

Assessment of Environmental Noise Effects

Private Plan Change Request MARLBOROUGH SOUNDS RESOURCE MANAGEMENT PLAN

MalcolmHuntAssociates



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Status: Final

Prepared for:

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1.0 Introduction

Malcolm Hunt Associates (MHA) have been commissioned by Port Marlborough New Zealand Limited (the Applicant) to carry out an assessment of potential noise effects regarding their Private Plan Change request to amend the current provisions of the Marlborough Sounds Resource Management Plan to provide for future development of the extended Marina Zone and establish "Mooring Management Areas".

The proposed Private Plan Change will provide for swing moorings by specifying 'Mooring Management Areas' within the inner parts of the Waikawa Bay where moorings will be permitted as of right (preferred option) or require a discretionary restricted consent (second preferred option) for mooring within the mooring management areas.

Appendix A attached to this report contains the proposed map relating to the Mooring Management Areas and proposed north-west and north-east marina areas.

Appendix B, attached, contains the existing Marlborough Sounds Resource Management Planning map of current zones for the Waikawa Bay and surrounding area.

Appendix C, attached, contains the existing Marlborough Sounds Resource Management Plan noise emission rules applicable to the proposed Private Plan Change.

2.0 Noise as an Environmental Effect

The environmental effects of land use activities are controlled through the provisions of the Resource Management Act 1991 (the RMA), which embraces the sustainable management of natural, and physical resources, focusing on the effects that land use activities have on the receiving environment. The environment involves people and communities and their ability to provide for their social and cultural well being as well as for their health and safety.

Section 16 (s.16) of the RMA places a general duty on all occupiers to adopt the best practicable option (BPO) to ensure noise emitted from any site does not exceed a reasonable level.

What constitutes a “reasonable level” is not prescribed by the Act. Noise limits prescribed in *Marlborough Sounds Resource Management Plan* are adopted here as a basis for establishing limits of acceptability.

Further to Section 16 it is important to note Section 17 of the Act. Section 17 states that every person has the general duty to avoid, remedy or mitigate potential adverse effects, including noise.

The over-riding requirement is for the noise maker to control noise at source with noise-makers recognising the general duty to avoid unreasonable noise received at noise-sensitive sites.

3.0 Ambient Sound Level Monitoring

An ambient noise survey was carried out by Malcolm Hunt Associates in the environment surrounding the proposed private plan change area during December 2007 to January 2008.

During all measurement periods the weather was fine with no precipitation. All measurements were undertaken in accordance with NZS 6801:1991 “*Measurement of Sound*”. Measurements were undertaken using a Sound Level Meter complying with IEC 651 Type 1 or 2 specifications for precision grade sound level meters. Field calibration was checked before and after measurements.

Three sites were selected as part of the Malcolm Hunt Associates survey these are described as follows:

- **Position 1** is located at the top of Marina Drive – an access road to 3 houses overlooking the marina. This location is located in the approximate centre of the existing marina area. This position has a view of the bay.
- **Position 2** is located adjacent the northern end of the existing marina area.
- **Position 3** is located past the northern most end of the existing marina area and adjacent the proposed future development of the north-west marina.

The measurement locations are illustrated in **Figure 1** below:

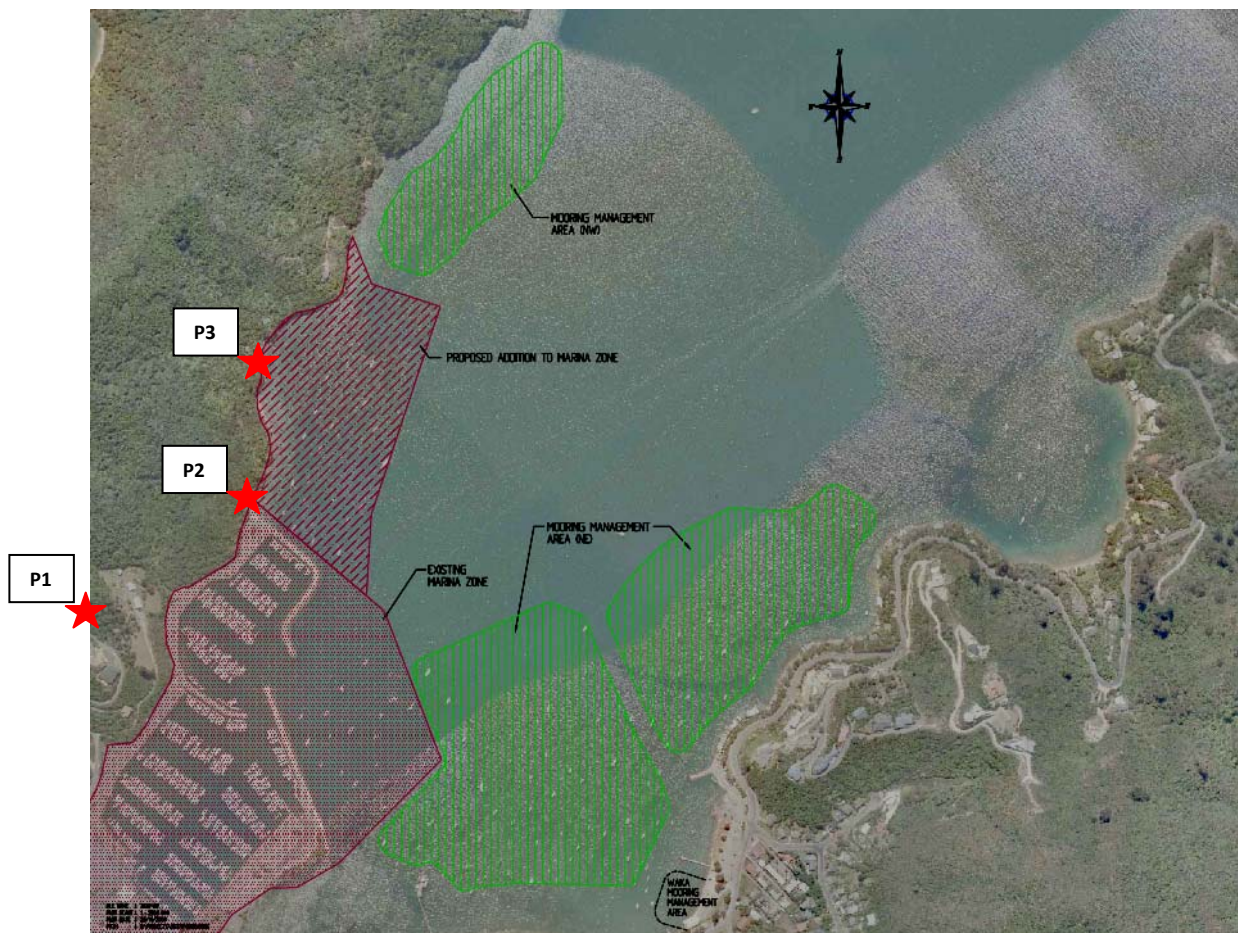


Figure 1: Ambient measurement positions. NTS.

The existing environment (including the contribution from the existing marina and mooring areas) is characterised by only modest levels of environmental noise. Average L_{95} background levels during night time can be summarised as L_{95} 36 dBA for Position 1 (11 hour night time sample), L_{95} 43 dBA Position 2 (6 hour day time sample) and L_{95} 32 Position 3 (16.5hr day and night sample). These sites are located to the west which is likely to experience less existing noise than residential receiving sites to the east (which are nearer to traffic routes and other noise sources). The monitoring has shown the area to be likely to be moderately sensitive to the introduction on new noise sources.

4.0 Assessment of Proposed Plan Change

The private plan change proposes alternative mooring areas (Mooring Management Areas) within the Coastal Marine Zone at Waikawa Bay where mooring would be permitted activities (i.e. no resource consent required) provided that a mooring licence is obtained from the Moorings Area Manager or resource consent for a restricted discretionary activity is obtained. These Mooring Management Areas, which are to be located within the Coastal Marina 1 Zone at Waikawa Bay, will be depicted on the Planning Map of the Marlborough Sounds Resource Management Plan.

Potential environmental noise effects of relocating the existing moorings into the rationalised moorings areas are set out below, also including potential noise effects of extending the Marina Zone the extent proposed by the Plan Change.

Noise emissions associated with the extension of the Marina Zone and the proposed new Mooring Management Areas Plan Change will primarily be related to vessels mostly at rest (moored) and as such will not be inherently noisy. Noise effects of the on-going use of mooring areas within the inner parts of the Bay will include the following noise sources:

- *Temporary engine noise for motor vessels and noise from the halyards on yachts;*
- *Noise from vessel operation and essential maintenance i.e. cleaning;*
- *People noise associated with vessels;*
- *Noise effects of temporary construction activities due to extending the marina and establishing the mooring areas i.e. trucks, vessels and machinery etc.;*
- *Generator noise.*

The above noise sources are similar for both the proposed Mooring Management Areas and North West Marina Zone extension (once developed for marina activities). Calculations based on typical expected noise levels have been based on noise sources within the Marina Zone extension (should this be developed) being relatively more densely spaced compared to noise sources than within the mooring areas. **Table 1** sets out expected typical L₁₀ cumulative noise levels received at the above ambient sound level monitoring positions, plus assessment for receiver positions typical of the closest existing residential dwellings located on Waikawa Road.

