File Ref. M135-15-23

MARLBOROUGH
DISTRICT COUNCIL

Marlborough Sounds Resource Management Plan

Plan Change 23

Submissions received by Marlborough District Council

November 2009

Table of Contents

Alphabetical index of Submitters (by surname) for Plan Change 23

PartNo	Submitter	Address
1	Ashton - Des	73 Morven Lane RD 2 Blenheim 7272
17	Bruckel - Paul	875 Waihopai Valley Road RD 6 Blenheim 7276
5	Burtergill Farm (2003) Limited (Geoff van Asch)	TVA Lock Limited PO Box 1003 Blenheim 7240
9	Clintondale Trust - Whyte Trustee Company Limited (David A. Whyte)	183 Redwood Street Witherlea Blenheim 7201
19	Constantine - Peter	Principal Planner Marlborough District Council PO Box 443 Blenheim 7240
15	Constellation New Zealand Limited (Ollie Davidson)	PO Box 260 Blenheim 7240
6	Dashwood Corner Vineyard Limited (Geoff Van Asch)	TVA Lock Limited PO Box 1003 Blenheim 7240
13	Fairhall Downs Estate Wines (Stuart T Smith)	70 Wrekin Road Rd2 Blenheim 7272
26	Gibbs - Blair	37 Lake Timara Road Blenheim 7276
2	Handley - Geoffrey	52 Lady Cobham Grove Anakiwa RD 1 Picton 7281
16	Horticulture New Zealand (Chris Keenan)	PO Box 10232 Wellington 6143
25	Jane Buckman and John Kershaw ( )	Kakariki Vineyards PO Box 48200 Renwick 7243
23	Jones - Gary B	19 Opawa Street Blenheim 7201
11	Karn - Richard	2 Nott Street Westshore Napier 4110
24	Lissaman - Guy	Trelawne Farm Limited 25 Old Ford Road RD 1 Seddon 7285
12	Little - Kevin J A	3828 SH 63 RD 1 Wairau Valley Blenheim 7271
7	Little Oasis Vineyard Limited (Geoff van Asch)	TVA Lock Limited PO Box 1003 Blenheim 7240
10	Maclean - Malcolm	59 Morven Lane RD 2 Fairhall Blenheim 7272
27	Meadowbank Holdings Limited (William Grigg)	PO Box 90 Blenheim 7240
18	Nelson Marlborough DHB Public Health Service (Geoff Cameron)	Public Health Service PO Box 647 Nelson 7040
8	New Zealand Winegrowers (Kristy Newland/Philip Gregan)	PO Box 90276 Victoria Street West Auckland 1142
22	Parsons - Glenys	"Whitelocks" 2020 SH 63 RD 1 Blenheim 7271
21	Ryan - Richard	3585 SH 63 RD 1 Wairau Valley Blenheim 7271
3	Smith - C J	2666 SH 63 RD 1 Wairau Valley Blenheim 7271
14	Villa Maria Estate Limited (Ollie Powrie)	PO Box 43046 Magere Manukau 2153
20	Wither Hills Vineyards Marlborough Limited (Stephanie Bond)	Russell McVeagh PO Box 8 Auckland 1140

Numerical index of Submitters for Plan Change 23

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27	Meadowbank Holdings Limited (William Grigg)	PO Box 90 Blenheim 7240

Amendments	

Print Form

1

Submission Form for Plan Changes 23 and 58 to the

Wairau/Awatere & Marlborough Sounds Resource Management Plans

Frost Fan Plan Changes

Office Use
Participant No.
01
Submission Point No.

File Refs
W045-15-58
M13-15-23

Date Received Stamp
FILE No.:
OFFICER:
DATE RECVD: 29 SEP 2009

Name/organisation:	Des Ashton
Contact Name (if different from above):	
Address for Service:	73 Morven Lane Fairhall, RD2 Blenheim 7272
Telephone Number:	021 664 920
Fax Number:	

Submissions Close:
5.00 pm Friday
23 October 2009

Return your submission to:
Marlborough District Council
PO Box 443
Blenheim 7240
Attention: Mark Caldwell
Fax: (03) 520 7496
E-Mail:
frostfans@marlborough.govt.nz

I have attached ☐ pages of additional text.

Do you wish to speak in support of your submission? YES ☐ NO ☑

If you wish to be heard, and others make a similar submission, would you be prepared to consider presenting a joint case with them at the hearing? YES ☐ NO ☐

Signature: [signature] Date: 26 September 2009

How To Make A Submission

Anyone is welcome to make a submission, either as an individual or on behalf of an organisation. You may use this form or prepare your own submission so long as you are careful to provide all of the information identified on this form. [These information requirements are per Form 5 of the Resource Management (Forms, Fees and Procedures) Regulations 2003]. If you run out of room here, please continue on a separate page. When preparing your submission you need to include the following:

"This part of my submission relates to ..." - state the name of the plan change and the part(s) of the plan change that is/are the subject of your submission.

"I support (or oppose) this part of the plan change." – state whether you support or oppose (in full or part).

"My reasons for supporting (or opposing) this part of the plan change ..." - tell us what your concerns are and the reasons why you support or oppose the provisions in the plan change.

"The decision I seek from the Council is ..." - How do you want the Council to respond to your submission? It is very important that you clearly state the decision you wish the Council to make as the Council cannot make changes which have not been specifically requested. Start by indicating if you want the provision to be retained, deleted or amended. If you want an amendment (including additional provisions) then specify what wording changes you would like to see.

REMEMBER - the clearer you can be, the easier it will be for the Council to understand your concerns and take them into account.

Please indicate the plan change(s) that your submission relates to:

Plan Change 23 (Frost Fans) to the Marlborough Sounds Resource Management Plan

Plan Change 58 (Frost Fans) to the Wairau/Awatere Resource Management Plan

If you wish to provide a submission for more than one of the plan changes, you can use the same form so long as you clearly indicate which plan change your comments relate to.

Any submission received by the Council is considered to be public information.

Plan Change No. Volume, Section of Plan, Page Number	***Details of your submission and specific changes or decisions requested***
Example: *Plan Change 23* *New policy 1.9*	*Example:* *I oppose this policy because...* *I would like the Council to change wording of this policy to "suggest change"*

- I support ~~the~~ plan changes 23 (Frost Fans)
- and Plan Change 58 (Frost Fans).
-
- I particularly support the
- provisions in the plan changes
- that provide for the construction
- and use of a frost fan being a
- controlled activity and the
- Council reserving control over
- recording information about the
- use of frost fans and monitoring
- requirements.
- I ~~support the~~ recognise the need
- of winegrowers to protect their
- crops from frost but am pleased
- that they can now do so from
- a prescribed and measured
framework.

Reset Form

Submission on Variation # to the .....
Resource Management Plan

Office Use
Participant No.
02
Submission Point No.
File Ref

Geoffrey Handley

52 Lady Cobham Grove
Anakiwa
RD1 Picton 7281

574 2055

Date Received Stamp

RECEIVED
30 SEP 2009
MARLBOROUGH DISTRICT COUNCIL

Submissions Close:
.....

☐

☐ ☑

☐ ☑

30/9/2009

Return your submission to:

Marlborough District Council
PO Box 443
Blenheim 7240

Attention:

Fax: (03) 520 7496
E-Mail:

How To Make A Submission

Anyone is welcome to make a submission, either as an individual or on behalf of an organisation. You may use this form or prepare your own submission so long as you are careful to provide all of the information identified on this form. [These information requirements are per Form 5 of the Resource Management (Forms, Fees and Procedures) Regulations 2003]. If you run out of room here, please continue on a separate page. When preparing your submission you need to include the following:

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Any submission received by the Council is considered to be public information.

Plan Variation No. Volume, Section of Plan, Page Number	***Details of your submission and specific changes or decisions requested***
Example: *Variation 50* *New policy 1.9*	*Example:* *I oppose this policy because...* *I would like the Council to change wording of this policy to "suggest change"*
Variation #23 The Marlborough Sounds Resource Management Plan - Frost Fans	I support this proposed change to the Marlborough Sounds Resource Management Plan in full because of the potential for Frost Fans to present a serious noise problem if installed for frost protection in the Marlborough Sounds area. Such noise could potentially destroy the tranquility and peaceful environment currently enjoyed and valued by residents of and visitors to the Marlborough Sounds area.

Reset form

Submission Form for Plan Changes 23 and 58 to the

Wairau/Awatere & Marlborough Sounds Resource Management Plans

Frost Fan Plan Changes

Office Use
Participant No.
03
Submission Point No.

File Refs
W045-15-58
M13-15-23

Date Received Stamp

MARLBOROUGH DISTRICT COUNCIL

C J Smith

2666, SH 63,Wairau Valley,
RD 1, Blenheim

5722643

7

Submissions Close:
5.00 pm Friday
23 October 2009

Return your submission to:
Marlborough District Council
PO Box 443
Blenheim 7240
Attention: Mark Caldwell
Fax: (03) 520 7496
E-Mail:
frostfans@marlborough.govt.nz

☐ ☑

☑ ☐

06/10/2009

How To Make A Submission

Anyone is welcome to make a submission, either as an individual or on behalf of an organisation. You may use this form or prepare your own submission so long as you are careful to provide all of the information identified on this form. [These information requirements are per Form 5 of the Resource Management (Forms, Fees and Procedures) Regulations 2003]. If you run out of room here, please continue on a separate page. When preparing your submission you need to include the following:

"This part of my submission relates to ..." - state the name of the plan change and the part(s) of the plan change that is/are the subject of your submission.

"I support (or oppose) this part of the plan change." – state whether you support or oppose (in full or part).

"My reasons for supporting (or opposing) this part of the plan change ..." - tell us what your concerns are and the reasons why you support or oppose the provisions in the plan change.

"The decision I seek from the Council is ..." - How do you want the Council to respond to your submission? It is very important that you clearly state the decision you wish the Council to make as the Council cannot make changes which have not been specifically requested. Start by indicating if you want the provision to be retained, deleted or amended. If you want an amendment (including additional provisions) then specify what wording changes you would like to see.

REMEMBER - the clearer you can be, the easier it will be for the Council to understand your concerns and take them into account.

To

Marlborough District Council

FROST FAN PLAN CHANGES

This submission refers to:

Wairau/Awatere Resource Management Plan

Proposed Plan Change 58

and

Marlborough Sounds Resource Management Plan

Proposed Change 23

and is a 7 page attachment to **Submission Form for Plan Changes** .

C J Smith,
2666, SH 63,
Wairau Valley,
RD 1, Blenheim

This part of my submission relates to:

Volume Two
Definitions
1. Add a new definition as follows:

I ~~support~~ /oppose this part of the plan change:

My reasons for ~~supporting~~/ opposing this part of the plan change are:

No mention is made in the definition to the prime mover (drive unit) powering the fan.

The support structure of the fan is referenced, but not the structure related to the drive unit.

The decision I seek from Council is ~~retained/deleted~~/amended:

The definition needs expanding to include the drive unit as the drive unit can have its own audible characteristic noise / noise level which might be completely different from the fan noise, e.g. reciprocating diesel engine as opposed to an oscillating fan blade(s).

The noise level of the drive unit must be considered in conjunction with the fan blade noise.

This part of my submission relates to:

Rural 3 and 4 Zones
3. Add a new rule 30.1.4.2.4
Noise Sensitive Activities

I ~~support~~ /oppose this part of the plan change:

My reasons for ~~supporting~~/ opposing this part of the plan change are:

30.1.4.2.4
a)
Measurement of noise levels with bedroom doors and windows closed might contravene Section G4 of The NZ Building Code (Building Act 1991) regarding ventilation for the occupants of dwellings.

It cannot be assumed that people will have closed windows for sleeping when frost fans are operating.

Ventilation at prescribed rates must be provided by opening windows or by mechanical ventilation.

Ventilation by mechanical means will impose additional building costs and could generate objectionable noise internal to the dwelling.

b) -ditto

c)
If frost fans require a Building Consent (for the fan and /or the drive unit) then compliance with any noise requirements of the NZ Building Code will be required.

This clause is ambiguous and should be expanded to make it clear what components are intended to require a Building Consent.

The decision I seek from Council is ~~retained/deleted~~/amended

Reconsider the rule in relation to the effect of the NZ Building Code on ventilation requirements and noise.

Question:

I live in a Rural Township Zone which has specific noise control requirements.

Is "Rural 3 and Rural 4 Zones" inclusive of Rural Township Zone?
If not, this needs clarifying and the rule expanding to encompass Rural Township Zone.

This part of my submission relates to:

Rural 3 and 4 Zones
5. Add a new rule 30.2.9.1.1
Noise from a frost fan etc

I ~~support~~ /oppose this part of the plan change:

My reasons for ~~supporting~~/ opposing this part of the plan change are:

I live in Wairau Valley Township which is recognized by Council as a Township.
(long term planning is currently underway to assess the township's growth and needs.)

Irrespective of any separation distance for frost fans and dwellings in specific cases, there should be a "**no go zone**" for frost fans in relation to established townships, towns, villages and similar communities in the Marlborough region.

Council's acoustical consultant can advise on a suitable notional distance (500 metres minimum is suggested from any township or similar boundary.)

Apart from the noise issues surrounding frost fans, there is also the visual impact which needs to be considered in relation to the RMA and addressed at Resource Consent application stage.

The decision I seek from Council is ~~retained/deleted~~/amended

Address the situation of separation distance from small established communities for noise and visual impact of frost fans.

Add 30.2.9.1.1 iii)..... to cover this situation.

This part of my submission relates to:

Rural 3 and 4 Zones
5. Add a new rule 30.2.9.2
Matters over which the Council will exercise control

I support /~~oppose~~ this part of the plan change:

It is incumbent on Council to exercise such controls.

My reasons for supporting/ opposing this part of the plan change are:

It is incumbent on Council to exercise such controls.

The decision I seek from Council is retained/~~deleted~~/amended

Add (f)

Supervision of operational fans (this is a requirement of RMA, OSH etc) so that there is a "person in charge" of operational machinery who can physically attend to fan problems as they might arise (noise complaints, dangerous conditions, damage, fire etc).

This part of my submission relates to:
Rural Residential Zone
6. Add a new rule etc

***I support /oppose this part of the plan change:**

***My reasons for supporting/ opposing this part of the plan change are:**

***The decision I seek from Council is retained/deleted/amended**

*Refer foregoing comments on Rural 3 and 4 Zones which apply equally or appropriately amended to Rural Residential zoning.

This part of my submission relates to:
Appendix K Marlborough Ridge Zone
7. Add a new rule etc

***I support /oppose this part of the plan change:**

***My reasons for supporting/ opposing this part of the plan change are:**

***The decision I seek from Council is retained/deleted/amended**

*Refer foregoing comments on Rural 3 and 4 Zones which apply equally or appropriately amended to Marlborough Ridge zoning.

This part of my submission relates to:
Appendix K Marlborough Ridge Zone
10. Add a new rule etc

***I support /oppose this part of the plan change:**

***My reasons for supporting/ opposing this part of the plan change are:**

***The decision I seek from Council is retained/deleted/amended**

*Refer foregoing comments on Rural 3 and 4 Zones which apply equally or appropriately amended to Marlborough Ridge zoning

This part of my submission relates to:
Section 32 of the Report, File Ref W045 -15-58 and M135 -15 - 23

***I support /oppose this part of the plan change:**

***My reasons for supporting/ opposing this part of the plan change are:**

***The decision I seek from Council is retained/deleted/amended**

*Refer to the Report, Section 32, p 24, para 2, second sentence:

> ***"Compliance with this standard has to be supported with a design certificate from an appropriately qualified and experienced acoustical engineer."***

I am not sure that such a person as you describe as an "acoustical engineer" specifically exists in New Zealand. The question of an appropriate "design certificate" is also unclear.

Rather, some architects, some engineers, some fan suppliers, etc. might purport to be "acoustical engineers" when they might not have a recognized and appropriate engineering qualification, might not be able to give an unbiased evaluation and might not hold appropriate and current Professional Indemnity insurance..

Council should refer the matter of the definition, qualifications and experience to The New Zealand Institute of Profession Engineers (IPENZ) for clarification on what would be "an appropriately qualified and experienced acoustical engineer."

The decision I seek from Council is that a suitable definition *of "an appropriately qualified and experienced acoustical engineer"* be included to the Schedule of Proposed Changes.

C J Smith

06/10/2009

Part. N° 5.

FORM 5

SUBMISSION ON A PUBLICLY NOTIFIED PROPOSED PLAN CHANGE UNDER CLAUSE 6 OF THE RESOURCE MANAGEMENT ACT 1991-

To: Marlborough District Council
PO Box 443
Blenheim 7240
Attention: Mark Caldwell
Fax (03) 520 7496
frostfans@marlborough.govt.nz

Full name of submitter: Bunberg Farm (2003) Ltd.

Postal address: Box 7003
Blenheim

This is a submission on proposed Plan Change 23 – Use of wind machines for frost protection and Plan Change 58 – Use of wind machines for frost protection ("the Plan Change").

The specific provisions of the proposal that my submission relates to are: ***(give details)***

- the change of status of frost fans from permitted to controlled;
- the lowering in decibel level from 60 to 55 dB LAeq;
- the rule that no frost fan shall be located within 500 metres of an Urban Residential, Township Residential, Rural Residential Zone or the Marlborough Ridge; and
- the list of matters that the Council may impose conditions on.

My submission is:
(include whether you support or oppose the specific provisions or wish to have them amended and the reasons for your views)

I am aware of and support the submission made by New Zealand Winegrowers. I oppose each of the provisions listed above for the reasons provided in that submission.

In addition, I would like to state

I seek the following decision from the Marlborough District Council:
(give precise details)

Either: Withdraw the variation ~~until the programme of forensic monitoring~~ is ~~completed; OR~~

Should the Council proceed with the Plan Change, then the amendments requested are set out in the submission of New Zealand Winegrowers.

☑ **I wish to be heard** in support of my submission

☐ **I do not wish to be heard** in support of my submission

(tick one box)

If others make a similar submission **I would / ~~would not~~** *(delete one)* be prepared to consider presenting a joint case with them at any hearing

Signature of person making submission or authorized agent — Date 22/10/09

Submissions close on Friday 23 October 2009 at 5.00pm

Part N° 6

FORM 5

SUBMISSION ON A PUBLICLY NOTIFIED PROPOSED PLAN CHANGE UNDER CLAUSE 6 OF THE RESOURCE MANAGEMENT ACT 1991-

To: Marlborough District Council
PO Box 443
Blenheim 7240
Attention: Mark Caldwell
Fax (03) 520 7496
frostfans@marlborough.govt.nz

Full name of submitter: Dashwood Corner Vineyard Ltd.

Postal address: Box 1003
Blenheim

This is a submission on proposed Plan Change 23 – Use of wind machines for frost protection and Plan Change 58 – Use of wind machines for frost protection ("the Plan Change").

The specific provisions of the proposal that my submission relates to are: ***(give details)***

- the change of status of frost fans from permitted to controlled;
- the lowering in decibel level from 60 to 55 dB LAeq;
- the rule that no frost fan shall be located within 500 metres of an Urban Residential, Township Residential, Rural Residential Zone or the Marlborough Ridge; and
- the list of matters that the Council may impose conditions on.

My submission is:
(include whether you support or oppose the specific provisions or wish to have them amended and the reasons for your views)

I am aware of and support the submission made by New Zealand Winegrowers. I oppose each of the provisions listed above for the reasons provided in that submission.

In addition, I would like to state

I seek the following decision from the Marlborough District Council:
(give precise details)

Either: Withdraw the variation ~~until the programme of forensic monitoring~~ is ~~completed; OR~~

Should the Council proceed with the Plan Change, then the amendments requested are set out in the submission of New Zealand Winegrowers.

☑ **I wish to be heard** in support of my submission

☐ **I do not wish to be heard** in support of my submission

(tick one box)

If others make a similar submission I **would** / ~~would not~~ *(delete one)* be prepared to consider presenting a joint case with them at any hearing

Signature of person making submission or authorized agent

22/10/09
Date

Submissions close on Friday 23 October 2009 at 5.00pm

Part No 7

FORM 5

SUBMISSION ON A PUBLICLY NOTIFIED PROPOSED PLAN CHANGE UNDER CLAUSE 6 OF THE RESOURCE MANAGEMENT ACT 1991-

To: Marlborough District Council
PO Box 443
Blenheim 7240
Attention: Mark Caldwell
Fax (03) 520 7496
frostfans@marlborough.govt.nz

Full name of submitter: Little Oasis Vineyard Ltd.

Postal address: Box 1003
Blenheim

This is a submission on proposed Plan Change 23 – Use of wind machines for frost protection and Plan Change 58 – Use of wind machines for frost protection ("the Plan Change").

The specific provisions of the proposal that my submission relates to are: ***(give details)***

- the change of status of frost fans from permitted to controlled;
- the lowering in decibel level from 60 to 55 dB LAeq;
- the rule that no frost fan shall be located within 500 metres of an Urban Residential, Township Residential, Rural Residential Zone or the Marlborough Ridge; and
- the list of matters that the Council may impose conditions on.

My submission is:
(include whether you support or oppose the specific provisions or wish to have them amended and the reasons for your views)

I am aware of and support the submission made by New Zealand Winegrowers. I oppose each of the provisions listed above for the reasons provided in that submission.

In addition, I would like to state

I seek the following decision from the Marlborough District Council:
(give precise details)

Either: Withdraw the variation ~~until the programme of forensic monitoring~~ is ~~completed; OR~~

Should the Council proceed with the Plan Change, then the amendments requested are set out in the submission of New Zealand Winegrowers.

☑ **I wish to be heard** in support of my submission

☐ **I do not wish to be heard** in support of my submission

(tick one box)

If others make a similar submission **I would / ~~would not~~** *(delete one)* be prepared to consider presenting a joint case with them at any hearing

Signature of person making submission or authorized agent

22/10/09
Date

Submissions close on Friday 23 October 2009 at 5.00pm

Part N° 8

SUBMISSION ON A PUBLICLY NOTIFIED PROPOSED PLAN CHANGE UNDER CLAUSE 6 OF THE RESOURCE MANAGEMENT ACT 1991-

TO: Marlborough District Council
PO Box 443
Blenheim 7240
frostfans@marlborough.govt.nz

NAME: New Zealand Winegrowers

ADDRESS FOR SERVICE: New Zealand Winegrowers
PO Box 90276
Victoria Street West
Auckland 1142

Attention: Kristy Newland

SUBMISSION ON BEHALF OF NEW ZEALAND WINEGROWERS:

New Zealand Winegrowers (**NZW**) make this submission in response to the proposed change to the Wairau/Awatere and Marlborough Sounds Resource Management Plans, specifically: Plan Change 23 – Use of wind machines for frost protection and Plan Change 58 – Use of wind machines for frost protection ("the Plan Change").

The submitter opposes the proposed Plan Change.

BACKGROUND

New Zealand Winegrowers was formed in 2002 as a joint venture between the Wine Institute of New Zealand Inc. and the New Zealand Grape Growers Council Inc. Membership comprises all the winemakers and grape growers in New Zealand. Current membership includes 655 winemakers and 1,128 grape growers.

Our strategic goal is to build a great New Zealand wine industry. This means a wine industry which is world class in all aspects of grape and wine production. Inherent in that goal is a desire to ensure the sustainability of our industry as follows:

i. Our goal is to have 100% of production accredited to an independently accredited sustainability programme by 2012. To date, over 82% of producing area is accredited or working towards Sustainable Winegrowing New Zealand accreditation.

ii. By 2015, the industry projections are for $2 billon worth of sales and 35,000 hectares in production. It is therefore crucial that we have a sound, clearly understood and consistent resource management regime going into the future.

GENERAL SUBMISSION

Lack of justification

1.1 The stated purpose of the Plan Change is to "better achieve the objectives and policies of the Wairau/Awatere and Marlborough Sounds Resource Management Plans than do the existing frost fan provisions of the Plans."

1.2 The Section 32 Report ("the Report") is structured around the assumption that the existing provisions are not effective because they are "too difficult to enforce." There is little explanation or analysis in the Report to support this assumption. Given that the Plan Change will not apply

to existing frost fans (being the cause of the 28 frost fan complaints recorded by the Council in the ten years to 2008), it is astonishing that the Council's solution to the issue is to introduce new rules with no understanding of whether the current rules could be effective if enforced.

1.3 Further, the Report's introductory section describes the Plan Change as a "limited measure" required to enable the Council to more effectively gather information about the noise generated by frost fans in order for it to determine whether more substantive changes should be made. On this basis also, we question whether the Plan Change is in fact the most efficient approach for achieving the purposes of the Act.

1.4 As an industry dependant on frost protection technology to remain viable, we do not support the Plan Change as an information gathering exercise. It is a costly, uncertain and unscientific method by which to gather information. As submitted previously, NZW is supportive of a science based set of rules which provide certainty to growers about what is required to comply. It is our view that this Plan Change goes against that objective. In addition, it is our submission that the Plan Change will neither address the issue of rural amenity conflict nor will it give effect to the Wairau/Awatere Plan's policies to protect the productive capacity of rural land and should therefore be withdrawn.

Rural Land Use

1.5 One of the key issues which is not addressed in the Report is the primacy given by Council to the Wairau/Awatere Plan's Rural Environments policies and objectives, specifically:

> *"to enable rural activities which might generate adverse effects such as noise or smell, to operate in rural areas in accordance with accepted practices, without being significantly compromised by other activities demanding higher levels of amenity" [Policy 12.2.2.2.8];* and
>
> *"to adequately provide within the rural zones for a range of persons wishing to live in the rural areas without ...inhibiting or diminishing the life supporting capacity of the soil or the primary productive capacity of the land" [Residential activity in the rural environment – Objective 12.5.2.1].*

1.6 Except for listing the relevant provisions and noting that rural activities produce effects that people moving into rural areas may not have anticipated, there is no discussion in the Report of the impact that the proposed rules will have on the productive capacity of the region's rural land. We discuss the effect that the proposed separation distances will have on large tracts of potentially viable land below at paragraphs 5.1 to 5.14.

1.7 Given that the direction of the policy framework in the Rural Environments chapter of the Wairau/Awatere Plan is framed around the protection of rural land uses, we note that the Plan lacks any distinct mechanisms to adequately achieve this.

1.8 Over time, rural production activities in Marlborough have moved from pastoral and horticultural to viticultural in response to market demand. However, this is not a change in land use. The land use has remained rural and the activity has remained a rural production activity. We therefore find the Report's inference that some rural activities are considered more 'traditional' than others to be unhelpful and irrelevant.

1.9 The land use which has changed in the region is the subdivision of rural land into rural residential developments. We do not agree that the Council can address this matter in isolation from the wider reverse sensitivity context. As raised in our previous submissions, if all new rural residents were made aware that they were moving into a productive working environment which is subject to the effects of permitted uses that are part of that environment (ie farming, horticulture, viticulture and forestry) the scope for conflicts of this nature arising in future would be significantly reduced. One of the mechanisms by which this could be achieved is noted at page 10 of the Report.

1.10 Instead of addressing this issue in a holistic way, it is our submission that the Plan Change represents a politicized stop-gap in response to complaints centred around a limited number of 'hot spots'. Yet in an attempt to manage public perception around these localised issues, the proposed Plan Change will apply to all rural land use with no scientific or other evidential basis and no evidence that the new provisions will have any impact on the 'hot spots' driving the change.

1.11 To place the issue in context, assuming from the planner's report that the 2 complaints received by the Council in 2007 and the 10 received in 2008 were instigated solely by the operation of frost fans (although the Report notes that the noise from helicopters may have also contributed), and were received from 12 separate complainants, this is still a very minor incident when compared with the total number of frost fans in the region. A targeted strategy which focuses on enforcing the current framework in the previously identified 'hot spots' is likely to do more to address the issues identified in the Report than the proposed Plan Change.

1.12 Further, it is unlikely that in the time it will take the Council to undertake the research deemed necessary in order to understand the full effects of frost fan usage that there will be a proliferation of new frost fans that would exacerbate the existing dissatisfaction of their use in the 'hot spots' in question. This also raises the question of proportionality. It is our submission that the Council's response is not proportionate to the scale of issue and therefore conflicts with s31 of RMA.

1.13 For these reasons NZW considers it would be more appropriate for the Council to address this in the context of the wider issue of reverse sensitivity in the rural productive zone; and resolve the enforceability issues within the current rule framework than to subject the region's rural businesses to this ad hoc and ill conceived regulatory restriction.

Section 32 Analysis

1.14 Section 32(4)(b) of the Resource Management Act ("the Act") requires the Section 32 Report to evaluate the risks of acting or not acting if there is uncertain or insufficient information about the subject matter of the policies, rules or other methods.

1.15 As noted above, the Report states that the changes proposed are to enable the Council to gather information about the noise generated by frost fans in order to determine whether there should be more substantive changes. Accordingly, the Council is acknowledging that there is insufficient information about the subject matter.

1.16 The reporting officer's evaluation of the risks of acting or not acting is cursory. For example, on page 24 the Report states: "In this case, if the Council does not act to change the permitted activity status to controlled in the resource management plans, the existing situation of not being able to determine whether frost control fans are complying with existing rules will continue. This process, as already explained, is a two stage process that will enable the gathering of further information to make a determination as to whether further plan changes are necessary about how our activities in Marlborough's rural environments should be provided for".

1.17 It is our view that the costs of a further additional plan change at a later date and the uncertainty to growers that will result from not knowing if a further plan change with additional restrictions is imminent has not been adequately discussed or considered in terms of the requirements of Section 32. If the Council believes that they have inadequate information on the effects of frost fans then they should put this plan change on hold until such time as they have completed the assessments and monitoring considered necessary for them to make a full and informed decision on the way forward with the proposed plan changes. We note that the Report also fails to take into account the Council's ongoing ability under s16 of RMA to control unreasonable noise.

1.18 We submit that the Report is also in breach of s32(3) in that it fails to establish that the Plan Change is the "most appropriate" method to achieve the objectives.

SPECIFIC SUBMISSIONS

2. CHANGE OF STATUS

2.1 Proposed Rule 30.2.9 of the Wairau/Awatere Plan and Rule 36.2.7 of the Marlborough Sounds Plan require all frost fans to obtain a Controlled Activity consent.

2.2 Essentially, the Plan Change proposes to change the status of frost fans from permitted to controlled in order to ensure that landowners "demonstrate compliance with the noise standards before the wind machines are erected." We are unsure, given the Council's assertion that it is currently unable to enforce the current noise standards, how it intends to demonstrate non-compliance of a proposed machine prior to its installation either.

2.3 While a Controlled Activity status may provide some certainty to growers that a consent will be granted (subject to conditions), after further consideration of the proposed plan change including the reasoning for the proposed Controlled Activity status and our assessment of acoustic advice provided through other recent plan changes in other districts, it is not considered the most appropriate way to deal with the issue.

2.4 Permitted Activity status removes the unnecessary costs for growers associated with entering the resource consent process when, in NZW's submission, the effects of establishing frost fans are well known. It would allow for frost control fans where the effects are known to be acceptable to be established as of right. For those machines which are outside the Permitted Activity standards the Council would retain the ability for further assessment but also to decline the consent if the effects deemed that necessary.

3. DECIBEL LEVEL

3.1 The Plan Change proposes to reduce the decibel level to 55 dB LAeq. It appears from the analysis in the Report that the decibel limits considered appropriate by the Council follow a recommendation by John Maassen ("the Maassen Report") that the standards be reduced to account for special audible characteristics and a comment by a supplier of frost fans that "its four bladed frost fans could meet the 55 dB LAeq requirement at 300 metres." It is our submission that this is not a sound basis upon which to base such an important amendment, nor is it supported by evidence.

Effective Decibel Level

3.2 The Maassen Report recommended a reduction of the noise limit from 60 to 55 dBA with the provision that no further penalty should be applied for frost fans with special audible characteristics.

3.3 The general noise interpretation provisions of the Wairau/Awatere Plan already incorporate a 5dB limit adjuster for special characteristics. As the Plan Change omits to remove the operation of this provision, the proposed noise level could be enforced as 50 dBA. This effective limit is not supported by the acoustic evidence previously submitted to the Council by NZW.

Acoustic Evidence

3.4 In preparation for the Hurunui District Council's Proposed Plan Change 18 to the Hurunui District Plan, NZW engaged an acoustic expert to provide an independent acoustic assessment of the proposal to set the decibel limit within the Waipara Valley Wine Region at 55 dB LAeq. The resulting report ("Acoustic Report") found that the various models of frost fans have variable levels of sound emission and sound qualities, meaning that there "is no consistent picture as to whether these sound characteristics can be classified as containing 'special

audible characteristics' as described by New Zealand Standard NZS 6802". Further, from a policy perspective, the Acoustic Report noted:

> *"In order to encourage the development of machines which do not emit special audible characteristics, it is important to only apply the penalty for sounds with special audible character under the relevant NZ Standards where there is clear and unequivocal evidence of additionally annoying tonal components and/or impulsiveness."*[1]

3.5 Additionally, the Acoustic Report reviewed the World Health Organisation (WHO) guidelines for community noise and recommended that the internal 30 dBA level could be achieved with an outdoor noise level of 60 dBA Leq.

3.6 Accordingly, we submit that the noise limit should remain at 60 dB with the 5dB penalty only being applied in appropriate cases in accordance with NZS6802:2008.

4. NOISE MEASUREMENT DISTANCE

4.1 The Plan Change prescribes that noise from a frost fan shall not exceed 55 dBA LAeq at the notional boundary of any existing dwelling, visitor accommodation or other habitable building.

4.2 In the existing Plans, "notional boundary" is defined as the boundary of a 20 meter zone created around a dwelling or nominated building for the purposes of measuring noise intrusion. "Habitable building" is not defined. "Dwelling house" (single residential unit) encompasses accessory buildings and "visitor accommodation" includes ancillary land and buildings used for dining, sanitation, conference and recreation. Such facilities could well be spread out over a wide area and the 20 meter exclusion zone extended from the most remote unit.

4.3 It is accordingly requested that the term "notional boundary" be unambiguously defined in order to limit the area of productive land affected. Given that the provision relating to Noise Sensitive Activities is focussed at ensuring the noise level in any bedroom of the dwelling should not exceed 30 dB LAeq, the notional boundary could therefore potentially be considered as the external wall of the bedroom closest to the frost fan in question.

5. SETBACK DISTANCES

5.1 Proposed rule 30.2.9.1.4 requires that no frost fan shall be located within 500 metres of an Urban Residential, Township Residential, Rural Residential Zone or the Marlborough Ridge Zone. This replaces the current rule 30.1.4.2.3(c) which stipulates that "the wind machine be located no closer than 500 metres to any residential zone, or within 100 metres of a dwelling house not located on the property."

5.2 It is not clear from the Report's analysis why the Council considers that 300 metres would achieve their recommended decibel limit in proposed rule 30.2.9.1.1(i), but then prescribes a considerably greater separation distance in proposed rule 30.2.9.1.4. An increased separation is clearly not required to achieve the objective.

5.3 The proposed increased separation distances would render many hectares of current and potential viticultural land unviable due to a lack of protection from the threat of frost without obtaining resource consent.

5.4 Frost control fans generally have a maximum range of thermal effectiveness of approximately 150 metres, although this will vary between machines and on local terrain and crop factors (upwind, for example, thermal effectiveness is estimated to be closer to 80 metres). Particular

[1] Specific criteria are available for the assessment of tonality and impulsiveness within the 2008 version of NZS6802 Appendix B of NZS6802:12008 sets out an explicit test for tonality that should be followed for assessing whether there 5 dB penalty can be justified for that effect.

conditions must be present to achieve an effective radius of 150 metres. The actual effective distance is more often between 120 and 130 metres. As such, it is obvious that the proposed blanket setback distance in rule 30.2.9.1.4 would be highly detrimental to the effective use of frost control fans as a method of frost control.

5.5 Under the Council's proposal, if a vineyard were cited alongside any one of the four Plan Zones identified, a frost fan would be required to be sited 500 metres from that boundary.

5.6 With a thermal effectiveness of a maximum of 150 metres in radius, this would result in an unprotected vineyard area of 350 metres.

5.7 The total area unprotected would be a rectangle with one side being the boundary and the other a concave curve of 150 metres in radius with the centre of the concave 350 metres from the boundary.

5.8 In the very best possible case with a rectangular vineyard having only one boundary with an identified zone, the 'buffer zone' created by the proposed 500 metre separation distance occupies 11.465 hectares and the protected area is only 7.0695 hectares. In simpler terms, the total area able to be protected as of right under the proposed rules is only 38% of the vineyard. See attached Diagram A.

5.9 For a single fan situated in the middle of a property in one of the prescribed zones, the minimum size of the property would need to be 1000 metres by 1000 metres or 100 hectares and the protected area would still be only 7.0695 hectares. Again to simplify this, only 7% of the vineyard could be protected by a frost fan as of right.

5.10 The average size of a Marlborough vineyard is approximately 23.7 hectares. An average sized vineyard measuring 500 metres by 500 metres or 25 hectares with only one boundary bordering an identified zone would be entitled to no frost fan protection as of right under the proposed rules. See attached Diagram B.

5.11 Under s 32(4)(a) of the Act the Council is required to carry out a rigorous cost benefit analysis on the proposed plan change. However, aside from a cursory reference to the cost to the Council of preparing the changes and the cost to growers in having to obtain resource consents, the Report fails to quantify the potential loss that would result from the large tracts of potentially viable land found to be unusable under the proposed regime.[2]

5.12 For example, in terms of an average vineyard (as outlined above at paragraph 5.10) which had been refused resource consent to install a frost fan based on its inability to comply with proposed rule 30.2.9.1.4, the potential loss in terms of that unusable land per year would be:

(a) $425,000 as income from grapes;

(b) $192,000 in wages;

(c) $29,000 in taxes;

(d) $10,000 in rates; and

(e) $91,000 as income for vineyard service providers.

Total = $747,000.

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[2] We acknowledge that under the proposed rules consent may be sought for frost fans to be located within the proposed separation distance; however, given the restricted discretionary status of such consents, it is uncertain whether consent would be obtained.

These figures are based on the Ministry for Agriculture and Forestry's 2009 Vineyard Monitoring Programme (Marlborough Vineyard Model).[3] They do not take into account other working expenses such as insurance, ACC, administration, legal/accountancy fees and levies.

5.13 We therefore submit that this type of loss is not only contrary to the policies and objectives of the Plan which seek to provide for rural productive activities to occur on rural-zoned land, but it also conflicts with one of the key principles of the RMA – providing for the economic well-being of people and communities.

5.14 Given that a frost fan could meet the current noise decibel limit of 60dBA at the boundary of these Zones at distances less than the one prescribed in the rules, we do not support this rule. Not only does the proposed rule lack any scientific basis, the Council itself concedes at page 23 of the Report that separation distances between dwellings and frost fans should effectively be determined by the point at which the prescribed noise level is achieved.

Marlborough Ridge Zone

5.15 In 1992 the Council proposed a plan change to make Marlborough Ridge rural-residential. The policy for the zone acknowledged that the Zone was situated in the midst of a rural productive area and that appropriate rules to minimise reverse sensitivity were therefore required. It was acknowledged by the Council at the time that there would be cross-boundary effects (then envisaged as bird bangers) and provision was made in the Plan for it. On that basis, NZW opposes the inclusion of the Marlborough Ridge Zone in this rule.

6. MATTERS THAT COUNCIL MAY IMPOSE CONDITIONS ON

6.1 NZW reiterates its concern in relation to several of the matters over which the Council has reserved its power to impose conditions on.

6.2 The sole justification provided by the Council for including these matters is "to enable it to gather information about how frost fans are used." We are therefore unsure why it is necessary for the Council to impose conditions in this respect in relation to the speed of a frost fan *or* its operational requirements.

6.3 The operational requirements of frost fans are stipulated within the proposed standards of the Plan. Failure to meet these standards would require an application for Limited Discretionary Activity consent to be made whereby the Council can use its discretion to impose conditions of consent over and above the standards specified for a Controlled Activity. As such, additional conditions of consent are not necessary and these categories should be removed.

