilot’s Chemical Applicator’s Certificate’.</td>
<td>For aerial applications, the applicator must hold a ‘Pilot’s Chemical Applicator’s Certificate’ (51(f)).</td>
</tr>
<tr>
<td>Certification Contractor</td>
<td>Contractors’ undertaken ground-based application must hold a ‘Registered Chemical Applicators Certificate’ or hold an ‘Introductory Certificate’ or be under the direct supervision of a person holding a ‘Registered Chemical Applicators Certificate’.</td>
<td>Contractors’ undertaken ground-based application must hold a ‘Registered Chemical Applicators Certificate’ or hold an ‘Introductory Certificate’ or be under the direct supervision of a person holding a ‘Registered Chemical Applicators Certificate’ (51(f)).</td>
</tr>
</tbody>
</table>

### Notification

<table>
<thead>
<tr>
<th>Specific Requirement</th>
<th>Yes, in accordance with NZS 8409:2004.</th>
<th>Yes.</th>
<th>Yes.</th>
</tr>
</thead>
<tbody>
<tr>
<td>How</td>
<td>Verbal or written notice.</td>
<td>Where spraying occurs on private land, signs shall be erected to indicate the use of agrichemicals within 10m of public land where there is a shelter belt giving effective protection between private/public land or within 30m of public land where there is no shelter belt.</td>
<td></td>
</tr>
<tr>
<td>Who</td>
<td>To all occupied dwellinghouses, owners or occupiers of properties, sensitive crops or farming systems and places of public assembly within 30m of the area to be sprayed for ground applications and 100m for aerial applications.</td>
<td>In accordance with Appendix M4 of NZS 8409:2004 where spraying occurs within 50m of an adjacent property twice in any 12 month period and spray drift beyond the property boundary cannot be avoided.</td>
<td></td>
</tr>
<tr>
<td>When</td>
<td>General notice at the start of the spray season (and can request notice closer to the time as well) or within 2 hours and 4 weeks</td>
<td>In accordance with Appendix M4 of NZS 8409:2004 where spraying occurs within 50m of an adjacent property twice in any 12 month period and spray drift beyond the property boundary cannot be avoided.</td>
<td></td>
</tr>
<tr>
<td>Horizons Regional Council</td>
<td>Taranaki Regional Council</td>
<td>Hawke's Bay Regional Council</td>
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<td></td>
</tr>
<tr>
<td></td>
<td>prior to spraying.</td>
<td>month period and spray drift beyond the property boundary cannot be avoided.</td>
<td></td>
</tr>
<tr>
<td><strong>Form</strong></td>
<td>Areas to be sprayed.</td>
<td>In accordance with Appendix M4 of NZS 8409:2004 where spraying occurs within 50m of an adjacent property twice in any 12 month period and spray drift beyond the property boundary cannot be avoided.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Dates and times of spraying or factors that will determine when spraying occurs.</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Agrichemicals to be used.</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Measures to be adopted to minimise spray drift from the target area.</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Spraying in Public Areas</strong></td>
<td></td>
<td></td>
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</tr>
<tr>
<td><strong>Rule Provision</strong></td>
<td>Rules do not distinguish between private and public areas.</td>
<td>Rule 52 specifically provides for agrichemical discharges in public areas.</td>
<td></td>
</tr>
<tr>
<td><strong>Notification</strong></td>
<td>NZS 8409:2004 requirements.</td>
<td>Landowner, manager or contractor must give public notice of intention to spray not less than 4 weeks or more than 6 months prior to spraying. Notice is to include:</td>
<td></td>
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<tr>
<td></td>
<td></td>
<td>Areas to be sprayed.</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Dates and times of spraying or factors that will determine when spraying occurs.</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Agrichemicals to be used.</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Measures to be adopted to minimise spray drift from the target area.</td>
<td></td>
</tr>
<tr>
<td><strong>Signage</strong></td>
<td>Standard?</td>
<td>Except for spraying along the verges of public roads, signs must be placed clearly visible to the public at all points where the public have entry to the area been sprayed. Signs must contain the words 'CAUTION – SPRAYED AREA' and remain in place until the re-entry period for that particular chemical has expired (52(h)). Where spraying along the verges of public</td>
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<tr>
<td>Horizons Regional Council</td>
<td>Taranaki Regional Council</td>
<td>Hawke’s Bay Regional Council</td>
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<tr>
<td></td>
<td></td>
<td>roads, vehicles associated with the spraying must display signs stating ‘CAUTION – SPRAYING IN PROGRESS’.</td>
<td></td>
</tr>
<tr>
<td><strong>Aerial Applications</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Requirements</strong></td>
<td>Must take all reasonable measures to prevent the discharge of agrichemicals within 10m of flowing river and adverse effects on rare, threatened and at-risk habitats.</td>
<td>Rules 51 to 53 do not apply to the application of vertebrate toxic agents to land by aerial spraying.</td>
<td>All reasonable measures taken to prevent any discharge of agrichemicals within 20m of water bodies, wetlands etc.</td>
</tr>
<tr>
<td><strong>Water Applications</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Purpose of Spraying</strong></td>
<td>Eradication, modification or control of unwanted aquatic plants.</td>
<td>Rules 51 to 53 do not apply to the application of agrichemicals direct to water for the purposes of controlling aquatic life. This is controlled through Rule 32 of the Regional Fresh Water Plan.</td>
<td>Eradication, modification or control of unwanted aquatic plants.</td>
</tr>
<tr>
<td><strong>Conditions</strong></td>
<td>Agrichemical is approved for aquatic use. Application shall not exceed the quantity or concentration required for that purpose. No disposal of agrichemical to water. Notification of every person taking water for domestic supply with 1km downstream of proposed discharge and every holder of a resource consent for the taking of public water supply at least one week before commencing the discharge.</td>
<td>Agrichemicals approved by ERMA for aquatic use. Application shall not exceed the quantity or concentration required for that purpose. No disposal of agrichemical to water. Notification of every person taking water for domestic supply with 1km downstream of proposed discharge and every holder of a resource consent for the taking of public water supply at least one week before commencing the discharge.</td>
<td></td>
</tr>
<tr>
<td><strong>Spray Plan</strong></td>
<td>Previous regional plan required a Spray Diary to be kept.</td>
<td>Must keep records and supply to TRC on request (i.e. agrichemical used, weather conditions, location, area and date, equipment used etc) (51(i)).</td>
<td>Permitted Activity Condition (h) requires that were spraying occurs within 50m of an adjacent property twice in any 12 month period and spray drift beyond the property boundary cannot be avoided a spray plan</td>
</tr>
<tr>
<td>Definitions</td>
<td>Horizons Regional Council</td>
<td>Taranaki Regional Council</td>
<td>Hawke's Bay Regional Council</td>
</tr>
<tr>
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<td>-----------------------------</td>
</tr>
<tr>
<td><strong>Agrichemical</strong></td>
<td><strong>Agrichemical</strong> means any substance, whether inorganic or organic, human-made or naturally occurring, modified or in its original state, that is used to eradicate, modify or control flora and fauna. For the purposes of this Plan, it includes agricultural compounds agrichemicals do not include animal remedies, but excludes fertilisers*, fumigants, or sanitisers vertebrate pest control products and oral nutrition compounds.</td>
<td>Agrichemicals means any substance, whether inorganic or organic, human-made or naturally occurring, modified or in its original state, that is used on production land or within public amenity areas, including parks, reserves, pedestrian walkways, beaches and foreshore areas, road and railside verges or on, over, onto or into water, to eradicate, modify or control flora and fauna. For the purpose of this Plan ‘agrichemicals’ do not refer to chemicals used to treat water intended for use in municipal supply or industrial processes (i.e. cooling systems, boilers, abstraction for consumptive use) while not part of a water body nor do ‘agrichemicals’ include vertebrate toxic agents (VTA’s), or oral nutrition compounds or fertilisers. VTA’s are subject to the Hazardous Substances and New Organisms (HSNO) Act 1996 and under the Act anyone who manufactures, sells, uses or stores VTA’s must hold a Controlled Substances Licence and manage VTA’s according to the HSNO Act. VTA’s are therefore not controlled under this Plan. Oral nutrition compounds are subject to the Agrichemical Compounds and Veterinary Medicines Act 1997 and are therefore not controlled under this Plan. The application of fertilisers is controlled by Rule</td>
<td>Any substance, whether inorganic or organic, man-made or naturally occurring, modified or in its original state, that is used to eradicate, modify or control flora and fauna, excluding fertiliser and pheromones.</td>