6.4 It appears that this rule is being included in order to enable and expedite the imposition of subsequent and as yet unannounced controls and conditions on the use of frost fans without resorting to the rigour of a further section 32 exercise. This again raises our concern that the Council is creating an environment of regulatory uncertainty in order to protect itself politically where necessary.

6.5 If the Council intends to impose further controls/conditions on growers in relation to operational requirements and monitoring then we request that these be based on technical evidence that has been robustly produced and peer reviewed, and included within the Plan to allow the necessary section 32 assessment and consultation.

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[3] http://www.maf.govt.nz/mafnet/rural-nz/statistics-and-forecasts/farm-monitoring/2009/horticulture/viticulture/viticulture.pdf

7. NOISE SENSITIVE ACTIVITIES

7.1 NZW support the inclusion of the proposed reverse sensitivity rule with the following minor change:

> *Prior to the issue by Council of a building consent for any new dwelling house located on a separate lot under different ownership within 1000 metres of any frost control fan acoustic certificate shall be provided to the Council by a suitably qualified and experienced acoustic engineer to confirm that the building work has been designed and specified to achieve an insulation rating of DnTw + Ctr>30dBA for the building envelope as described within NZS 1276.1:1999 acoustics-rating of sound insulation in buildings and of building elements Part 1: Airborne Sound Insulation.*
>
> *For the purpose of this rule, "frost fan" includes a proposed frost control fan for which an approved building consent and/or resource consent has been granted.*[4]

8. Overall, we appreciate that by including this provision the Council has made an effort to protect rural industry from reverse sensitivity and this aspect of the proposed plan change is supported.

9. FREQUENCY OF USE

9.1 As noted in our Acoustic Report, frost fans operate for specific purposes during a limited time period of operation and may warrant specialised limits based on these factors (as opposed to application of the normal permitted activity noise standards for these devices). It is our submission that the Council should not analyse this issue in isolation from an acknowledgment of the limited nature of frost fan usage.

9.2 In support of this approach, we note the Environment Court's comments in *Maclean v Marlborough District Council* (8/7/2008, Christchurch, C081/08):

> *"Frost fans are a crop protection mechanism that intermittently produces high noise levels, and this is part of the inherent nature of land based production activities. However they will operate only for a very small percentage of the time, probably on less than 5% of the available days in a year. This figure (5%) is our calculation.] Such fluctuations in amenity should be accepted as anticipated components of rural amenity values, particularly by those choosing to live in rural areas such as this Rural Residential zone."*

When considered annually, the duration of frost fan usage is in fact very low and due consideration should be given to this in any new framework proposed by the Council.

10. RESOLVING ENFORCEMENT ISSUES WITH CURRENT FRAMEWORK

10.1 Given that the Council's difficulties with enforcement appear to be the impetus behind the Plan Change, it would seem to be critical that these were resolved before new (and potentially also "unenforceable") rules are formulated.

10.2 As noted above, the Report fails to clearly identify what those difficulties are and why they cannot be resolved. On page 8 the Report states "There are issues with monitoring compliance with the noise conditions being too difficult to enforce, because they relate to one fan, and the reality is that often there is more than one fan operating at the time of assessment." No evidence is provided to support the Council's assumptions relating to cumulative noise effects.

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[4] The DnT,w approach for specifying the acoustic performance of the building envelope can be measured in-situ and provides certainty in the design process according to previous acoustic advice.

10.3 On this point the Acoustic Report concluded:

> *"If two frost protection fans are running, and they are each the same distance from an observer, we find that the cumulative noise of these two machines would results in a 3 dB increase over the noise level measured when one of the machines running alone. Where one or other of the frost protection fans lies at a greater distance to the receiving position than the other, a noise level increase of less than 3 dB will occur. Thus, the cumulative noise level effect is not large.*[5]
>
> *Also, it should be borne in mind that simply because frost fan are located in the same area does not mean that they will always operate in unison. A host of site-specific factors related to the siting of the fans and terrain will cause differences in the micro climate which means that not all frost fans located within a local area will always operate concurrently. In any event, the area of effectiveness of each fan will ensure the cumulative effects, if they do arise, will be low level due to the low density with which frost fans occur within wine growing areas, due to the fact that frost fans do not need to be located close to each other."*

10.4 We therefore request that the Council review its conclusion that the current framework is unenforceable on the basis of cumulative noise effects. As noted above, the Council would be in a much better position to address the issue by resolving its enforceability issues within the current rule framework than to subject the region's rural businesses to further regulatory restrictions.

NZW SEEK THE FOLLOWING DECISIONS FROM THE LOCAL AUTHORITIY:

Relief Sought:

Either:

Withdraw the variation until the programme of forensic monitoring is completed;

Or:

Should the Council proceed with the Plan Change then several amendments to the proposed Plan Changes are requested. The specific changes are set out below.

Plan Change 23 to the Wairau/Awatere Resource Management Plan

Add a definition as follows:

Frost fan	means a land based device, designed or adapted to control frost by fanning warmer air over potentially frost-affected surfaces, and includes the support structure.

Rural 3 and 4 Zones

Amend Rule 30.1.4.2.3 to read as follows:

Operation of frost fans shall be a Permitted Activity provided the activity conforms to the following standards and terms:

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[5] Citing *Cumulative Noise from Frost Boss Wind Machines*, Richard Kam B.E(Mech), M.E(Aero), Aerodynamic Research Engineer, Rikan Aeromarine Ltd, Napier.

(a) Noise from all frost fans operating cumulatively on a property shall not exceed 60dBA Leq when measured:

(i) At a distance of 300 metres from the frost fan(s); or
(ii) At the notional boundary[6] of any existing dwelling, visitor accommodation or other habitable building (other than on the site which the frost fan is located), whichever is the least distance.

The sound levels shall be measured in accordance with the provisions of NZS 6801:2008 Acoustics – Environmental Noise.

(b) Frost fans shall only be operated for frost protection and when the air temperature on the vineyard drops to 2 degrees Celsius with the exception of:

(i) Maintenance and testing purposes.

Add a new Rule 30.1.4.2.5 as follows:

(a) Any new dwelling house, visitor accommodation or other habitable building located within 300 metres of any frost control fan shall provide an acoustic certificate to the Council by a suitably qualified and experienced acoustic engineer to confirm that the building work has been designed and specified to achieve an insulation rating of DnTw + Ctr>30dBA for the building envelope as described within NZS 1276.1:1999 acoustics-rating of sound insulation in buildings and of building elements Part 1: Airborne Sound Insulation.

(b) This rule shall also apply to any alteration of an existing dwelling house, visitor accommodation or other habitable building located within 300 metres of any frost fan, where a new bedroom forms part of the alteration. Only new bedrooms must be treated in accordance with (a) above.

(c) For the purpose of this rule, "frost fan" includes a proposed frost fan for which an approved building consent and/or resource consent has been granted.

Rural Residential Zone

Add a new Rule 31.1.5.1 - Noise Sensitive Activities as follows:

(a) Any new dwelling house, visitor accommodation or other habitable building located within 300 metres of any frost control fan shall provide an acoustic certificate to the Council by a suitably qualified and experienced acoustic engineer to confirm that the building work has been designed and specified to achieve an insulation rating of DnTw + Ctr>30dBA for the building envelope as described within NZS 1276.1:1999 acoustics-rating of sound insulation in buildings and of building elements Part 1: Airborne Sound Insulation.(b) This rule shall also apply to any alteration of an existing dwelling house, visitor accommodation or other habitable building located within 300 metres of any frost fan, where a new bedroom forms part of the alteration. Only new bedrooms must be treated in accordance with (a) above.

(c) For the purpose of this rule, "frost fan" includes a proposed frost fan for which an approved building consent and/or resource consent has been granted.

[6] Note our comments in para 4 that "notional boundary" be unambiguously defined as the external wall of the bedroom closest to the frost fan in question.

Appendix K

Amend Rule 2.2.11 as follows:

Operation of frost fans shall be a Permitted Activity provided the activity conforms to the following standards and terms:

(a) Noise from all frost fans operating cumulatively on a property shall not exceed 60dBA Leq when measured:

(ii) At a distance of 300 metres from the frost fan(s); or
(iii) At the notional boundary of any existing dwelling, visitor accommodation or other habitable building (other than on the site which the frost fan is located), whichever is the least distance.

The sound levels shall be measured in accordance with the provisions of NZS 6801:2008 Acoustics – Environmental Noise.

(b) Frost fans shall only be operated for frost protection and when the air temperature on the vineyard drops to 2 degrees Celsius with the exception of:

i. Maintenance and testing purposes.

Add a new Rule 2.2.11.1 as follows:

(a) Any new dwelling house, visitor accommodation or other habitable building located within 300 metres of any frost control fan shall provide an acoustic certificate to the Council by a suitably qualified and experienced acoustic engineer to confirm that the building work has been designed and specified to achieve an insulation rating of DnTw + Ctr>30dBA for the building envelope as described within NZS 1276.1:1999 acoustics-rating of sound insulation in buildings and of building elements Part 1: Airborne Sound Insulation.

(b) This rule shall also apply to any alteration of an existing dwelling house, visitor accommodation or other habitable building located within 300 metres of any frost fan, where a new bedroom forms part of the alteration. Only new bedrooms must be treated in accordance with (a) above.

(c) For the purpose of this rule, "frost fan" includes a proposed frost fan for which an approved building consent and/or resource consent has been granted.

Plan Change 58 to the Marlborough Sounds Resource Management Plan

Add a definition as follows:

Frost fan	means a land based device, designed or adapted to control frost by fanning warmer air over potentially frost-affected surfaces, and includes the support structure.

Rural 1 and 2 Zones

Amend Rule 36.1.3.4.2.3 to read as follows:

Operation of frost fans shall be a Permitted Activity provided the activity conforms to the following standards and terms:

(a) Noise from all frost fans operating cumulatively on a property shall not exceed 60dBA Leq when measured:

(i) At a distance of 300 metres from the frost fan(s); or

(ii) At the notional boundary of any existing dwelling, visitor accommodation or other habitable building (other than on the site which the frost fan is located), whichever is the least distance.

The sound levels shall be measured in accordance with the provisions of NZS 6801:2008 Acoustics – Environmental Noise.

(b) Frost fans shall only be operated for frost protection and when the air temperature on the vineyard drops to 2 degrees Celsius with the exception of:

i. Maintenance and testing purposes.

Add a new Rule 36.1.3.4.2.6 as follows:

(a) Any new dwelling house, visitor accommodation or other habitable building located within 300 metres of any frost control fan shall provide an acoustic certificate to the Council by a suitably qualified and experienced acoustic engineer to confirm that the building work has been designed and specified to achieve an insulation rating of DnTw + Ctr>30dBA for the building envelope as described within NZS 1276.1:1999 acoustics-rating of sound insulation in buildings and of building elements Part 1: Airborne Sound Insulation.

(b) This rule shall also apply to any alteration of an existing dwelling house, visitor accommodation or other habitable building located within 300 metres of any frost fan, where a new bedroom forms part of the alteration. Only new bedrooms must be treated in accordance with (a) above.

(c) For the purpose of this rule, "frost fan" includes a proposed frost fan for which an approved building consent and/or resource consent has been granted.

11. **NZW does wish to be heard in support of its submission.**

12. **If others make a similar submission NZW would be prepared to consider presenting a joint case with them at any hearing.**

Philip Gregan
New Zealand Winegrowers
22 October 2009

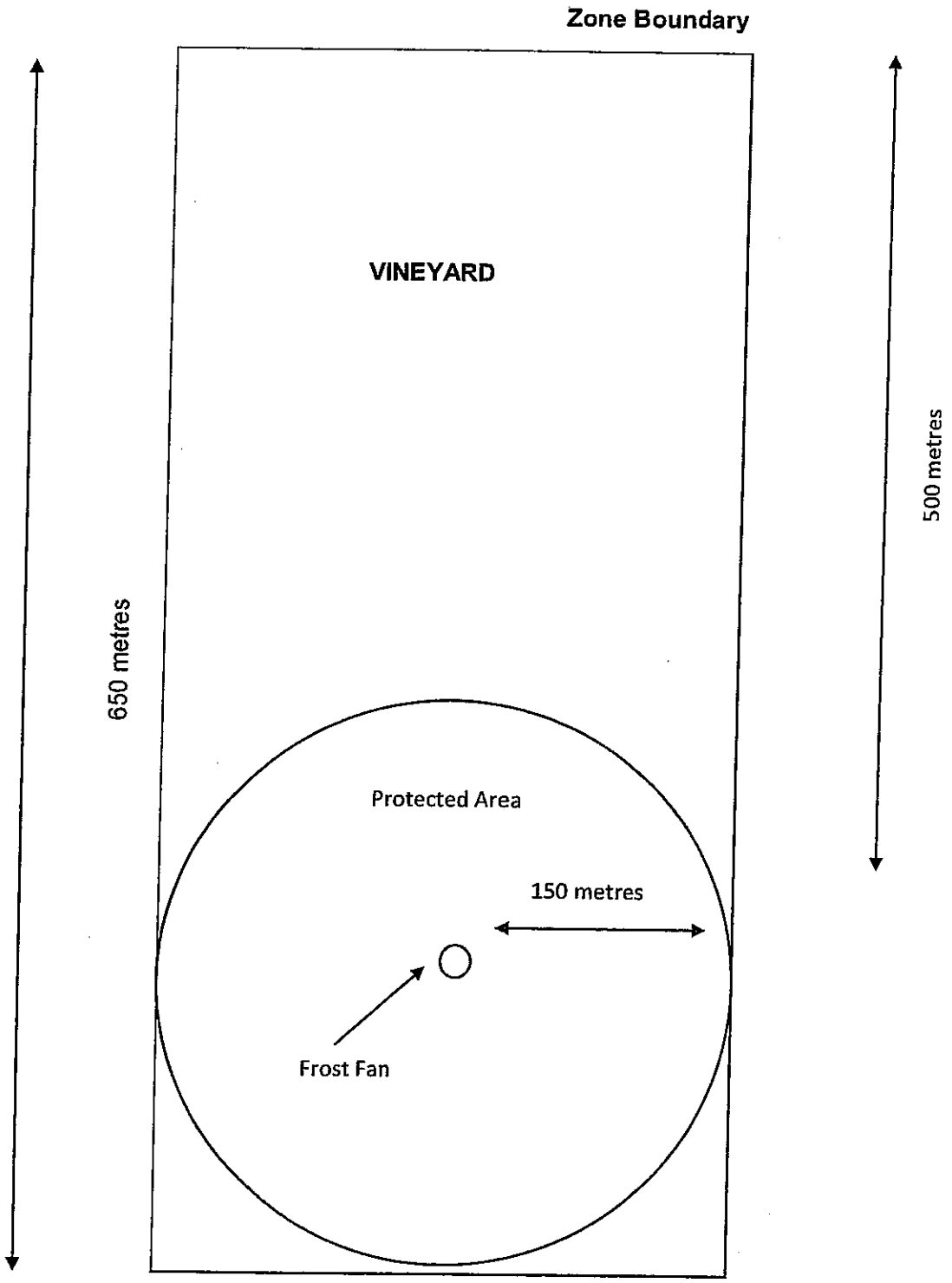

DIAGRAM A – Rectangular vineyard of 32.5ha bordering Marlborough Ridge, Urban and/or Rural/Residential Zones: 38% protectable under 30.2.9.1.4

NB Circular shape of protected area is indicative only - shape will vary according to drift.

Part Nº 9.

FORM 5 OF THE RESOURCE MANAGEMENT ACT 1991

File Refs. W045-15-58 / M13-15-23

TO: The Chief Executive
Marlborough District Council
PO Box 443
Blenheim 7240
frostfans@marlborough.govt.nz

Resource Management Act 1991 (RMA)
Clauses (5) and (6) Part 1, First Schedule

SUBMISSION ON PROPOSED PLAN CHANGES

SUBMITTER :

Name : Clintondale Trust – Whyte Trustee Company Limited

Postal Address : 183 Redwood Street, Witherlea, Blenheim 7201.

Telephone Number : 64-3-5794187

E-mail Address : clintondale@vodafone.co.nz

Address for Service : As above.

Background to the Submission

On 24th September, 2009 the Chief Executive, Marlborough District Council (MDC) notified proposed changes to the Wairau / Awatere Resource Management Plan and the Marlborough Sounds Resource Management Plan in respect of Frost Fans, specifically :-

(a) Proposed Plan Change Number (58) to the Wairau / Awatere Resource Management Plan, and

(b) Proposed Plan Change Number (23) to the Marlborough Sounds Resource Management Plan,

hereafter referred to as the Plan Changes.

2. The submitter opposes the proposed Plan Changes in their entirety, except where otherwise explicitly stated.

3. In the interests of efficiency any reference to a part of the Wairau / Awatere Resource Management Plan shall be a commensurate reference to the corresponding part of the Marlborough Sounds Resource Management Plan unless specifically stated otherwise.

Relevance of the Submission

4. The submitter has established a substantial and dispersed vineyard estate in the Marlborough region. It is a rational expectation that the submitter may take reasonable and lawful action to protect and preserve this significant investment, not only for the long term benefit of the submitter, but also for the economic and social stability and advancement of the Region as a whole. Such protection is reliant upon the ability to have confidence in an effective, consistent, and transparent statutory and regulatory regime. It is the submitter's determination that the proposed Plan Changes will not enhance the effectiveness or enforceability of the existing Plans, and will inevitably exacerbate reverse sensitivity issues.

THE SUBMISSION

Complaints

5. It is evident from the Introduction to the Section 32 RMA Report (the Report) that the impetus behind the MDC decision to change the Plans has been the incidence of complaints lodged with the Council in respect of frost fans. It is imperative however to place these complaints in perspective and context.

6. The MDC has recorded frost protection noise complaints since 1998 however concedes that some may involve the use of helicopters. Equally there is no indication as to the incidence of multiple complaints from the same source.

7. In the seven year period 1998 to 2006 only 16 complaints were lodged with the MDC, seven of those occurring in 2004.

8. In the two year period from January 2007 to December 2008 the number of frost fans in Marlborough increased from approximately 400 to nearly 1000, however in the same period only 12 complaints were lodged. Even assuming that each complaint was from a separate individual in respect of different occasions, and did not involved the use of helicopters, this incidence of complaint can only be perceived as minimal in comparison with the complement of frost fans installed.

9. This minimal complaint incidence is undoubtedly in direct proportion to the infrequent use of frost fans as can be illustrated by the submitter's experience. Three frost fans of the four bladed model were installed in mid 2004 upon securing a resource consent consequent to the presence of a rural residential subdivision within 500 meters of the intended location of the frost fans.

10. In the four year period from October, 2005 to October, 2009 the frost fans have been deployed on only ten occasions, in only six individual months throughout that period, averaging only 8.2 hours per 12 month period, and totalling just 32.7 hours operation over the 48 month duration. In effect there were 42 separate months during the period when the frost fans were not operated, apart from a total of 4.8 hours for maintenance conducted during daylight on week days. The frost fans are properly managed and attended when in operation in accordance with industry guidelines and best practises.

11. A recurrent complaint theme has been that there are alternatives to frost fans. Water based protection is only viable where there is a sufficient and reliable water source. This excludes those vineyards served by the Southern Valleys Irrigation Scheme and similar systems. Frost pots have national emissions standards implications, having equally been the subject of complaint in this respect, and used other than to supplement frost fans are only effectively and economically viable for small vineyards. It is evident that helicopters face the same reverse sensitivity issues as experienced by frost fans. Passive frost mitigation provisions e.g. inter –row cultivation do not over the degree of protection of frost fans and incur negative sustainability impacts.

12. The minimal incidence of complaint and frequency of use should be considered in the context of Chapter 22, Volume One (Objectives, Policies and Methods) of the Wairau / Awatere Resource Management Plan (the Plan) which solely addresses noise, and includes specific reference to wind machines.

13. The Introduction (22.1) states that in respect of rural activities most frequent noise complaints arise from crop sowing, tending and harvesting machinery and equipment, animals, bird scaring devices, and wind machines. Placing wind machines at the end of the list would tend to indicate the lower relative impact significance.

14. In Chapter 22, Noise, Objective and Policies, (22.3) Policy 1.3 establishes the policy intent to accommodate inherently noisy activities and processes which are ancillary to normal activities within industrial and rural areas.

15. The companion explanation to this policy statement includes :

"Rural areas are often perceived to be quiet, tranquil places - but this is not always true. Many rural activities involve noisy mobile equipment and machinery with some special audible characteristics of that noise (e.g.; bird scaring). People living in rural areas have to accept, as part of their lifestyle, reasonable noise that is generated by legitimate rural activities, including that generated by animals."

"Although there is a duty under Section 17 of the Act to avoid, remedy or mitigate any adverse effects, the Council recognises that the principle rural activities inherently involve effects that may not meet the expectations of an urban environment. These urban activities at the rural/urban interface must expect to compromise their urban amenity expectations where there are justifiable and reasonable effects as a result of primary production activities in the rural environment."

16. Chapter 12, Rural Environments, Objectives and Policies, establishes unequivocal direction that the primary productive capacity of rural land is to be protected. Specific reference is made to the fact that the Council recognises that the principle rural activities inherently involve effects that may not meet the expectations of an urban environment. Urban activities at the rural/urban interface must expect to compromise their urban amenity expectations where there are justifiable and reasonable effects as a result of primary production activities in the rural environment.

17. To this end the Plan contains at 12.2.2.2 the following Objective / Policies :-

Policy 2.3 - To limit the scale of rural subdivision and dwellings in order to retain the rural amenity values of openness, to reduce conflicts between residential and neighbouring rural activities, and to assist in protecting the quality of the water resources.

Policy 2.7 - Ensure that the patterns of small-scale rural subdivision and related residential development are not located where:-

Rural amenity values of openness will be adversely affected; or the potential for conflict between residential and neighbouring rural activities will be created, or where they already exist, be exacerbated.

Policy 2.8 - To enable rural activities which might generate adverse effects such as noise or smell, to operate in rural areas in accordance with accepted practices, without being significantly compromised by other activities demanding higher levels of amenity.

18. The accompanying explanation states "the current amenity levels in the rural areas of Marlborough are characterised by fluctuations in amenity because of both routine and seasonal land based primary production management practices. These fluctuations should be accepted as anticipated components of rural amenity values, particularly by those choosing to live in rural areas."

19. The incidence of frost machines located at the rural / urban interface is very limited. The bulk of complaints conceivably arise from the proximity of frost fans to rural residential subdivisions, or individual rural residences, both of which by definition are in rural areas, and cannot reasonably meet the expectations of an urban environment.

20. Provision is made at 12.5 Rural Residential (residential activity in the rural environment) to the extent that any residential development extending into the rural area may bring potential residents into closer contact with land use activities such as viticulture, orchards, intensive livestock operations, forestry or rural industries. Adverse effects can include smell, noise, spray drift or in the case of forestry, fire risk and fire hazard.

21. In order to ensure that individuals contemplating migration to the rural area are in no doubt as to the nature and extent of rural activities the Council is requested to adopt the reverse sensitivity mitigation initiative of including a statement on Land Information Memorandum (LIM) and Project Information Memorandum PIM) advising prospective residents of the likelihood of disturbance from primary production activities in rural zones.

22. Rural activities which are legitimately established should not be expected to relocate to accommodate residential activity. Residential activities should only be permitted to be established where clear steps have been taken to mitigate any adverse effects. The onus is clearly on the developer to ensure that a situation of conflict between the residential activity and the legitimate rural activity does not arise.

23. It is evident that the majority of complaints aired recently in the media emanated from individual rural residences located in marginal viticultural areas remote from the rural / urban interface, and where it could be reasonably expected that principle rural activities may take precedence over urban amenity expectations.

24. Further development of marginal viticultural areas requiring additional frost fans is self limiting due to viable land availability and economics. There are grounds for expectation therefore that the incidence of rational complaint will reach a plateau, and with sensitive and sensible attention will then reduce.

25. The submitter takes the pre-emptive initiative of discouraging against any inclination to introduce a Plan limitation or consent condition on the frequency or duration of frost fan

operation as such would be an entirely arbitrary measure. The Council would need to be prepared to compensate growers for any loss of production precipitated by the non-availability of frost protection resulting from such limit.

26. The temperature rule within the existing Plan sufficiently limits the frequency and duration of frost fan usage to the absolute minimum whilst ensuring their effective operation. In any event it is evident from the tone of recent complaints that any frequency or duration of use would be perceived as excessive.

Section 32 –Evaluation / Report of Proposed Plan Changes

27. The stated conclusion of the Section 32 RMA Report is that the proposed Plan Change is to "better achieve the objectives and policies of the Wairau / Awatere and Marlborough Sounds Resource Management Plans than do the existing frost fan provisions of the Plans. It is also concluded that the benefits of the proposed changes outweigh the costs".

28. The existing Plan under Chapter 22 Noise, Methods of Implementation (22.4) makes provision for :-

(a) Rules – to set noise performance standards for different areas to reflect existing amenity values,
(b) Guidelines – development of guidelines for the operation of inherently noisy rural equipment and machinery (e.g. wind machines, bird scarers). These are to address :

Location of activity;
Operation of equipment and machinery;
Operating techniques and hours of operation;
Noise levels relative to notional boundaries;
Design and form of any structures; and
Means to mitigate emission of excessive noise. The Council will provide information on appropriate land use practices and encourage use of voluntary guidelines and best practices.

(c) Enforcement - The Council will use the noise abatement provisions of the Act where emission of noise is excessive or unreasonable.
(d) Monitoring - Monitoring of noise to establish annual and seasonal profiles and to ensure compliance with rules and consent conditions.
(e) Research.
(f) Consultation.

29. The accompanying explanation states :-

"Rules define noise performance standards considered excessive or unreasonable relative to the amenity values in residential, commercial, industrial and rural areas. Where emission of noise exceeds these standards the Council will enforce the standards to protect the amenity values.

Guidelines allow the Council to provide advice to resource users on ways to avoid or mitigate the emission of excessive or unreasonable noise. Specific guidelines relating to the operation of wind machines and bird scarers will be produced."

30. Rules in respect of frost fans are established in Volume Two of the Plan, whilst the industry (NZ Wine) with Council endorsement has taken the initiative to develop, implement and encourage the use of voluntary guidelines and best practises. The Research and Consultation aspects are restricted in the current plan to the use of bird scaring devices. This only leaves the areas of Enforcement and Monitoring.

31. It is evident that the Report is devised on the premise that the current Plan is ineffective in respect of frost fans because of "issues with monitoring compliance with the noise conditions being too difficult to enforce." The Report however is deficient in explanation or substantiation of this fundamental assertion on which the proposed Plan changes are predicated.

32. Having regard to the Council's position that the proposed Plan Changes are in response to complaints, despite the fact that the existing nearly 1000 frost fans under the current Plan have only been the subject of 28 frost fan complaints recorded by the Council in the ten years to 2008, it is unconscionable that the Council's solution to the issue is to introduce new rules with limited investigation or appreciation of whether the current rules could be effective if properly enforced.

33. The Introduction to the Report seeks to emphasise the importance of noting that the proposed Plan Changes are limited in extent. Indeed a footnote to page (4) states that for the purposes of the Plan Change, no objectives or policies in the Plan are being proposed to be changed, only the rules. Whilst such contention may be determined by a restricted interpretation of the Plan terminology, it is an inescapable fact that the proposed Plan Changes will have a profound impact on the Region's viticultural industry and its ability to sustain the area's economy.

34. The Report purports that "essentially the changes proposed will enable the Council to be able to more effectively gather information about the noise generated by wind machines. The collation of information and its investigation / analysis does not necessitate nor justify a significant change to the statutory regime.

35. The Report further contends that once more information is available about the noise generated by frost fans then the Council will be in a better position to determine if there should be more substantive changes made to the Plan controlling the use of such machines for frost protection.

36. This statement is tantamount to an admission that substantive changes to the Plan should only be made when information is available. The Council contends that such information is not at hand. It is therefore reasonable to expect that changes to the Plan not be contemplated until such time as comprehensive information is secured.

37. The Council concedes that it is contemplating further, more substantive changes to the Plan in respect of frost fans. Having regard to the fact that the proposed Plan Changes have been precipitated by a minimal incidence of complaint, negating the contention of an overriding urgency, it is an equally reasonable inference that delaying any changes to the Plan until a comprehensive review can be conducted with the benefit of investigated and analysed information would have to be more effective, less disruptive, and more readily enforced than Plan changes by piecemeal instalment.

38. The MDC initiated Maassen Report (Mr. John Maassen of law firm Cooper Rapley, March 2009) unequivocally determined that there needed to be a forensic enforcement /

monitoring methodology developed and implemented by the MDC to identify the scale of the alleged problem including its frequency and duration.

39. This was based on the conclusion that the MDC was in a difficult position in terms of establishing compliance with the existing permitted activities, due to the difficulties isolating the effects of single machines. Without knowing the effects of individual machines it would be difficult to then determine the extent of cumulative effects.

40. Despite the apparent minimal incidence of complaint when compared with the total complement of frost fans, and the limited frequency of use throughout the year, compounded by assurances that work on forensic monitoring was underway, the MDC has unilaterally determined to implement fundamental plan changes without awaiting the conclusion of the monitoring it initiated, let alone an analysis of the results.

41. Without such data the MDC will reasonably be expected to experience the same difficulties establishing compliance with the proposed standards as purportedly faced with the existing requirements which precipitated the need for forensic methodology to be established in the first instance.

42. The MDC perceives that the cost of awaiting the outcome of forensic monitoring includes :-

(a) Lack of confidence in residents that standards / conditions are being complied with,
(b) Potential for increased conflict between rural residential and primary production activities,
(c) The MDC is likely to receive more complaints,
(d) Ongoing costs will be incurred in investigating whether growers are complying with standards,
(e) The existing rules are difficult to enforce.

43. On the contrary, it is a conceivable conclusion that securing the benefit of definitive analysis of comprehensive forensic data would facilitate the formulation of commensurate and effective standards, instil confidence in their efficacy, and facilitate their investigation and enforcement, whilst providing the means to evaluate and resolve reasonable complaints, thus reducing the potential for conflict.

44. It is apparent that the Report has failed to adequately consider and address the cost of resorting to an additional plan change at a later dated to take into account the result of the information collation, comparative to the cost of a single exercise enabled by a comprehensive knowledge base upon which a fully informed determination could be made, and subsequently effectively enforced.

45. Equally the Report makes no reference to consideration of the cost to viticulturists derived through uncertainty as to whether or not a further plan change with a more restrictive control regime is imminent.

46. Furthermore, the Report makes no reference to the cost incurred to a grower of the proposed setback distances which would render significant swathes of currently productive land to be unprotected by frost fans, with an inevitable but very significant cost in the impact upon the land's value.

47. Of greater concern however is the apparent failure of the Report to address the cost of the proposed Plan Changes creating two different control regimes for frost fans i.e. those

existing and future installations, possibly in the same vicinity, and the conflict that will inevitably arise when complainants insist upon the more onerous restrictions relevant to new machines being retrospectively imposed upon those frost fans provided with existing use protection.

48. Section 32 of the RMA 1991 stipulates that before a plan change is notified an evaluation must be made by the local authority, that such evaluation must examine the extent to which each objective is the most appropriate way to achieve the purpose of the Act, and whether having regard to their efficiency and effectiveness, the policies, rules, or other methods are the most appropriate for achieving the objectives. Such evaluation must take into account the benefits and costs of policies, rules, or other methods, and the risk of acting or not acting if there is uncertain or insufficient information about the subject matter of the policies, rules, or other methods. The person carrying out the evaluation must prepare a report summarising the evaluation and giving reasons for that evaluation.

49. On page (19) of the Report Option (4) is raised i.e. the amendment of the status of frost fans from permitted to controlled, with a list of the perceived benefits and costs, whilst on page (24) the risk of not acting to change the permitted status to controlled is mentioned.

50. On page (20) the Report states " the main changes to the resource management plans that arise from this (sic) plan changes , aside from the change in status from permitted to controlled are as follows: ....." with six items listed.

51. Page (20) then states "The following assessment considers the individual parts of the main changes proposed."

52. Observations of this assessment are now made in respect of the adequacy of the evaluation and reporting of five of the seven main changes :-

(a) The use of an updated New Zealand Standard for the measurement and assessment of noise.

The specification that sound levels shall be measured in accordance with NZS 6801 and 6802 / 2008 is made in the proposed new rule 30.2.9.1.2. Whilst the assessment states that the Council considers the use of the new standard to be more effective and efficient, there is no indication that the possible costs have been taken into account.

(b) The lowering in decibel level from 60-55 dBA

The specification that noise from a frost fan shall not exceed 55 dB LAeq is made in the proposed new rule 30.2.9.1.1. Whilst the assessment provides background to the debate on this issue, and concludes that the Council considers the lowering of the level to be effective and efficient, there is no indication that the possible costs of the rule have been taken into account.

(c) Where noise is to be measured from.

The specification requiring the new noise level of 55 dB LAeq be met at a distance of 300 metres from the frost fan, and at the notional boundary of any existing dwelling etc is made in the proposed new rule 30.2.9.1.1 (i) and (ii). Whilst the assessment states that the Council considers that the introduction of this new rule will encourage the use of quieter machines, and such an approach is effective, there is no indication that the possible costs of the rule have been taken into account.

(d) Clarification about separation distances.

The 500 meter setback from the respective residential zones and the Marl borough Ridge zone is specified in the new proposed rule 30.2.9.1.4. Whilst the assessment states that the Council considers that the setback is effective and efficient there is no indication that the possible costs have been taken into account.

(e) A list of matters that the Council may impose conditions on.

A new rule is proposed at 30.2.9.2 entitled Matters Over Which the Council Will Exercise Control. The assessment in this respect makes no indication that the either the benefits or the costs of the proposed rule have been evaluated or taken into account.

53. The proposed Plan Changes are intended to be effected solely by the imposition of a number of new rules, as indicated by the footnote to page (4). Section 32(4) of the RMA stipulates that the required evaluation must take into account :-

(a) the benefits and costs of policies, rules, and other methods; and
(b) the risk of acting or not acting, if there is uncertain or insufficient information about the policies, rules, or other methods,

54. Section 32(5) requires the evaluation to be reported, giving reasons for that evaluation.

55. The assessment commencing on page (20) of the Report purports to be a record of the evaluation of the intent to change the definition of wind machine to frost fan, and the evaluation of six new rules.

56. In evaluation of five of these new rules there is no indication in the Report that the possible costs of the new rule have been taken into account. In one instance, the new rule pertaining to matters over which the Council will exercise control, there is no indication in the assessment that either the costs or the benefits have been taken into account.

57. The Report at page (24) provides a paragraph entitled Risk of Acting or Not Acting. This however is restricted to the case if the Council does not act to change the permitted activity status to controlled activity in the Plans. No mention is made of the risk of acting or not acting in respect of the change of definition, or the six new rules.

58. The Introduction to the Report cites doubt as to the noise produced by wind machines, which in turn raises doubt about whether a more stringent noise level should be applied, and the distance at which wind machines should be measured. It is similarly stated that the proposed changes will enable the Council to be able to more effectively gather information about the noise generated by wind machines, upon which the Council will be in a position to determine if there should be more substantive changes to the Plan.

59. Collectively this is an acceptance of the existence of uncertain or insufficient information about the policies, rules or other methods intended. In such circumstances Section 32(4) requires the evaluation to take into account the risk of acting or not acting. It is evident from the assessment detailed at page (20) of the Report that evaluation of the risk of acting or not acting has not been taken into account in respect of at least five of the six new proposed rules.

60. The Report ends on page (24) by stating that the overall conclusion of the evaluation is that the proposed changes better achieve the objectives and policies of the two Plans than do the existing frost fan provisions of the Plans. It also concluded that the benefits of the proposed changes outweigh the costs. By failing to adequately consider the costs and benefits of the proposed rules, and the risks of acting or not acting, the Report has not met the responsibility under Section 32(3)(b) i.e. to ensure the evaluation examines whether, having regard to their efficiency and effectiveness, the rules are the most appropriate for achieving the objectives.

61. It is therefore determined that the Report does not adequately meet the requirements of Section 32 of the RMA, specifically :-

(a) the Section 32(3)(b) requirement that the evaluation examine whether the rules are the most appropriate for achieving the objectives,
(b) the Section 32(4) requirement that the evaluation must take into account the benefits and costs of the proposed rules, and the risk of acting or not acting if there is uncertain or insufficient information about the rules, and
(c) the Section 32(5) requirement that the report of the evaluation give reasons for that evaluation.

62. In accordance with Section 32A(1) the submitter therefore gives formal notice of a challenge to the proposed new rules on the grounds that Section 32 has not been adequately complied with in respect of these rules, and requests that the Report and the consequent proposed Plan Changes be withdrawn accordingly on this basis.

The Plan Changes – Specific Provisions

63. On page (20) the Report details the main changes to the Plans arising from the Plan Changes and records an assessment of the individual parts of the main changes proposed. The submitter now addresses these aspects using the format / headings of the assessment.

Amend the status of frost fans from permitted to controlled.

64. The installation and operation of a frost fan is currently a permitted activity under the Plan. The proposed Rule 30.2.9 of the Wairau/Awatere Plan and Rule 36.2.7 of the Marlborough Sounds Plan require all frost fans to obtain a Controlled Activity consent.

65. Such requirement is contrary to the Plan's Chapter 12, Wairau Plan (12.2), specifically 12.2.3 - Methods of Implementation – Rules, which stipulates that the Plan rules provide for activities on the basis of their effects on the sustainable management of the lower Wairau Plain as an area for intensive rural development.

66. This provision unequivocally states that in general rural activities are provided for as Permitted Activities subject to performance conditions.

67. In the Report at page (20) it is stated that the Council has opted for the Option (4) change in status from permitted to controlled activity as it is considered that this will more effectively and efficiently deal with immediate issues. The Council perceives the benefits to be :-

(a) A determination about a frost fan meeting the controlled activity standards will be required before a fan is able to be erected and in order to ensure that landowners

"demonstrate compliance with the noise standards before the wind machines are erected."

Given the Council's assertion that it is currently unable to enforce the existing permitted activity noise standards, how it intends to demonstrate non-compliance of a proposed machine to controlled activity standards prior to its installation is questionable.

(b) With a controlled activity status, growers will receive a resource consent provided the standards for the controlled activity are met.

Under the current permitted activity status the grower is equally assured of consent provided the existing standards are met.

In this regard it may be noted that the operation of bird scaring devices with a comparable noise level standard of 65dBA, is a permitted activity within Rural Zones (3) and (4).

Accordingly there is no overriding rationale or justification for the change of frost fan status from permitted to controlled activity.

(c) Conditions can be imposed requiring monitoring of resource consents.

As stated in 12.2.3 Methods of Implementations – Rules, in general rural activities are provided for as Permitted Activities subject to performance conditions i.e. conditions may be imposed under the existing status.

(d) Where a frost fan cannot meet the standards then a case by case assessment will occur as a discretionary activity.

In the existing regime where the intended frost fan installation does not meet the standards then it is subjected to a case by case assessment through the resource consent mechanism.

68. Accordingly there is limited, if any, perceivable benefit to be derived by the proposed change form permitted to controlled activity status that cannot equally be achieved through the existing provisions.

69. To the contrary there are significant costs to the proposal including :-

(a) The cost of the exercise in amending the plan for limited benefit,
(b) The cost to individual growers in having to obtain resource consent,
(c) The cost of the introduction of two control regimes, separate for existing and future installations, and the conflicts / complaints that such will inevitably precipitate,
(d) The failure to implement an adequate reverse sensitivity provision into the Plan to address and resolve such conflicts / complaints.

<u>Change in name of wind machined / frost fan and inclusion of definition.</u>

70. Despite the fact that the term wind machine is referred to repeatedly in the Plan, in both the Objectives & Policies Volume One, and the Rules at Volume Two, neither Wind Machine nor Frost Fan is defined in the Definitions at 26.0.

71. The Council propose that a new definition be included:

"Frost fan – means a land based device, designed or adapted to control frost by fanning warmer air over potentially frost –affected surfaces, and includes the support structure."