</tr>
<tr>
<td>Horizons Regional Council</td>
<td>Taranaki Regional Council</td>
<td>Hawke’s Bay Regional Council</td>
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<td></td>
</tr>
<tr>
<td><strong>Agrichemical Spray Drift</strong></td>
<td>42 in the Plan ‘Fertiliser and other soil conditioners’.</td>
<td>The airborne movement of agrichemicals, as droplets, vapour or solid particles, onto a non-target area.</td>
<td></td>
</tr>
<tr>
<td><strong>Private Land</strong></td>
<td>Public amenity areas mean those areas to which the public have right of access under any statute, regulation, law or by-law, including: (a) Crown and Council properties, reserves, gardens, parks, cemeteries and airfields; (b) grasslands, sports grounds and recreational turfs; (c) forest and bush areas; (d) road verges and embankments, pedestrian walkways, malls and precincts; (e) beaches, beach reserves, and adjacent foreshore areas.</td>
<td>Land which is not public land.</td>
<td></td>
</tr>
<tr>
<td><strong>Public Land</strong></td>
<td>Public land means land(^{\wedge}) to which the public has free access at the time that an activity is undertaken.</td>
<td>Land to which the public has free access at the time an activity is undertaken in accordance with a rule in this Plan.</td>
<td></td>
</tr>
<tr>
<td><strong>Public Road</strong></td>
<td>Public road means any formed legal road(^{\wedge}) that has open public access. It includes both the road area normally used by motor vehicles and cyclists along with adjacent footpaths and any berms and verges not in</td>
<td></td>
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</tbody>
</table>

\(^{\wedge}\) For the purposes of this Plan, the term ‘land’ shall be interpreted as including any land immediately under the surface of the earth, any land at sea or under water, and any land under the water, to the surface of the sea or any water.

\(^{\wedge}\) A formed legal road is a road which has been declared a road within the meaning of the Regional Councils Act 1993 by the Regional Council.
<table>
<thead>
<tr>
<th>Horizons Regional Council</th>
<th>Taranaki Regional Council</th>
<th>Hawke’s Bay Regional Council</th>
</tr>
</thead>
<tbody>
<tr>
<td>private ownership.</td>
<td></td>
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</tr>
<tr>
<td><strong>Sensitive Site</strong></td>
<td>Sensitive areas (or sites) are areas that have within them uses or values or activities that are more susceptible to adverse effects than other users or values or activities and include occupied dwellinghouses, public amenity areas, places of public assembly, water bodies used for public water supply, any water body, wetlands, sensitive crops or farming systems, public roads and any place, area or feature of special significance to tangata whenua. For the Purpose of this Plan ‘Sensitive activities’ means the activities that occur within sensitive areas as listed above.</td>
<td></td>
</tr>
</tbody>
</table>
APPENDIX 8

Analysis of Options
### Assessment of Options

<table>
<thead>
<tr>
<th>Option</th>
<th>Benefit</th>
<th>Cost</th>
<th>Implementation</th>
</tr>
</thead>
<tbody>
<tr>
<td>NZS8409 – Management of Agrichemicals</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Remove references to NZS8409:1999 and replace with NZS8409:2004.</td>
<td>A relatively simple change that will ensure that spraying activities are undertaken in accordance with the latest version of the standard, which represents current best practice</td>
<td>The plan will still reference a document that is written as a set of guidelines and this will not address the difficulties associated with enforcing the provisions. Only parts of the document are directly relevant – see below.</td>
<td>Plan change.</td>
</tr>
<tr>
<td>Reference only sections 2 and 5 of the Standard in the Regional Air Plan.</td>
<td>Provides a focused approach that considers the specific provisions that are relevant to ensure clarity and certainty for plan users.</td>
<td>There may be parts of other sections that are also useful. There is a risk that the overall coherence of the document is reduced by referencing specific sections only.</td>
<td>Plan change.</td>
</tr>
<tr>
<td>Reproduce the relevant sections of the standard in the Regional Air Plan.</td>
<td>Enables the relevant parts of the standard to be adapted to best suit the specific requirements of the region and fit within the framework of the other plan provisions.</td>
<td>May result in lengthy and overly detailed provisions, thereby detracting from the effectiveness of the plan.</td>
<td>Plan change</td>
</tr>
</tbody>
</table>