72. There is no reference to the device being fixed, static or mobile. Accordingly it is unclear if portable propeller model fans, or the tractor drawn LPG / diesel fired frost protector fan which both have noise characteristics somewhat different from a traditional frost fan are encompassed within the ambit of the plan.

73. Equally there is no reference to the motive power unit of the frost fan being included in the definition. The frost fan motor emanates noise of its own separate and different in nature from the frost fan rotor. It is recommended that the motive power unit be included in the definition to pre-empt the use of the motor noise to mask or alter the frost fan noise characteristic.

74. A more effective definition may be :-

Frost fan means a fixed land based device, designed or adapted to control frost by fanning warmer air over potentially frost-affected surfaces, and includes the motive source and support structure.

A Lowering decibel level from 60-55 dBA

75. The existing decibel level for frost fans in the plan is set at 60 dBA L10. At Volume Two, Chapter 26 -18 Definitions – Interpretation – Noise Measurements there is imposed a further 5 dB limit adjustment for special audible characteristics, reducing the overall limit to 55 dBA.

76. The Maassen Report recommended the plan reduce the level of noise emission from the current 60 to 55dBA. Maassen supplemented his recommendation to reduce the level to 55 dBA with the provision that consequent to such lowering no further penalty should be applied for frost fans with special audible characteristics.

77. At the meeting of the Council's Environmental Policy Committee convened on 24 August 2009 an internal report was presented on the proposed plan changes including the lowering in decibel level from 60 to 55 dBA. A note to that report indicated that the draft rules do not adopt Mr. Maassen's recommendation to remove the penalty for special audible characteristics. No explanation was made as to the rationale for not adopting the recommendation.

78. The Schedule of Proposed Changes, prepared to meet the requirements of section 32 of the RMA 1991, deletes the existing rules reference to 60 dBA (30.1.4.2.3) and creates a new 55 dBA rule (30.2.9.1.1). There is however no reference to deletion of the additional 5 dB limit adjuster for special audible characteristics. This omission effectively renders the proposed frost fan noise level limitation to be 50 dBA for all intents and purposes.

79. In addition to the Maassen Report which is prepared predominantly from a legal perspective, it is evident from the Report evaluation that the determination to lower the decibel level from 60 to 55 was made in part from comment from a frost fan supplier indicating that its four bladed frost fans could meet the 55 dB requirement at 300 metres.

80. This does not take into account the further 5 dB special audible characteristic restriction, and in no way constitutes a sound nor satisfactory scientific foundation upon which to base such an important provision with immense inherent impacts.

81. The Malcolm Hunt (Malcolm Hunt Associates Noise and Environmental Consultants) Report compiled as an independent acoustic investigation in preparation for the proposed Hurunui District Council Plan Change (18) found that the various models of frost protection fans have variable levels of sound emission and sound qualities meaning that there "is no consistent picture as to whether these sound characteristics can be classified as containing 'special audible characteristics' as described by New Zealand Standard NZS 6802".

82. Indeed the Malcolm Hunt Report highlighted the fact that the World Health Organisation (WHO) guidelines for community noise recommended that the internal 30 dBA level could be achieved with an outdoor noise level of 60 dBA Leq.

83. It is therefore submitted that the frost fan noise limit should remain at 60 dB with the 5dB penalty only being applied in appropriate cases of special audible characteristics categorically established in respect of individual frost fans in situ by substantive scientific methodology in accordance with NZS6802:2008

<u>The use of an updated New Zealand Standard for the measurement and assessment of noise</u>

84. The existing 60 dBA L10 frost fan noise limit is based in respect of measurement and assessment in accordance with New Zealand Standards 6801/6802 (1991). The L10 is a reference to the level of sound exceeded for no more than 10% of the monitoring period, a useful reflection of the subjective reaction to noise, and the cyclic fluctuation of frost fan noise.

85. The proposed plan change (30.2.9.1.1) prescribes that noise from a frost fan shall not exceed 55 dBA LAeq. In this instance the LAeq is a reference to the way noise is measured in the 2008 standards involving the time averaged sound level (or equivalent sound level) over a measured time period. The duration of that time period is generally stated in the measurement e.g. LAeq10min. This time period is significant in the case of frost fan noise measurement having regard to the cyclic nature of the wind machines operation imposed by the 360 degree rotation of the fan's thrust direction which results in the noise level / nature changing in level, modulation and characteristic at the location from where the measurement is taken.

86. The proposed plan changed should specify the measurement time period e.g. 60 dB LAeq10min in order to remove the opportunity for conflicting interpretation.

<u>Where the noise is to be measured from - Notional boundary</u>

87. The proposed plan change (30.2.9.1.1) prescribes that noise from a frost fan shall not exceed 55 dBA LAeq at the notional boundary of any existing dwelling, visitor accommodation or other habitable building (other than on the property on which the frost fan is situated).

88. In the existing plan notional boundary is defined as the boundary of a 20 meter zone created around a dwelling or nominated building for the purposes of measuring noise. intrusion.

89. Habitable building is not defined. Dwelling house (single residential unit) encompasses accessory buildings, whilst visitor accommodation includes ancillary land and buildings used for dining, sanitation, conference and recreation. Such facilities could be well spread out over a wide area and the 20 meter exclusion zone extended from the most remote unit.

90. As notional boundary is to be used as critical limiting element this term needs to be unambiguously defined. Having regard to the fact that the proposed plan changes under Noise Sensitive Activities (31.1.5.1) requires any new (or altered) dwelling house, visitor accommodation or other habitable building to be constructed to ensure that the noise level in any bedroom of the dwelling should not exceed 30 dB LAeq with the closest frost fan operating, the notional boundary may well be simply defined as the external wall of the bedroom closest to the frost fan under investigation.

Clarification about separation distances –setback

91. The assessment at page (23) unequivocally states that "the separation distance between dwellings and frost fans will effectively be determined by the point at which the noise level of 55dB LAeq is achieved.

92. The proposed rule 30.2.9.1.1 is constructed to the effect that :-

Noise from a frost fan shall not exceed 55 dB LAeq when measured :

i) At a distance of 300 meters from the device, or

ii) At the notional boundary of any existing dwelling, visitor accommodation, or other habitable building (other than on the property on which the frost fan is situated);

whichever is the least distance.

93. This amounts to an unambiguous determination by the Council that the 55 dBLAeq noise level is achieved at 300 metres, and possibly a lesser distance.

94. It is anomalous therefore that the proposed rule 30.2.9.1.4 deems that frost fans shall not be installed within 500 meters of an Urban, Township, or Rural Residential Zone, or the Marlborough Ridge Zone.

96. The assessment attempts to justify this contradictory standard by surmising that "the interface between different zones in resource management plans can be a problem where the effects from an activity can create reverse sensitivity effects where they may not be experienced within the zone.

97. The recent media coverage has highlighted vociferous reverse sensitivity from individuals resident well within in the rural zone. To consider the noise expectations of rural zone residents differently from those residing in rural residential enclaves within the zone would only precipitate complaints of bias, and exacerbate the impact of a lack of effective reverse sensitivity provisions within the Plan.

98. No current frost fan model has an effective range of 300 metres, let alone the required 500 meter setback. A realistic maximum effective protection foot print would in the range of 80 – 150 meters dependent upon topography, climatic conditions including the strength of the inversion layer, and catabatic drift profiles. Assuming a very generous 150 meter radius of efficiency, and a circular protected field (the effective footprint is in fact more dumbbell shaped) the maximum frost protection area from a single frost fan is just over 7 hectares.

99. Best case frost fan scenario :-

A conventional rectangular vineyard bounded by a singular residential zone on one side only. Short side : 300 metres (2 x150 metre frost fan effective radius). Long side : 650 metres (150 metre frost fan effective radius + 500 metre setback).

Vineyard area : 19.5 hectares

Required buffer zone : 11.5 hectares

Frost fan protected area : 7.1 hectares

100. Worst case frost fan scenario :-

A conventional rectangular vineyard with residences in close proximity to all four boundaries. Minimum side length required to ensure setback: 1000 metres

Vineyard area : 100 hectares

Required buffer area : 71.5 hectares

Frost fan protected area : 7.1 hectares

101. The average size of a Marlborough vineyard is approximately 24 hectares. A rectangular vineyard of 500 x 500 meters, totalling 25 hectares, with a residential zone on only one boundary would not be afforded frost fan protection as a permitted right under the proposed Plan Changes.

102. The Report fails to evaluated or establish the cost of the extent of otherwise viable land that would be rendered unprotected by frost fans if the proposed setback distances were imposed. Such regime would be in conflict with the objectives and policies of the Plan, specifically Rural Environments : Objectives and Policies :-

Objective 1 - Maintenance or enhancement of the life supporting capacity of the soils and the retention of primary production options for rural land. (12.4.2.1)

103. Such cost would inevitably be reflected in the fiscal value of the land with a consequent impact on the rates to be collected by the Council, to the detriment of the region's economic stability as a whole.

104. Whilst there remains provision under the proposed Plan Changes for frost fans to be installed inside the mooted setback distance through the resource consent mechanism, the restricted discretionary status intended for such consents, coupled with the Plan's inadequacy in addressing the reverse sensitivity effects, renders the securing of such consent definitely an uncertain prospect.

105. In addition to Urban, Township, and Rural Residential Zones, the proposed rule 30.2.9.1.4 seeks to impose the same 500 metre setback from the Marlborough Ridge Zone. Having regard to the unique circumstances surrounding the establishment and development of this zone it is the subject of a dedicated section of the Plan, with its own rules as detailed in Volume Two-Rules- Appendix K.

106. The Zone Statement makes specific reference to the fact that it will include viticultural activity and protects this activity by the stating :-

The zone is located within a rural environment and it is desirable that it does not compromise legitimate farming activity. The potential incompatibility of intensive rural productive activities and urban land use is mitigated partly through the provision of a buffer area at the road frontage of the property, and partly through rules which provide performance standards reflecting the needs of productive activities to operate within reasonable limits. These rules specifically recognise that productive activities should not be compromised by the addition of this zone and the proposed development in the zone.

107. The Zone Objectives and accompanying explanation include :-

1.8 Objective - To recognise the establishment and management of activities in the zone, in that the zone is located within a rural environment, and that there are legitimate rural activities which should not thereby be restricted. Explanation - Marlborough Ridge Zone is a new urban zone in the midst of a productive rural area. Those productive activities must be given protection consistent with the sustainable management of natural and physical resources, to provide a climate of certainty for the future protection and development of the area. In particular the addition of the Zone will not result in performance standards for productive rural activities in adjoining and nearby rural areas, greater than could be anticipated in any rural environment distant from urban areas. There is a limit to rules that can be imposed with respect to this objective, because much of the land potentially impacted by activities in the zone lies outside of the zone. Noise standards and other performance standards for the zone reflect the location in the midst of productive rural areas. Private covenants on each residential title will include provisions to reflect its location in close proximity to productive rural areas, and the "working rural environment" philosophy.

108. The Rules at 2.1 provides for vineyards and horticulture on lots 2,000 m2 or greater as a permitted activity within the Zone.

109. The Conditions for Permitted Activities at 2.2.11 specifically provides for Wind Machines for Frost Control within the Marlborough Ridge Zone and stipulates that noise levels measured at 200 meters from the wind machine shall not exceed 60dBA provided that ..... the wind machine be located no closer than 500 metres to a residential zone.

110. The Zone Introduction states that the zone provides for rural-residential activities and is therefore considered to be a residential zone, as evidenced by its inclusion together with Urban, Township, and Rural Residential Zones in proposed rule 30.2.9.1.4. The fact that the Marlborough Ridge Zone rules allow for wind machines within the residential zone as a permitted activity but then requires the wind machine to be located no closer than 500 metres to a residential zone is totally incongruous and untenable.

111. The requirement that the noise levels be measured at 200 metres from the wind machine is an unequivocal acceptance by the Council that wind machines are capable of achieving the 60dBA standard at 200 metres. This concession negates the basis for the proposed lowering of the noise level standard to 55 dB LAeq, both within the Marlborough Ridge Zone at Appendix K 2.3.3.2, or throughout the remainder of the rural zones - 30.2.9.1.1

112. The fact that the Council in establishing the Marlborough Ridge Zone included viticulture activity as an amenity and recognised its unique nature by stipulating that noise levels were to be measured at 200 metres from a wind machine in contrast to the 300 metres required in other zones under the Plan renders the intent to now impose a 500 metre setback from all residential zones, whilst deleting the requirement for a frost fan in the Marlborough Ridge Zone to be 500 meters away from a residential zone as inconsistent and devoid of any established justification other than the possibility of attempting to redress an earlier anomaly.

113. Whilst the proposed rule 30.2.9.1.4 requires frost fans to be located 500 meters from an Urban, Township, and Rural Residential Zone, and the Marlborough Ridge Zone, the proposed corresponding rule in the Marlborough Sounds Resource Management Plan only requires the 500 metres setback from an Urban Residential Zone.

114. Again this provision lacks consistency and justification, but supports the contention that any setback if imposed should only be at the Urban / Rural interface, and not at the boundary between residential enclaves clearly located in the rural domain i.e. township and rural residential zones.

116. Accordingly the proposed inclusion of Township, and Rural Residential Zones, and the Marlborough Ridge Zone in the proposed rule at 30.2.9.1.4 should be withdrawn.

Matters over which the Council will exercise control

117. The proposed plan change (30.2.9.2) indicates the MDC reserves control over, and may impose conditions with respect to :

(a) Operational requirements of frost fans,
(b) Speed of frost fans,
(c) Operation of frost fans for maintenance purposes,
(d) Recording information about the use of frost fans
(e) Monitoring requirements.

118. The MDC contends that "the reason for the Council changing the status of this rule is to enable it to gather information about how frost fans are used". This is an untenable argument having regard to the fact that the MDC has determined to impose the proposed changes to the plan without awaiting the forensic enforcement / monitoring methodology which it initiated and claims to be in progress, and the implied intention to introduce additional controls on the allowed speed of a frost fan, and impose other unstated operational requirements.

119. The existing plan under Wind Machines for Frost control (30.1.4.2.3) includes elements of the intended operational requirements of frost fans, and their speed. In the event that the MDC intends to impose further controls / conditions, including operation of frost fans for maintenance purposes, recording of information, and monitoring requirements, these

may be readily constructed and included within the plan upon proper RMA section 32 consultation.

120. Operational standards for frost fans are detailed in the Plan Change proposed standards. Where any intended frost fan installation or operation failed to meet these standards there is recourse to require an application for limited discretionary activity resource consent. In this mechanism the Council may exercise its discretion to impose conditions beyond those already specified in the stated standards. Accordingly there is no requirement for a separate provision to enable additional consent conditions and this proposed rule should be withdrawn.

121. A more likely rationale for the inclusion of this rule is to enable and expedite the imposition of subsequent and as yet unannounced controls and conditions on the use of frost fans without resorting to the scrutiny of a further RMA Section 32 exercise. In essence the proposed rule creates the MDC power to control and impose conditions within the plan, but maintains the specifics of such control / conditions outside the plan and the requisite RMA consultation mechanism.

122. There is concern that such provision would result in a rapidly changing goal post scenario, with control / conditions being imposed in response to vocal complaint bereft of the supporting forensic information the MDC has determined not to await. This would only serve to exacerbate a climate of regulatory uncertainty where confidence in a fair and transparent regime should be the paramount propellant.

123. Whilst the MDC may be entitled to impose conditions at time of granting a new resource consent, the Resource Management Act (RMA) makes provision for existing use rights. Accordingly it is argued that existing frost fans that comply with the current rules are not subject to any retrospective requirement for resource consent, irrespective of limited expectation in this regard.

124. Equally those frost machines for which a resource consent was previously granted, and in respect of which the conditions are complied with, would not be subject to new conditions imposed by MDC.

125. The MDC will need to be prepared to address public query of the existence of frost machines in respect of which there are varying conditions, compliance standards, and operational requirements, and defend growers' use of frost fans in compliance with existing controls / conditions on their individual use.

126. The existing plan under Wind Machines for Frost control (30.1.4.2.3) includes elements of the intended operational requirements of frost fans, and their speed. In the event that the MDC intends to impose further controls / conditions, including operation of frost fans for maintenance purposes, recording of information, and monitoring requirements, these may be readily constructed and included within the plan upon proper RMA section 32 consultation.

127. In this regard it may be noted that the conditions for operation of bird scaring devices, a permitted activity within Rural Zones (3) and (4) with a comparable noise level standard of 65dBA, are adequately provided for within the Plan at 30.1.4.2.2.1 to 3. Accordingly there is no overriding rationale or justification for the provision for control and imposition of conditions outside the Plan.

Operational requirements of frost fans

128. The proposed plan change (30.2.9.2) indicates the Council's intent to impose conditions outside the Plan on the operational requirements of frost fans

129. There is a strong argument that controls / conditions on the operation of a frost fan such as speed could be dispensed with provided the basic tenet of noise standard compliance was established, with the caveat that safety was maintained. This is adequately provided for within the existing Plan and additional imposition of conditions outside the plan is unwarranted.

130. The proposed plan change (30.2.9.1.3) stipulates that the frost fan shall only be operated for frost protection and when the air temperature on the vineyard drops to 2 degrees C.

131. It could be argued that this wording only permits a frost fan to be operated when the temperature in the vineyard is 2 degrees, no more, no less.

132. Equally there is no indication as to where the temperature is established e.g. ground, canopy, or frost fan tower level.

133. This new rule may well be better constructed along the lines of :-

"The frost fan shall only operate when the local air temperature falls to, or below 2 degrees centigrade, recorded at a height above ground level relevant to the bud height of the plants being protected.

Speed of Frost Fans

134. The proposed plan change (30.2.9.2) indicates the Council's intent to impose conditions outside the Plan on the speed of frost fans.

135. In this respect the measurement of the speed of frost fan needs to be better defined than the current provision (30.1.4.2.3 b) which requires that the speed of the wind machine must be governed such that the top speed of the rotor does not exceed the speed of sound. The tip of the rotor blade will be travelling at a speed in excess of a measurement location closer to the rotor hub. The Council must develop a standard and consistent mechanism for determining the speed of a frost fan before considering the imposition of conditions in this respect.

Operation of Frost Fans for maintenance purposes.

136. The proposed plan change (30.2.9.2) indicates the Council's intent to impose conditions outside the Plan on the operation of frost fans for maintenance.

137. By way of illustration the submitter in the four year period since the installation of wind machines has operated them for maintenance purposes on only 16 occasions, accumulating a total of 4.8 hours, at an average of 15 minutes per operation, all conducted during mid -week day light hours. This minimal operation does not justify the imposition of conditions within or outside the Plan, and can best be addressed by way of industry guidelines and best practises.

138. It has been intimated that the operation of frost fans for maintenance purposes be restricted to daylight hours during week days. Unfortunately frosts are disinclined to keep "office" hours. Recent experience has shown that a frost threat may extend for several consecutive days, including weekends. Having regard to the value of the crop being protected, it would be unconscionable to require delay of emergency maintenance over a weekend. Common sense dictates provision for reasonable urgent maintenance provided minimum disturbance duration is incurred.

Monitoring of frost fans

139. The proposed plan change (30.2.9.2) indicates the Council's intent to impose conditions outside the Plan on the monitoring of the operation of frost fans.

140. In order for any monitoring requirement to be practical and of the use the Council has to develop the forensic enforcement / monitoring methodology, the current absence of which was highlighted by the Maassen Report.

141. Monitoring conditions should not be imposed until such time as an effective, enforceable, equitable and transparent monitoring mechanism has been developed and included within the Plan upon Section 32 consultation.

142. In the interim the Council may seek the assistance of the industry through inclusion of monitoring within guidelines and best practises.

New Rules for noise sensitive activities

143. It is encouraging to observe that the Council at 30.1.4.2.4 Noise Sensitive Activities has attempted to address in part the deficiency in the Plan of reverse sensitivity effect provisions by proposing requirements for dwellings to be designed and constructed with adequate noise mitigation measures. The submitter supports this initiative but seeks further enhancement in the extent and clarity of the provision.

144. Having regard to the fact that proposed new rule 30.2.9.1.4 requires that frost fans shall not be operated within 500 metres of an Urban, Township, or Rural Residential Zone, or the Marlborough Ridge Zone, it is a reasonable reciprocal requirement that houses constructed within at least the same 500 metres of a frost fan be required to be adequately insulated against sound intrusion. For the purposes of this provision a frost fan would include an existing frost fan which is permitted by right or a proposed frost fan for which an approved building consent and / or resource consent has been granted

145. To ensure the adequacy and enforceability of this provision it is recommended that appropriate noise installation standards be specified e.g. NZS 1276.1:1999 acoustics-rating of sound insulation in buildings and of building elements Part 1: Airborne Sound Insulation. In addition there should be a requirement that as part of the Building Consent process an acceptable acoustics design certificate shall be provided to the Council by a properly qualified acoustics engineer, and entered on the Land / Project Information Memorandum files.

Conclusion

146. Having regard to the Council's contention that the Plan Changes proposed are essentially intended to enable the Council to more effectively gather information about the noise generated by wind machines, as a precursor to the possibility of even more substantive changes, whilst declining to await the collation and analysis of an information exercise the Council itself initiated, it is determined that the proposed Plan Changes are not the most effective method of achieving this objective, and the inevitable negative impact of the proposed changes is excessively disproportionate to the indefinite outcome.

Action / Decision sought from the Council

147. The submitter requests the Council to note, address, and respond to the challenge to the proposed rules or other methods on the grounds that Section 32 RMA 1991 has not been complied with in that the required evaluation and Report have not fully taken into account the benefits and costs of the rules or other methods, nor the risk of acting or not acting if there is uncertain or insufficient information about the subject matter of the rules or other methods.

148. The submitter requests that the Report be withdrawn until such time as a full and proper evaluation in compliance with Section 32 has been completed and adequately reported.

149. The submitter further requests that the Council withdraw the Public Notice of Plan Changes until such time as the recommended forensic enforcement / monitoring methodology has been developed and thereafter implemented until such time as sufficient, certain, consistent and comprehensive information has been secured.

150. The submitter requests that upon the collation of such sufficient and certain information to provide an accurate and scientific assessment of the nature and impact of frost fan generated noise an independent analysis by a qualified entity with experience in the field be secured.

151. The submitter requests that upon receipt of this analysis, in the event that the Council determines to seek a variation of the Plans, a comprehensive evaluation be conducted and reported in full compliance with Section 32.

152. In the event that the Council insists upon proceeding with the proposed Plan Changes the submitter requests that the specific amendments detailed in the Annexure (1) are effected to the Wairau / Awatere Resource Management Plan, and commensurate amendments made to the corresponding parts of the Marlborough Sounds Resource Management Plan.

153. Equivalent amendments shall be made to the corresponding sections of the Marlborough Sounds Resource Management Plan.

154. The remaining proposed amendments arising from the Plan Changes are to be withdrawn.

155. In accordance with Chapter 22 Noise – 22.4 Methods of Implementation the Council is requested to avoid the disruptive and divisive circumstances of a further Plan Change by adopting the methods of implementation provided in Chapter 22.4 Noise, specifically

(a) Encouraging use of voluntary guidelines and best practices,
(b) Monitoring of noise to establish annual and seasonal profiles,
(c) Support and facilitate research into improve frost protection technology,
(d) Consultation to mitigate and reduce reverse sensitivity effects.

156. In order to ensure that individuals contemplating migration to the rural area are in no doubt as to the nature and extent of rural activities, the Council is requested to adopt the reverse sensitivity mitigation initiative of including a statement on Land Information Memorandum (LIM) and Project Information Memorandum PIM) advising prospective residents of the likelihood of disturbance from primary production activities in rural zones.

157. This statement may be augmented by the inclusion of details of frost fans within the prescribed separation distance for which resource consent has been granted. This mechanism may readily be implemented outside of the Plan.

Hearing

158. The submitter reserves the right to be heard in support of this submission, and in the event of other submissions of a similar nature would be prepared to consider presenting a joint case for hearing.

Signed.

David A. Whyte

Director

Clintondale Trust – Whyte Trustee Company Ltd.

23rd October, 2009

Annexure (1)

Specific Amendments

Wairau/Awatere Resource Management Plan

Add a definition as follows:

Frost fan means a fixed land based device, designed or adapted to control frost by fanning warmer air over potentially frost-affected surfaces, and includes the motive source and support structure.

Rural 3 and 4 Zones

Amend Rule 30.1.4.2.3 to read as follows:

Operation of frost fans shall be a Permitted Activity provided the activity conforms to the following standards and terms:

(a) Noise from all frost fans operating cumulatively on a property shall not exceed 60dBA Leq10min when measured:

(i) At a distance of 300 metres from the frost fan(s); or
(ii) At the notional boundary of any existing dwelling, visitor accommodation or other habitable building (other than on the site which the frost fan is located), whichever is the least distance.

The sound levels shall be measured in accordance with the provisions of NZS 6801:2008 Acoustics – Environmental Noise.

For the purposes of this rule the notional boundary is defined as the external wall of the bedroom closest to the frost fan.

(b) Frost fans shall only be operated for frost protection and when the local air temperature falls to, or below, 2 degrees centigrade, recorded at a height above ground level relevant to the bud height of the plants being protected.

(c) Frost fans shall not be located within 300 metres of an Urban Residential Zone.

Add a new Rule 30.1.4.2.5 as follows:

(a) Any new dwelling house, visitor accommodation or other habitable building located within 500 metres of any frost control fan shall as part of the building consent process provide an acoustic certificate to the Council by a suitably qualified and experienced acoustic engineer to confirm that the building work has been designed, specified and constructed to achieve an insulation rating of DnTw + Ctr>30dBA for the building envelope as described within NZS 1276.1:1999 acoustics-rating of sound insulation in buildings and of building elements Part 1: Airborne Sound Insulation.

(b) This rule shall also apply to any alteration of an existing dwelling house, visitor accommodation or other habitable building located within 500 metres of any frost fan, where a new bedroom forms part of the alteration. Only the new bedrooms must be treated in accordance with (a) above.

(c) For the purpose of this rule, "frost fan" includes an existing frost fan permitted by right or a proposed frost fan for which an approved building consent and/or resource consent has been granted.

Rural Residential Zone

Add a new Rule 31.1.5.1 - Noise Sensitive Activities as follows:

(a) Any new dwelling house, visitor accommodation or other habitable building located within 500 metres of any frost control fan shall provide as part of the building consent process an acoustic certificate to the Council by a suitably qualified and experienced acoustic engineer to confirm that the building work has been designed, specified and constructed to achieve an insulation rating of DnTw + Ctr>30dBA for the building envelope as described within NZS 1276.1:1999 acoustics-rating of sound insulation in buildings and of building elements Part 1: Airborne Sound Insulation.

(b) This rule shall also apply to any alteration of an existing dwelling house, visitor accommodation or other habitable building located within 500 metres of any frost fan, where a new bedroom forms part of the alteration. Only the new bedrooms must be treated in accordance with (a) above.

(c) For the purpose of this rule, "frost fan" includes an existing frost fan permitted by right or a proposed frost fan for which an approved building consent and/or resource consent has been granted.

Appendix K

Amend Rule 2.2.11 as follows:

Operation of frost fans shall be a Permitted Activity provided the activity conforms to the following standards and terms:

(a) Noise from all frost fans operating cumulatively on a property shall not exceed 60dBA Leq10min when measured:

(i) At a distance of 300 metres from the frost fan(s); or
(ii) At the notional boundary of any existing dwelling, visitor accommodation or other habitable building (other than on the site which the frost fan is located), whichever is the least distance.

The sound levels shall be measured in accordance with the provisions of NZS 6801:2008 Acoustics – Environmental Noise.

For the purposes of this rule the notional boundary is defined as the external wall of the bedroom closest to the frost fan.

(b) Frost fans shall only be operated for frost protection and when the local air temperature falls to, or below, 2 degrees centigrade, recorded at a height above ground level relevant to the bud height of the plants being protected.

(c) Frost fans shall not be located within 300 metres of an Urban Residential Zone.

Add a new Rule 2.2.11.1 as follows:

(a) Any new dwelling house, visitor accommodation or other habitable building located within 500 metres of any frost control fan shall provide as part of the building consent process an acoustic certificate to the Council by a suitably qualified and experienced acoustic engineer to confirm that the building work has been designed, specified and constructed to achieve an insulation rating of DnTw + Ctr>30dBA for the building envelope as described within NZS 1276.1:1999 acoustics-rating of sound insulation in buildings and of building elements Part 1: Airborne Sound Insulation.

(b) This rule shall also apply to any alteration of an existing dwelling house, visitor accommodation or other habitable building located within 500 metres of any frost fan, where a new bedroom forms part of the alteration. Only the new bedrooms must be treated in accordance with (a) above.

(c) For the purpose of this rule, "frost fan" includes an existing frost fan permitted by right or a proposed frost fan for which an approved building consent and/or resource consent has been granted.

Note

(i) Equivalent amendments shall be made to the corresponding sections of the Marlborough Sounds Resource Management Plan.

(ii) The remaining proposed amendments arising from the Plan Changes are to be withdrawn.

Print Form

Submission Form for Plan Changes 23 and 58 to the

Wairau/Awatere & Marlborough Sounds Resource Management Plans

Frost Fan Plan Changes

Office Use

Participant No.

10

Submission Point No.

File Refs

W045-15-58

M13-15-23

Date Received Stamp

RECEIVED
23 OCT 2009
MARLBOROUGH DISTRICT COUNCIL

Submissions Close:

5.00 pm Friday

23 October 2009

Malcolm Maclean

59 Morven Lane
RD2, Fairhall
Blenheim

577 5515

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Return your submission to:
Marlborough District Council
PO Box 443
Blenheim 7240
Attention: Mark Caldwell
Fax: (03) 520 7496
E-Mail:
frostfans@marlborough.govt.nz

How To Make A Submission

Anyone is welcome to make a submission, either as an individual or on behalf of an organisation. You may use this form or prepare your own submission so long as you are careful to provide all of the information identified on this form. [These information requirements are per Form 5 of the Resource Management (Forms, Fees and Procedures) Regulations 2003]. If you run out of room here, please continue on a separate page. When preparing your submission you need to include the following:

"This part of my submission relates to ..." - state the name of the plan change and the part(s) of the plan change that is/are the subject of your submission.

"I support (or oppose) this part of the plan change." – state whether you support or oppose (in full or part).

"My reasons for supporting (or opposing) this part of the plan change ..." - tell us what your concerns are and the reasons why you support or oppose the provisions in the plan change.

"The decision I seek from the Council is ..." - How do you want the Council to respond to your submission? It is very important that you clearly state the decision you wish the Council to make as the Council cannot make changes which have not been specifically requested. Start by indicating if you want the provision to be retained, deleted or amended. If you want an amendment (including additional provisions) then specify what wording changes you would like to see.

REMEMBER - the clearer you can be, the easier it will be for the Council to understand your concerns and take them into account.

Plan Change 58:

Wairau/Awatere Resource Management Plan

This part of my submission relates to;
Volume Two
Definitions

1. **Add** a new definition as follows:

Frost fan means a land based device, designed or adapted to control frost by fanning warmer air over potentially frost-affected surfaces, and includes the support structure.

I support this part of the plan change.

****

This part of my submission relates to;
Rural 3 and 4 Zones

2. **Delete** Rural 3 and 4 Zones Rule 30.1.4.2.3 as follows. (Consequential renumbering for existing Rule 30.1.4.2.4 Temporary Military training Activities to 30.1.4.2.3)

~~**30.1.4.2.3 Wind machines for Frost Control**~~

~~Any wind machine used for frost control shall be so constructed and operated that any noise emission measured at a distance of 300 metres shall not exceed 60 dBA L10 provided that:~~

~~a) The wind machine will be allowed to operate during the frost danger period until the leaves of the plant are dry and the air temperature has reached 2°C;~~

~~b) The speed of the wind machine must be governed such that the top speed of the rotor does not exceed the speed of sound; and~~

~~c) The wind machine be located no closer than 500 metres to any residential zone, or within 100 metres of a dwelling house not located on the property.~~

I support this part of the plan change.

****

This part of my submission relates to;
Rural 3 and 4 Zones

3. **Add** a new rule 30.1.4.2.4 as follows:

30.1.4.2.4 Noise Sensitive Activities

(a) Any new dwellinghouse, visitor accommodation or other habitable building located within 300 metres of any frost fan shall be designed and constructed to ensure that the noise level inside any bedroom of the dwelling shall not exceed 30 dB LAeq with the closest frost fan operating when the doors and windows are closed. Compliance with this standard shall be demonstrated by the production of a design certificate from an appropriately qualified and experienced acoustic engineer.

(b) This rule shall also apply to any alteration of an existing dwellinghouse, visitor accommodation or other habitable building located within 300 metres of any frost fan, where a new bedroom forms part of the alteration. Only the new bedroom has to be treated in accordance with part (a) of this rule.

(c) For the purpose of this rule, "frost fan" includes a proposed frost fan for which an approved building consent and/or resource consent has been granted.

I oppose this part of the plan change

My reason for opposing this part of the plan change is that the requirement to acoustically insulate a bedroom in a dwelling house to a level based on the proximity to only one frost fan does not adequately take into account the cumulative noise generated by other fans that may be slightly further away, but will still generate a significant amount of combined noise. The end result will be a bedroom in a dwelling-house that is not adequately protected to the level required to protect the inhabitant. Additionally, there is no allowance made for an increase in noise in the environment and provide economic growth if more fans are installed at a later time.

The decision I seek from the Council is to amend this provision to read the following;

Add a new rule 30.1.4.2.4 as follows:

30.1.4.2.4 Noise Sensitive Activities

(a) Any new dwelling-house, visitor accommodation or other habitable building located within 1000 metres of any frost fan(s) shall be designed and constructed to ensure that the noise level inside any bedroom of the dwelling shall not exceed 27 dBA Leq with all frost fans within 1000m operating when the doors and windows are closed. Compliance with this standard shall be demonstrated by the production of a design certificate from an appropriately qualified and experienced acoustic engineer.

(b) This rule shall also apply to any alteration of an existing dwelling-house, visitor accommodation or other habitable building located within 1000 metres of any frost fan(s), where a new bedroom forms part of the alteration. Only the new bedroom has to be treated in accordance with part (a) of this rule.

(c) For the purpose of this rule, "frost fan" includes a proposed frost fan for which an approved building consent and/or resource consent has been granted.

By designing the dwelling-house to achieve a level of attenuation that results in a quieter level than 30dBA Leq level, this allows the installation of further fans in the surrounding environment and supports the potential for future development of agricultural use of frost fans.
By expanding the sphere of potential frost fan noise sources to 1000m, and including all frost fans in this sphere, the cumulative noise of the environment is taken into account and this will adequately protect the inhabitants.

****

This part of my submission relates to;
Rural 3 and 4 Zones

5. **Add** a new Rule 30.2.9 as follows:

30.2.9 Erection and use of frost fans

The construction and use of a frost fan is a Controlled Activity provided that the activity conforms to the following standards and terms:

30.2.9.1 Standards and Terms

30.2.9.1.1 Noise from a frost fan shall not exceed 55 dB LAeq when measured:

i) at a distance of 300 metres from the device; or

ii) at the notional boundary of any existing dwelling, visitor accommodation or other habitable building (other than on the property on which the frost fan is situated);

whichever is the least distance.

30.2.9.1.2 Sound levels shall be measured in accordance with the provisions of NZS 6801: 2008 Acoustics – Measurement of Sound and assessed in accordance with the provisions of NZS 6802: 2008 Acoustics – Environmental Noise.

30.2.9.1.3 The frost fan shall only be operated for frost protection and when the air temperature on the vineyard drops to 2°C.

30.2.9.1.4 The frost fan shall not be located within 500 metres of an Urban Residential, Township Residential, Rural Residential Zone or the Marlborough Ridge Zone.

30.2.9.2 Matters Over Which the Council Will Exercise Control

The Council reserves control over and may impose conditions with respect to:

(a) Operational requirements of frost fans.

(b) Speed of frost fan.

(c) Operation of frost fans for maintenance purposes.

(d) Recording information about the use of frost fans.

(e) Monitoring requirements.

I oppose this part of the plan change

My reason for opposing this part of the plan change is that applying a noise limit on frost fans individually does not address the issue of cumulative effects of more than one fan. Additionally the issue is not a concern of how much noise a frost fan makes, it is an issue over the provision of a quiet area suitable for sleep in dwelling-houses while frost fans are operating nearby. Therefore, the emphasis should be removed from the amount of noise a fan produces and placed on providing an environment suitable for sleep in the

bedroom of a dwelling-house. Using this basis for evaluating noise, there is no need to restrict the distance that a frost fan should be from any residential zone or residence. Taken to a logical extreme, a frost fan, or collection of fans could be permitted to produce far *more* noise than current levels, so long as any dwelling houses nearby did not experience noise levels higher that the WHO recommended 30dBA Leq that allows for undisturbed sleep in a bedroom.
Incumbent in the recognition of the ability to operate frost fans in a way that prevents an unreasonable noise in a bedroom, there needs to be a clear direction of the means of reducing the noise level if the limit of 30dBA Leq is breached. I suggest that this be simply by reducing the speed of the closest frost fan to the dwelling-house until the 30dBA Leq limit is reached. If a noise reading suggests that the level is to high even after the nearest fan is turned off, then the next closest fan should also be reduced in speed accordingly and the process repeated recursively if more fans are required to be turned down.
Likewise, the reference to the air temperature dropping to 2 degrees before switching on does not reflect that temperature should be *below* 2 degrees before operation.
An additional section has been added to apply a limit on the minimum distance that a frost fan can be placed from any dwelling-house, visitor accommodation or other habitable building. This it to protect against instances of mechanical failure

The decision I seek from the Council is to amend this provision to read the following;

Add a new Rule 30.2.9 as follows:

30.2.9 Erection and use of frost fans

The construction and use of a frost fan is a Controlled Activity provided that the activity conforms to the following standards and terms:

30.2.9.1 Standards and Terms

30.2.9.1.1 Noise from frost fans shall not exceed 30dBA Leq when measured in the bedroom of any dwelling-house, visitor accommodation or other habitable building within 1000m of a frost fan.

30.2.9.1.2 Sound levels shall be measured in accordance with the provisions of NZS 6801: 2008 Acoustics – Measurement of Sound and assessed in accordance with the provisions of NZS 6802: 2008 Acoustics – Environmental Noise.

30.2.9.1.3 The frost fan shall only be operated for frost protection and when the air temperature on the vineyard drops below 1°C and must be switched off when the temperature rises above 2°C.

30.2.9.1.4 The frost fan shall not be located within 500 metres of an Urban Residential, Township Residential, Rural Residential Zone or the Marlborough Ridge Zone.

30.2.9.1.5 To mitigate potential for injury from mechanical failure, the frost fan shall not be located within 200 metres of any dwelling-house, visitor accommodation or other habitable building.

30.2.9.2 Matters Over Which the Council Will Exercise Control

The Council reserves control over and may impose conditions with respect to:

(a) Operational requirements of frost fans.

(b) Speed of frost fan.

(c) Operation of frost fans for maintenance purposes.

(d) Recording information about the use of frost fans.

(e) Monitoring requirements.

These changes result in the simplification of the proposed change and refocuses the solution on the provision of an environment suitable for undisturbed sleep.
It also allows for the discovery of solutions to noise issues from fans to be placed back in the hands of the frost fan operators. In an effort to ensure compliance with noise levels, each operator will need to ensure that their neighbours who also operate fans are adhering to reasonable levels of noise that allow all operators to use the fans responsibly. Only when the problem of noise management is accepted by the frost fan users, will there be any resolution to the production of noise. This will require robust monitoring / enforcement action from Council officers who are checking compliance. Likewise any conditions of consent should reflect the requirement to reduce the speed of the machines in the event that an excess noise is produced in a neighbouring dwelling-house.
This solution will not improve the lot of those residents who are already in conditions where the noise exceeds 30dBA Leq in their bedrooms at night, but it should prevent their situation worsening.
The change to the temperature requirements for initiating and finishing operation reflect a more certain temperature range for operation and allows a buffer to ensure that machines do not turn off and on as their temperature probes oscillate around 2 degrees.
A 200 metre separation represents a margin of safety indicated by the Department of Labour as mitigation against mechanical failure and subsequent blade separation.