<p>| Notification Requirements | | | |
| Who | | | |
| Increase notification distance | Will ensure that all parties potentially affected by agrichemical spraying activities are aware that spraying is being undertaken and can take the appropriate precautions. Provides certainty to those living near spraying sites | Increases the number of parties spray applicators are required to notify prior to undertaking spraying. | Plan change |
| Change requirement from ‘adjoining neighbours’ to ‘all dwellings and property owners’ | | | |</p>
<table>
<thead>
<tr>
<th>When</th>
<th>Provides greater certainty to neighbours regarding precisely when spraying is to take place. Provides some flexibility in the method of notification which can improve the efficiency and effectiveness of notification processes.</th>
<th>Potential difficulties in successfully contacting neighbours within a small time window (12-24 hrs). Provides less flexibility in terms of when spraying can be undertaken.</th>
<th>Plan change.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Change notification requirement to 12-24hr prior to spraying</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Require seasonal information to be provided to neighbours outlining spray plans</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Enable notification methods to be agreed between parties</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Spraying on (or adjacent to) public land</strong></td>
<td>Standardising sign size and location requirements as well as considering other notification methods will improve public awareness and provide certainty for both spray applicators and neighbours.</td>
<td>Providing a narrow time period for notification is challenging for roadside spraying programmes which involve large areas and are subject to weather conditions.</td>
<td>Plan change</td>
</tr>
<tr>
<td>Standardise signage size and location requirements</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Consider alternative signage/notification methods</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Narrow time period for notification of roadside spraying</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Amend/review signage requirements for roadside spraying</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Consistent format and content of signage for agrichemical spraying activities on both private and public land.</td>
<td>Provides certainty regarding the requirements.</td>
<td>Reduces flexibility to adapt to specific situations.</td>
<td>Plan change</td>
</tr>
<tr>
<td>Update the Regional Council’s Guidelines for Agrichemical Applicators</td>
<td>Improves the understanding of best practices and thereby helps to increase compliance levels Consistent with identified method of implementing Regional Air Plan</td>
<td>Requires a commitment of resources to research and prepare document.</td>
<td>Education / advocacy</td>
</tr>
<tr>
<td>Develop guidelines that explain the realities of living in the rural environment for newcomers.</td>
<td>Improves the level of awareness of agrichemical spraying activities. Consistent with identified method of implementing Regional Air Plan</td>
<td>Requires a commitment of resources to research and prepare document.</td>
<td>Education / advocacy</td>
</tr>
<tr>
<td>Sensitive Sites</td>
<td></td>
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<td></td>
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<tr>
<td>----------------</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Insert new or amend existing provisions in the Air Plan to ensure certain measures are implemented when spraying within proximity of a 'sensitive site'.</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>Recognises that there are varying degrees of tolerance to agrichemicals and one generic requirement may not be appropriate. Provides better protection for neighbouring properties. Helps spray applicators ensure harmful concentration thresholds are not breached.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Potential difficulties in grouping various activities into one 'sensitive sites' category Increases the complexity of the provisions</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Define 'Sensitive Site'.</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>Necessary to support provisions relating to sensitive sites in order to avoid uncertainty regarding what is a sensitive site.</td>
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</tr>
<tr>
<td>Potential debate regarding what is included within the definition of a sensitive site.</td>
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</tr>
<tr>
<td>Certification</td>