****

This part of my submission relates to;
Rural Residential Zone

6. **Add** a new rule 31.1.5.1 as follows:

31.1.5.1 Noise Sensitive Activities

(a) Any new dwellinghouse, visitor accommodation or other habitable building located within 300 metres of any frost fan shall be designed and constructed to ensure that the noise level inside any bedroom of the dwelling shall not exceed 30 dB LAeq with the closest frost fan operating when the doors and windows are closed. Compliance with this standard shall be demonstrated by the production of a design certificate from an appropriately qualified and experienced acoustic engineer.

(b) This rule shall also apply to any alteration of an existing dwellinghouse, visitor accommodation or other habitable building located within 300 metres of any frost fan, where a new bedroom forms part of the alteration. Only the new bedroom has to be treated in accordance with part (a) of this rule.

(c) For the purpose of this rule, "frost fan" includes a proposed frost fan for which an approved building consent and/or resource consent has been granted.

I oppose this part of the plan change

My reason for opposing this part of the plan change is that the requirement to acoustically insulate a bedroom in a dwelling house to a level based on the proximity to only one frost fan does not adequately take into account the cumulative noise generated by other fans that may be slightly further away, but will still generate a significant amount of combined noise. The end result will be a bedroom in a dwelling-house that is not adequately protected to the level required to protect the inhabitant. Additionally, there is no allowance made for an increase in noise in the environment and provide economic growth if more fans are installed at a later time.

The decision I seek from the Council is to amend this provision to read the following;

Add a new rule 31.1.5.1 as follows:

31.1.15.1 Noise Sensitive Activities

(a) Any new dwelling-house, visitor accommodation or other habitable building located within 1000 metres of any frost fan(s) shall be designed and constructed to ensure that the noise level inside any bedroom of the dwelling shall not exceed 27 dBA Leq with all frost fans within 1000m operating when the doors and windows are closed. Compliance with this standard shall be demonstrated by the production of a design certificate from an appropriately qualified and experienced acoustic engineer.

(b) This rule shall also apply to any alteration of an existing dwelling-house, visitor accommodation or other habitable building located within 1000 metres of any frost fan(s), where a new bedroom forms part of the alteration. Only the new bedroom has to be treated in accordance with part (a) of this rule.

(c) For the purpose of this rule, "frost fan" includes a proposed frost fan for which an approved building consent and/or resource consent has been granted.

By designing the dwelling-house to achieve a level of attenuation that results in a quieter level than 30dBA Leq level, this allows the installation of further fans in the surrounding environment and supports the potential for future development of agricultural use of frost fans.
By expanding the sphere of potential frost fan noise sources to 1000m, and including all frost fans in this sphere, the cumulative noise of the environment is taken into account and this will adequately protect the inhabitants.

****

This part of my submission relates to;
Appendix K Marlborough Ridge Zone

7. **Add** a new rule 2.2.11.1 (to be located immediately before the 'Bird Scaring Device' rule) as follows:

2.2.11.1 Noise Sensitive Activities

(a) Any new dwellinghouse, visitor accommodation or other habitable building located within 300 metres of any frost fan shall be designed and constructed to ensure that the noise level inside any bedroom of the dwelling shall not exceed 30 dB LAeq with the closest frost fan operating when the doors and windows are closed. Compliance with this standard shall be demonstrated by the production of a design certificate from an appropriately qualified and experienced acoustic engineer.

(b) This rule shall also apply to any alteration of an existing dwellinghouse, visitor accommodation or other habitable building located within 300 metres of any frost fan, where a new bedroom forms part of the alteration. Only the new bedroom has to be treated in accordance with part (a) of this rule.

(c) For the purpose of this rule, "frost fan" includes a proposed frost fan for which an approved building consent and/or resource consent has been granted.

I oppose this part of the plan change

My reason for opposing this part of the plan change is that the requirement to acoustically insulate a bedroom in a dwelling house to a level based on the proximity to only one frost fan does not adequately take into account the cumulative noise generated by other fans that may be slightly further away, but will still generate a significant amount of combined noise. The end result will be a bedroom in a dwelling-house that is not adequately protected to the level required to protect the inhabitant. Additionally, there is no allowance made for an increase in noise in the environment and provide economic growth if more fans are installed at a later time.

The decision I seek from the Council is to amend this provision to read the following;

Add a new rule 2.2.11.1 (to be located immediately before the 'Bird Scaring Device' rule) as follows:

2.2.11.1 Noise Sensitive Activities

(a) Any new dwelling-house, visitor accommodation or other habitable building located within 1000 metres of any frost fan(s) shall be designed and constructed to ensure that the noise level inside any bedroom of the dwelling shall not exceed 27 dBA Leq with all frost fans within 1000m operating when the doors and windows are closed. Compliance with this standard shall be demonstrated by the production of a design certificate from an appropriately qualified and experienced acoustic engineer.

(b) This rule shall also apply to any alteration of an existing dwelling-house, visitor accommodation or other habitable building located within 1000 metres of any frost fan(s), where a new bedroom forms part of the alteration. Only the new bedroom has to be treated in accordance with part (a) of this rule.

(c) For the purpose of this rule, "frost fan" includes a proposed frost fan for which an approved building consent and/or resource consent has been granted.

By designing the dwelling-house to achieve a level of attenuation that results in a quieter level than 30dBA Leq level, this allows the installation of further fans in the surrounding environment and supports the potential for future development of agricultural use of frost fans.
By expanding the sphere of potential frost fan noise sources to 1000m, and including all frost fans in this sphere, the cumulative noise of the environment is taken into account and this will adequately protect the inhabitants.

****

This part of my submission relates to;
Appendix K Marlborough Ridge Zone
9. **Delete** the 'Wind Machines for Frost Control' under 2.2.11 as follows:

~~**Wind Machines for Frost Control**~~

~~• Noise levels measured at 200 metres from the wind machine shall not exceed 60 dBA provided that:~~

~~• That the start-up air temperature for the machine should be no higher than 2°C.~~

~~• That the wind machine be allowed to operate during the frost danger period until the leaves of the plant are dry and the air temperature has reached 1°C.~~

~~• That the speed of the wind machine must be governed such that the top speed of the rotor does not exceed the speed of sound.~~

~~• That the wind machine be located no closer than 500 metres to a residential zone.~~

I support this part of the plan change.

****

This part of my submission relates to;
Proposed Plan Change No. 23

Marlborough Sounds Resource Management Plan

Volume Two
Definitions
1. **Add** a new definition as follows:

Frost fan means a land based device, designed or adapted to control frost by fanning warmer air over potentially frost-affected surfaces, and includes the support structure.

I support this part of the plan change.

****

This part of my submission relates to;

Rural 1 and 2 Zones

2. **Delete** Rural 1 and 2 Zones Rule 36.1.3.4.2.3 as follows: (Consequential renumbering for Rules 36.1.3.4.2.4 to 36.1.3.4.2.6)

~~36.1.3.4.2.3 Wind Machines for Frost Control~~

~~Any wind machine used for frost control shall be so constructed and operated that any noise emission measured at a distance of 300 metres shall not exceed 60 dBA L10 provided that:~~

~~a) The operation of the wind machine shall be restricted to periods during which the local air temperature does not exceed 2 degrees Celcius;~~

~~b) No wind machine shall be sited within 100 metres of any dwelling not on the same property;~~

~~c) The speed of the wind machine must be governed such that the top speed of the rotor does not exceed the speed of sound; and~~

~~d) The wind machine be located no closer than 500 metres to an Urban Residential Zone.~~

I support this part of the plan change.

****

This part of my submission relates to;

3. **Add** a new Rule 36.1.3.4.2.6 as follows:

36.1.3.4.2.6 Noise Sensitive Activities

(a) Any new dwellinghouse, visitor accommodation or other habitable building located within 300 metres of any frost fan shall be designed and constructed to ensure that the noise level inside any bedroom of the dwelling shall not exceed 30 dB LAeq with the closest frost fan operating when the doors and windows are closed. Compliance with this standard shall be demonstrated by the production of a design certificate from an appropriately qualified and experienced acoustic engineer.

(b) This rule shall also apply to any alteration of an existing dwellinghouse, visitor accommodation or other habitable building located within 300 metres of any frost fan, where a new bedroom forms part of the alteration. Only the new bedroom has to be treated in accordance with part (a) of this rule.

(c) For the purpose of this rule, "frost fan" includes a proposed frost fan for which an approved building consent and/or resource consent has been granted.

I oppose this part of the plan change

My reason for opposing this part of the plan change is that the requirement to acoustically insulate a bedroom in a dwelling house to a level based on the proximity to only one frost fan does not adequately take into account the cumulative noise generated by other fans that may be slightly further away, but will still generate a significant amount of combined noise. The end result will be a bedroom in a dwelling-house that is not adequately protected to the level required to protect the inhabitant. Additionally, there is no allowance made for an increase in noise in the environment and provide economic growth if more fans are installed at a later time.

The decision I seek from the Council is to amend this provision to read the following;

Add a new Rule 36.1.3.4.2.6 as follows:

36.1.3.4.2.6 Noise Sensitive Activities

(a) Any new dwelling-house, visitor accommodation or other habitable building located within 1000 metres of any frost fan(s) shall be designed and constructed to ensure that the noise level inside any bedroom of the dwelling shall not exceed 27 dBA Leq with all frost fans within 1000m operating when the doors and windows are closed. Compliance with this standard shall be demonstrated by the production of a design certificate from an appropriately qualified and experienced acoustic engineer.

(b) This rule shall also apply to any alteration of an existing dwelling-house, visitor accommodation or other habitable building located within 1000 metres of any frost fan(s), where a new bedroom forms part of the alteration. Only the new bedroom has to be treated in accordance with part (a) of this rule.

(c) For the purpose of this rule, "frost fan" includes a proposed frost fan for which an approved building consent and/or resource consent has been granted.

By designing the dwelling-house to achieve a level of attenuation that results in a quieter level than 30dBA Leq level, this allows the installation of further fans in the surrounding environment and supports the potential for future development of agricultural use of frost fans.
By expanding the sphere of potential frost fan noise sources to 1000m, and including all frost fans in this sphere, the cumulative noise of the environment is taken into account and this will adequately protect the inhabitants.

****

This part of my submission relates to;

5. **Add** a new Rule 36.2.7 as follows:

30.2.7 Erection and use of frost fans

The construction and use of a frost fan is a Controlled Activity provided that the activity conforms to the following standards and terms:

30.2.7.1 Standards and Terms

30.2.7.1.1 Noise from a frost fan shall not exceed 55 dB LAeq when measured:

i) at a distance of 300 metres from the device; or

ii) at the notional boundary of any existing dwelling, visitor accommodation or other habitable building (other than on the property on which the frost fan is situated);

whichever is the least distance.

30.2.7.1.2 Sound levels shall be measured in accordance with the provisions of NZS 6801: 2008 Acoustics – Measurement of Sound and assessed in accordance with the provisions of NZS 6802: 2008 Acoustics – Environmental Noise.

30.2.7.1.3 The frost fan shall only be operated for frost protection and when the air temperature on the vineyard drops to 2°C.

30.2.7.1.4 The frost fan shall not be located within 500 metres of an Urban Residential Zone.

30.2.7.2 Matters Over Which the Council Will Exercise Control

The Council reserves control over and may impose conditions with respect to:

(a) Operational requirements of frost fans.

(b) Speed of frost fan.

(c) Operation of frost fans for maintenance purposes.

(d) Recording information about the use of frost fans.

(e) Monitoring requirements.

I oppose this part of the plan change

My reason for opposing this part of the plan change is that applying a noise limit on frost fans individually does not address the issue of cumulative effects of more than one fan. Additionally the issue is not a concern of how much noise a frost fan makes, it is an issue over the provision of a quiet area suitable for sleep in dwelling-houses while frost fans are operating nearby. Therefore, the emphasis should be removed from the amount of noise a fan produces and placed on providing an environment suitable for sleep in the bedroom of a dwelling-house. Using this basis for evaluating noise, there is no need to restrict the distance that a frost fan should be from any residential zone or residence. Taken to a logical extreme, a frost fan, or collection of fans could be permitted to produce far *more* noise than current levels, so long as any dwelling houses nearby did not experience noise levels higher that the WHO recommended 30dBA Leq that allows for undisturbed sleep in a bedroom.
Incumbent in the recognition of the ability to operate frost fans in a way that prevents an unreasonable noise in a bedroom, there needs to be a clear direction of the means of reducing the noise level if the limit of 30dBA Leq is breached. I suggest that this be simply by reducing the speed of the closest frost fan to the dwelling-house until the

30dBA Leq limit is reached. If a noise reading suggests that the level is to high even after the nearest fan is turned off, then the next closest fan should also be reduced in speed accordingly and the process repeated recursively if more fans are required to be turned down.
Likewise, the reference to the air temperature dropping to 2 degrees before switching on does not reflect that temperature should be *below* 2 degrees before operation.
An additional section has been added to apply a limit on the minimum distance that a frost fan can be placed from any dwelling-house, visitor accommodation or other habitable building. This it to protect against instances of mechanical failure
Lastly, the proposed change is numbered incorrectly and should be part of Rule 36, not 30 as printed in the section 32 report.

The decision I seek from the Council is to amend this provision to read the following;

Add a new Rule 36.2.7 as follows:

36.2.7 Erection and use of frost fans

The construction and use of a frost fan is a Controlled Activity provided that the activity conforms to the following standards and terms:

36.2.7.1 Standards and Terms

36.2.7.1.1 Noise from frost fans shall not exceed 30dBA Leq when measured in the bedroom of any dwelling-house, visitor accommodation or other habitable building within 1000m of a frost fan.

36.2.7.1.2 Sound levels shall be measured in accordance with the provisions of NZS 6801: 2008 Acoustics – Measurement of Sound and assessed in accordance with the provisions of NZS 6802: 2008 Acoustics – Environmental Noise.

36.2.7.1.3 The frost fan shall only be operated for frost protection and when the air temperature on the vineyard drops below 1°C and must be switched off when the temperature rises above 2°C.

36.2.7.1.4 The frost fan shall not be located within 500 metres of an Urban Residential, Township Residential, Rural Residential Zone or the Marlborough Ridge Zone.

36.2.7.1.5 To mitigate potential for injury from mechanical failure, the frost fan shall not be located within 200 metres of any dwelling-house, visitor accommodation or other habitable building.

36.2.7.2 Matters Over Which the Council Will Exercise Control

The Council reserves control over and may impose conditions with respect to:

(a) Operational requirements of frost fans.

(b) Speed of frost fan.

(c) Operation of frost fans for maintenance purposes.

(d) Recording information about the use of frost fans.

(e) Monitoring requirements.

These changes result in the simplification of the proposed change and refocuses the solution on the provision of an environment suitable for undisturbed sleep.
It also allows for the discovery of solutions to noise issues from fans to be placed back in the hands of the frost fan operators. In an effort to ensure compliance with noise levels, each operator will need to ensure that their neighbours who also operate fans are adhering to reasonable levels of noise that allow all operators to use the fans responsibly. Only when the problem of noise management is accepted by the frost fan users, will there be any resolution to the production of noise. This will require robust monitoring / enforcement action from Council officers who are checking compliance. Likewise any conditions of consent should reflect the requirement to reduce the speed of the machines in the event that an excess noise is produced in a neighbouring dwelling-house.
This solution will not improve the lot of those residents who are already in conditions where the noise exceeds 30dBA Leq in their bedrooms at night, but it should prevent their situation worsening.
The change to the temperature requirements for initiating and finishing operation reflect a more certain temperature range for operation and allows a buffer to ensure that machines do not turn off and on as their temperature probes oscillate around 2 degrees.
A 200 metre separation represents a margin of safety indicated by the Department of Labour as mitigation against mechanical failure and subsequent blade separation.
The Rule number change is implemented.

****

This part of my submission relates to the notation used to denote the noise levels throughout the proposed amendments.

Throughout the proposed amendments, the notation used to denote noise levels is given as dB LAeq. This in incorrect and should be more accurately put as dBA Leq

The decision I seek from the Council is to amend any provision put forward to have noise levels correctly represented as dBA Leq

This is in keeping with standard notation.

Submission Form for Plan Changes 23 and 58 to the

Wairau/Awatere & Marlborough Sounds Resource Management Plans

Frost Fan Plan Changes

Office Use
Participant No.
11
Submission Point No.

File Refs
W045-15-58
M13-15-23

Date Received Stamp
RECEIVED
23 OCT 2009
MARLBOROUGH DISTRICT COUNCIL

Name/Organisation	Richard Karn
Contact Name *(If different from above)*	
Address for Service:	2 Nott St Westshore Napier 4110
Phone Number	06-8355-792
Fax Number	

Submissions Close:
5.00 pm Friday
23 October 2009

I have attached 1 **pages to this submission**

Do you wish to be heard in support of your submission? Yes

If you wish to be heard & others make a similar submission, would you be prepared to consider presenting a joint case? No

Signature: 22 Oct 2009

Return your submission to:
Marlborough District Council
PO Box 443
Blenheim 7240
Attention: Mark Caldwell
Fax: (03) 520 7496
E-Mail:
frostfans@marlborough.govt.nz

How To Make A Submission

Anyone is welcome to make a submission, either as an individual or on behalf of an organisation. You may use this form or prepare your own submission so long as you are careful to provide all of the information identified on this form. [These information requirements are per Form 5 of the Resource Management (Forms, Fees and Procedures) Regulations 2003]. If you run out of room here, please continue on a separate page. When preparing your submission you need to include the following:

"This part of my submission relates to ..." - state the name of the plan change and the part(s) of the plan change that is/are the subject of your submission.

"I support (or oppose) this part of the plan change." – state whether you support or oppose (in full or part).

"My reasons for supporting (or opposing) this part of the plan change ..." - tell us what your concerns are and the reasons why you support or oppose the provisions in the plan change.

"The decision I seek from the Council is ..." - How do you want the Council to respond to your submission? It is very important that you clearly state the decision you wish the Council to make as the Council cannot make changes which have not been specifically requested. Start by indicating if you want the provision to be retained, deleted or amended. If you want an amendment (including additional provisions) then specify what wording changes you would like to see.

Please indicate the plan change(s) that your submission relates to:

Plan Change 23 (Frost Fans) to the Marlborough Sounds Resource Management Plan

Plan Change 58 (Frost Fans) to the Wairau/Awatere Resource Management Plan

If you wish to provide a submission for more than one of the plan changes, you can use the same form so long as you clearly indicate which plan change your comments relate to.

Any submission received by the Council is considered to be public information.

Plan Change No. Volume, Section of Plan, Page Number	***Details of your submission and specific changes or decisions requested***
Plan Change 23 and 58	Although **NZS 6802:2008** allows a measurement time interval to be less than 15 minutes, the Plan Rule should state that no noise measurements should be made for less than 2 complete cycles of the frost fan. (10-15 mins depending on fan model)
	This will allow a fairer average noise level to be established, that is less influenced
	by the periodic highs and lows in the noise level during the regular fan cycle.
Plan Change 23	
Requested addition to	I think this rule should include a line that reads :
Rule 30.2.7.1.2	"Sound levels shall be measured for at least 2 complete cycles of the frost fan"
Plan Change 58	
Requested addition to	I think this rule should include a line that reads :
Rule 30.2.9.1.2	"Sound levels shall be measured for at least 2 complete cycles of the frost fan"

Emma Richardson-5474 Part N° 12

From: Pere Hawes-5143
Sent: Friday, 23 October 2009 8:17 a.m.
To: Emma Richardson-5474
Subject: FW: plan changes frost fans.

-----Original Message-----
From: kevin [mailto:santofarm@yahoo.co.nz]
Sent: Thursday, 22 October 2009 9:11 p.m.
To: Pere Hawes-5143
Subject: plan changes frost fans.

this submision is from kja little ,3828 state highway 63 blenheim .wairau valley .
Please delete 55dba at notional boundary.and insert 30dba in a neighbours bedroom cumulative ..ie all noise making devices should be counted collectively ..
This would give all an even playing field ,ie all using the same noise level..

Monitering ;comprehensive monitoring of frost fans by website is currently being used by some growers :stuart smith frost fan workshop:
Please make it compulsory with a wof or cert of fitness ,specifications and safety checks..

Wind ;can all frost fans be fitted with a auto shut off switch in wind .this would alleviate safety concerns and also wind seems to intensify noise by a large degree..

Safety ;please add a 550 metre set back from any dwelling .
will alleviate any further worries about being in the kill zone when these things blow apart ..

thankyou for taking time to consider my submission ,i think changes should apply to both plans ..cu

Emma Richardson-5474

From: Pere Hawes-5143
Sent: Friday, 23 October 2009 8:18 a.m.
To: Emma Richardson-5474
Subject: FW: addition to my submission

-----Original Message-----
From: kevin [mailto:santofarm@yahoo.co.nz]
Sent: Thursday, 22 October 2009 9:50 p.m.
To: Pere Hawes-5143
Subject: addition to my submission

sorry forgot to add this .from kja little 3828 st hway 63 wairau valley .
please add under times of operation ,specify timing of operation to occur only after budburst ..

thanks kevin little

Submission Form for Plan Changes 23 and 58 to the

Wairau/Awatere & Marlborough Sounds Resource Management Plans

Frost Fan Plan Changes

Office Use

Participant No.

13.

Submission Point No.

File Refs

W045-15-58

M13-15-23

Date Received Stamp

RECEIVED
22 OCT 2009
MARLBOROUGH DISTRICT COUNCIL

Submissions Close:

5.00 pm Friday

23 October 2009

Return your submission to:

Marlborough District Council
PO Box 443
Blenheim 7240
Attention: Mark Caldwell
Fax: (03) 520 7496
E-Mail:
frostfans@marlborough.govt.nz

Fairhall Downs Estate Wines

Stuart T Smith

70 Wrekin Road
RD 2
Blenheim 7272

03 5728 356

03 5728 347

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☐ ☑

22/10/2009

How To Make A Submission

Anyone is welcome to make a submission, either as an individual or on behalf of an organisation. You may use this form or prepare your own submission so long as you are careful to provide all of the information identified on this form. [These information requirements are per Form 5 of the Resource Management (Forms, Fees and Procedures) Regulations 2003]. If you run out of room here, please continue on a separate page. When preparing your submission you need to include the following:

"This part of my submission relates to ..." - state the name of the plan change and the part(s) of the plan change that is/are the subject of your submission.

"I support (or oppose) this part of the plan change." – state whether you support or oppose (in full or part).

"My reasons for supporting (or opposing) this part of the plan change ..." - tell us what your concerns are and the reasons why you support or oppose the provisions in the plan change.

"The decision I seek from the Council is ..." - How do you want the Council to respond to your submission? It is very important that you clearly state the decision you wish the Council to make as the Council cannot make changes which have not been specifically requested. Start by indicating if you want the provision to be retained, deleted or amended. If you want an amendment (including additional provisions) then specify what wording changes you would like to see.

REMEMBER - the clearer you can be, the easier it will be for the Council to understand your concerns and take them into account.

Please indicate the plan change(s) that your submission relates to:

Plan Change 23 (Frost Fans) to the Marlborough Sounds Resource Management Plan

Plan Change 58 (Frost Fans) to the Wairau/Awatere Resource Management Plan

If you wish to provide a submission for more than one of the plan changes, you can use the same form so long as you clearly indicate which plan change your comments relate to.

Any submission received by the Council is considered to be public information.

Plan Change No. Volume, Section of Plan, Page Number	***Details of your submission and specific changes or decisions requested***
Example: *Plan Change 23* *New policy 1.9*	*Example:* *I oppose this policy because...* *I would like the Council to change wording of this policy to "suggest change"*

Reset Form

FAIRHALL
DOWNS
SMALL & SMITH FAMILY ESTATE

TO:

Marlborough District Council
PO Box 443
Blenheim 7240
frostfans@marlborough.govt.nz

NAME:

Fairhall Downs Estate Wines

ADDRESS FOR SERVICE:

Fairhall Downs
70 Wrekin Road
RD 2
Blenheim

Use of frost fans for frost protection

Wairau Awatere Resource Management Plan -Proposed Plan Change No. 58 and No. 23

Submissions have been invited on the proposed plan changes which will directly impact upon most winegrowers in Marlborough.

It is widely accepted that there are around 1000 wind machines in Marlborough. Despite this large number only 28 complaints were recorded by the MDC to 2008. It is likely that a good number of these complaints are from the same people

The MDC initiated Maassen Report (March 2009) determined that there needed to be a forensic enforcement / monitoring methodology developed and implemented by the MDC to identify the scale of the alleged problem including its frequency and duration.

This was based on the difficulty that MDC has in establishing the compliance of individual frost fans. This makes it difficult to determine the extent of cumulative effects.

Despite adopting the Massen Report the MDC has not attempted to carry out the necessary research recommended in the report. Instead the MDC seems to be planning to carry this out on the fly in an ad hoc manner. This is certainly not best practise and not in the line with the principals of the Resource Management Act.

Lowering decibel level from 60-55 dBA L10.

The Maassen Report recommended the plan reduce the level of noise emission from the current 60 to 55dBA, with the provision that no further penalty should be applied for frost fans with special audible characteristics.

Notional boundary

In the existing plan notional boundary is defined as the boundary of a 20 meter zone created around a dwelling or nominated building for the purposes of measuring noise intrusion.

This definition should be unambiguously defined to limit the impact on productive land. Given that the issue is with sleep disturbance the Notional Boundary should be defined as the external bedroom wall closest to the frost fan.

Operation of the frost fan

The operation of frost fans should be defined by crop type as use of these machines is not confined to grapes. Each crop has different danger periods and should therefore the use of frost fans for each crop type should be defined in the plan.

Below are the recommended operating conditions as they apply to grapes;

Grapes

> Producing grape vines: The frost danger period shall be defined as being from bud break to the last reasonable harvest date or May 31st whichever comes first.
>
> Non producing grapes: The frost danger period shall be defined as the period from bud break to May 31st.

The proposed plan change (30.2.9.1.3) stipulates that the frost fan shall only be operated for frost protection and when the air temperature on the vineyard drops to 2 degrees C.

It could be argued that this wording only permits a frost fan to be operated when the temperature in the vineyard is 2 degrees, no more, no less.

Equally there is no indication as to where the temperature is established e.g. ground, canopy, or frost fan tower level.

This new rule may well be better constructed along the lines of:-

"The frost fan shall only operate when the local air temperature falls below 2 degrees centigrade, recorded at a height above ground level relevant to the bud height of the plants being protected".

Matters over which the Council will exercise control

The proposed plan change (30.2.9.2) indicates the MDC reserves control over and may impose conditions with respect to:

(a) Operational requirements of frost fans,
(b) Speed of frost fans,
(c) Operation of frost fans for maintenance purposes,
(d) Recording information about the use of frost fans
(e) Monitoring requirements.

The MDC states "the reason for the Council changing the status of this rule is to enable it to gather information about how frost fans are used". This again underlines the MDC's haste to implement an ad hoc solution.

Controls on the operation of a frost fan such as speed should be dispensed with as noise compliance should be established prior to installation.

It is important that the operation of frost fans for maintenance purposes is not restricted to daylight hours during week days. Frost events can extend for several consecutive days, including weekends. Having regard to the value of the crop being protected, it would be ridiculous to delay emergency maintenance to meet such a restriction.

The proposed rule that no frost fan be located within 500 metres of an Urban Residential, Township Residential or Rural Residential Zone or the Marlborough Ridge Zone is not effects based.

I understood that the Marlborough Ridge Zone as part of the conditions it was established under had to accept the right to farm in covenants. If this is so then this is a back door attempt to usurp a binding legal covenant and should not be included in any plan change.

A set back is not required as this is covered in the maximum decibel limit at the notional boundary.

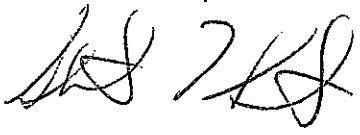
Rural subdivisions have had a detrimental impact on the operation on agriculture in Marlborough by limiting activities to those that do not disturb Rural Residential Zones. The proposed set back rule would further impact on agriculture and ~~we~~ would likely drive yet more Rural Residential subdivisions growing like a cancer across our most precious resource, as this would be the only profitable option left to land owners adjacent to existing Rural Residential Zones.

Conclusion

Clearly this plan change has been hastily thrown together. Had the research recommended in the Massen report been carried out, the section 32 report would not have been so deficient.

I also support the New Zealand Winegrowers submission.

Yours faithfully



Stuart T Smith
Director Fairhall Downs.

Print Form

Submission Form for Plan Changes 23 and 58 to the

Wairau/Awatere & Marlborough Sounds Resource Management Plans

Frost Fan Plan Changes

Name/Organisation	Villa Maria Estate Limited
Contact Name *(if different from above)*	Ollie Powrie
Address for Service	P O Box 43046 Mangere Auckland
Phone Number	021931162
Fax Number	068788702

I have attached 0 pages to this submission

Do you wish to be heard in support of your submission? YES ✓ NO

If you wish to be heard & others make a similar submission would you be prepared to consider presenting a joint case? YES ✓ NO

Signature: [signature] Date: 23/10/09

Office Use

Participant No.

14

Submission Point No.

File Refs

W045-15-58

M13-15-23

Date Received Stamp

RECEIVED
23 OCT 2009
MARLBOROUGH DISTRICT COUNCIL

Submissions Close:

5.00 pm Friday

23 October 2009

Return your submission to:

Marlborough District Council
PO Box 443
Blenheim 7240
Attention: Mark Caldwell
Fax: (03) 520 7496
E-Mail:
frostfans@marlborough.govt.nz

How To Make A Submission

Anyone is welcome to make a submission, either as an individual or on behalf of an organisation. You may use this form or prepare your own submission so long as you are careful to provide all of the information identified on this form. [These information requirements are per Form 5 of the Resource Management (Forms, Fees and Procedures) Regulations 2003]. If you run out of room here, please continue on a separate page. When preparing your submission you need to include the following:

"This part of my submission relates to ..." – state the name of the plan change and the part(s) of the plan change that is/are the subject of your submission.

"I support (or oppose) this part of the plan change." – state whether you support or oppose (in full or part).

"My reasons for supporting (or opposing) this part of the plan change ..." – tell us what your concerns are and the reasons why you support or oppose the provisions in the plan change.

"The decision I seek from the Council is ..." – How do you want the Council to respond to your submission? It is very important that you clearly state the decision you wish the Council to make as the Council cannot make changes which have not been specifically requested. Start by indicating if you want the provision to be retained, deleted or amended. If you want an amendment (including additional provisions) then specify what wording changes you would like to see.

REMEMBER – the clearer you can be, the easier it will be for the Council to understand your concerns and take them into account.

Please indicate the plan change(s) that your submission relates to:

Plan Change 23 (Frost Fans) to the Marlborough Sounds Resource Management Plan

Plan Change 58 (Frost Fans) to the Wairau/Awatere Resource Management Plan

If you wish to provide a submission for more than one of the plan changes, you can use the same form so long as you clearly indicate which plan change your comments relate to.

Any submission received by the Council is considered to be public information.

Plan Change No. Volume, Section of Plan, Page Number	***Details of your submission and specific changes or decisions requested***
Example: *Plan Change 23* *New policy 1.9*	*Example:* *I oppose this policy because...* *I would like the Council to change wording of this policy to "suggest change"*
23	Submission on behalf of Villa Maria Estate Limited The submitter opposes proposed plan changes 23 and 58 in relation to the Marlborough Sounds Resource Management Plan and Wairau/ Awatere Resource Management Plan respectively. Please note specific submissions below. Change of Status We believe that change from Permitted Activity to Controlled Activity is likely to add significant time delays and costs. Permitted activity status removes the unnecessary costs for growers associated with the resource consent process. We would like to see frost fans to continue to be considered a Permitted Activity unless a set of standards are not met. Decibel Level We submit that the noise limit should remain at 60dB and the 5dB penalty. Matter over which the Council will Exercise Control Villa Maria has concerns with the number of matters over which the Council has reserved its rights to impose conditions upon. We cannot understand why the Council would need to impose conditions in terms of the operational requirements of frost fans if it is 'to enable it to gather information about how frost fans are used'. We oppose this as we cannot see on what grounds this would be necessary.

Reset Form

Submission on Variation # to the ..... Resource Management Plan

Name/Organisation	Constellation NZ Ltd
Contact Name (if different from above)	Ollie Davidson
Address for Service	P.O Box 260 Blenheim
Phone Number	035705252
Fax Number	035705272

I have attached ☑ pages to this submission

Do you wish to be heard in support of your submission? YES ☐ NO ☑

If you wish to be heard & other make a similar submission, would you be prepared to consider presenting a joint case? YES ☐ NO ☑

Signature: [signature] Date: 23-10-09

Office Use

Participant No. 15.

Submission Point No.

File Ref

Date Received Stamp

RECEIVED
23 OCT 2009
MARLBOROUGH DISTRICT COUNCIL

Submissions Close: .....

Return your submission to:

Marlborough District Council
PO Box 443
Blenheim 7240

Attention:

Fax: (03) 520 7496
E-Mail:

How To Make A Submission

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REMEMBER - the clearer you can be, the easier it will be for the Council to understand your concerns and take them into account.

Form 5 of the Resource Management Act 1991-

To

Marlborough District Council
P.O Box 443
Blenheim 7240

From:

Constellation NZ Ltd
P.O Box 260
Blenheim

Constellation New Zealand makes this submission in response to the proposed change to the Wairau /Awatere and Marlborough Sounds Resource Management Plans, specifically:

a) Plan change 23 – Use of wind machines for frost protection
b) Plan change 58 – Use of wind machines for frost protection

Constellation NZ oppose the proposed Plan Change

Amend the status of Frost Fans from a permitted to a controlled activity.

Councils reasoning for this change are:

- A determination about a frost fan meeting the controlled activity standards will be required before a frost fan is able to be erected.
- With a controlled activity status, growers will receive a resource consent provided the standards for the controlled activity are met.
- Conditions can be imposed requiring monitoring of resource consents
- Where a frost fan cannot meet the standards then a case by case assessment will occur as a discretionary activity.

Constellation NZ concerns

- Council claims the existing rules are too difficult to enforce –there is little explanation or analysis to support this. Given the Plan Change will not apply to existing machines why is the council's solution to introduce new rules with no understanding of whether the current rules could be effective if enforced.
- Plan changes described as a limited measure to enable the council to more effectively gather information about noise generated by wind machines in order to determine whether more substantive changes should be made.
- We do not support the plan changes as an information gathering exercise.
- The plan lacks any reverse sensitivity mechanisms. The land use which has changed in the region is the subdivision of rural land into rural residential developments. This plan change represents a politicized stop-gap response by the council to complaints from a limited number of "hot spots".
- There were 2 complaints in 2007 and 10 in 2008 (noise from helicopters may have also contributed) is minimal compared with the number of frost fans in the region.
- If the council believes that they have inadequate information on the effects of frost fans then they should put this plan on hold until they have completed the

assessments and monitoring considered necessary for them to make a full and informed decision.

- How does the council it intends to demonstrate non-compliance of a proposed machine prior to its installation given the councils assertion that it is currently unable to enforce the current noise standards.

Recommendation:

Withdraw the variation until the programme of forensic monitoring is complete

The main changes to the resource management plans that arise from this plan changes, aside from the change in status from permitted to controlled, are as follows:

- A lowering in decibel level from 60 to 55
- Including a new requirement that the noise standard has to be met at not only at a distance of 300 metres form the device but at the notional boundary of any dwelling, visitor accommodation or other inhabitable building (other than the property on which the frost fan is situated), whichever is the least distance
- The use of an updated New Zealand Standard for the measurement and assessment of noise.
- Removing the part of the rule that states "or within 100 metres of a dwelling house not located on the property".
- A list of matters that the council may impose conditions about.
- A new rule for Rural and Rural Residential Zones that require any new dwellings etc, to be designed and constructed to ensure the noise level inside any bedroom of the dwelling does not exceed 30dB LAeq with the closest fan operation when the doors are closed.

- How does the council intends to demonstrate non-compliance of a proposed machine prior to its installation given the councils assertion that it is currently unable to enforce the current noise standards?

<u>Decibel Level</u>

- The proposed change is to reduce the level down to 55 dB LAeq. The plan already incorporates a 5dB adjuster for special conditions but the proposed plan changes omit to remove the operation of this provision and in effect the noise level could be enforced at 50dB
- The Malcolm Hunt report reviewed World Health Organisation guidelines for community noise and recommended that the internal 30dBA level could be achieved with an outdoor noise level of 60dBA Leq

Recommendation:

Leave the decibel level at 60 dB LAeq with a 5 dB adjuster for special conditions

Noise Measurement distance

- The term "notional boundary" be unambiguously defined in order to limit the area of productive land affected and should be defined as the external wall of the bedroom closest to the frost fan in question

Part N° 16.

SUBMISSION ON PROPOSED Plan Changes 23 and 58 to the Marlborough Sounds and Wairatu Awatere Resource Management Plans

TO:	Marlborough District Council
SUBMISSION ON:	Proposed Plan Change 23 (Frost Fans) Marlborough Sounds Resource Management Plan Proposed Plan Change 58 (Frost Fans) Wairau Awatere Resource Management Plan
NAME:	Horticulture New Zealand
ADDRESS:	PO Box 10 232 WELLINGTON

1. **Horticulture New Zealand's submission, and the decisions sought, are detailed in the attached schedules:**

   Schedule 1: General Submission

2. **Horticulture New Zealand wishes to be heard in support of this submission.**

3. **Background to Horticulture New Zealand and its RMA involvement:**

3.1 Horticulture New Zealand was established on 1 December 2005, combining the New Zealand Vegetable and Potato Growers' and New Zealand Fruitgrowers' and New Zealand Berryfruit Growers Federations, and now also includes Olives New Zealand.

3.2 On behalf of its 7,000 active grower members Horticulture New Zealand takes a detailed involvement in resource management planning processes as part of its National Environmental Policies. Horticulture New Zealand works to raise growers' awareness of the RMA to ensure effective grower involvement under the Act, whether in the planning process or through resource consent applications. The principles that Horticulture New Zealand considers in assessing the implementation of the Resource Management Act 1991 (RMA) include:

- The effects based purpose of the Resource Management Act,
- Non-regulatory methods should be employed by councils;
- Regulation should impact fairly on the whole community, make sense in practice, and be developed in full consultation with those affected by it;
- Early consultation of land users in plan preparation;
- Ensuring that RMA plans work in the growers interests both in an environmental and sustainable economic production sense.

Thank you for the opportunity to submit on Plan Change 23 to the Marlborough Sounds Resource Management Plan and Plan Change 58 to the Wairau/Awatere Resource Management Plan.

Chris Keenan
Manager – Resource Management and Environment
Horticulture New Zealand

Dated: 23 October 2009

Address for service:

Chris Keenan
Manager – Resource Management and Environment
Horticulture New Zealand
PO Box 10-232
WELLINGTON

Tel: 64 4 472 3795
DDI: 64 4 470 5669
Fax: 64 4 471 2861
Email: chris.k@hortnz.co.nz

SCHEDULE ONE: General comments

1.1 Introduction

Horticulture New Zealand recognises that the current use of frost fans in the Marlborough District is primarily for the purpose of controlling frost damage in grape crops. Horticulture NZ also recognises there are other horticultural crops that require frost protection in the Marlborough District.

Horticulture New Zealand has not been consulted on the Proposed Plan Change, although an extensive consultation process has been undertaken with wine growers.

Horticultural frost protection methods vary across the country. In areas with significant air quality issues, and in regions where there is water shortage, air disturbance measures are seen as good agricultural practice. This is the case in the Marlborough District.

Horticulture NZ notes that use of frost fans for frost protection constitutes what could be expected as **a normal rural production activity**. Other examples of rural production activities that face scrutiny from councils include the use of agrichemicals, vehicles, structures, and the timing of rural activities. Increasingly, councils are being faced with complaints and demands from rural residential communities focussed on achieving a level of control over rural production activities that will limit the productive capacity and the flexibility of rural land.

Rural production activities are driven by market expectations. In the Marlborough District this has driven an increase in viticultural activities, in what was primarily mixed dryland sheep and beef country - with some horticulture. This is not a change in landuse or activity. The land use has remained rural, and the activity has remained (as defined within the Resource Management Act 1991) a "production land" activity.

Some landuse *has* changed during this period. There has been limited and sporadic subdivision of some rural land into rural residential "lifestyle" blocks. This land use change was negotiated through, and approved by, Marlborough District Council. The reverse sensitivity matters (that have arisen since these land use changes were approved), are a direct result of council decisions.

Council is seeking to address one reverse sensitivity matter in isolation to many other production activities and growers face the uncertainty of similar production activities coming under scrutiny at the political whims of council. In this case, the proposed regulatory response will capture all rural properties wishing to employ or use frost fans. Council has indicated that complaints have only come from some rural residential dwellers, but has proposed regulations for all rural land use to control these localised issues. Horticulture NZ is concerned that acceptance of this approach will set a precedent regulatory approach for other rural production activities.

By adopting this approach Marlborough District Council has incorrectly identified the cause of these resource management issues. The real cause of these issues has been a lack of Council control over land use change from rural to rural residential land use. Horticulture New Zealand is not suggesting it is inappropriate to have rural residential

landuse, but notes that other councils (for example Western Bay of Plenty, Wairarapa DC's, or Rodney DC) have moved to limit the effects of reverse sensitivity by controlling rural residential growth and notifying potential rural residents of the realities of living in, and adjacent to, rural zones.

Marlborough District residents enjoy the benefits of a strong rural economy with considerable benefits derived from the establishment of viticultural and horticultural rural production. In return rural businesses seek that council develop an efficient and effective regulatory framework to encourage growth.

1.2 General Comments on Plan Changes (Frost Fans)

Horticulture New Zealand made submissions on the Hurunui District Plan Change relating to Frost Fans. As part of that submission process Horticulture New Zealand engaged Dr Malcolm Hunt of Malcolm Hunt Associates to prepare a report on the acoustic matters relating to the use of frost fans.

A copy of that report is appended to this submission.

The conclusion reached by Dr Hunt was that a permitted activity rule with appropriate standards can provide an adequate level of amenity.

In particular the Hunt Report indicates that LAeq 60 dB will provide the World Health Organisation level for sleep to the met in a setback to 100 metres from the notional boundary of dwellings in different ownership in the rural zone is required.

Therefore Horticulture New Zealand seeks that a permitted activity rule be included in the Plan that has:

- A level of LAeq 60 dB
- A setback distance of 100 metres from the notional boundary of dwellings in different ownership in the Rural 3 and 4 Zones
- Provisions for acoustic installation in new dwellings.

If a frost fan can achieve the 30dB Leq inside at a dwelling an activity should be able to be undertaken as a permitted activity.

At present the default rule is a discretionary activity. It is considered that a Restricted Discretionary Activity Rule should be provided with clear matters of discretion so there is clarity as to what would be assessed.

Decision Sought: Include in Plan Change 23 and Plan Change 58 Rural Zones the following changes:

Include a permitted activity rule which provides for use of frost protection fans where:

- A level of LAeq 60 dB be exceeded within 100 metres from the notional boundary of dwellings in different ownership in the Rural 3 and 4 Zones
- The frost fan shall only be operated for frost protection when the air temperature in the area of the crop drops to 2°C
- Provisions for acoustic installation in new dwellings.

- Sound levels shall be measured in accordance with NZs6801:2008 Acoustic Measurement of Sound and assessed in accordance with the provisions of NZS6802:2008 Acoustics – Environmental Noise.
- The frost fan may be operated during daytime outside of frost conditions for maintenance purposes only.

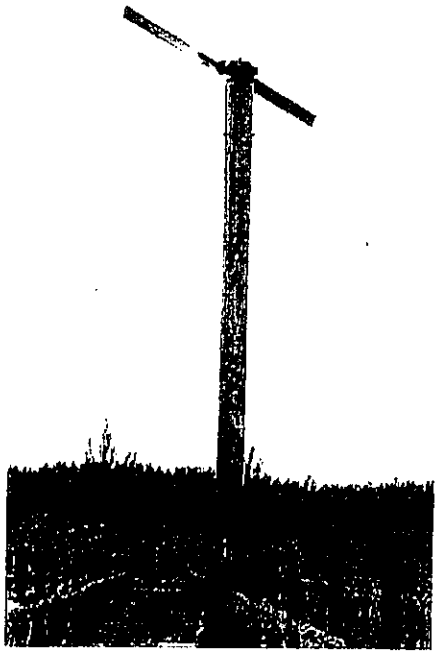
Where the standards are unable to met the frost fan will be assessed as a Restricted Discretionary Activity.

Include a Restricted Discretionary Activity Rule for frost fans with the following matters of discretion:

- Location of frost fan
- Operational requirements of the frost fans
- Speed of frost fan
- Recording information
- Monitoring requirements

Retain the notified provisions in 30.1.4.2.4, 31.1.5.1 and 2.2.11.1 for Noise Sensitive Activities to construct dwellings to that 30 dB LAeq can be met with doors and windows closed.

Noise Assessment: Frost Protection Fans



Prepared On Behalf Of:

Horticulture New Zealand and ***New Zealand Winegrowers***

Horticulture New Zealand

NEW ZEALAND WINE
PURE DISCOVERY

Prepared by:

MalcolmHuntAssociates

NOISE AND VIBRATION CONSULTANTS

First floor, Arco House, 47 Cuba Street, PO Box 11-294, Wellington
Telephone 04 472 5689 Fax 04 473 0456
mha@noise.co.nz www.noise.co.nz

March, 2009

Report Reference:
88-474.09(V3)

Noise Assessment: Frost Protection Fans

Horticulture New Zealand and ***New Zealand Winegrowers***

MalcolmHuntAssociates

1.0 Introduction

Malcolm Hunt Associates have been commissioned by Horticulture NZ and NZ Winegrowers to investigate and assess noise and acoustic matters relevant to the operation of frost protection fans. The report has been prepared to assist with submissions on proposed District Plan changes under consideration by the Hurunui District Council.

This document represents a review of available information on the acoustic emission factors associated with the typical operation of frost protection fans, including taking into account the acoustic characteristics of these fans and climatic environmental factors associated with their use. The relevant noise provisions of the District Plan are assessed as are the relevant guidance provided by environmental noise standards NZS6801 and NZS6802. As the recommendations of this report are in accordance with the relevant guidelines and noise limits to protect people from adverse noise effects due to infrequent night time frost protection fan events, this report puts forward a suggested noise rule regime which can be seen to be both balanced and technically sustainable within the planning process.

Noise may be defined as unwanted or undesirable sound. The effects of noise are not the same for all people as some sounds that are acceptable to some may be intolerable to others. The strength of sound, or sound pressure level, is measured in decibels (dBA[1]). In New Zealand as in many other countries dBA measurements of sound pressure are the basis of assessment of environmental noise in. The following diagram depicts everyday sound sources and typical dBA sound levels associated with these sources;

[1] dBA is defined as the "A" frequency weighted sound level and is designed to reflect the acuity of the human ear, which is less efficient at low and high frequencies than at medium or speech-range frequencies. To describe a sound in a manner representative of the ear's response, it is necessary to measure sound pressure using the electronic A weighting network on sound level meters.

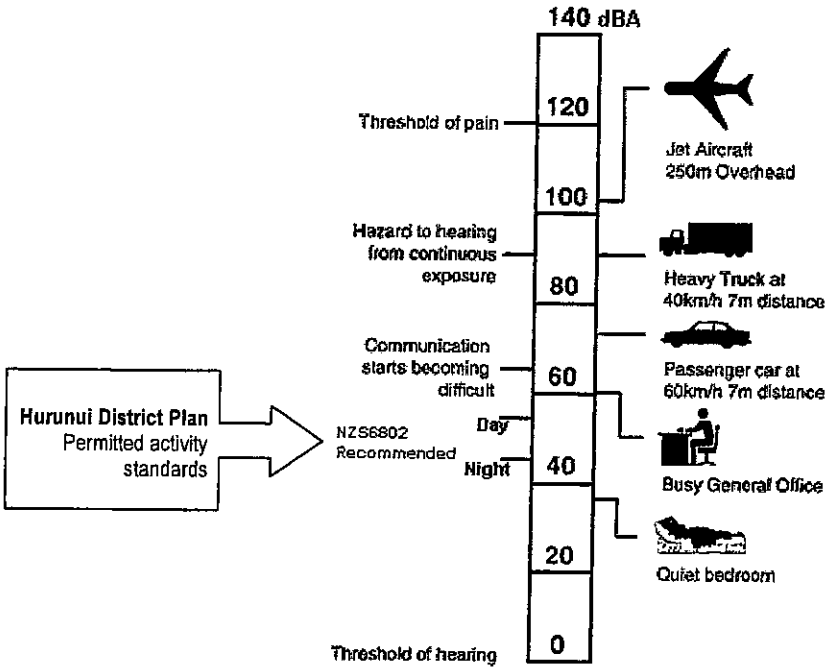


Figure 1. Examples of everyday sound sources and their equivalent dBA sound level.

Noise from various sources in the environment therefore occur vary widely depending upon the situation.

Methods for quantifying environmental sound use descriptors that take into account the overall loudness and prevalence of the sound within the environment. As above, dBA is the general measurement unit. The dBA unit equates generally with the sensitivity of the human ear across the audible sound spectrum. A further descriptor is used to account for variations in the sound level of interest. The L10 sound level (in units dBA) is used to describe the average maximum sound level. See attached Glossary. Leq (also measured using A weighted decibels) is a measure of average sound energy and is the main measurement unit now promoted within NZ Standards since 1999.

For sounds emitted by frost protection fans, L10 levels are usually 1 to 2 dB higher than the Leq measured over the same period. The Hurunui District Plan specifies noise limits for permitted activities in terms of the L10 and Lmax units, which is consistent with most District Plans developed prior to 1999. Further details on typical sound levels from frost protection fans is provided below in Section 3.

2.0 Existing District Plan

2.1 Noise Limits

District Plan noise limits specified for permitted activities within the Hurunui District Plan are summarised as follows;

> *All activities shall be designed and conducted so as to ensure that the following noise limits are not exceeded, at or outside the boundary of the site:*
> *55 dBA L10 7am – 7pm daily*
> *45 dBA L10 7pm – 7am daily*
> *75 dBA Lmax All days between 10pm and 7am*

The above District Plan L10 and Lmax limits are consistent with limits recommended within the pre-1999 NZ Standards as adequate to protect residential sites from adverse noise effects. This general recommendation still remains within later Standards for typical sounds in the environment experienced on an on-going basis. Higher limits are sometimes adopted in District Plans and elsewhere where the noise effects occur on a very limited basis (such as noise limits in urban areas governing the use of a stadium for music concerts or other temporary events). The circumstances under which frost protection fans operate also warrant special consideration regarding appropriate limits to protect residential sites.

2.2 Noise Policies

It is important to note the Hurunui District Plan places emphasis on people's health and well-being and does not place any special emphasis on amenity issues related to noise effects. This is because the Hurunui District Plan refers to controlling noise in the environment via methods set out in section A1.2.9 which only refers to Policies 10.1 and 10.9 regarding Objective 10. The District Plan noise requirements have not been specifically linked within the District Plan to Policy 10.3 which seeks to maintain and enhance environmental amenity. The two policies referenced to the Noise Section (A1 2.9) are;

> ***Policy 10.1***
> *To foster environmental health for the wellbeing of the District's residents.*
>
> ***Policy 10.9***
> *To control noise emissions at levels acceptable to the community.*

These policies indicate the environment must be maintained in such a way that people's health is not adversely affected by land use activities however the District Plan also states the emission of noise from activities which have a legitimate function in an area is deemed acceptable, especially where the activities which are of limited duration, such as seasonal harvesting. The District Plan sets out an exemption for "*normal agricultural practice undertaken for a limited duration*" however the proposed plan change seeks to introduce noise limits specifically to cover the operation of frost fans which by their very nature emit noise of limited duration.

As described below, frost fans operate for specific purposes during a (limited) night time period of operation and may warrant specialised limits based on these factors (as opposed to application of the normal permitted activity noise standards for these devices). Limits recommended for the control of noise from frost protection fans recommended below are based on indoor sound levels which are intended for the protection of human health and well-being[2].

2.3 Assessment Location

The Hurunui District Plan applies the above limits at the rural site boundary which does not usually represent the location of a residential dwelling, particularly where the adjoining site is rural in nature. In some rare cases a dwelling maybe located adjacent to the site boundary. To ensure noise is adequately controlled, what is needed is an approach which only applies the noise limit where dwellings are located. Only applying a noise limit the 20 metre notional boundary to any rural dwelling achieves this. The notional boundary is defined within NZS6802 as *"a line 20 metres from any side of a dwelling, or the legal boundary where this is closer to the dwelling"*. Compared to the alternative, the notional boundary approach is preferred as this allows the vacant land to be used for noise mitigation, where this is available.

Most District Plans in New Zealand adopt the notional boundary approach whereby in noise emissions are measured and assessed in terms of noise received within 20 metres of a rural dwelling. Controlling noise to

---

[2] *Guidelines for Community Noise*. Berglund, B., Lindvall, T. and Schwela, D. (Eds). 2000. World Health Organization. http://wholibdoc.who.int/hq/1999/a68672.pdf 7 April 1999

site boundaries in rural areas is not necessary or essential in avoiding adverse noise effects on people's health and well-being.

As a general observation, farmers need to be aware that control of noise at site boundaries in rural areas may give rise to serious unintended consequences for legitimate land use activities establishing in rural areas near to the site boundary, such as water pumps or generators. The normally available buffer distances which can mitigate noise for activities located near rural site boundaries are not available where the noise source is located near the site boundary. Even though this site may be remote from any dwelling, technical non-compliance with the District Plan noise limits may occur at site boundary locations even though there are no detectable effects on people's health and well-being. The "site boundary" approach of the existing District Plan can be said to be counter to the effects-based approach of the Resource Management Act.

2.4 Acoustic Standards

The District Plan requires the measurement to be in accordance with the provisions of NZS 6801:1991 "*Measurement of Sound*", and assessment to be in accordance with the provisions of NZS 6802:1991 "*Assessment of Environmental Sound*". These NZ Standards are important for the proper functioning of the noise rules. NZS6801 guides on the precautions to be taken in the measurement of environmental sound, while NZS6802 sets out some important assessment matters, which includes the application of a penalty for sounds which contain "special audible characteristics". This is an important matter further discussed below in Section 6.

These 1991 acoustic Standards have been revised and are now available as NZS6801:2008 *Acoustics – Measurement of Environmental Sound*, and NZS6802:2208 *Acoustics – Environmental Noise*. As a matter of "best practice" any new District Plan provisions dealing with noise should make reference to the 2008 versions of these Standards to ensure the most up to date methods are employed to measure and assess noise. It is quite normal and workable for the noise new rule to refer to the 2008 Standards while the rest of the Plan refers to the 1991 versions. The recommended measurement unit is LAeq, measured over 15 minutes. Because the cyclic variations occur over a matter of minutes a measurement/assessment period of 15 minutes will ensure adequate account is taken of variations in the noise output of frost protection fans.

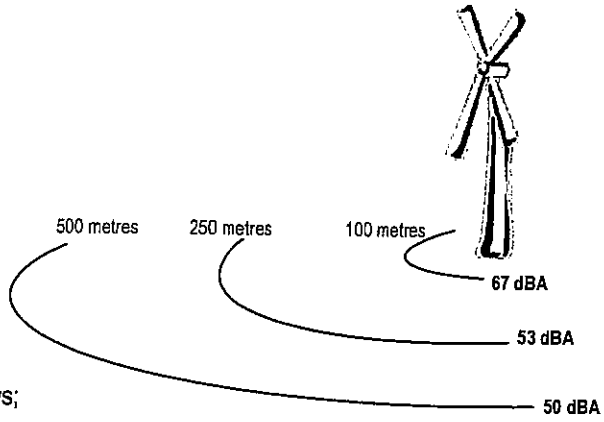
The main advantages of adopting the 2008 acoustic standards that a assessment is now based on a rating level which can be derived from new short and detailed assessment methods, which expand the methods used previous versions. LEQ and Lmax are employed as the main descriptors for environmental noise. Standardised averaging provisions with duration adjustments have been re-introduced for daytime sound. Adjustments for residual sound contamination, façade corrections and special audible characteristics are part of the rating level determination. A reference test method for tonality has been added based on latest ISO 1996 provisions. The treatment of special audible characteristics is further discussed in Section 6 below.

3.0 Frost Fan Noise Sources

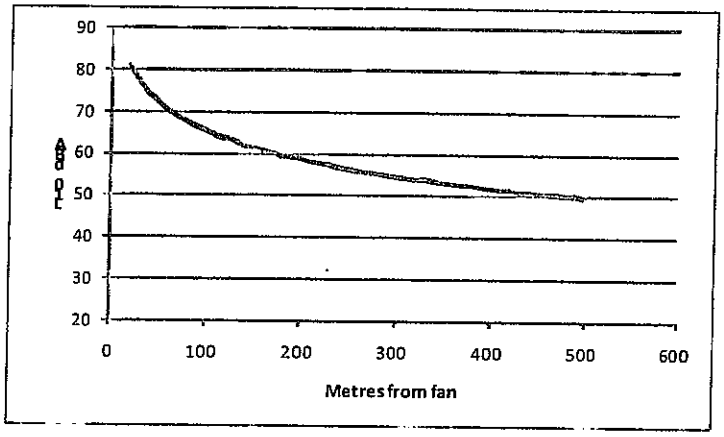
The sound emitted during frost fan operation arises largely from aerodynamic sources associated with the blade passing through air. It is generally held that it is the blade tips which generate the most noise as these parts of the blade are travelling the fastest through the air and have the most potential to induce air disturbance (which is perceived as noise). The engine employed as the power source does not usually control overall sound levels (unless it has a poor or faulty muffler).

The blade configuration and rotational speed has a significant bearing on the amount of noise generated. A four-bladed design is considered more efficient at moving air and does not need to operate at the same revolutions to achieve the desired degree of frost protection. As noise output is related to tip speed to the fourth power, a significant drop in noise level is achieved by slowing the tip speed.

Sound from frost protection fans reduces in intensity with distance. Expected sound levels for a typical frost fan over distance are set out as follows;



Graphically, this is shown as follows;



Generally, fans have an area of thermal effectiveness at distances of 150 metres in diameter, although this will vary between machines and on local terrain and crop factors. One machine per 4 to 5 hectares is not uncommon. The issue of cumulative noise effects from multiple fans is discussed in Section 6 below.

The general character of frost fan noise (2 or 4 bladed) is a continuous sound that varies in level depending upon the orientation of the blade with respect to the observer position. See Figure 2 below. This variation is caused by a change in directionality of the sound source and arises due the face of the "swept area" of the blade rotating laterally to ensure maximum air disturbance in all directions. Sound output (over a limited range) is controlled by the tip speed of the blade. The area of effectiveness of the fan is also related to airflow which is in turn affected by fan speed.

An example of typical sound from a frost protection fan is shown in Figure 2.

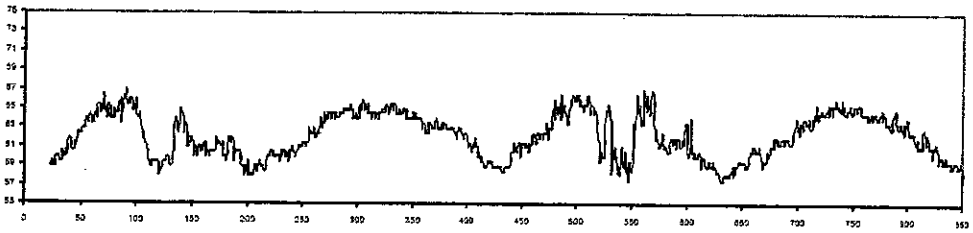


Figure 2. Examples of variation in typical frost fan dBA sound level over 2 complete rotation cycles (approx 840 seconds). Ref. Noise from Frost Boss Wind Machines, http://www.frostboss.co.nz

There are several factors affecting the perception of sound from frost protection fans;

- Cyclic variations in sound levels over time
- Distance of the source to the receiver location
- Impulsiveness of the sound - some models possessing a light "chomp" characteristic
- Tonal components (if present)

The various models of frost protection fans have variable levels of sound emission and sound qualities. Importantly, there is no consistent picture as to whether the sound characteristics can be classified as containing "special audible characteristics" as defined by NZ Standard NZS6802. A summary by researchers in Canada[3] have described the sound emitted by frost protection fans as;

"... noise components that extend throughout the audible frequency range from the blade passage frequency to upwards of about 1,000 Hz. The sound spectrum of a wind machine is full [of] natural tones and impulses that give it a readily identifiable acoustic character"

The conclusion is that sound from the normal operation of frost fans has unique characteristics. In order to encourage the development of machines which do not emit special audible characteristics, it is important to only apply the penalty for sounds with special audible character under the relevant NZ Standards where there is clear and unequivocal evidence of additionally annoying tonal components and/or impulsiveness.

Specific criteria are available for the assessment of tonality and impulsiveness within the 2008 version of NZS6802 Appendix B of NZS6802:12008 sets out an explicit test for tonality that should be followed for assessing whether there 5 dB penalty can be justified for that effect.

4.0 Effects Of Noise

Environmental noise (which includes vibration) is unwanted sound and can have potential health effects and detract from the amenity of an area. The potential effects of noise are:

[3] *Field Study of the Movement of Sound Produced by Wind Machines in Vineyards in Niagara, Ontario, Canada* Fraser, H.W., Gambino, V., and Gambino, T. 2006. American Society of Agricultural and Biological Engineers, Paper Number 06-1146.

- Sleep interference (both awakening and difficulty in getting to sleep), Noise at levels predicted will induce adverse effects on the quality of sleep and/ or the ability to get to sleep. Adequate sleep is important for personal health and well being.
- Communication interference in its various forms eg. Speech, listening to TV, radio, etc.
- General annoyance and the feeling of helplessness because of the intrusion by a factor in the local environment that is out of the direct control by the individual.

Frost fan noise assessment needs to reflect the typical night time operation through to early morning. This means that sleep effects are the primary concern, followed by receiver environments of lesser importance such as the more usual outdoor amenity and communication issues. Annoyance can be triggered by sounds that are simply detectable (audible) within an otherwise quiet rural environment. The usual approach to setting limits on noise received at residential sites is protect human health and amenity. For noise during night time, it is sleep protection which is the primary concern. It is not appropriate to protect particularly sensitive people who may be annoyed by the frost fans because a low level of sound is detectable within or around the dwelling.

The best practice approach taken within District Plan and NZ standards are to base maximum permissible noise levels on health protection. This is the case with the Hurunui District Plan, as discussed in the following section.

RMA Section 16 requires occupiers to adopt the best practicable option to ensure noise emissions do not exceed a reasonable level. The definition of best practicable option is set out in s.2 of the Act:

> *"Best Practicable Option", in relation to a discharge of a contaminant or an emission of noise, means the best method for preventing or minimising the adverse effects on the environment having regard, among other things, to –*
>
> *(a) The nature of the discharge or emission and the sensitivity of the receiving environment to adverse effects; and*
> *(b) The financial implications, and the effects on the environment, of that option when compared with other options; and*
> *(c) The current state of technical knowledge and the likelihood that the option can be successfully applied*

Helicopter are considered by many to be a viable method of frost protection. The operation of helicopters is generally regarded as more noisy than frost fans. Helicopters at 500 metres would generally exceed the permitted activity standard of Lmax 75 dBA for residential locations near helicopter landing areas. The noise effect is generally considered to be greater than the use of frost protection fans (see above). Whilst noise associated with helicopter landing areas is controlled under the District Plan, the Plan does not and can not control helicopters in flight. Section 9(a) of the RMA restricts Council's powers in respect of aircraft overflight to controls on noise only in relation to landing areas. Unless the helicopter is about to land or has just taken off, Council cannot attempt to control the aircraft in any way using the Resource Management Act.

While use of helicopters may not be under the control of the District Plan, there should be no misunderstanding that noise from helicopter operations are subject to control by existing legislation. The Civil Aviation Authority have wide ranging powers under the Civil Aviation Act 1990 to control noise from aircraft overhead, which is especially relevant where noise nuisance is due to low level helicopter activity. The point is that there are controls on noise helicopter operations, and powers exist under the Civil Aviation Act to control helicopters in flight where noise causes a nuisance. It just happens to be that it is not Council

that has the power to control the operations of helicopters to limit or control noise effects.

It may therefore be incorrect to conclude that helicopters can conduct low level frost protection operations near dwellings as of right. The emerging view is that helicopters do not represent a viable candidate for the best practical option for frost control when operating near dwellings.

5.0 Guideline Values

Regarding guideline values for sleeping areas within dwellings, the widely referenced WHO guidelines for community noise[4] state (at Section 4 page 13);

> *At night-time, outside sound levels about 1 metre from facades of living spaces should not exceed 45 dB L_{Aeq}, so that people may sleep with bedroom windows open.*

These noise guidelines recommend indoor noise limits for an open window situation. However, two factors arise;

1. Windows will not generally be open on cold frosty nights when the frost fans operate. Outdoor levels to protect indoor spaces need to take account of the effects of closed windows within typical New Zealand dwellings. Indoor levels of 30 to 35 L_{Aeq} are adequate to protect sleep; and
2. The WHO guidelines are for everyday noise sources whereas the infrequent operation of frost fans means the potential adverse noise effects are much more limited in occurrence. Noise limits can be justified to be slightly higher than normal allowable normal limits on the basis the effects are infrequent.

These factors are further discussed in the Assessment Section below.

A wide range of possible limits and controls exist within other District Plans in New Zealand. The pattern is that no noise levels as high as 65 dBA are permitted from frost fan operation. In recognition of the special circumstances surrounding the use of these devices, there are no known District Plan noise rules for frost protection fans set at a limit of 40 to 45 dBA at the dwelling. The assessment below takes into account guidance on frost fan noise limits based on published criteria on sleep protection and on the typical acoustic performance of New Zealand dwellings.

6.0 Assessment

Studies have found indoor sound levels up to 30 dBA indoors for the adequate protection of sleep which is consistent the World Health Organization (WHO) recommendations based continuous indoor noise levels of no more than L_{eq} 30 dBA for the avoidance of sleep disturbance.

Generally speaking this internal level would equate to L_{eq} 60 dBA outside the dwelling, assuming a 30 dB loss through the building façade with closed windows. Due to conditions during which frost fan operate, it is reasonable to assume occupiers would have their windows closed.

[4] *GUIDELINES FOR COMMUNITY NOISE* Edited by Birgetta Berglund, Thomas Lindvall, Dietrich H Schwela. World Health Organisation, Geneva, 1999.

The methods used to operate of the frost protection fans can minimise the noise effects. New Zealand Winegrowers have developed a Code Of Practice which assists growers with advice of the operation of these machines to minimise adverse effects including noise. A copy of these guidelines are attached as Appendix A. These guidelines can be considered an important aspect of the "best practicable option" to avoid unreasonable noise.

The reduction provided by the building is important. There are two formal studies of the attenuation properties of New Zealand dwellings. The most extensive was reported in 2000 about the Auckland International Airport Limited designations relating to a proposed second runway and the airport noise related aspects of the review of the Manukau City Proposed District Plan. The second was a 2000 report to the Building Industry Authority Environmental Sound Project Committee.

For the airport study[5] the study aim was to quantify desired levels of insulation for houses affected by airport noise to achieve an acceptable internal noise environment. The study included measurements of 10 types of house construction to reflect typical designs used in New Zealand. The results indicated that noise level differences (D) are higher than expected by theory. With windows open for ventilation the average D_{open} is 18 dB. With the windows closed, the houses with aluminium window frames typically had a better acoustic performance (D_{closed} = 31 dB) than those with timber frames (D_{closed} = 24 dB).

The second report was commissioned by the former Building Industry Authority and involved testing the sound attenuation of the external envelope of six houses, G. Bellhouse, 2000 unpublished. Here the findings showed the type of building structure is highly significant in controlling the level of attenuation, overall with the window and doors closed, the overall A-weighted level difference obtained was between 23 and 28 dB for road traffic and between 24 and 27 dB for air traffic. The protection against road traffic is relevant given the prominence of low frequencies within typical sound from frost protection fans when measured at distances beyond about 250 metres.

By way of comparison, it is useful to consider the US EPA 1974 "Levels" document.[6] Which included information on the performance of windows which was also based on field surveys. This US report is widely adopted internationally for planning purposes, the typical reduction in sound level from outside to inside a house can be summarised as follows;

SOUND LEVEL REDUCTION DUE TO HOUSES* IN WARM AND COLD CLIMATES, WITH WINDOWS OPEN AND CLOSED [4]

	Windows *Open*	Windows *Closed*
Warm Climate	12 dB	24 dB
Cold Climate	17 dB	27 dB

Thus, it appears an outdoor level based on building attenuation of 27 to 30 dB is not unreasonable for a rural dwelling with windows closed. Given the indoor guideline sound level of 30 dB recommended by WHO to protect sleep, this equates to an outdoor level of Leq 60 dBA.

As noted above, clearly significant factor is whether adjustments are warranted for the unique character of frost fan sound. It is noted the Marshall Day Acoustics Nov 2008 document[7] discussing frost fan noise rules

5 *Housing NZ v Manukau City Council*, A143/01, 7 NZED 116

6 Information on Levels of Environmental Noise Requisite to Protect Public Health and Welfare with an Adequate Margin of Safety, Office of Noise Abatement and Control, U.S. Environmental Protection Agency, March 1974, 550/9-74-004

7 Frost Fan Noise Rules, MDA Report 001 R03 2008469c, dated Nov 2008.

implies that all frost fans possess special audible characteristics. No evidence is provided. There are examples where no correction is warranted.

As with most District Plans, the Hurunui District Plan requires noise to be measured in accordance with NZS6801:1991 *Measurement of Sound* and assessed in accordance with NZS6802:1991 *Assessment of Environmental Sound*.

The 2008 MDA report avoids a specific recommendation for limits on noise from new frost fans by stating the level of Leq 55 dBA is acceptable. This is said to be based on MDA's previous experience elsewhere with frost fans and takes into account the character of frost fan sounds. In fact, a level of Leq 60 dBA can be justified based on closed windows and the typical expected acoustic performance of NZ dwellings.

7.0 Cumulative Noise Effects

Cumulative noise effects may arise where two or more fans are located in the vicinity of dwellings or urban area. Under the RMA these effects are required to addressed within proposed rules governing frost fan noise.

If two frost protection fans are running, and they are each the same distance from an observer, we find that the cumulative noise of these two machines would results in a 3 dB increase over the noise level measured when of one of the machines running alone. Where one or other of the frost protection fans lies at a greater distance to the receiving position than the other, a noise level increase of less than 3 dB will occur. Thus, the cumulative noise level effect is not large[8].

Also, it should be borne in mind that simply because frost fan are located in the same area does not mean that they will always operate in unison. A host of site-specific factors related to the siting of the fans and terrain will cause differences in the micro climate which means that not all frost fans located within a local area will always operate concurrently. In any event, the area of effectiveness of each fan (1 per 4 hectares) will ensure the cumulative effects, if they do arise, will be low level due to the low density with which frost fans occur within wine growing areas, due to the fact that frost fans do not need to be located close to each other.

Within indoor receiving environments, not all rooms within dwellings will be affected equally by frost fan sounds. Noise from frost fans will generally be most noticeable within rooms facing the direction of the fan. Thus, sounds from frost fans which affect different sides of the dwelling will not necessarily combine internally to achieve the theoretical sound levels that are calculated to occur.

Plan Change 18 contemplates deals with cumulative noise effects by adopting various setback distances, as follows;

1. Frost control fans shall be located no closer than 500 metres of a dwellinghouse on a separate lot under different ownership or within 500 metres of an urban area; and
2. There shall be a total of no more than five frost control fans located between 500 and 1000 metres of a dwellinghouse on a separate lot under different ownership on any other site or of an urban area

[8] *Cumulative Noise from Frost Boss Wind Machines*, Richard Kam B.E(Mech), M.E(Aero), Aerodynamic Research Engineer, Rikan Aeromarine Ltd, Napier. www.frostboss.co.nz

These methods do not appear to have considered the actual noise effects, in terms of allowable noise levels. These requirements do not therefore address the cumulative effects in a way that reflects the benefits in operating smaller or low noise machines at closer locations to dwellings.

The approach recommended by Waipara Valley Wine Growers is to use a 300 metre setback from any Residential or Rural Lifestyle Area boundary, and 100 metres from the notional boundary to any rural dwelling. These requirements are subject to the need to comply with a limit on noise from each frost fan. As above, this limit is recommended to be L_{Aeq} 60 dBA assessed over a 15 minute period. The placement of a frost fan at distances as close as 100 metres to a notional boundary will require a typical frost fan to be significantly de-rated in noise emission terms to ensure the 60 dBA limit is achieved.

It is important to note that the 300 metre setback to residentially zoned land will result in typical noise levels from an individual frost protection fan at around LAeq 53 dBA, well below the maximum recommended level of LAeq 60 dB. The 60 dBA limit will in fact only be approached when a maximum of 3.3 frost fans each are located at 300 metres. This is not a likely scenario for a residentially zoned site as mostly the fans would be located at much greater distances from these residentially zoned areas and result in lower noise effects.

8.0 Summary

This assessment has considered the District Plan and relevant noise guidelines. The noise from frost protection fans has potential to disturb sleep due to typical operation being at night time. However, these fans only operate under cold conditions when windows can reasonably be assumed to be closed.

The following observations have been made;

- The Hurunui District Plan noise provisions place primacy on protecting public health and well-being. Amenity factors are not specifically relevant to the control of noise via the District Plan rules. In any event, the importance of outdoor amenity is reduced during frost fan operations as the typical operating period is during night time (10 pm to 7 am). The assessment takes into account the cold conditions during typical frost fan operational periods which means the windows within sleeping rooms will generally be closed which significantly reduces the effects of sounds occurring in the outdoor environment.
- An measurement/assessment period of 15 minutes will ensure adequate account is taken of variations in the noise output of frost protection fans.
- The recommendations already take into account the nature of frost fans and no adjustment of the allowable noise level for special audible characteristics is needed.
- The minimum separation distances recommended by the Waipara Valley Wine Growers of 300 metre setback from any Residential or Rural Lifestyle Area boundary, and 100 metres from the notional boundary to any rural dwelling are appropriate and adequate to control adverse noise effects of frost fans in the Hurunui District.

Specific consideration has been given within this report to the unique nature and character of frost fan sound. It is considered unnecessary to make adjustment to the recommended limit of 60 dB LAeq(15 minutes) to further take account of the type or character of sound emitted by frost fans, such as the potential 5 dB penalty set out in NZS6802:1991 for sounds containing special audible characteristics.

Malcolm Hunt
March 2009

Glossary of Noise Terminology

The measurement units used to describe and quantify the noise in the environment and other concepts of acoustics are as follows:

Leq or L_{eq}

The Equivalent Continuous Sound Exposure Level, Leq, is the theoretical constant level of noise that has the same energy content as the actual noise that is present (the equivalent in terms of energy). The Leq is described as the "average" level of noise over a certain time period. The time a measurement is undertaken is critical hence, the unit is always related to the time e.g. Leq 50 dBA (5min).

Lmax or L_{max}

The single highest sampled level of sound. Used in night time emission limits as a means of ensuring sleep protection. Short duration, high level sounds such as audible warning devices, pressure relief valves, etc. have a significant effect on Lmax values.

L10 or L_{10}

The level of sound exceeded for only 10% of the monitoring period. This level of sound therefore equates to an average maximum sound and is used widely in emission limits as the L10 correlates well with the subjective reaction to sound. NZS6802:1991 *Assessment of Environmental Sound* sets maximum permissible noise levels for residential land uses in terms of the L10 criteria.

L95 or L_{95}

The level of sound exceeded for 95% of the monitoring period. This level of sound equates to an average background sound level, and is influenced by constant sources such as industrial equipment and constant low-level sounds from air handling plant. Noise emission limits are not generally specified in terms of an L95 level, but it is used as a guide to the general ambient sound level.

Sound Power

Sound Power Level. The 'energy' created by a sound is defined as its sound power. The ear cannot hear sound power nor can it be measured directly. Sound power is not dependent upon its surrounding environment.

Sound Pressure

Sound Pressure Level is defined as varying pressure fluctuations caused by sound waves. The ear converts these fluctuations into what we call audible sound, which is the sensation (as detected by the ear) of very small rapid changes in the air pressure above and below a static value. This "static" value is atmospheric pressure.

APPENDI X A - New Zealand Winegrowers Wind Machine Code Of Practice 2008

NEW ZEALAND WINE

PURE DISCOVERY

NEW ZEALAND WINEGROWERS

WIND MACHINE CODE OF PRACTICE 2008

Introduction

The New Zealand Winegrowers Wind Machine Code of Practice 2008 (the Code) represents a standard of good practice in the safe operation of wind machines and takes the form of recommendations.

The intent of the Code is to provide guidance to the wine industry on the safe operation of wind machines:

a) when climatic conditions necessitate their use;
b) in accordance with local council rules; and
c) in a way that minimises risk and disturbance.

In accordance with section 3.1 of the *Guidance on Planning for the Wine Industry* (Ministry for the Environment, Guidance Note, 2007), it is noted that any standards regulating the use of frost-protection devices should recognise the infrequent occasions on which these devices may need to be used, typically dependent on factors beyond a winegrowers control.

It may be that, in some situations, strict compliance with all recommendations is impracticable. In such circumstances, every endeavour should be made to observe the intent of the Code.

The good practice recommendations in this Code are voluntary and do not displace the obligation on members to comply with the rules contained in the District Plan of their relevant regional authority or not to engage in any other conduct which may be in breach of the Resource Management Act 1991. In particular, we draw attention to the relevant rules in each region on noise limits and location of wind machine from boundary. Extracts from regulations relevant to the operation of wind machines are appended to the Code.

1 OPERATING ENVIRONMENT

1.1 Avoid operating a wind machine in the following conditions:

- fog;
- rain;
- when winds are at **7km/h** or greater; or
- when there is no risk of frost (except for maintenance purposes, which should be conducted at a time / duration to minimise intrusion).

1.2 Where possible, shield the wind machine engine and tower from vineyard sprays and/or irrigation sprinklers.

1.3 In order to prevent inadvertent start up the wind machine should be disarmed during periods when no frost threat exists.

2 PRE-USE INSPECTION

2.1 Before operating the wind machine (or activating the 'Operator Assist' or 'Automatic' function), check the following levels:

- fuel level (never allow the fuel tank to run out of fuel when wind machine is operating);
- oil level;
- coolant level; and
- battery voltage levels.

2.2 Conduct a visual inspection of the gear box and fan for cracks, debris, tree branches and/or birds' nests that might impede the operation of the wind machine.

2.3 When performing pre-use inspections:

- always keep the tower between yourself and the fan; and
- never adjust, alter or modify any part of the wind machine.

2.4 In order to avoid toppling the tower, only authorised and suitably trained people should climb wind machine towers.

3 WARM UP

3.1 It is essential to safely warm up a wind machine before use. Refer to the operating manual supplied by your manufacturer for the appropriate warm up method for your machine.

3.2 If set to 'Operator Assist' or 'Automatic', the machine should engage the warm up procedure automatically.

4 ON-SITE SUPERVISION

4.1 **Always** supervise a wind machine during operation.

4.2 During operation, ensure that there is access to the following:

- a set of jumper leads or spare battery;
- hand held thermometer; and
- portable fuel supply or regular delivery order from local fuel supplier.

5 DURATION OF USE

A wind machine may potentially operate for hours, after starting automatically at 1°C, even though no frost has occurred. The 1°C frost threshold is not absolute; the risk of frost may vary by variety, time of year, air temperature immediately preceding the temperature drop and proximity to sunrise (generally the coldest part of the day). Assess the conditions of each frost event in order to avoid unnecessary operation.

5.1 A wind machine should only be operated during a frost danger period.

This generally means:

- the leaves of the plant are wet; and

- the air temperature has reached a critical level as determined by you and based on your experience of past frost events.