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</tr>
<tr>
<td>Review the requirements regarding GROWSAFE® Certification in the Regional Plan to ensure accuracy.</td>
<td></td>
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<tr>
<td>Ensures the most relevant industry certification is referenced in the plan reflecting current best practice.</td>
<td></td>
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</tr>
<tr>
<td>Reliance on GROWSAFE® does not enable recognition of other relevant qualifications.</td>
<td></td>
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<tr>
<td>Re-evaluate the need for references in the Air Plan to an 'equivalent' course.</td>
<td></td>
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<tr>
<td>Provides certainty as to what qualification is required and makes it easy to determine compliance Consistent with other regional approaches.</td>
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<tr>
<td>Potential risk that the content or structure of the courses may change. Does not provide an opportunity for other equally relevant qualifications to be recognised</td>
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<tr>
<td>Proactively engage with GROWSAFE® to investigate options for developing targeted/specific courses for the Bay of Plenty Region.</td>
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<tr>
<td>Increases the level of compliance. Ensures the course is relevant and effective at improving the expertise of spray applicators</td>
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<tr>
<td>Focuses on a single qualification. Requires a commitment of resources.</td>
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<tr>
<td>Education / advocacy</td>
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<tr>
<td>Definitions</td>
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<td>----------------------------------------------------------------------------</td>
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<tr>
<td>Review the definition of ‘harmful concentration’.</td>
<td>Provides clarity and certainty to plan users.</td>
<td>Potential risk that new definition will be complex in order to</td>
<td>Plan change</td>
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<tr>
<td></td>
<td></td>
<td>address the current issues, resulting in lower levels of</td>
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<td></td>
<td></td>
<td>understanding than with the current definition.</td>
<td></td>
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<td></td>
<td></td>
<td>Need for education to avoid misinterpretation of new definition</td>
<td></td>
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<tr>
<td>Clarify the meaning of ‘adjoining property’.</td>
<td>Provides clarity and certainty to plan users.</td>
<td>Need for education to avoid misinterpretation of new definition</td>
<td>Plan change</td>
</tr>
<tr>
<td>Complaints System and Database.</td>
<td>Simplification of the system to ensure information is gathered in</td>
<td>Requires commitment of resources to amend database and training</td>
<td>Internal review process</td>
</tr>
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<td>a format that is useful and can be used to evaluate the</td>
<td>to ensure data is entered correctly.</td>
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<td></td>
<td>effectiveness of the Agrichemical Spray Rules.</td>
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<tr>
<td>Agrichemical Spray Rules - General</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>Review format, content and terminology used in Rules 10 to 13.</td>
<td>Consistent and clear resulting in an improved level of</td>
<td>Potential challenges in reaching consensus on required changes.</td>
<td>Plan change</td>
</tr>
<tr>
<td></td>
<td>understanding and less potential for misinterpretation.</td>
<td></td>
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<tr>
<td>Objectives and Policies</td>
<td></td>
<td></td>
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<tr>
<td>Provide a specific policy in the Regional Air Plan to address agrichemical</td>
<td>Consistent with other regions. Provides clear linkage between</td>
<td>Potential challenges in summarising approach into one succinct</td>
<td>Plan change</td>
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<tr>
<td></td>
<td>spraying.</td>
<td>objective, policy, and methods</td>
<td>policy.</td>
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<td>Specific guidance in terms of anticipated outcomes for</td>
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<td>agrichemical discharges.</td>
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</tbody>
</table>