5.2 Where these conditions no longer prevail and you are confident that the temperature within the vineyard is stable, shut the wind machine down manually.

6 SHUT DOWN

6.1 When shutting down a wind machine, follow the procedure for shut down as directed by the operating manual supplied by your manufacturer.

6.2 If set to 'Operator Assist' or 'Automatic', the machine should engage the shut down procedure automatically.

7 ANNUAL MAINTENANCE

7.1 Ensure that the wind machine is serviced annually by a suitably qualified person.

APPENDIX – PLAN RULES RELATING TOTHE OPERATION OF WIND MACHINES

Section 16 of the Resource Management Act 1991

16. Duty to avoid unreasonable noise –
(1) Every occupier of land (including any premises and any coastal marine area), and every person carrying out an activity in, on, or under a water body [...] or the coastal marine area, shall adopt the best practicable option to ensure that the emission of noise from that land or water does not exceed a reasonable level.

(2) Subsection (1) does not limit the right of any local authority or consent authority to prescribe noise emission standards in plans made, or resource consents granted, for the purposes of any of sections 9, 12, 13, 14, or [15, [15A and 15B].

Proposed Wairau/Awatere Resource Management Plan

Wind machines for Frost Control

Any wind machine used for frost control shall be so constructed and operated that any noise emission measured at a distance of 300 metres shall not exceed 60 dBA L10 provided that:

- *The wind machine will be allowed to operate during the frost danger period until the leaves of the plant are dry and the air temperature has reached 2°C.*
- *The speed of the wind machine must be governed such that the top speed of the rotor does not exceed the speed of sound.*
- *The wind machine be located no closer than 500 metres to any residential zone, or within 100 metres of a dwelling house not located on the property.*

Rural Resource Area Standards (Amended Proposed Central Otago District Plan)

Wind machines for Frost Control

Any wind machine used for frost control shall be so constructed and operated that any noise emission measured at a distance of 300 metres shall not exceed 60 dBA L10 provided that:

1. *The wind machine will be allowed to operate during the frost danger period until the leaves of the plant are dry and the air temperature has reached 1°C.*
2. *The speed of the wind machine must be governed such that the top speed of the rotor does not exceed the speed of sound.*
3. *The wind machine is located no closer than 300 metres to any Residential or Rural Settlement Resource Area, or within 100 metres of a dwelling house not located on the property.*

Proposed Wairarapa District Plan

(ii) Frost protection devices

Operation of frost protection devices is a permitted activity provided that:

(1) The hours of operation are restricted to the times when danger of frost damage is imminent or for maintenance purposes. The frost protection devices shall be operated only when air

temperature 1 metre above the ground is 1°C or below. The thermometer used to measure the air temperature shall be located 1 metre above the ground.

(2) *Operation for maintenance purposes shall be restricted to between the hours of 8.00am and 6.00pm weekdays. Test operation may take place only for emergency maintenance outside these hours.*

(3) *A written log shall be maintained, clearly recording the date and length of time the devices are used. A copy of the log shall be made available to the Councils upon request.*

(4) *The thermometer used to determine frost danger, shall be independently assessed and calibrated by a suitably qualified technician to ensure that it accurately measures temperature and that the calibration certificate is provided to the Councils prior to the operation of the machine.*

(5) *The device shall cease operation when the air temperature reaches 3°C.*

Hastings District Plan

14.2.9.3 *Frost Protection Fans*

(a) *Users of frost protection fans must adopt the best practicable option to avoid creating an unreasonable level of noise.*

(b) *Fans shall be separated by 300m from the boundary of any residential zone unless the noise produced by the fan does not exceed 65 dBA L10 at or within that residential zone. Fans may be located as close as 100m to a residential zone boundary subject to them being fitted with equipment demonstrated to comply with the above noise limit.*

Proposed City of Napier District Plan

57.10 *Frost Protection Fans*

1. *The Following conditions shall apply to all frost protection fans:*

(a) *Users of frost protection fans must adopt the best practicable option to avoid creating an unreasonable level of noise.*

(b) *Fans must be located no closer than 300m from the boundary of any residential zone unless the noise produced by the fan does not exceed 65 dBA L10 at any point within that residential zone. Fans may be located as close as 100m to a residential zone boundary subject to them being fitted with equipment demonstrated to comply with the above noise limit.*

Hurunui District Plan

Wind Machines for Frost Protection are not specifically provided for in the Hurunui District Plan and are therefore subject to the environmental amenity standards in the District Plan including noise and height. With respect to noise standards "normal agricultural practices undertaken for a limited duration, such as harvesting" are exempted from the noise standards. However with respect to height, any structure over 10 metres is a discretionary activity and therefore Hurunui District Council informs us that all of the effects of wind machines for frost control are considered at resource consent stage, including noise effects.

NB: The existing rules are under review. Contact Hurunui District Council if you would like to be involved in that review.

Proposed Plan Changes 23 and 58 to the Wairau/Awatere & Marlborough Sounds Resource Management Plans SUBMISSION

Submission Form for Plan Changes 23 and 58 to the

Wairau/Awatere & Marlborough Sounds Resource Management Plans

Frost Fan Plan Changes

Office Use
Participant No.
17
Submission Point No.

File Refs
W045-15-58
M13-15-23

Date Received Stamp

Name/Organisation: PAUL BRÜCKEL

Address for Service: 875 WAIHOPAI VALLEY RD 6 BLENHEIM 7276

Phone Number: 572 4300

Fax Number: 572 4300

Submissions Close:
5.00 pm Friday
23 October 2009

Return your submission to:
Marlborough District Council
PO Box 443
Blenheim 7240
Attention: Mark Caldwell
Fax: (03) 520 7496
E-Mail:
frostfans@marlborough.govt.nz

6

YES ✓ NO

✓

Paul Brückel

23/10/09

How To Make A Submission

Anyone is welcome to make a submission, either as an individual or on behalf of an organisation. You may use this form or prepare your own submission so long as you are careful to provide all of the information identified on this form. [These information requirements are per Form 5 of the Resource Management (Forms, Fees and Procedures) Regulations 2003]. If you run out of room here, please continue on a separate page. When preparing your submission you need to include the following:

"This part of my submission relates to ..." - state the name of the plan change and the part(s) of the plan change that is/are the subject of your submission.

"I support (or oppose) this part of the plan change." – state whether you support or oppose (in full or part).

"My reasons for supporting (or opposing) this part of the plan change ..." - tell us what your concerns are and the reasons why you support or oppose the provisions in the plan change.

"The decision I seek from the Council is ..." - How do you want the Council to respond to your submission? It is very important that you clearly state the decision you wish the Council to make as the Council cannot make changes which have not been specifically requested. Start by indicating if you want the provision to be retained, deleted or amended. If you want an amendment (including additional provisions) then specify what wording changes you would like to see.

REMEMBER - the clearer you can be, the easier it will be for the Council to understand your concerns and take them into account.

Comments

Cumulative Noise

The proposed plan changes which fail to even mention, let alone consider, cumulative noise effects cannot prove effective in addressing the enormous cumulative noise levels now imposed upon many residents in the province.

I have only three frost machines less than one kilometer from my home (at 537 metres, 662 metres and 725 metres), and yet I experience cumulative noise levels of up to 61dBA with only the two nearest machines running and a light wind blowing the noise away from me. These levels are 11dB above the proposed level of 50dBA for a single machine with the 5dB penalty applied for special audible characteristics (which these machines exhibit).

It is essential that the proposed rules incorporate limits for the cumulative noise level from all frost fans measured at a dwelling and not approve individual frost fans for compliance and then take no account of the total cumulative noise from all of them.

Continuing to concentrate on individual frost fans and their noise compliant parameters, without considering the cumulative effect of other machines likely to operate during a frost event, is akin to checking speedway noise compliance by measuring individual car noise and then saying 'OK, as all the cars are individually compliant, you can start your race with as many cars as you like' – I am quite sure that the affected residents would have something to say regarding the competence of such a methodology and resulting decision.

Switch on temperature

If the switch-on temperature were to be reduced to below 0.75°C it is estimated that the start-up time could be delayed by up to at least an hour, to reduce the noise nuisance, save fuel and reduce the carbon footprint. Similarly a switch-off temperature of above 0.75°C would provide similar benefits.

Manual Switch-on- enable and Mandatory Staff Presence

If staff were to be required to be on site to enable the frost fans and to monitor and ensure that they switched on and off at the prescribed temperatures, it would ensure that rogue fan operation and noise annoyance would be eliminated – it would also provide assurance that in the event of a fan failing to start, the staff member could take action to prevent serious crop damage from frost and any associated financial loss. A further advantage would be the ability of the staff member to shut down a frost fan should mechanical problems arise affecting health and safety aspects. If the potential financial losses are as large as often reported, I believe that the grape growers should have no problem with such a requirement.

Automatic Wind Speed Shut Off

Observations have for some time concluded that if, and when, frost fans are operated even if light wind is present, then noise from the fan blades increases significantly, and risk of mechanical damage or even failure is increased. A very recent report[1] confirms these observations and a copy is attached to this submission. Unlike the Frost Boss four-blade frost fans which incorporate as standard a wind sensor and automatic shut down when wind reaches or exceeds 10 km/h, the two bladed frost fans which lack any such protective devices continue to operate in considerably higher winds (up to 21 km/h have been noted) with significantly higher noise levels and attendant risk of mechanical damage, not to mention potential loss of crop if the frost fan should fail during a frost event. In view of the foregoing, it should be borne in mind that machines that meet the existing compliance level of 55dBA L_{10} will exceed that limit by possibly up to 10dB when the (unattended?) machines continue to operate in windy conditions.

Wine Industry proposal for 60dBA compliance limit

It should be noted that in asking for this increased limit, the wine industry is continuing to ignore the fact that many (if not most) two bladed frost fans continue to be operated at non-compliant and excessive speeds with corresponding excess noise levels likely to equal or even exceed the 60dbA proposed. This non-compliant operation continues to be the major contributor to the extremely high levels of cumulative noise pollution.

I suggest that if action were to be taken to adjust all machines to their compliant operating speeds, there would be an immediate and significant reduction in the cumulative noise levels in the province which are a significant source for complaint.

Ambient noise increase due to frost fan operations

Measurements taken in 1994 and again in 2007 prove that the basic ambient background noise in the Waihopai Valley has not increased by more than one or two decibels during the period. However measurements in 2007 show an increase in the ambient level, when frost fans were operating, of approximately 25 decibels or an increase in noise intensity level of 316 times!

Since 2007 many tens if not hundreds of additional frost fans have been installed which will no doubt have pushed the cumulative noise level even higher!

In conjunction with the plan changes, it is imperative that a determined and aggressive programme of compliance monitoring and enforcement be implemented to encompass all existing and future machines in order to reduce and then contain cumulative noise levels.

It is not sufficient to merely enforce compliance on machines where neighbours lodge noise complaints, as it is very apparent that cumulative noise originating several kilometers away is impacting upon residents ability to sleep.

[1] Rikan Aeromarine report 20 October 'Effects of running Frost Fans in Ambient Wind'

PLAN CHANGE 58

New Rule 30.2.9

30.2.9.1.1 Change to read:

Cumulative frost fan noise shall not exceed 55dBA Leq ***(or 50dBA Leq where special audible characteristics exist)*** when measured at the notional boundary of any existing dwelling, visitor accommodation or other habitable building (other than on the property on which the frost fan is situated)

~~i) at a distance of 300 metres from the device; or~~

30.2.9.1.3 Change to read:

The frost fan shall only be operated for frost protection ***from bud burst (mid-September) to mid-December, and from 1st March to the last day of harvest, or the 30th of April, whichever comes first, commencing when the air temperature at the vine canopy drops below 0.75 °C and terminating when this temperature rises above 0.75°C***

30.2.9.2 Matters Over Which Council Will Exercise Control

The Council reserves control over and may impose conditions with respect to:

(b) Speed of frost fan

Note: It is important to ascertain Make, Model gearbox ratios, and engine speed in order to correctly calculate fan blade speed for correlation with acoustic report(s) when non-standard combinations are installed.

New Rule 2.3.3

2.3.3.2 Change to read:

Cumulative frost fan noise shall not exceed 55dBA Leq ***(or 50dBA Leq where special audible characteristics exist)*** when measured at the notional boundary of any existing dwelling, visitor accommodation or other habitable building (other than on the property on which the frost fan is situated)

~~i) at a distance of 300 metres from the device; or~~

2.3.3.4 The frost fan shall only be operated for frost protection ***from bud burst (mid-September) to mid-December, and from 1st March to the last day of harvest, or the 30th of April, whichever comes first, commencing when the air temperature at the vine canopy drops below 0.75 °C and terminating when this temperature rises above 0.75°C***

2.3.3.5 Matters Over Which Council Will Exercise Control

The Council reserves control over and may impose conditions with respect to:

(b) Speed of frost fan

Note: It is important to ascertain Make, Model gearbox ratios, and engine speed in order to correctly calculate blade speed for correlation with acoustic report(s) when non-standard combinations are installed.

PLAN CHANGE 23

New Rule 36.2.7

30.2.7.1.1 Change to read:

Cumulative frost fan noise shall not exceed 55dBA Leq ***(or 50dBA Leq where special audible characteristics exist)*** when measured at the notional boundary of any existing dwelling, visitor accommodation or other habitable building (other than on the property on which the frost fan is situated)

~~i) at a distance of 300 metres from the device; or~~

30.2.7.1.3 The frost fan shall only be operated for frost protection ***from bud burst (mid-September) to mid-December, and from 1st March to the last day of harvest, or the 30th of April, whichever comes first, commencing when the air temperature at the vine canopy drops below 0.75 °C and terminating when this temperature rises above 0.75°C***

30.2.7.2 Matters Over Which Council Will Exercise Control

The Council reserves control over and may impose conditions with respect to:

(b) Speed of frost fan

Note: It is important to ascertain Make, Model gearbox ratios, and engine speed in order to correctly calculate blade speed for correlation with acoustic report(s) when non-standard combinations are installed.

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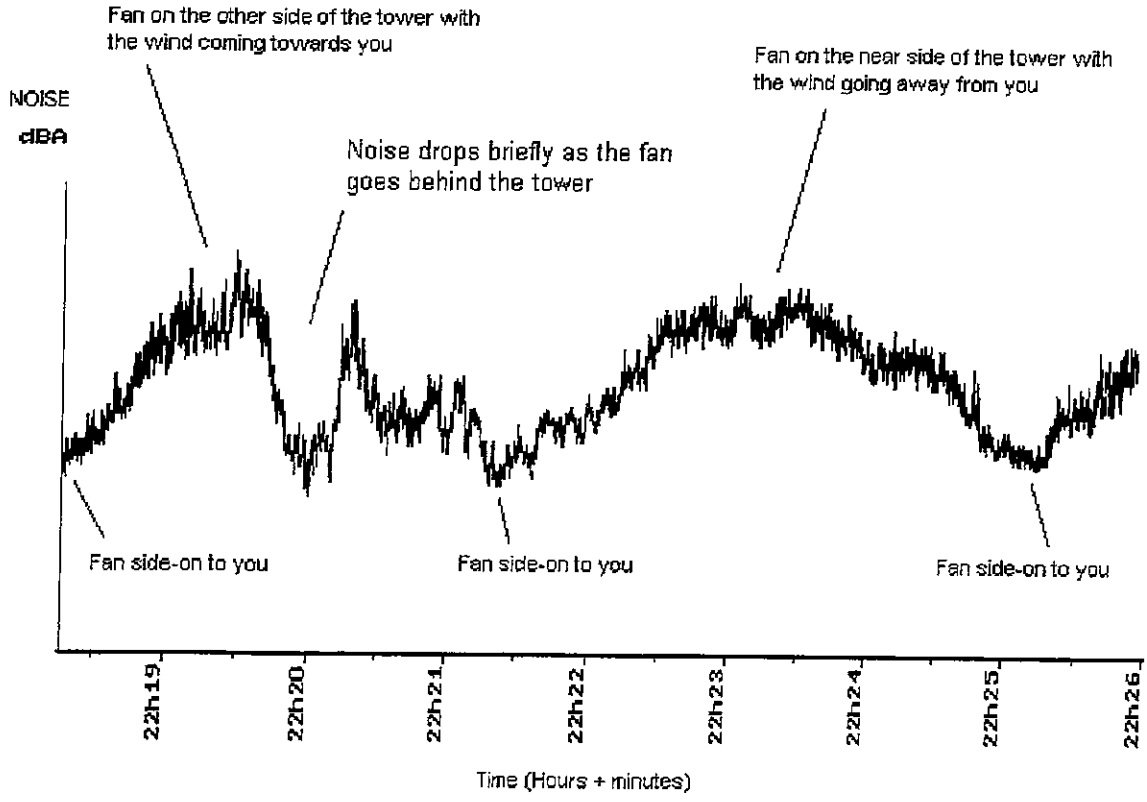
Effects of running Frost Fans in Ambient Wind

Frost fans are designed to run on still, frosty nights. During these conditions the aerodynamic loads on the fan are predictable and manageable.

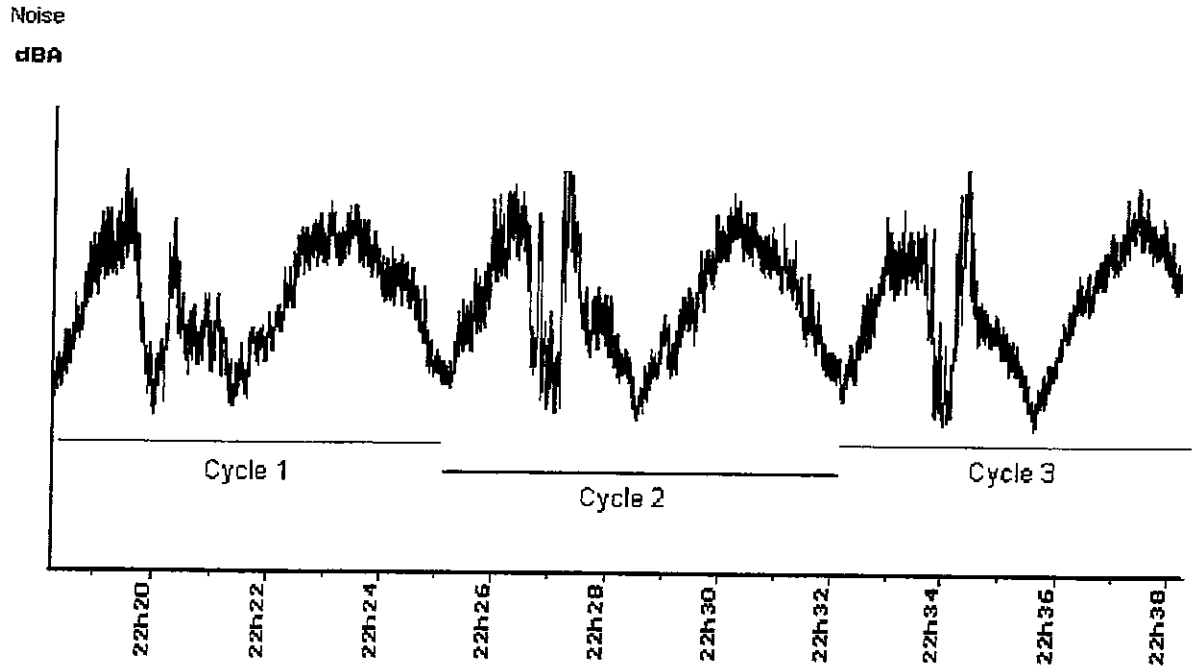
If frost fans are run in even the slightest ambient wind, the aerodynamic loads on the blades change significantly. This change in loading is very audible and can be clearly observed on a Noise versus Time plot.

This change in noise level reflects the increased aerodynamic loads on the fan and gearboxes, which can be quite significant and random. The stronger the ambient wind, the higher the additional noise and the higher the adverse aerodynamic loads on the blades. In some instances, the random load changes on the fan can induce unpredictable oscillations in the tower.

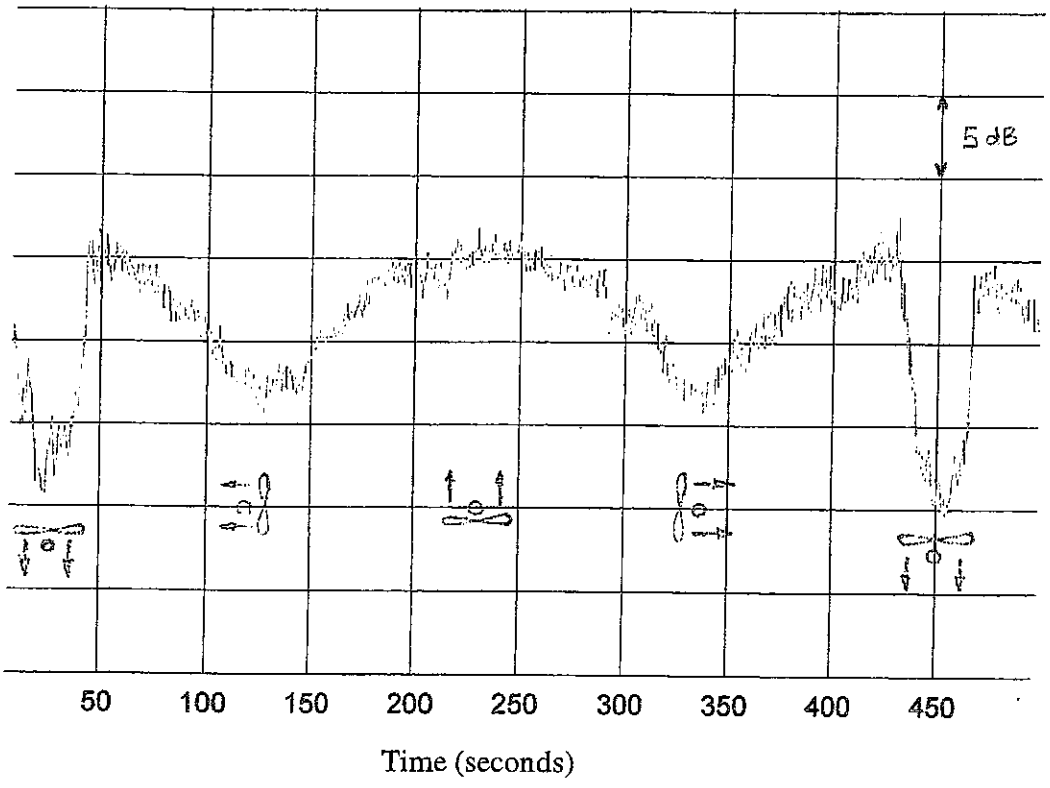
The noise versus time plot for a frost fan, in still air, produces a cyclical noise signature that varies depending on where the fan is, relative to the observer. The plot below shows a typical 4 blade, aluminium alloy fan at 100m from the observer. The fan is rotating slowly around the tower, in a clockwise direction, when observed from above. The periodic cycle time for this particular fan is about 7 minutes. The fan is the quietest when it is side on to the observer and loudest when the fan blast is going away from the observer.



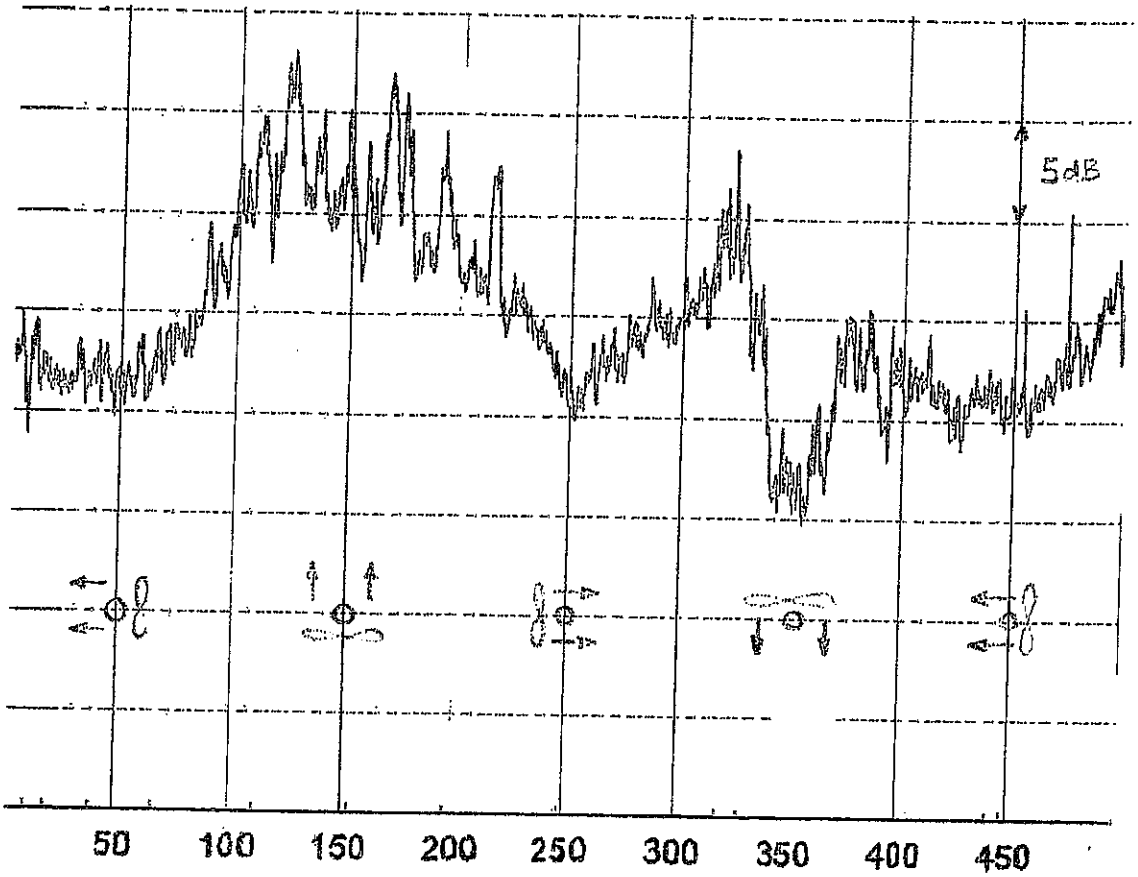
When the fan completes quite a few cycles, a uniform, repeating, noise signature becomes apparent. The plot below shows 3 cycles of a 4 blade fan, running in still air, at a distance of 100m from the observer. The noise signature is clear and repeatable.



The next plot shows the complete cycle for a 2009 model, FrostBoss C-49, 4 blade fan measured at 100m from the observer, in still air. The noise output from this fan is lower and much smoother than the previous model, 4 blade aluminium fan.



When this same fan is run in a light, puffy ambient wind, of less than 10 km/hr, it produces a totally different noise signature plot. The noise output becomes very spiky with sudden, random jumps in noise, of up to 10 dB. The clean uniformity of the noise signature is lost, and you would think it was the noise signature plot for a totally different fan.



These spikes in the noise output are generated by sudden changes in the apparent angle of attack of the airflow impinging the high speed sections of the fan blades. The airflow over these parts of the blade become unstable and can separate and reattach very suddenly. This manifests itself as a fluctuating change in the thrust developed by the blade and can be observed as an instantaneous increase in the fan noise and movement in the top of the tower.

A New Zealand manufacturer of frost fans, Frost Boss, has been pro-active in preventing their frost fans from running in ambient wind. For the past 3 years they have been supplying their fans with a wind speed sensor that shuts down the fan, if the ambient wind exceeds 10 km/hr, when averaged over a minute. Once shut down, the fan is re-armed, ready to run again, but it cannot restart until the one minute average wind speed has decreased to below 8 km/hr.

Field reports indicate the wind sensor has shut down many frost fans temporarily in areas where the fan owner said there is no wind during frost events. In some instances, frost fans have been shut down many times during one frost event, as the ambient wind comes and goes through the night. Some areas, with geographic peculiarities, are very susceptible to large pockets of wind passing through the vineyard on a frosty night.

If ambient wind does shut down the frost fan, for a period of time during a frost event, the crop is still protected because the incoming ambient wind is doing the job of the frost fan, by mixing the warmer air in the inversion layer with the colder air around the crop. This effect can be seen in the temperature data collected from vineyards with frost fans fitted with wind sensors. In addition, an ambient wind erodes the upwind and crosswind reach of the frost fan, reducing the effectiveness of the frost fan significantly.

If the frost event is accompanied by a polar blast of chilled air, and the inversion layer is pushed out by much colder, sub-zero air, the grower would want to shut the fan down regardless, to avoid blast-freezing his crop. The wind sensor will activate in these polar winds and prevent the fan from running for the duration of the polar wind passing through the area. This can happen in southern parts of New Zealand.

The wind sensor also protects an armed, auto-start, frost fan from inadvertently running in an ambient wind when it is not meant to. From time to time, the temperature sensing circuit may develop a fault, or be damaged by grazing stock or vineyard machinery. When this happens, the frost fan may get a signal to start, and it would be free to run until someone notices it running, or it runs out of fuel. At least with a wind sensor fitted, the fan is prevented from running during the day if there is anything more than a light breeze blowing past the fan.

Without a doubt, a wind sensor is a vital piece of control equipment for a frost fan. It can act when a human thinks it doesn't need to act. The wind sensor on a frost fan performs exactly the same function as a pressure relief valve in a hydraulic circuit. It prevents the equipment from being subjected to operating loads the equipment is not designed to take.

In conclusion, frost fans should not be run in ambient wind, because the wind subjects the fan to aerodynamic loads that it is not designed to withstand. These additional loads are both audible and visible. The first indicator of ambient wind is the increased random noise level from the fan. With the new breed of quieter fans coming on to the market this year, the increased noise created by ambient wind on the fan is even more noticeable.

Richard Karn B.E (Mech), M.E (Aero)

Aerodynamic Research Engineer

Disclosure Statement

Rikan Aeromarine Ltd is a specialist aerodynamic research company with over 30 years experience in all aspects of aerodynamic research and design. The company provides research consultancy services to Frost Boss Wind Machines Ltd, based in Hastings.

Rikan Aeromarine Ltd

20 October 2009

Print Form

Submission Form for Plan Changes 23 and 58 to the

Wairau/Awatere & Marlborough Sounds Resource Management Plans

Frost Fan Plan Changes

Office Use

Participant No.

18

Submission Point No.

File Refs

W045-15-58

M13-15-23

Date Received Stamp

RECEIVED

23 OCT 2009

MARLBOROUGH DISTRICT COUNCIL

Name/Organisation	Nelson Marlborough DHB Public Health Service
Contact Name *(if different from above)*	Geoff Cameron
Address for Service	NMDHB Public Health Service PO Box 647 NELSON
Phone Number	(03) 5461541
Fax Number	(03) 5461542

I have attached 22 pages to this submission

Do you wish to be heard in support of your submission? YES ✓ NO

If you wish to be heard & others make a similar submission would you be prepared to consider presenting a joint case? YES NO ✓

Signature: Date: 22 October 2009

Submissions Close:

5.00 pm Friday

23 October 2009

Return your submission to:

Marlborough District Council
PO Box 443
Blenheim 7240
Attention: Mark Caldwell
Fax: (03) 520 7496
E-Mail:
frostfans@marlborough.govt.nz

How To Make A Submission

Anyone is welcome to make a submission, either as an individual or on behalf of an organisation. You may use this form or prepare your own submission so long as you are careful to provide all of the information identified on this form. [These information requirements are per Form 5 of the Resource Management (Forms, Fees and Procedures) Regulations 2003]. If you run out of room here, please continue on a separate page. When preparing your submission you need to include the following:

"This part of my submission relates to ..." - state the name of the plan change and the part(s) of the plan change that is/are the subject of your submission.

"I support (or oppose) this part of the plan change." – state whether you support or oppose (in full or part).

"My reasons for supporting (or opposing) this part of the plan change ..." - tell us what your concerns are and the reasons why you support or oppose the provisions in the plan change.

"The decision I seek from the Council is ..." - How do you want the Council to respond to your submission? It is very important that you clearly state the decision you wish the Council to make as the Council cannot make changes which have not been specifically requested. Start by indicating if you want the provision to be retained, deleted or amended. If you want an amendment (including additional provisions) then specify what wording changes you would like to see.

REMEMBER - the clearer you can be, the easier it will be for the Council to understand your concerns and take them into account.

Please indicate the plan change(s) that your submission relates to:

Plan Change 23 (Frost Fans) to the Marlborough Sounds Resource Management Plan

Plan Change 58 (Frost Fans) to the Wairau/Awatere Resource Management Plan

If you wish to provide a submission for more than one of the plan changes, you can use the same form so long as you clearly indicate which plan change your comments relate to.

Any submission received by the Council is considered to be public information.

Plan Change No, Volume, Section of Plan, Page Number	***Details of your submission and specific changes or decisions requested***
Example: *Plan Change 23* *New policy 1.9*	*Example:* *I oppose this policy because...* *I would like the Council to change wording of this policy to "suggest change"*

"

Attached are submissions on:

Proposed Plan Change #23 to the Marlborough Sounds Resource Management Plan, and
Proposed Plan Change #58 to the Wairau/Awatere Resource Management Plan"

Reset Form

Resource Management (Forms, Fees and Procedure) Regulations 2003 Form 5

SUBMISSION ON PUBLICLY NOTIFIED PROPOSED PLAN CHANGE UNDER, CLAUSE 6, OF THE FIRST SCHEDULE TO THE RESOURCE MANAGEMENT ACT 1991

To the Marlborough District Council

Office Use
Participant No.

Submission Point No.

File Refs
W045-15-58
M13-15-23

Date received stamp

Submissions on behalf of The Nelson Marlborough District Health Board Public Health Service

This is a submission on Proposed Plan Change #58 to the Wairau/ Awatere Resource Management Plan titled. "Use of wind machines for frost protection"

The broad reason for these submissions is to provide helpful, objective and independent input so as to promote the reduction of adverse environmental noise effects on the health of people and communities pursuant to the New Zealand Public Health and Disability Act 2000 and the Health Act 1956. These statutory obligations are the responsibility of the Ministry of Health and in the Marlborough District these obligations are carried out by delegation under Crown funding agreements by the Nelson Marlborough District Health Board Public Health Service. The Ministry of Health requires The Public Health Service, to reduce any potential health risks by means including submissions on Plans, Variations and Plan Changes to ensure the public health significance of noise is considered. The Proposed Plan Change "Use of wind machines for frost protection" contains provisions which may affect the health of people and communities in the district. The Public Health Service makes this submission on matters relating to environmental noise and how it is proposed to be controlled and mitigated through these two Proposed Plan Changes.

The sole objective of these submissions is to improve the provisions relating to noise for the people and communities of the District and to promote efficient administration of those provisions by the Council.

1. **Generally**

The submission is: The Nelson Marlborough District Health Board Public Health Service supports the proposed plan change to improve the plan provisions, but with the amendments proposed in the detailed submissions below. All references are to the document "Appendix 1: Schedule of proposed changes Wairau/ Awatere Resource Management Plan, to the section 32 report ,and the legal basis is understood to be the Act as at the date of notification of the proposed plan changes.

2. **The specific provision is:** Generally, in relation to the proposed rule as a whole and related to the scope of the proposed plan change.

The submission is: It is understood operation of frost fans during certain advection frost events is counter productive to frost mitigation and under these circumstances residents affected by noise from frost fans should not have to tolerate their operation. Operation of frost fans which may have the effect of worsening frost damage is not sustainable management. Such matters are within the compass of meteorological experts for comment and the Public Health Service wishes to raise this issue as a matter for which Council should seek independent meteorological expert input when considering its own further submissions.

It may be that additional provisions are required in this part of the plan rule to prohibit use of frost fans during advection frost events defined in a manner deemed appropriate by meteorological experts. This aspect raises the question of whether use of frost machines should be a prohibited activity under certain conditions. Whether or not such measures could or should be given effect through a new plan section related to prohibited activities in addition to that proposed under the classification of a controlled activity, is a matter for legal and planning consideration.

The decision required is: Consider the sustainability of frost fan operation for advection frost events with independent expert meteorological input as to the practicality of such plan provisions. Consider the possible need for prohibited activity status for advection frost events.

3. **The specific provision is:** **Item 1,** Volume 2 under the heading "Definitions,"

The submission is: The phrase "to control frost" is imprecise as the purpose is to mitigate damage from frost. Frost conditions cannot be controlled.

The decision required is: Amend by deleting the words "control frost" and substitute the words, "to mitigate frost damage".

4. **The specific provision is:** **Item 1,** Volume 2, under the heading "Definitions,"

The submission is: Inclusion of the words "support structure" is noted in the definition but the definition literally excludes from consideration the power source, typically a diesel engine. Elsewhere in New Zealand and during the Waihopai Valley noise testing in May 2009 it was demonstrated that a power source can be as significant an issue at 300m distance as the aerodynamic noise caused by the fan blades. Note power sources may be permanent or temporary installations.

The decision required is: Amend by addition to the definition of "frost fan," after the words "support structure," the words, "and power source".

5. **The specific provision is:** **Item 2** Proposed amendment to rule 30.1.4.2.3. (a)-(c) and **Item 9** Proposed amendment to rule 2.2.11 of Appendix K.

The submission is: The Public Health Service supports deletion of the existing provisions which have proved unsatisfactory and inadequate for the purpose originally intended.

The decision required is: Delete existing rule 36.1.4.2.4.

6. **The specific provision is:** **Item 3** Proposed new rule 30.1.4.2.4. (a)-(c) and **Item 6** proposed new rule 31.1.5.1, and **Item 7** new rule 2.2.11.1

The submission is: The Public Health Service supports provisions for reverse sensitivity designed to limit exposure of people to frost fan noise. However the performance standard lacks the necessary elements of indoor sound level design limits such as have been evolved over the years to address noise emission from airports, ports, road traffic and inner city noise. The key elements of how noise is measured and assessed are missing and reliance on a design certificate without reference to appropriate standards can lead to confusion, inequities and failure of the intended purpose of the rule. Certification without a standard to which certification is related is meaningless as there are many different possible acoustical criteria that might be applied. NZS 6802:2008 provides guidance on these measures (See section 8.6.9).

Reliance upon closed windows to meet acoustical indoor design limits must be complemented with alternative means of ventilation as required by the Building Code. This is a matter specified in NZS 6801:2008, section 6.2.2.

All these matters have been in the public arena for some years since the former Building Industry Authority published its consultation proposals for amendment to the Building Code to specify required indoor noise limits when acoustical requirements for the purposes of the RMA must be met to meet some other statute such as a district plan rule. While those provisions are still being considered for implementation by government, many other local authorities have had to make interim provisions of the kind necessitated by this proposed rule, for other types of external noise sources.

Provision needs to be included for consideration of circumstances where an alteration to a dwelling does not , having regard to the screening of the bedroom affected by other parts of the dwelling, require any treatment of the bedroom to meet the performance standard of being adequately isolated from noise arising from the operation of the frost fan.

Proposed clause (c) is supported consequentially renumbered (h) as below.

The defect can be remedied by amendment to revise the proposed rule using the guidance in NZS 6802:2008.

The decision required is: Amend by deleting the proposed rule paragraphs (a)-(c) and substitute the following or provisions to the like effect or by inclusion of the part related to ventilation in a new Appendix or elsewhere in the Plan:

Noise isolation

(a) Any bedroom in a building used as a dwelling house, visitor accommodation or other habitable building located within 300 metres of any frost fan shall be adequately isolated from noise arising from the operation of the frost fan.

(b) For the purposes of this rule, "adequately isolated" means the building shall be orientated, screened, sited, and acoustically insulated, to comply with the design sound levels set out in (c).

(c) The building envelope shall be designed and constructed to achieve the following sound insulation in any bedroom.

$$D_{nT,w} + C_{tr} > 30 \text{ dB}$$

(d) Construction shall be in accordance with an acoustical design certificate signed by a suitably qualified and experienced acoustical engineer stating the design as proposed will achieve compliance with the above indoor design sound levels.

(e) Sub-clauses (a)-(d) shall in addition apply to any alteration to a habitable room used as a bedroom.

Ventilation

(f) Indoor design sound levels in (c) above shall be achieved with windows and doors open unless adequate alternative ventilation means for fresh air from outside the building envelope is provided. Where bedrooms with openable windows providing natural ventilation are required to be closed to comply with an acoustical isolation requirement, an alternative supplementary source of fresh air is required to achieve a minimum distribution into the bedroom of 7.5 litres per second per person. Acoustical and ventilation requirements shall be met concurrently.

(g) Where approved alternative means of ventilation are provided the installation shall if supplied by a fan assisted mechanical ventilation system:

(i) Enable the rate of airflow to be controlled across the range, from the maximum airflow capacity down to 0.5 ± 0.1 air changes of outdoor air per hour in all bedrooms; and

(ii) Limiting internal pressure to not more than 30 Pascals above ambient air pressure; and

(iii) Being individually switched on and off by the building occupants, in the case of each system; and

(iv) Creating no more than Leq 30 dBA in any bedrooms. Noise levels from the mechanical system(s) shall be measured at least 1 metre away from any diffuser.

If air conditioning plus mechanical outdoor air ventilation is used it shall:

(i) Provide 7.5 litres per second per person in all bedrooms

(ii) Provide internal temperatures in bedrooms above not greater than 25 degrees Celsius at 5% ambient design conditions as published by the National Institute of Water and Atmospheric Research ("NIWA") (NIWA, Design Temperatures for Air Conditioning (degrees Celsius), Data Period 1991-2000), with all external doors and windows of the bedroom closed; and

(h) Compliance with the above ventilation performance standards shall be achieved by construction and operation in accordance with a ventilation design certificate signed by a suitably qualified ventilation engineer stating that the design as proposed will achieve compliance with the minimum performance standard. This certificate shall be submitted with the relevant application for resource consent or building consent.

(i) For the purpose of this rule, "frost fan" includes a proposed frost fan for which an approved building consent and/or resource consent has been granted.

Definitions and standards

($D_{nT,w}$ + C_{tr}): means the standardised level difference (outdoor to indoor) and is a measure of the airborne sound insulation provided by the external building envelope (including windows, walls, ceilings and floors where appropriate) described using $D_{nT,w}$ + C_{tr} as defined in the following Standards:

AS/NZS ISO 717.1:2004 *Acoustics - Rating of sound insulation in buildings and of building elements – Part 1: Airborne sound insulation* (using spectrum No.2).

ISO 140-5:1998 *Acoustics - Measurement of sound insulation in buildings and of building elements Part 5: Field measurements of airborne sound insulation of facade elements and facades.*

7. **The specific provision is:** **Item 4** Proposed new bullet point under rule 30.2.1

The submission is: The Public Health Service supports the addition of this item. The words "use of a frost fan" would include operation of the fan, and power source regardless of the purpose. This approach is strongly supported as any attempt to refine the terminology further by means of an inclusive or exclusive list of types of operation would probably never be comprehensive enough and would allow technical or legal argument about intentions of the operator, a matter that would cause monitoring difficulties, and could not be proved to the standard required for any necessary enforcement proceedings.

The decision required is: Retain provision or words to the like effect.

8. **The specific provision is:** **Item 5** proposed new rule 30.2.9 and **Item 10** proposed new rule 2.3.3 to Appendix K

The submission is: The Public Health Service supports the proposed new rule status as a controlled activity because this provides for site-by-site consideration and allows the consent authority to impose conditions appropriate to the circumstances.

Consideration of the Environment Court's distinction between the alternative classification of a discretionary activity indicates a "precautionary approach" would be appropriate where there was a shortage of empirical information and researched data concerning the effects of an activity. However that is not the case for wind machines, so a "controlled activity" is an appropriate status.

"Prohibited activity" status is recognised as unrealistic given the number of existing installations, however see paragraph 2 (page 1) for a possible exception. RMA Section 77B (2) (aa) provides that the consent authority must grant the resource consent, unless it has insufficient information to determine whether or not the activity is a "controlled activity", and this in conjunction with the other provisions of s.77B enables Council an adequate degree of control without the statutory burden on the horticulture industry being too high given the need to also provide for the health and safety of the people and communities under Section 5 of the Act.

The decision required is: Retain provision or words to the like effect.

9. **The specific provision is:** Item 5 proposed new rule "Standards and terms" rule 30.2.9.1.1, first line and item 10 proposed new rule 2.3.1 to Appendix K

The submission is: The Public Health Service supports the proposed new rule but with amendments. The acoustical descriptor or metric used is the A-frequency weighted time average sound level however the incorrect expression and abbreviation has been used given the proposed method of assessment and measurement is the 2008 editions of NZS 6801 and NZS 6802. The correct expression using these standards is "LAeq (t)" where (t) is the measurement sample time. See next submission for addition matters related to the sample time interval.

The decision required is: Amend "55 dBA Leq " to "55 dB LAeq (t)."

10. **The specific provision is:** **Item 5** proposed new rule "Standards and terms" rule 30.2.9.1.1, first line and **Item 10** proposed new rule 2.3.1 to Appendix K

Continued from and linked to the previous submission, in the case of almost all, (discounting the rare use of non-360 degree rotating frost fan heads, and for all three main types of frost fans, the fans rotate on a mast according to gearbox reductions and engine RPM. The cycle period varies and is typically in the range 4-8 minutes.

Under the existing rules in the plan, measurements must be in accordance with the provisions in the Definitions section, page 19 "Interpretation - Noise Measurements" where for cyclic noise, the measurement sample may be less than 10-15 minutes and an average level shall be determined in manner set out in sub clause 3 of that plan section. This requires an energy average value based on ten head rotation cycles be derived for assessment purposes against noise limits.

This is a simple and fair statistical approach to produce a representative value for a relatively short duration cyclic event of a repetitive nature; however it was not designed specifically for wind machines.

Noise assessment using NZS 6802:2008 uses a different method to derive a rating level than the 1991 edition of the standard cited in the current plan rules and modified by the noise interpretation section described in the preceding paragraph. Because sound of an operating frost fan is typically continuous over at least several hours when "on" (albeit with a fluctuating noise level), the "simple" method of assessment set out in NZS6802:2008 can be used rather than the detailed method. This means measurement duration of 15 minutes is required and the number of cycles could be ignored. A 15 minute measurement period is traditionally what has generally been used as the measurement time interval for assessing environmental noise.

Rotation cycles are typically 5-7 minutes in duration and the only significant variable while fans are operating is wind load if any wind is present. At least one cycle of operation, aside from initial start up or run down, is desirable to obtain a representative sound level for a frost fan operation. A full 15 minute measurement time will be adequate for normal assessment purposes, however in circumstances where frost fan operation occurs for less than 15 minutes, the assessment method provides for a normalisation method by calculation based on measurement of a lesser time period. Based on experience this should be not less than one mast rotation cycle to obtain a representative value. Thus the method of assessment is adequate to cope with longer or shorter operating times in a fair manner.

The decision required is: The Public Health Service supports the proposed assessment method based on NZS 6802:2008.

11. **The specific provision is:** **Item 5** proposed new rule "Standards and terms" rule 30.2.9.1.1, first line and **Item 10** proposed new rule 2.3.3.2 to Appendix K

The submission is: The Public Health Service supports the proposed new rule but with amendments. The words, "when measured" create legal uncertainty of the kind subject to adverse

comment by the Environment Court due to the necessity for measured levels to be adjusted for various factors specified in the cited assessment standard. Using this phrase "when measured," allows legal argument that no adjustment to measured levels was intended. Uncertainty in drafting of noise rules has been well canvassed in the Environment Court and predecessor Tribunal and Board decisions over the past 40 years. Best practice drafting avoids such ambiguities which can undermine the ability of a Council to undertake enforcement action if such is considered necessary.

This uncertainty can be resolved by deleting the words "as measured" from the sentence.

The decision required is: Delete the words, "as measured".

12. **The specific provision is:** **Item 5** proposed new rule "Standards and terms" rule 30.2.9.1.1, sub-clauses i) and ii) and **Item 10** proposed new rule 2.3.3.2 to Appendix K

The submission is: The Public Health Service supports the proposed new rule but with amendments. In these sub-clauses the words "at a distance of " and "at the notional boundary" are stated as the assessment location. The word "at" is inadequate and a known problem that has been subject of adverse comment by the Environment Court. It was initially superseded by the phrase "at or within the boundary," as used elsewhere in the Council's noise rules. However this phrase was in turn held to be uncertain by the Court. The words were superseded by the time the 1999 edition of the Assessment Standard was published with what is now recognised to be best practice and what is also now generally understood to be acceptable to the Environment Court. The acceptable wording or phrase now used is, "at any point within...." in relation to a notional boundary or parcel of land or zone boundary desired to be protected by a noise limit.

This phrase overcomes practical difficulties caused by obstructions of various kinds and the need for a certain degree of survey precision about the exact location of a survey boundary. "At" is less of a problem than the survey precise term "on," but both have been superseded in recent editions of various standards by the proposed "at any point within...." phrase in relation to boundaries etc.

For the special case of the 300m distance, (which is supported by the Public Health Service), the word "at" has some of the same problems as the use of "at the notional boundary" as discussed in the preceding paragraph because of local obstacles, eg ditches, blackberry. Legal argument on what constitutes "at" the measurement point can undermine enforcement ability because of metrological reasons, ie which may affect legal measurement accuracy, any measurement of distance also has some degree of uncertainty. In enforcement proceedings the ability to test each point in defence is a matter of justice and drafting of rules should contemplate such contingencies.

The distance should be specified as 300 metres plus or minus 3.0 metres which allows for normal optical and other methods of determining distance by range finding instrumentation without highly specialised range finding instrumentation. The possible error in decibel measurement for such a distance would amount to about plus or minus 0.05 dB, an infinitesimal quantity of sound energy. Decibels are only calculated in tenths when necessary and are reported as integer numbers. One hundredth parts of a decibel are inconsequential. However if a rule states "at 300m" then there is a high burden of proof that the distance was actually 300m.

The amendment proposed resolves the issue in a practical manner which will facilitate any monitoring undertaken by Council staff, reduce the monitoring burden and be within the existing range finding capabilities of Councils monitoring equipment.

The decision required is:

A **sub-clause (i)** Amend the distance of 300m by adding after the numerals "300" the term " ± 3" ie "300m ± 3m "

B **sub-clause (ii)** Delete the words, "at the notional boundary" and substitute, "At any point within the notional boundary..."

13. **The specific provision is:** Item 5 proposed new rule "Standards and terms" rule 30.2.9.1.1 and item 10 proposed new rule 2.3.3.2 to Appendix K

The submission is: The Public Health Service supports the proposed new rule but with amendments. The distance 300m (± 3m as recommended) can be confounding factor in the presence of other noise sources such as other frost fans, helicopters or other aircraft or road traffic. The matter of cumulative effects is a known problem and a confounder of practical measurements. This is a manageable problem for documentation associated with making an application for resource consent where predictions can be made. However the rule itself is intended to be enforceable if necessary at law and its usage in that context needs to be accommodated by the methods of assessment provided.

NZS 6802:2008 is a document not part of the district plan, but cited by the district plan and only in the possession of a few institutions and consultants, or highly motivated members of the public and industry who can afford the cost. In making this rule provision Council needs to appreciate that assessment under NZS 6802 allows and provides for methods to avoid erroneous results due to intrusion from sound sources other than the sound source of interest. (See NZS 6802; 2008, the Foreword, and clauses 5.4.2, C6.1.2, 6.2.2 (c), Appendix B, and in particular clause B3.)

Such external indirect and esoteric references and qualifiers of application of a rule can cause confusion and it is suggested that it may be better to address this matter overtly in the rule by including a proviso which enables these measurement methods to be used to avoid erroneous results from other noise sources which are part of the residual noise in the rural landscape.

Such measures will allow for measurement of sound from a frost fan under investigation at distances closer than 300m so as to minimise the effects of sounds of extraneous noise events from other sources in the environment, including other frost fans. The standard for assessment makes provision for calculating the effect of extraneous noise source contributions where necessary but this may be impractical for frost fans in a locality so measurement closer to the fan of interest is necessary to minimise the effects of other fans or other noise sources. This is an important method to allow practical checking by Council staff of frost fan compliance with noise limits.

The method proposed below is designed to provide a simple rather than complex calculation approach and to ensure fairness to frost fan operators and to avoid technical arguments about the various factors affecting sound propagation outdoors.

The decision required is: Amend proposed rule 30.2.9.1.1 and new rule 2.3.3.3 to Appendix K by adding the following new paragraph after the words "whichever is the least distance".

"Provided that, for the purpose of minimising the effect of extraneous noise sources on measurements, the sound level of any frost fan at 300m distance from the assessment point may be calculated from measurements made at a closer location to the frost fan, with the resultant sound level reduced by the level reduction due to divergence alone. Such measurements shall not be made within 50m of the frost fan under investigation and calculation shall otherwise be in accordance with rule 30.2.9.1.2."

14. **The specific provision is:** **Item 5** proposed new rule "Standards and terms" rule 30.2.9.1.2 and **Item 10** proposed new rule 2.3.3.3 to Appendix K

The submission is: The incorrect title is cited for NZS 6802:2008.

The decision required is: Amend the title to "Acoustics – Measurement of Environmental Sound".

15. **The specific provision is:** **Item 5** proposed new rule "Standards and terms" rule 30.2.9.1.3 and **Item 10** proposed new rule 2.3.3.3 to Appendix K

The submission is: The Public Health Service supports the proposed new rule including air temperature threshold requirements but with amendments. The phrases "operated for frost protection" and "when the air temperature drops to 2°C." are joined by the word "and". This raises uncertainty as to the possible conjunctive or disjunctive meaning of the word. This creates legal uncertainty of a kind known to be rejected by the Environment Court because it allows possible legal defences in enforcement proceedings based on argument about the rule maker's intent.

The drafted form can be argued to contradict the words "use of a frost fan" under the heading "Frost Fans (new controlled activity rule)" as commented upon elsewhere.

The couplet phrase "and when" is recognised as poor grammar and the use of the word is syntactically unnecessary. Its removal resolves the potential enforcement problem without affecting the meaning or intention.

The decision required is: Amend 30.2.9.1.3 and proposed new rule 2.3.3.3 to Appendix K by deleting the word "and" in the first sentence.

16. **The specific provision is:** **Item 5** proposed new rule "Standards and terms" rule 30.2.9.1.3 and proposed new rule 2.3.3.4 to Appendix K

The submission is: The Public Health Service supports the proposed new rule including air temperature threshold requirements but is concerned at the adequacy of the provision which in its present form may hinder enforcement. The requirement is for temperature measurement at 2 ^{0} C and at 0.8meters above ground level. The temperature threshold is a critical parameter triggering the operation of frost fans and its measurement needs to have some rigor. There is an issue concerning where, when and how and with what degree of accuracy and in conjunction with other "near the ground" climatic parameters related to moisture content measurement that should be made. On sloping ground different factors apply than on flat ground, as does ground character, presence of surface features such as shelter belts, drains, and vegetation.

Regard should be paid to meteorological expert opinion on these matters. The Public Health Service concern is that, if people in rural areas are to be subjected to frost fan noise for sustainable management reasons, then there must be a high duty to avoid false triggering and operation only when frost damage has a reasonable certainty of occurring.

It appears that the instrumentation requirements and measurement details in relation to temperature lack rigor or traceability to standards in the manner required for noise measurements. It would seem appropriate that expert meteorological advice should be sought on this matter (independent from such advice on behalf of or to vineyard operators) as it appears the proposed provision is inadequate in its present form.

The decision required is: Review proposed new rule 30.2.9.1.3 and proposed new rule 2.3.3.4 to Appendix K and take independent expert advice on improving its certainty and an appropriate metrological (legal metrology not to confused with meteorology), rigor and provide more detail on minimum parameters and location of measurement.

17. **The specific provision is:** **Item 5** proposed new rule "Standards and terms" rule 30.2.9.1.4

The submission is: The Public Health Service strongly supports the 500m separation zone as the minimum that should be incorporated in this proposed rule, but also submits this is inadequate in relation to protection of urban areas. While 500m is an improvement on 300m, it is still inadequate in relation to that tiny portion of land area in the district specifically set aside for residential activities , in Blenheim and other townships compared to the total area of the district. The Public Health Service would prefer to see the distance as 1.0km rather than 500m from any land zoned Urban Residential, or Township Residential in the District Plan. This is the only measure that can protect the bulk of the population from night-time sleep disturbance and the adverse health effects consequential to sleep disturbance.

The decision required is: Amend the rule to provide for a separation distance of 1.0 km from any land zoned Urban Residential, or Township Residential in the District Plan.

18. **The specific provision is:** **Item 5** proposed new rule "Standards and terms" rule 30.2.9., proposed new clause and proposed new rule 2.3.3.4 to Appendix K.

The submission is: A known issue is the need for maintenance testing of frost fans. Such testing should be restricted to defined daylight hours and the period 8am -5pm on any day except weekends and on any public holiday is recommended as appropriate. The proposed rule makes no provision for this and such provision is necessary in the experience of the Public Health Service.

The decision required is: Add a new rule sub-clause as follows:

"30.2.9.1.5 and 2.3.3.4 to Appendix K

"No frost fan shall be operated for the purposes of testing mechanical or electrical components of the installation outside the hours of 8am -5pm on any day except weekends and on any public holiday.

19. **The specific provision is:** **Item 5** proposed new rule "Matters Over Which the Council Will Exercise Control," rule 30.2.9.2, proposed new clause. and proposed new rule 2.3.3.5 to Appendix K.

The submission is: The term "Speed of frost fan" is inadequate because the definition, (as recommended to be amended), can include the mast and power source creating uncertainty whether engine speed or blade speed is intended to be controlled. All elements from engine through the drive train to and including the blades and exhaust need to be subject to control because of the number of possible components affecting noise emissions and aerodynamic efficiency. Some vision is required to contemplate coverage of future possible innovations. This can all be clarified by amendment.

The decision required is: Amend by deleting the words "Speed of Frost fan" and substitute the words, "Orientation, rotational constraints and speed of any frost fan power source or frost fan blade set and engine muffling."

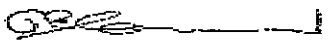
20. **The specific provision is:** 30.2.9.2 Under the heading "Matters Over Which the Council Will Exercise Control' and proposed new rule 2.3.3.5 to Appendix K.

The submission is: Public Health Service experience is that monitoring requirements are generally complemented by reporting requirements and are required by the assessment and measurement standards cited.

The decision required is: Amend by adding the words "and reporting" after the word "monitoring".

21. Nelson Marlborough District Health Board Public Health Service will wish to be heard in support of these submissions, but will not consider presenting a joint case with other parties making a similar submission.

Dated at Nelson this 22nd day of October 2009



Signed
GE CAMERON
Designated by the Director General of Health under s.7A of the Health Act 1956
For and on behalf of Public Health Service
Nelson Marlborough District Health Board

Attention:

Geoff Cameron
Senior Health Protection Officer
Public Health Service
Nelson Marlborough District Health Board
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Resource Management (Forms, Fees and Procedure) Regulations 2003 Form 5

SUBMISSION ON PUBLICLY NOTIFIED PROPOSED PLAN CHANGE 23 UNDER, CLAUSE 6, OF THE FIRST SCHEDULE TO THE RESOURCE MANAGEMENT ACT 1991

To the Marlborough District Council

Office Use
Participant No.

Submission Point No.

File Refs
W045-15-58
M13-15-23

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Submissions on behalf of The Nelson Marlborough District Health Board Public Health Service

This is a submission on Proposed Plan Change #23 to the Marlborough Sounds Resource Management Plan titled. "Use of wind machines for frost protection"

The broad reason for these submissions is to provide helpful, objective and independent input so as to promote the reduction of adverse environmental noise effects on the health of people and communities pursuant to the New Zealand Public Health and Disability Act 2000 and the Health Act 1956. These statutory obligations are the responsibility of the Ministry of Health and in the Marlborough District these obligations are carried out by delegation under Crown funding agreements by the Nelson Marlborough District Health Board Public Health Service. The Ministry of Health requires The Public Health Service, to reduce any potential health risks by means including submissions on Plans, Variations and Plan Changes to ensure the public health significance of noise is considered. The Proposed Plan Change "Use of wind machines for frost protection" contains provisions which may affect the health of people and communities in the district. The Public Health Service makes this submission on matters relating to environmental noise and how it is proposed to be controlled and mitigated through these two Proposed Plan Changes.

The sole objective of these submissions is to improve the provisions relating to noise for the people and communities of the District and to promote efficient administration of those provisions by the Council.

1. **Generally**

The submission is: The Nelson Marlborough District Health Board Public Health Service supports the proposed plan change to improve the plan provisions, but with the amendments proposed in the detailed submissions below. All references are to the document "Appendix 1: Schedule of proposed changes Marlborough Sounds Resource Management Plan, to the section 32 report ,and the legal basis is understood to be the Act as at the date of notification of the proposed plan changes.

2. **The specific provision is:** Generally, in relation to the proposed rule as a whole and related to the scope of the proposed plan change.

The submission is: It is understood operation of frost fans during certain advection frost events is counter productive to frost mitigation and under these circumstances residents affected by noise from frost fans should not have to tolerate their operation. Operation of frost fans which may have the effect of worsening frost damage is not sustainable management. Such matters are within the compass of meteorological experts for comment and the Public Health Service wishes to raise this issue as a matter for which Council should seek independent meteorological expert input when considering its own further submissions.

It may be that additional provisions are required in this part of the plan rule to prohibit use of frost fans during advection frost events defined in a manner deemed appropriate by meteorological experts. This aspect raises the question of whether use of frost machines should be a prohibited activity under certain conditions. Whether or not such measures could or should be given effect through a new plan section related to prohibited activities in addition to that proposed under the classification of a controlled activity, is a matter for legal and planning consideration.

The decision required is: Consider the sustainability of frost fan operation for advection frost events with independent expert meteorological input as to the practicality of such plan provisions. Consider the possible need for prohibited activity status for advection frost events.

3. **The specific provision is:** **Item 1,** Volume 2 under the heading "Definitions,"

The submission is: The phrase "to control frost" is imprecise as the purpose is to mitigate damage from frost. Frost conditions cannot be controlled.

The decision required is: Amend by deleting the words "control frost" and substitute the words, "to mitigate frost damage".

4. **The specific provision is:** **Item 1,** Volume 2, under the heading "Definitions,"

The submission is: Inclusion of the words "support structure" is noted in the definition but the definition literally excludes from consideration the power source, typically a diesel engine. Elsewhere in New Zealand and during the Waihopai Valley noise testing in May 2009 it was demonstrated that a power source can be as significant an issue at 300m distance as the aerodynamic noise caused by the fan blades. Note power sources may be permanent or temporary installations.

The decision required is: Amend by addition to the definition of "frost fan," after the words "support structure," the words, "and power source".

5. **The specific provision is:** Item 2 Proposed amendment to rule 36.1.3.4.2.3.

The submission is: The Public Health Service supports deletion of the existing provisions which have proved unsatisfactory and inadequate for the purpose originally intended.

The decision required is: Delete existing rule 36.1.3.4.2.3.

6. **The specific provision is:** **Item 3 Proposed new rule 36.1.3.4.2.6 (a)-(c))**

The submission is: **The Pu**blic Health Service supports provisions for reverse sensitivity designed to limit exposure of people to frost fan noise. However the performance standard lacks the necessary elements of indoor sound level design limits such as have been evolved over the years to address noise emission from airports, ports, road traffic and inner city noise. The key elements of how noise is measured and assessed are missing and reliance on a design certificate without reference to appropriate standards can lead to confusion, inequities and failure of the intended purpose of the rule. Certification without a standard to which certification is related is meaningless as there are many different possible acoustical criteria that might be applied. NZS 6802:2008 provides guidance on these measures (See section 8.6.9).

Reliance upon closed windows to meet acoustical indoor design limits must be complemented with alternative means of ventilation as required by the Building Code. This is a matter specified in NZS 6801:2008, section 6.2.2.

All these matters have been in the public arena for some years since the former Building Industry Authority published its consultation proposals for amendment to the Building Code to specify required indoor noise limits when acoustical requirements for the purposes of the RMA must be met to meet some other statute such as a district plan rule. While those provisions are still being considered for implementation by government, many other local authorities have had to make interim provisions of the kind necessitated by this proposed rule, for other types of external noise sources.

Provision needs to be included for consideration of circumstances where an alteration to a dwelling does not , having regard to the screening of the bedroom affected by other parts of the dwelling, require any treatment of the bedroom to meet the performance standard of being adequately isolated from noise arising from the operation of the frost fan.

Proposed clause (c) is supported consequentially renumbered (h) as below.

The defect can be remedied by amendment to revise the proposed rule using the guidance in NZS 6802:2008.

The decision required is: Amend by deleting the proposed rule paragraphs (a)-(c) and substitute the following or provisions to the like effect or by inclusion of the part related to ventilation in a new Appendix or elsewhere in the Plan:

Noise isolation

(a) Any bedroom in a building used as a dwelling house, visitor accommodation or other habitable building located within 300 metres of any frost fan shall be adequately isolated from noise arising from the operation of the frost fan.

(b) For the purposes of this rule, "adequately isolated" means the building shall be orientated, screened, sited, and acoustically insulated, to comply with the design sound levels set out in (c).

(c) The building envelope shall be designed and constructed to achieve the following sound insulation in any bedroom.

$D_{nT,w} + C_{tr} > 30$ dB

(d) Construction shall be in accordance with an acoustical design certificate signed by a suitably qualified and experienced acoustical engineer stating the design as proposed will achieve compliance with the above indoor design sound levels.

(e) Sub-clauses (a)-(d) shall in addition apply to any alteration to a habitable room used as a bedroom.

Ventilation

(f) Indoor design sound levels in (c) above shall be achieved with windows and doors open unless adequate alternative ventilation means for fresh air from outside the building envelope is provided, used and maintained in operating order. Where bedrooms with openable windows providing natural ventilation are required to be closed to comply with an acoustical isolation requirement, an alternative supplementary source of fresh air is required to achieve a minimum distribution into the bedroom of 7.5 litres per second per person. Acoustical and ventilation requirements shall be met concurrently.

(g) Where approved alternative means of ventilation are provided the installation shall if supplied by a fan assisted mechanical ventilation system:

(i) Enable the rate of airflow to be controlled across the range, from the maximum airflow capacity down to 0.5 ± 0.1 air changes of outdoor air per hour in all bedrooms; and

(ii) Limiting internal pressure to not more than 30 Pascals above ambient air pressure; and

(iii) Being individually switched on and off by the building occupants, in the case of each system; and

(iv) Creating no more than Leq 30 dBA in any bedrooms. Noise levels from the mechanical system(s) shall be measured at least 1 metre away from any diffuser.

If air conditioning plus mechanical outdoor air ventilation is used it shall:

(i) Provide 7.5 litres per second per person in all bedrooms

(ii) Provide internal temperatures in bedrooms above not greater than 25 degrees Celsius at 5% ambient design conditions as published by the National Institute of Water and Atmospheric Research ("NIWA") (NIWA, Design Temperatures for Air Conditioning (degrees Celsius), Data Period 1991-2000), with all external doors and windows of the bedroom closed; and

(h) Compliance with the above ventilation performance standards shall be achieved by construction and operation in accordance with a ventilation design certificate signed by a suitably qualified ventilation engineer stating that the design as proposed will achieve compliance with the minimum performance standard. This certificate shall be submitted with the relevant application for resource consent or building consent.

(i) For the purpose of this rule, "frost fan" includes a proposed frost fan for which an approved building consent and/or resource consent has been granted.

Definitions and standards

($D_{nT,w}$ + C_{tr}): means the standardised level difference (outdoor to indoor)and is a measure of the airborne sound insulation provided by the external building envelope (including windows, walls, ceilings and floors where appropriate) described using $D_{nT,w}$ + C_{tr} as defined in the following Standards:

AS/NZS ISO 717.1:2004 *Acoustics - Rating of sound insulation in buildings and of building elements – Part 1: Airborne sound insulation* (using spectrum No.2).

ISO 140-5:1998 *Acoustics - Measurement of sound insulation in buildings and of building elements Part 5: Field measurements of airborne sound insulation of facade elements and facades.*

7. **The specific provision is:** Item 4 Proposed new bullet point under 36.2

The submission is: The Public Health Service supports the addition of this item. The words "use of a frost fan" would include operation of the fan, and power source regardless of the purpose. This approach is strongly supported as any attempt to refine the terminology further by means of an inclusive or exclusive list of types of operation would probably never be comprehensive enough and would allow technical or legal argument about intentions of the operator, a matter that would cause monitoring difficulties, and could not be proved to the standard required for any necessary enforcement proceedings.

The decision required is: Retain provision or words to the like effect.

8. **The specific provision is:** Item 5 proposed new rule 36.2.7

The submission is: The Public Health Service supports the proposed new rule status as a controlled activity because this provides for site-by-site consideration and allows the consent authority to impose conditions appropriate to the circumstances.

Consideration of the Environment Court's distinction between the alternative classification of a discretionary activity indicates a "precautionary approach" would be appropriate where there was a shortage of empirical information and researched data concerning the effects of an activity. However that is not the case for wind machines, so a "controlled activity" is an appropriate status.

"Prohibited activity" status is recognised as unrealistic given the number of existing installations, however see paragraph 2 (page 1) for a possible exception. RMA Section 77B (2) (aa) provides that the consent authority must grant the resource consent, unless it has insufficient information to determine whether or not the activity is a "controlled activity", and this in conjunction with the other provisions of s.77B enables Council an adequate degree of control without the statutory burden on the horticulture industry being too high given the need to also provide for the health and safety of the people and communities under Section 5 of the Act.

The decision required is: Retain provision or words to the like effect

9. **The specific provision is:** Item 5 proposed new rule "Standards and terms" proposed new rule 36.2.7.1.1

The submission is: The Public Health Service supports the proposed new rule but with amendments. The acoustical descriptor or metric used is the A-frequency weighted time average sound level however the incorrect expression and abbreviation has been used given the proposed method of assessment and measurement is the 2008 editions of NZS 6801 and NZS 6802. The correct expression using these standards is "LAeq (t)" where (t) is the measurement sample time. See next submission for addition matters related to the sample time interval.

The decision required is: Amend "55 dBA Leq " to "55 dB LAeq (t)."

10. **The specific provision is:** Item 5 proposed new rule "Standards and terms" proposed new rule 36.2.7.1.1

Continued from and linked to the previous submission, in the case of almost all, (discounting the rare use of non-360 degree rotating frost fan heads, and for all three main types of frost fans, the fans rotate on a mast according to gearbox reductions and engine RPM. The cycle period varies and is typically in the range 4-8 minutes.

Under the existing rules in the plan, measurements must be in accordance with the provisions in the Definitions section, page 19 "Interpretation - Noise Measurements" where for cyclic noise, the measurement sample may be less than 10-15 minutes and an average level shall be determined in manner set out in sub clause 3 of that plan section. This requires an energy average value based on ten head rotation cycles be derived for assessment purposes against noise limits.

This is a simple and fair statistical approach to produce a representative value for a relatively short duration cyclic event of a repetitive nature, however it was not designed specifically for wind machines.

Noise assessment using NZS 6802:2008 uses a different method to derive a rating level than the 1991 edition of the standard cited in the current plan rules and modified by the noise interpretation section described in the preceding paragraph. Because sound of an operating frost fan is typically continuous over at least several hours when "on" (albeit with a fluctuating noise level), the "simple" method of assessment set out in NZS6802:2008 can be used rather than the detailed method. This means measurement duration of 15 minutes is required and the number of cycles could be ignored. A 15 minute measurement period is traditionally what has generally been used as the measurement time interval for assessing environmental noise.

Rotation cycles are typically 5-7 minutes in duration and the only significant variable while fans are operating is wind load if any wind is present. At least one cycle of operation, aside from initial start up or run down, is desirable to obtain a representative sound level for a frost fan operation. A full 15 minute measurement time will be adequate for normal assessment purposes, however in circumstances where frost fan operation occurs for less than 15 minutes, the assessment method provides for a normalisation method by calculation based on measurement of a lesser time period. Based on experience this should be not less than one mast rotation cycle to obtain a representative value. Thus the method of assessment is adequate to cope with longer or shorter operating times in a fair manner.

The decision required is: The Public Health Service supports the proposed assessment method based on NZS 6802:2008.

11. **The specific provision is:** Item 5 proposed new rule "Standards and terms" proposed new rule 36.2.7.1.1

The submission is: The Public Health Service supports the proposed new rule but with amendments. The words, "when measured" create legal uncertainty of the kind subject to adverse comment by the Environment Court due to the necessity for measured levels to be adjusted for various factors specified in the cited assessment standard. Using this phrase "when measured," allows legal argument that no adjustment to measured levels was intended. Uncertainty in drafting of noise rules has been well canvassed in the Environment Court and predecessor Tribunal and Board decisions over the past 40 years Best practice drafting avoids such ambiguities which can undermine the ability of a Council to undertake enforcement action if such is considered necessary.

This uncertainty can be resolved by deleting the words "as measured" from the sentence,

The decision required is: Delete the words, "as measured".

12. **The specific provision is:** Item 5 proposed new rule "Standards and terms" proposed new rule 36.2.7.1.1, sub-clauses i) and ii)

The submission is: The Public Health Service supports the proposed new rule but with amendments. In these sub-clauses the words "at a distance of " and "at the notional boundary" are stated as the assessment location. The word "at" is inadequate and a known problem that has been subject of adverse comment by the Environment Court. It was initially superseded by the phrase "at or within the boundary," as used elsewhere in the Council's noise rules. However this phrase was in turn held to be uncertain by the Court. The words were superseded by the time the 1999 edition of the Assessment Standard was published with what is now recognised to be best practice and what is also now generally understood to be acceptable to the Environment Court. The acceptable wording or phrase now used is, "at any point within...." in relation to a notional boundary or parcel of land or zone boundary desired to be protected by a noise limit.

This phrase overcomes practical difficulties caused by obstructions of various kinds and the need for a certain degree of survey precision about the exact location of a survey boundary. "At" is less of a problem than the survey precise term "on," but both have been superseded in recent editions of various standards by the proposed "at any point within...." phrase in relation to boundaries etc.

For the special case of the 300m distance, (which is supported by the Public Health Service), the word "at" has some of the same problems as the use of "at the notional boundary" as discussed in the preceding paragraph because of local obstacles, eg ditches, blackberry. Legal argument on what constitutes "at" the measurement point can undermine enforcement ability because of metrological reasons, ie which may affect legal measurement accuracy, any measurement of distance also has some degree of uncertainty. In enforcement proceedings the ability to test each point in defence is a matter of justice and drafting of rules should contemplate such contingencies.

The distance should be specified as 300 metres plus or minus 3.0 metres which allows for normal optical and other methods of determining distance by range finding instrumentation without highly specialised range finding instrumentation. The possible error in decibel measurement for such a distance would amount to about plus or minus 0.05 dB, an infinitesimal quantity of sound energy. Decibels are only calculated in tenths when necessary and are reported as integer numbers. One hundredth parts of a decibel are inconsequential. However if a rule states "at 300m" then there is a high burden of proof that the distance was actually 300m.

The amendment proposed resolves the issue in a practical manner which will facilitate monitoring by Council staff and reduce the monitoring burden and be within the existing range finding equipment capabilities of Council as used by its staff.

The decision required is:

A **sub-clause (i)** Amend the distance of 300m by adding after the numerals "300" the term "± 3" ie "300m ± 3m"

B **sub-clause (ii)** Delete the words, "at the notional boundary" and substitute, "At any point within the notional boundary..."

13. **The specific provision is:** Item 5 proposed new rule "Standards and terms" proposed new rule 36.2.7.1.1 i) and ii)_

The submission is: The Public Health Service supports the proposed new rule but with amendments. The distance 300m (± 3m as recommended) can be confounding factor in the presence of other noise sources such as other frost fans, helicopters or other aircraft or road traffic. The matter of cumulative effects is a known problem and a confounder of practical measurements. This is a manageable problem for documentation associated with making an application for resource consent where predictions can be made. However the rule itself is intended to be enforceable if necessary at law and its usage in that context needs to be accommodated by the methods of assessment provided.

NZS 6802:2008 is a document not part of the district plan, but cited by the district plan and only in the possession of a few institutions and consultants, or highly motivated members of the public and industry who can afford the cost. In making this rule provision Council needs to appreciate that assessment under NZS 6802 allows and provides for methods to avoid erroneous results due to intrusion from sound sources other than the sound source of interest. (See NZS 6802; 2008, the Foreword, and clauses 5.4.2, C6.1.2, 6.2.2 (c), Appendix B, and in particular clause B3.)

Such external indirect and esoteric references and qualifiers of application of a rule can cause confusion and it is suggested that it may be better to address this matter overtly in the rule by including a proviso which enables these measurement methods to be used to avoid erroneous results from other noise sources which are part of the residual noise in the rural landscape.

Such measures will allow for measurement of sound from a frost fan under investigation at distances closer than 300m so as to minimise the effects of sounds of extraneous noise events from other sources in the environment, including other frost fans. The standard for assessment makes provision for calculating the effect of extraneous noise source contributions where necessary but this may be impractical for frost fans in a locality so measurement closer to the fan of interest is necessary to minimise the effects of other fans or other noise sources. This is an important method to allow practical checking by Council staff of frost fan compliance with noise limits.

The method proposed below is designed to provide a simple rather than complex calculation approach and to ensure fairness to frost fan operators and to avoid technical arguments about the various factors affecting sound propagation outdoors.

The decision required is: Amend proposed rule 36.2.7.1.1 by adding the following new paragraph after the words "whichever is the least distance".

"Provided that, for the purpose of minimising the effect of extraneous noise sources on measurements, the sound level of any frost fan at 300m distance from the assessment point may be calculated from measurements made at a closer location to the frost fan, with the resultant sound level reduced by the level reduction due to divergence alone. Such measurements shall not be made within 50m of the frost fan under investigation and calculation shall otherwise be in accordance with rule 30.2.9.1.2."

14. **The specific provision is:** Item 5 proposed new rule "Standards and terms" proposed new rule 36.2.7.1.2

The submission is: The incorrect title is cited for NZS 6802:2008.

The decision required is: Amend the title to "Acoustics – Measurement of Environmental Sound".

15. **The specific provision is:** Item 5 proposed new rule "Standards and terms" proposed new rule 36.2.7.1.3

The submission is: The Public Health Service supports the proposed new rule including air temperature threshold requirements but with amendments. The phrases "operated for frost protection" and "when the air temperature drops to 2°C." are joined by the word "and". This raises uncertainty as to the possible conjunctive or disjunctive meaning of the word. This creates legal uncertainty of a kind known to be rejected by the Environment Court because it allows possible legal defences in enforcement proceedings based on argument about the rule maker's intent.

The drafted form can be argued to contradict the words "use of a frost fan" under the heading "Frost Fans (new controlled activity rule)" as commented upon elsewhere.

The couplet phrase "and when" is recognised as poor grammar and the use of the word is syntactically unnecessary. Its removal resolves the potential enforcement problem without affecting the meaning or intention.

The decision required is: Amend 36.2.7.1.3 by deleting the word "and" in the first sentence.

16. **The specific provision is:** Item 5 proposed new rule "Standards and terms" proposed new rule 36.2.7.1.3

The submission is: The Public Health Service supports the proposed new rule including air temperature threshold requirements but is concerned at the adequacy of the provision which in its present form may hinder enforcement. The requirement is for temperature measurement at 2 ^{0} C and at 0.8meters above ground level. The temperature threshold is a critical parameter triggering the operation of frost fans and its measurement needs to have some rigor. There is an issue concerning where, when and how and with what degree of accuracy and in conjunction with other "near the ground" climatic parameters related to moisture content measurement that should be made. On sloping ground different factors apply than on flat ground, as does ground character, presence of surface features such as shelter belts, drains, and vegetation.

Regard should be paid to meteorological expert opinion on these matters. The Public Health Service concern is that if people in rural areas are to be subjected to frost fan noise for sustainable management reasons, then there must be a high duty to avoid false triggering and operation only when frost damage has a reasonable certainty of occurring.

It appears that the instrumentation requirements and measurement details in relation to temperature lack rigor or traceability to standards in the manner required for noise measurements. It would seem appropriate that expert meteorological advice should be sought on this matter (independent from such advice on behalf of or to vineyard operators) as it appears the proposed provision is inadequate in its present form

The decision required is: Review proposed new rule 36.2.7.1.3 and take independent expert advice on improving its certainty and an appropriate metrological (legal metrology not to be confused with meteorology), rigor and provide more detail on minimum parameters and location of measurement.

17. **The specific provision is:** Item 5 proposed new rule "Standards and terms" rule 36.2.7.1.4

The submission is: The Public Health Service strongly supports the 500m separation zone as the minimum that should be incorporated in this proposed rule, but also submits this is inadequate in relation to protection of urban areas. While 500m is an improvement on 300m, it is still inadequate in relation to that tiny portion of land area in the district specifically set aside for residential activities, in Blenheim and other townships compared to the total area of the district. The Public Health Service would prefer to see the distance as 1.0km rather than 500m from any land zoned Urban Residential or Township Residential in the District Plan. This is the only measure that can protect the bulk of the population from night-time sleep disturbance and the adverse health effects consequential to sleep disturbance.

The decision required is: Amend the rule to provide for a separation distance of 1.0 km from any land zoned Urban Residential, or Township Residential in the District Plan.

18. **The specific provision is:** Item 5 proposed new rule "Standards and terms" rule 36.2.7.1.

The submission is: A known issue is the need for maintenance testing of frost fans. Such testing should be restricted to defined daylight hours and the period 8am -5pm on any day except weekends and on any pub lic holiday is recommended as appropriate. The proposed rule makes no provision for this and such provision is necessary in the experience of the Public Health Service.

The decision required is: Add a new rule sub-clause as follows:

"36.2.7.1.5

"No frost fan shall be operated for the purposes of testing mechanical or electrical components of the installation outside the hours of 8am -5pm on any day except weekends and on any public holiday.

19. **The specific provision is:** Item 5 proposed new rule "Matters Over Which the Council Will Exercise Control," rule 36.2.7.1., proposed new clause.

The submission is: The term "Speed of frost fan" is inadequate because the definition, (as recommended to be amended), can include the mast and power source creating uncertainty whether engine speed or blade speed is intended to be controlled. All elements from engine through the drive train to and including the blades and exhaust need to be subject to control because of the number of possible components affecting noise emissions and aerodynamic efficiency. Some vision is required to contemplate coverage of future possible innovations. This can all be clarified by amendment.

The decision required is: Amend by deleting the words "Speed of Frost fan" and substitute the words, "Orientation, rotational constraints and speed of any frost fan power source or frost fan blade set and engine muffling."

20. **The specific provision is:** Proposed clause 36.2.7.2 Under the heading "Matters Over Which the Council Will Exercise Control'

The submission is: Public Health Service experience is that monitoring requirements are generally complemented by reporting requirements and are required by the assessment and measurement standards cited.

The decision required is: Amend by adding the words "and reporting" after the word "monitoring".

21. Nelson Marlborough District Health Board Public Health Service will wish to be heard in support of these submissions, but will not consider presenting a joint case with other parties making a similar submission.

Dated at Nelson this 22nd day of October 2009

Signed
GE CAMERON
Designated by the Director General of Health under s.7A of the Health Act 1956
For and on behalf of Public Health Service
Nelson Marlborough District Health Board

Attention:

Geoff Cameron
Senior Health Protection Officer
Public Health Service
Nelson Marlborough District Health Board
email : geoff.cameron@nmdhb.govt.nz
DDI : ph 03 5461541

Part Nº 19

Submission on Publicly Notified Proposal for Policy Statement or Plan

To: Marlborough District Council

Name of Submitter: Peter Constantine, Principal Planner, Marlborough District Council

This is a submission on proposed plan change 58 to the Wairau Awatere Resource Management Plan and proposed plan change 23 to the Marlborough Sounds Resource Management Plan.

The specific provisions of the proposal that my submission relates to are:

1. The whole of proposed plan change 58 to the Wairau Awatere Resource Management Plan and proposed plan change 23 to the Marlborough Sounds Resource Management Plan.

2. The lack of appropriate policy support for the proposed suite of rules in each of the two plans.

3. The lack of a rule in each of the two plans establishing basic information requirements for resource consent applications for proposed frost fans.

4. The incorrect descriptor associated with the noise level standards.

5. The exclusion of "maintenance" from the description of the activity in proposed rules 30.2.9, 30.2.7 and 2.3.3.

6. The omission of a specific date reference in proposed rules 30.2.9.1.1 (ii), 30.2.7.1.1 (ii) and 2.3.3.2 (ii) that identifies when "existing" commences.

7. The omission of a reference to "maintenance purposes" in proposed rules 30.2.9.1.3, 30.2.7.1.3 and 2.3.3.4.

8. In proposed rules 30.2.9.2, 30.2.7.2 and 2.3.3.5 (a), (c) and (d) the wording should refer to "any" frost fan.

9. In proposed rules 30.2.9.2, 30.2.7.2 and 2.3.3.5 clause (b) the omission of a reference to "operating" speed.

10. The proposed inclusion of rules in respect of frost fans in Appendix K Marlborough Ridge Zone of the Wairau Awatere Resource Management Plan.

My submission is:

1. Except to the extent identified in the following paragraphs, both plan changes 58 and 23 are supported because they introduce provisions into the two resource management plans that address a resource management issue of some moment and that it is necessary to address if the purpose of the Resource Management Act is to be attained.

2. The absence of clear policy in respect of the establishment, use and maintenance of frost fans in the rural zones of the district deprives the two resource management plans of appropriate context for

the rules and any exceptions to the standards and terms that may be sought through applications for resource consent.

3. Establishing specific information requirements for resource consent applications for frost fans would ensure two outcomes: first, that Council is furnished with the information it requires to determine any proposal; and secondly, that applicants consider the environmental effects of proposals and, if appropriate, provide clear reasons why the standards and terms cannot be achieved.

4. It is important that the resource management plans use correct technical terms. In this instance it appears as though the letters have been transposed and they require correction.

5. There is an acknowledged need for scheduled maintenance of frost fans if optimum performance is to be achieved. Further, the proposed plan changes make reference to maintenance as a matter over which Council reserves control and may impose conditions. It is therefore appropriate that "maintenance" is part of the description of the activity to which the proposed suites of rules (PC 58 and PC 23) apply.

6. In proposed rules 30.2.9.1.1, 30.2.7.1.1 and 2.3.3.2 there is reference to "any existing dwelling" and that is appropriate. However, without the inclusion of a specific date at which the "existing" environment is settled, for the purpose of these rules, there is a significant lack of certainty. The proposed rules should record that "existing" is taken to be the date on which the proposed plan changes were publicly notified.

7. Proposed rules 30.2.9.1.3, 30.2.7.1.3 and 2.3.3.4 restrict the operation of frost fans. As drafted, the rules do not provide for operation of the frost fan for maintenance purposes unless a resource consent for a discretionary activity is obtained. This is inconsistent with the matters over which Council has reserved its discretion and would create unnecessary plan administration difficulties. The solution is to provide an exception for maintenance in these two proposed rules.

8. Proposed rules 30.2.9.2, 30.2.7.2 and 2.3.3.5 (a), (c) and (d) should be written in the singular so that it is clear that the focus of attention throughout the rules is individual frost fans. Council is not in a position, and neither is it appropriate, to be considering cumulative effects because of the known significant variability in effects through the district.

9. Proposed rules 30.2.9.2 (b), 30.2.7.2 (b) and 2.3.3.5 (b) refer to "speed of frost fan". This is considered imprecise and may lead to difficulties in application. The rule would be improved if it referred specifically to the speed at which the frost fan is operated.

10. Proposed plan change 58 includes an internal inconsistency. It establishes, as a Standard and Term, that any proposed frost fan must be located no closer to the Marlborough Ridge Zone than 500 metres but then proceeds to introduce a new suite of rules that enable, as a controlled activity, the establishment and use of frost fans within this particular zone. In simple planning terms this can only be reconciled by either deleting the provisions proposed to be added to the Marlborough Ridge Zone or the reference to the Marlborough Ridge Zone in proposed rule 30.2.9.1.4. The preferred solution, given the nature of development and its spatial distribution in the general locality, is to delete the reference to the Marlborough Ridge Zone from proposed rule 30.2.9.1.4.

I seek the following decision from the local authority:

1. Except as required by the amendments set out below, confirm proposed plan change 58 to the Wairau Awatere Resource Management Plan and proposed plan change 23 to the Marlborough Sounds Resource Management Plan.

2. Add the following new policies, or policies to like effect:

(a) After objective 12.2.2.2 (WARMP).

To recognise that the rural areas of the district are dynamic in terms of the characteristics and spatial location of crops grown and the needs of those crops for protection from the adverse effects of climate at particular times during the growing cycle.

(b) After objective 11.3.1 (MSRMP).

To recognise that the rural areas of the district are dynamic in terms of the characteristics and spatial location of crops grown and the needs of those crops for protection from the adverse effects of climate at particular times during the growing cycle.

3. Add a new rule to both the Wairau Awatere Resource Management Plan and the Marlborough Sounds Resource Management Plan as follows or to like effect:

Any application for a resource consent for the erection and use of a frost fan shall include the following information in addition to that required by s88 Resource Management Act 1991.

- *Details of the proposed frost fan(s).*
- *A plan showing the location of the proposed frost fan(s) and the area it is designed to cover.*
- *A report prepared by a recognised acoustic consultant setting out a full and detailed description of the proposed equipment, a prediction of the noise footprint of the proposed frost fan machine based upon stated operational parameters, and an assessment of the proposal against the Standards and Terms set out in the relevant Plan rules. The report should also detail all methods to be employed that will ensure the performance of the frost fan machine and noise levels generated remain as predicted.*

4. At each place where it occurs in proposed plan change 58 and 23, delete "dB LAeq" and replace with "*dBA Leq*".

5. Delete the second sentence in proposed rules 30.2.9, 30.2.7 and 2.3.3 and replace with the following:

The construction, use and maintenance of a frost fan is a Controlled Activity provided that the activity conforms to the following standards and terms:

6. Delete the word "existing" from proposed rules 30.2.9.1.1 (ii), 30.2.7.1.1 (ii) and 2.3.3.2 (ii) and add the following after the word "situated":

existing at 24 September 2009.

7. Add the following words after the word "2°C" in proposed rules 30.2.9.1.3, 30.2.7.1.3 and 2.3.3.4.

except for maintenance purposes

8. Delete the text at (a), (b), (c) and (d) in proposed rules 30.2.9.2, 30.2.7.2 and 2.3.3.5 and replace with the following:

(a) Operational requirements of any frost fan.

(b) Speed at which any frost fan is operated.

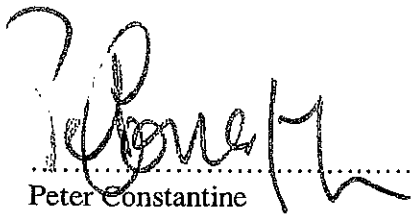
(c) *Operation of any frost fan for maintenance purposes.*

(d) *Recording information about the use of any frost fan.*

9. Delete the words "or the Marlborough Ridge Zone" from proposed rule 30.2.9.1.4 and insert the word "*and*" before the word "Rural".

10. Any subsequent or consequential changes required to give effect to the amendments set out above.

I wish to be heard in support of my submission.



Peter Constantine ..... Date 23.10.09

Address for service:

Principal Planner
PO Box 443
Blenheim 7240

Telephone: 520 7400
Email: peter.constantine@marlborough.govt.nz

Part N° 20

SUBMISSION ON PUBLICLY NOTIFIED PROPOSED PLAN CHANGE 58 AND PROPOSED PLAN CHANGE 23 UNDER CLAUSE 6 OF THE FIRST SCHEDULE TO THE RESOURCE MANAGEMENT ACT 1991

TO:	Marlborough District Council
SUBMISSION ON:	Proposed Plan Change 58 to the Wairau/Awatere Resource Management Plan and Proposed Plan Change 23 to the Marlborough Sounds Resource Management Plan ("**Plan Changes**").
NAME:	Wither Hills Vineyards Marlborough Limited ("**Wither Hills**")
ADDRESS:	C/- Russell McVeagh, at the address for service listed below

Background

1. The Wither Hills vineyard includes 350 hectares of viticulture land in the Wairau Valley. It is an important part of the Marlborough community and a significant contributor to the local economy.

2. Wither Hills operates over 20 frost fans on its properties for the purposes of mitigating the effects of frosts on grapes. Frost fans are essential for the defence against the frosts damaging the grapes. While Marlborough is suitable for grape growing, it is also susceptible to frosts that cause damage to the grape vines. The operation of the frost fans is the most common and effective means of preventing grapes from being damaged and potentially destroyed by the frost.

3. Wither Hills manages the operation of the frost fans under a strict regime. It manually controls the frost fans so that the fans are only turned on when required and often only for a few hours at a time. On average the frost fans operate for around 10 days of the year, and on each of those days only for 2-3 hours at a time.

4. Wither Hills is very concerned about the effects of the Plan Changes on its business.

Scope of submission

5. This submission relates to the Plan Changes in their entirety.

Nature of submission

6. In general, Wither Hills opposes the Plan Changes as they:

   (a) will not promote sustainable management of resources, will not achieve the purpose of the Resource Management Act 1991 ("**Act**");

(b) are inconsistent with the Wairau/Awatere Resource Management Plan and the Marlborough Sounds Resource Management Plan;

(c) will not enable social, economic and cultural well being;

(d) are otherwise contrary to the purposes and provisions of the Act and other relevant planning documents; and

(e) are inappropriate and inconsistent with the purpose and principles of the Act.

7. Without limiting the generality of paragraph 6 above, Wither Hills opposes the Plan Changes for the reasons set out below.

Deficient s32 analysis

8. Wither Hills considers that the Plan Changes are not supported by a sufficient s32 analysis. The Plan Changes have been promulgated without an adequate investigation as to whether the changes to the rules are appropriate.

9. It is evident from the s32 report that the Plan Changes have been initiated to deal with immediate issues that have arisen through a small number of complaints from the public around the noise of the frost fans. The Council has not, in notifying these provisions, had regard to the actual or potential effects of the activity on the environment, as is required.

10. Further, the Council has failed to adequately consider, and/or has failed to obtain sufficient information in relation to, the following matters:

(a) there has been no adequate assessment of the costs to the rural community arising from the additional regulatory tests to apply across the Rural zone;

(b) there has been no adequate analysis undertaken in relation to the requirement for the community to seek resource consent to erect frost fans; and

(c) there has been no assessment of the proposed changes by a noise expert to determine whether the changes to the noise levels are appropriate. For example, the s32 Report records that "there is some debate as to whether or not all types of frost fans exhibit special audible characteristics".

11. This lack of consideration and analysis is inappropriate, unreasonable and unlawful. In particular, the use of the plan change process to insert rules so as to "enable the Council to be able to more effectively gather information about the noise generated by wind machines" (Introduction to the Plan Change), rather than the Council undertaking a proper technical evaluation is ultra vires.

Part II

12. Wither Hills also considers that the Plan Changes:

    (a) will not enable the efficient use and development of resources within Marlborough, and will not enable economic well being of people and communities. The Plan Changes create a short term fix for the Council but result in short to long term uncertainty for a large sector of the rural community; and

    (b) are not the most appropriate way to achieve the objectives and policies of the Marlborough Sounds Resource Management Plan and the Wairau/Awatere Resource Management Plan relating to rural areas, namely those that promote the productivity of land and viticulture in the area.

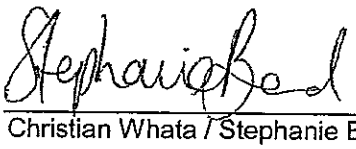
13. Overall the Plan Changes will not promote the sustainable management of resources, will not achieve the purpose of the Act, and are not consistent with Part II and other provisions of the Act.

Relief sought

14. The Appellant seeks that the Plan Changes be declined in their entirety.

15. Wither Hills wishes to be heard in support of this submission.

Signature: **WITHER HILLS VINEYARDS MARLBOROUGH LIMITED** by its solicitors and authorised agents Russell McVeagh:



Christian Whata / Stephanie Bond

Date: 23 October 2009

Address for Service: C/- Stephanie Bond
Russell McVeagh
Barristers and Solicitors
Level 30
Vero Centre
48 Shortland Street
PO Box 8/DX CX10085
AUCKLAND 1140

Telephone: (09) 367 8000

Facsimile: (09) 367 8163

Submission Form for Plan Changes 23 and 58 to the

Wairau/Awatere & Marlborough Sounds Resource Management Plans

Frost Fan Plan Changes

Office Use

Participant No.

21

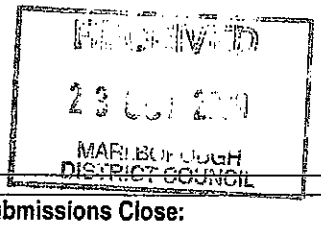
Submission Point No.

File Refs

W045-15-58

M13-15-23

Date Received Stamp



Richard Ryan

3585 SH63
RD1 - Wairau Valley
Blenheim 7271

03 5722782
027 498 7715

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Rm Ryan

23 October 2009

Submissions Close:

5.00 pm Friday

23 October 2009

Return your submission to:

Marlborough District Council
PO Box 443
Blenheim 7240
Attention: Mark Caldwell
Fax: (03) 520 7496
E-Mail:
frostfans@marlborough.govt.nz

How To Make A Submission

Anyone is welcome to make a submission, either as an individual or on behalf of an organisation. You may use this form or prepare your own submission so long as you are careful to provide all of the information identified on this form. [These information requirements are per Form 5 of the Resource Management (Forms, Fees and Procedures) Regulations 2003]. If you run out of room here, please continue on a separate page. When preparing your submission you need to include the following:

"This part of my submission relates to ..." - state the name of the plan change and the part(s) of the plan change that is/are the subject of your submission.

"I support (or oppose) this part of the plan change." – state whether you support or oppose (in full or part).

"My reasons for supporting (or opposing) this part of the plan change ..." - tell us what your concerns are and the reasons why you support or oppose the provisions in the plan change.

"The decision I seek from the Council is ..." - How do you want the Council to respond to your submission? It is very important that you clearly state the decision you wish the Council to make as the Council cannot make changes which have not been specifically requested. Start by indicating if you want the provision to be retained, deleted or amended. If you want an amendment (including additional provisions) then specify what wording changes you would like to see.

REMEMBER - the clearer you can be, the easier it will be for the Council to understand your concerns and take them into account.

Please indicate the plan change(s) that your submission relates to:

Plan Change 23 (Frost Fans) to the Marlborough Sounds Resource Management Plan

Plan Change 58 (Frost Fans) to the Wairau/Awatere Resource Management Plan

If you wish to provide a submission for more than one of the plan changes, you can use the same form so long as you clearly indicate which plan change your comments relate to.

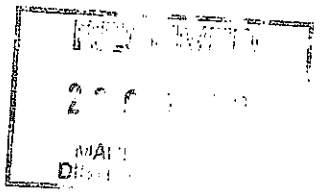
Any submission received by the Council is considered to be public information.

Plan Change No. Volume, Section of Plan, Page Number	***Details of your submission and specific changes or decisions requested***
Example: *Plan Change 23* *New policy 1.9*	*Example:* *I oppose this policy because...* *I would like the Council to change wording of this policy to "suggest change"*

Submissions for Frost Fan Plan Changes

I, Richard Malcolm Ryan Support a plan change as per above, submission, and want it ammended

The reasons I want it ammended is that I have approx 63 Wind Fans across the road from me a approx 200 within 5 kilometres of my house Sometimes going from 7.30pm 9.30am per night It is like living on the tarmac of a helicopter airport — It is unbearable



I would like the MD Council to;-

Restrict all Frost Fans to a minimum of 185 metres from their boundary where houses are located within 3 kilometres of frost fans - including existing;- - - as recommended by OSH in written letter sent to MDC dated May 2006 Stating this recommendation but totally ignored by MDC ------

Resource Consent - needed before erecting of fan towers publicly notifiable to all residents in that area for consultation process & queries, objections etc etc

Noise Monitoring levels set at 35 decibels inside the houses in proximity or noise objectors, be the house noise proofed or non noise proofed

Council is to prior to Season starting for Frost Fans, employ & train appropriate numbers of people to respond to noise control Complaints - (not using the excuse we do not have enough personnel to do this) ;- as is at present, and to respond immediately to caller complaint, check decibel levels recorded a copy given to complainant.

Fines of minimum of $5,000 per night, for each fan breaching to Noise levels for every night after recorded excess levels

Submission Form for Plan Changes 23 and 58 to the

Wairau/Awatere & Marlborough Sounds Resource Management Plans

Frost Fan Plan Changes

Office Use
Participant No. 22.
Submission Point No.
File Refs
W045-15-58
M13-15-23
Date Received Stamp
23 OCT 2009
MARLBOROUGH DISTRICT COUNCIL

Glenys Parsons

2020 State Highway 63
"Whitelocks" Wairau Valley
RD1

Phone Number: 5722707

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✓ ☐

GK Parsons — 22.10.09

Submissions Close:
5.00 pm Friday
23 October 2009

Return your submission to:
Marlborough District Council
PO Box 443
Blenheim 7240
Attention: Mark Caldwell
Fax: (03) 520 7496
E-Mail:
frostfans@marlborough.govt.nz

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"I support (or oppose) this part of the plan change." – state whether you support or oppose (in full or part).

"My reasons for supporting (or opposing) this part of the plan change ..." - tell us what your concerns are and the reasons why you support or oppose the provisions in the plan change.

"The decision I seek from the Council is ..." - How do you want the Council to respond to your submission? It is very important that you clearly state the decision you wish the Council to make as the Council cannot make changes which have not been specifically requested. Start by indicating if you want the provision to be retained, deleted or amended. If you want an amendment (including additional provisions) then specify what wording changes you would like to see.

REMEMBER - the clearer you can be, the easier it will be for the Council to understand your concerns and take them into account.

My name is Glenys Parsons and I have been part of the Wairau Valley Community for 23yrs. We purchased our bare 20 acre piece of paradise in 1986 and built our current home in 1988. Unfortunately 2 years ago the neighbouring farm was bought by the Hig field Estate and a vineyard planted. When this vineyard was established we were never contacted or informed that there were frost fans being erected, only coming home one day from town to have one sprout up out of the ground.

This part of my submission relates to the erection of a two bladed frost fan situated ver close to our boundary and within 100-150metres to our home. When this frost fan is act vated it not only causes an awful noise (ie, you could not have a conversation out the front door) but it makes the 3 large picture windows shudder. It sounds like an Iroquois helicopter landing on the front lawn.

I have OSH concerns as to the safety of this machine as if the blade was to become dis-connected it would fly right thru the path of our house. The noise is something indescrit able only to say that it gets into your ears and head and god help us if you do get back t sleep, you wake up with this sound still in your head and a feeling like you have a hang-over. I work as a District Nurse for the NMDHB and do find it very tiring after being kept awake between the hours of 12.00– 7.30am. Surely it is a safety issue when you have to have all your wits about you when dealing with peoples lives only to feel shat-tered before you even start.

I also own a horse which I compete successfully on Trail Rides who had become dis-tressed and ran through the hot wires due to the horrible noise that these fans make. A known fact is that the humble horse has far more sensitive hearing than of us humans. I cannot begin to imagine what it would sound like it to them.

We have 13 fans around us and another 17 further down the valley in the next paddock. I can begrudgingly accept and put up with the fans down the bottom towards the river (even thou they are still noisy) but would urge the council to hear the people re these fan so close to our houses.

Please do something about it for us, that have to put up with this noise at ungodly hour of the morning on no certain days.

I except that Marlborough is a world wide wine making area but I feel that this industry has to answer for all the misery and discontentment that it is causing to people as it con-tinues its greed. You would have thought that the powers to be would have done some homework to know that the Wairau Valley has severe frosts (-6 degrees) and continue right through till Nov with the Muller Frosts.

I invite the mayor and the head of the wine industry to a free nights accommodation at my place with the guarantee of a night of no sleep.

If you would like to discuss this submission with me I am only to happy to meet with you.

Yours sincerely,
Glenys Parsons
GK Parsons

Submission Form for Plan Changes 23 and 58 to the

Wairau/Awatere & Marlborough Sounds Resource Management Plans

Frost Fan Plan Changes

Office Use

Participant No.

23

Submission Point No.

File Refs

W045-15-58

M13-15-23

Date Received Stamp

RECEIVED

21 OCT 2009

MARLBOROUGH DISTRICT COUNCIL

Name/Organisation: Gary B. Jones.

Contact Name (if different):

Address for Service: 14 Opawa St, Blenheim

Phone Number: 5784926.

Fax Number:

Submissions Close:

5.00 pm Friday

23 October 2009

Return your submission to:

Marlborough District Council

PO Box 443

Blenheim 7240

Attention: Mark Caldwell

Fax: (03) 520 7496

E-Mail: frostfans@marlborough.govt.nz

May we contact you to discuss your submission? ☐ Yes ☑ No

Do you wish to be heard in support of your submission? ☐ Yes ☐ No

If others make a similar submission, will you consider presenting a joint case with them at a hearing? ☐ Yes ☐ No don't know.

Signature: G B Jones. Date:

How To Make A Submission

Anyone is welcome to make a submission, either as an individual or on behalf of an organisation. You may use this form or prepare your own submission so long as you are careful to provide all of the information identified on this form. [These information requirements are per Form 5 of the Resource Management (Forms, Fees and Procedures) Regulations 2003]. If you run out of room here, please continue on a separate page. When preparing your submission you need to include the following:

"This part of my submission relates to ..." - state the name of the plan change and the part(s) of the plan change that is/are the subject of your submission.

"I support (or oppose) this part of the plan change." – state whether you support or oppose (in full or part).

"My reasons for supporting (or opposing) this part of the plan change ..." - tell us what your concerns are and the reasons why you support or oppose the provisions in the plan change.

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REMEMBER - the clearer you can be, the easier it will be for the Council to understand your concerns and take them into account.

Please indicate the plan change(s) that your submission relates to:

Plan Change 23 (Frost Fans) to the Marlborough Sounds Resource Management Plan

Plan Change 58 (Frost Fans) to the Wairau/Awatere Resource Management Plan

If you wish to provide a submission for more than one of the plan changes, you can use the same form so long as you clearly indicate which plan change your comments relate to.

Any submission received by the Council is considered to be public information.

Plan Change No. Volume, Section of Plan, Page Number	***Details of your submission and specific changes or decisions requested***
Example: *Plan Change 23* *New policy 1.9*	*Example:* *I oppose this policy because...* *I would like the Council to change wording of this policy to "suggest change"*
A Plan Change No 23 New Policy 2.3.3.2	I propose an amendment Noise from an existing or new frost fan shall not exceed 55 dB LAeq when measured: ↳ etc etc.
	(ie adding words "an existing or new" where ↓ have inserted. ↓ to cover existing frost fans as well as new ones erected.
A Plan Change No 58 New Policy 30.2.9.11	Noise from an existing or new frost fan shall not exceed 55 dB LAeq when measured: etc etc
	(ie adding new words "an existing or new" ↳ to cover existing frost fans as well as new ones erected.

Part N° 24

SUBMISSION ON A PUBLICLY NOTIFIED PROPOSED PLAN CHANGE UNDER CLAUSE 6 OF THE RESOURCE MANAGEMENT ACT 1991

To: **Marlborough District Council**

P.O Bo 443

Blenheim 7240

Attention: Mark Caldwell

Fax (03) 520 7496

Submitter: **Richard Guy Lissaman**

Address: **Trelawne Farm Limited**

25 Old Ford Road

R.D 1 Seddon 7285

23.10.2009

This is a submission on proposed Changes to the Wairau/Awatere and Marlborough Sounds Resource Management Plans:

Plan Change 23 – Use of wind machines for frost protection, and

Plan Change 58 – Use of wind machines for frost protection ("the Plan Change"), to the Wairau/Awatere and Marlborough Sounds Resource Management Plans

The specific provisions of the proposal that my submission relates to and recommendations to Marlborough District Council are:

1) The change of status of frost fans from permitted to controlled

The Council's rationale for making this plan change is to ensure that landowners "demonstrate compliance with the noise standards before the wind machines are erected".

Given that MDC is having difficulty enforcing the current noise standards it is hard to understand how it intends to demonstrate non-compliance of a windmachine prior to its installation.

Permitted Activity status allows Frost Fans to be installed where the effects are known to be acceptable without unnecessary costs associated with the resource consent process.

Recommend there be no change of status

2) The lowering in decibel level from 60 to 55 dB LAeq

The Plan Change appears to be based on the Maassen Report that the standards be reduced and a comment by a supplier of frost fans "that its four bladed frost fans meet the 55 dB LAeq requirement at 300 metres"

It is our firm belief that a proposed change of this nature needs to be justified by strong scientific evidence and a peer review process which haven't been undertaken.

Recommend no change in decibel level until scientific research has been conducted and peer review completed to justify a change.

3) Noise Measurement Distance

The "notional boundary" needs to be defined clearly in order to limit the area of productive land affected. Given that the focus is on the noise level in any bedroom in a dwelling then it would seem prudent that the external wall of the bedroom closest to the frost fan in question be used as the notional boundary.

Recommend clearly define the notional boundary as the external wall of the bedroom in a dwelling on a neighbouring property closest to the frost fan in question.

4) Setback Distances

Given that a frost fan could meet the current noise decibel limit of 60dBA at the boundary of these Zones at a distances less than the one prescribed in the rules, we do not support this proposed rule change. The proposed rule lacks any scientific basis and the Council acknowledges that separation distances between dwellings and frost fans should be determined by the point at which the prescribed noise level is achieved.

Recommend no change to the current setback distances.

5) The list of matters that the Council may impose conditions on:

Recommend: If the Council intends to impose further controls/conditions on growers in relation to operational requirements and monitoring then we request that these be based on technical evidence that has been robustly produced and peer reviewed, and it needs to be included within the Plan to allow thorough assessment and consultation.

- **I am aware of and support the submission made by New Zealand Winegrowers. I oppose each of the provisions listed above for the reasons provided in that submission.**
- **I wish to be heard in support of my submission.**
- **If others make a similar submission I would be prepared to consider presenting a joint case with them at any hearing.**

Signed: **R Guy Lissaman**

Director -Trelawne Farm Ltd

R. G. Lissaman 23/10/09

Part N° 25

FORM 5

SUBMISSION ON A PUBLICLY NOTIFIED PROPOSED PLAN CHANGE UNDER CLAUSE 6 OF THE RESOURCE MANAGEMENT ACT 1991-

To: Marlborough District Council
PO Box 443
Blenheim 7240
Attention: Mark Caldwell
Fax (03) 520 7496
frostfans@marlborough.govt.nz

Full name of submitter:	Jane Buckman & John Kershaw – Kakariki Vineyard, 489 Brookby Road, Omaka Valley
Postal address:	PO Box 48200
	Renwick 7243
	Marlborough

This is a submission on proposed Plan Change 23 – Use of wind machines for frost protection and Plan Change 58 – Use of wind machines for frost protection ("the Plan Change").

The specific provisions of the proposal that our submission relates to are:

- the change of status of frost fans from permitted to controlled activity;
- the lowering in permitted decibel level from 60 to 55 dB LAeq;
- the rule that no frost fan shall be located within 500 metres of an Urban Residential, Township Residential, Rural Residential Zone or the Marlborough Ridge; and
- the list of matters that the Council may impose conditions on.

Our submission is:

That the actions that the Council are proposing, that of retrospectively changing the change of status of frost fans from a permitted to a controlled activity, lowering permitted noise to 55 dB LAeq and extending the exclusion zone between Urban Residential, Township Residential, Rural Residential Zone or the Marlborough Ridge and an existing vineyard site goes against natural justice and therefore we both wish **to oppose the proposed changes**.

The Marlborough District Council supported the development of vineyard activity in the Southern Valleys, (ours is in Omaka) with the introduction of the irrigation scheme, yet your proposed Plan Change 23 – Use of wind machines for frost protection {and Plan Change 58 – Use of wind machines for frost protection for Marlborough Sounds} ("the Plan Change") will if enacted unchanged impact detrimentally on operation of our own and other vineyards of these regions. We are unable to use alternate water based protection due to lack of a suitable dam site, for us the use of a frost fan is critical to our staying in business.

At the periods covering vine bud burst and prior to grape harvest frosts are a reality of life and without frost protection the grapes are often ruined, or

significantly damaged. The flow on effects of these losses of production, income and subsequent expenditure and to employment in the region would be enormous. The Council's proposed changes to the plan would be forcing grape growers (rural farmers like those in the rest of the Marlborough region) to apply for resource consent for an activity that we have, until the Council's proposed Plan changes, been lawfully operating within the 60 dB LAeq requirement.

The increase in the Urban Residential, Township Residential, Rural Residential Zone separation to 500metres penalizes those future property developments who wish to incorporate the Marlborough "vineyard ambiance" without those properties having the associated land responsibilities. Proximity to a rural outlook is an asset, not a liability and the proposed extension from the current 300m to 500m for boundary separation to a frost fan is a major deterrent on this type of development. The greater separation distance proposed would make protecting and irregular shaped block such as our own impractical.

We feel that it is important that all new rural residents as part of their planning consent process were made aware that they would be moving into a productive working environment, one which operates 24/7 unlike a purely urban existence.

We are aware of and support the submission made by New Zealand Winegrowers. We oppose each of the provisions listed above for the reasons provided in that submission.

In addition, we would like to state that while current economic times are hard for the wine industry, grape growing and wine production will recover and continue to be one of the cornerstones of Marlborough's prosperity and should therefore be supported by the Council wherever possible.

I seek the following decision from the Marlborough District Council:

Either: Withdraw the variation until the programme of forensic monitoring is completed; OR

Should the Council proceed with the Plan Change, then the amendments requested are set out in the submission of New Zealand Winegrowers.

X	**I wish to be heard** in support of my submission
	I do not wish to be heard in support of my submission

(tick one box)

If others make a similar submission we **would** be prepared to consider presenting a joint case with them at any hearing

Jane Buckman & John Kershaw 23rd October 2009

Signature of person making submission or authorized agent Date

Part Nº 26

FORM 5

SUBMISSION ON A PUBLICLY NOTIFIED PROPOSED PLAN CHANGE UNDER CLAUSE 6 OF THE RESOURCE MANAGEMENT ACT 1991-

To: Marlborough District Council
PO Box 443
Blenheim 7240
Attention: Mark Caldwell
Fax (03) 520 7496
frostfans@marlborough.govt.nz

Full name of submitter: Blair Gibbs

Postal address: 37 Lake Timara Road
Blenheim 7276

This is a submission on proposed Plan Change 23 – Use of wind machines for frost protection and Plan Change 58 – Use of wind machines for frost protection ("the Plan Change").

The specific provisions of the proposal that my submission relates to are: ***(give details)***

- the change of status of frost fans from permitted to controlled;
- the lowering in decibel level from 60 to 55 dB LAeq;
- the rule that no frost fan shall be located within 500 metres of an Urban Residential, Township Residential, Rural Residential Zone or the Marlborough Ridge; and
- the list of matters that the Council may impose conditions on.

My submission is:

I am aware of and support the submission made by New Zealand Winegrowers. I oppose each of the provisions listed above for the reasons provided in that submission.

In addition, I would like to state

I seek the following decision from the Marlborough District Council:
(give precise details)

Either: Withdraw the variation until the programme of forensic monitoring is completed; OR

Should the Council proceed with the Plan Change, then the amendments requested are set out in the submission of New Zealand Winegrowers.

☐ **I wish to be heard** in support of my submission

☑ **I do not wish to be heard** in support of my submission

(tick one box)

If others make a similar submission **I would** be prepared to consider presenting a joint case with them at any hearing

Signature of person making submission or authorized agent — Date: 23/10/09

Submissions close on Friday 23 October 2009 at 5.00pm

Submission Form for Plan Changes 23 and 58 to the

Wairau/Awatere & Marlborough Sounds Resource Management Plans

Frost Fan Plan Changes

Office Use	
Participant No.	27
Submission Point No.	
File Refs	W045-15-58 M13-15-23
Date Received Stamp	RECEIVED 23 ... 2009 MARLBOROUGH DISTRICT COUNCIL

Name/Organisation	MEADOWBANK HOLDINGS LTD
Contact name (if different from above)	WILLIAM GRIGG
Address for Service	P.O. BOX 90 BLENHEIM
Phone Number	5784174
Fax Number	

I have attached [2] pages to this submission

Do you wish to be heard in support of your submission? YES ☐ NO ☑

If others make a similar submission, would you be prepared to consider presenting a joint case at any hearing? YES ☐ NO ☐

Signature: [signature] Date: 22/10/09

Submissions Close:
5.00 pm Friday
23 October 2009

Return your submission to:
Marlborough District Council
PO Box 443
Blenheim 7240
Attention: Mark Caldwell
Fax: (03) 520 7496
E-Mail:
frostfans@marlborough.govt.nz

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Plan Change 58 (Frost Fans) to the Wairau/Awatere Resource Management Plan

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Plan Change No. Volume, Section of Plan, Page Number	***Details of your submission and specific changes or decisions requested***
Example: *Plan Change 23* *New policy 1.9*	*Example:* *I oppose this policy because...* *I would like the Council to change wording of this policy to "suggest change"*
Plan Change 58 New Rule 30.2.9	Meadowbank Holdings Ltd (MBH) opposes this proposed plan change and believes the use of frost fans should remain a permitted activity. The number of complaints received by Council when compared with the number of people residing in the rural area suggest that it is very much the minority of the rural population that have an issue with frost fan use. As in all aspects of society it is often the minority (or extremists) that make themselves most heard. This does not warrant a plan change especially when regard is given to the following Plan Policies 22.3.1.3, 12.2.2.13, 12.4.2.1, 12.5.2.1 and 12.2.2.2.8. The right to farm land sustainably into the future should not preclude the use of new technologies otherwise that ~~may~~ sustainability will be undermined. MBH believes that little regard has been given in the proposed changes to the associated costs to producers of such a change. MBH considers the proposed plan change and associated consent costs an unnecessary impost.

Plan Change 58 and 23

30.2.9.1.1

Meadowbank Holdings Ltd (MBH) opposes this plan change and believes the current 60dB standard should remain until forensic testing is completed but supports a change to the standards as outlined in 30.2.9.1.1 i) and ii) to allow for technological advances in frost fans.

Plan Change 58 & 23

30.2.9.1.4

MBH does not support this rule. This rule should allow that should new technology in frost fans become available that enables their use within 500m of the said areas without disturbance to these areas then this is permitted given standards are met.

Plan Change 58 & 23

30.2.9.2

MBH opposes the new rule 30.2.9.2 as this effectively gives Council the unfettered control of imposing conditions on producers as to how frost fans are used which gives no certainty to the producer with respect to effective and efficient use of these fans. Such uncertainty is untenable.

MBH would expect detailed specifications of standards to be outlined for use of frost fans and for this not to be at the Council's discretion. This set of standards should be devised in conjunction with New Zealand Winegrowers and/or other wine and viticultural industry bodies and participants with the major weighting given to the opinions of the industry rather than those of the minority complainants in order that primary regard be given to producers who should have the "right too farm".

Plan Change 58 & 23

New rule 31.1.5.1 a) This rule should exclude dwellings on the property that frost fans are operating on. It should include that any dwelling house or other habitable building built in a rural residential zone should be built so that the noise level inside any bedroom of the dwelling should not exceed 30dB from a frost fan 100m away. This gives producers the ability to protect a far greater portion of their land in accordance with the Wairau/Awatere Plan policy framework which gives significant recognition to protecting the productive capacity of rural areas.

If people wish to live in a rural area the onus should be on them to build a dwelling that meets the 30dB criteria. MBH recognises that there are practicalities that need to be accounted for when devising such rules and would require input from experienced acoustic engineers.

MBH views holds the same views as it has stated above with regard to Appendix K Marlborough Ridge Zone.