	Predicted Worst Case Cumulative Sound Pressure Level	Predicted Worst Case Cumulative Sound Pressure Level
	Mooring Areas	Marina Extension
	L ₁₀ dBA	L ₁₀ dBA
Position 1	<20 dBA	<20 dBA
Position 2	28 dBA	30 dBA
Position 3	<20 dBA	35 dBA
Waikawa Road Residences	32 dBA	<20 dBA

Table 1: Predicted cumulative (L₁₀) sound pressure levels at representative receiving locations for worst case operational noise within the mooring areas and marina extension areas.

Noise from generators may cause disturbance to nearby residents. Clause 5.1(v) of the Moorings Management Plan states there shall be no living aboard vessels which obviates the need for generators. The use of night time generators may arise from time to time, however their use would generally result in less than L10 40 dBA at any existing residential site unless the sound output of the generator exceeds 102 dBA. The L10 40 dBA limit (measured and assessed in accordance with the relevant NZ Standards) is adequate to protect any affected residential site.

While the use of generators on board vessels at moorings is not prohibited under the plan change, the RMA requires vessel operators to adopt the best practicable option (BPO) to ensure noise emitted does not exceed a reasonable level, as set out within Section 16 (s.16) of the RMA. The over-riding requirement is for the noise-maker and operator of any vessel to control noise at source and avoid unreasonable noise received at noise-sensitive sites i.e. adjacent residential dwellings.

Overall, the activities resulting from the Private Plan Change will result in the emission of only minor levels of noise from limited activities associated with the mooring and light maintenance of vessels that will comply with Marlborough Sounds Resource Management Plan noise rules.

Based on the above analysis of sounds produced from the activity, including the cumulative noise effects of the mooring areas together with a fully developed Marina Zone of the extent proposed by the Plan Change, additional noise emissions will be below the readings of existing ambient sound in the area measured adjacent to the existing facilities, as shown in **Table 1**. Therefore, once future marina area and mooring management areas are fully established in the future it is unlikely that any additional noise effects in the area will be noticed as the emissions of sound associated with the proposed activities will be consistent with (and no greater than) the minimum existing ambient noise levels already found within the local and wider area.

The provisions of the Marlborough Sounds Resource Management Plan noise rules which are associated with the areas subject to the Plan Change are adequate and appropriate for avoiding, remedying or mitigating potential noise emissions from the proposed activities that may potentially be received at nearby noise sensitive sites. It is noted that permitted mooring activities are required to achieve compliance with these noise rules and that any consent applications for mooring activities will be assessed against these noise rules.

In terms of construction activities, there is likely to be noise associated with establishing the mooring management areas e.g. construction vessel movements establishing the moorings. Noise from construction taking place within the Marina Zone is controlled within the Marlborough Sounds Resource Management Plan by the use of the 1984 New Zealand Construction Noise Standard NZS6803P:1984 *The Measurement and Assessment of Noise from Construction, Maintenance and Demolition Work*

It is noted that the Marlborough Sounds Resource Management Plan does not specifically contain construction noise rules for the Coastal Marine 1 Zone. However it is noted that construction works associated with establishing mooring areas would easily comply with the requirements of NZS6803P:1984.

The noise assessment set out above specifically takes account of noise effects on residents in the NW area. Assessment locations 2 and 3 (see Figure 1, Page 3) were selected to represent the closest dwellings on the northwest side of the marina extension. These positions were described in our report as follows;

- Position 2 is located adjacent the northern end of the existing marina area.
- Position 3 is located past the northern most end of the existing marina area and adjacent the proposed future development of the north-west marina.

Both these locations represent dwellings on the side of Waikawa bay closest to the marina extension. Positions 2 and 3 are also quite close to the new Moorings Management Area. The predicted L10 levels for these two locations shown in Table 1 (Page 4) show predicted worst case cumulative L10 noise from mooring areas and predicted worst case cumulative L10 noise from marina extension in both cases are below permitted activity noise standards of the Marlborough Sounds Resource Management Plan. These prediction results show dwellings in the area will not be exposed to unreasonable levels of noise from the new mooring area.

5.0 Summary

This acoustic report has assessed the environmental noise implications of a proposed private Plan Change application to the Marlborough Sounds Resource Management Plan.


The proposed private Plan Change will provide for swing moorings by specifying Mooring Management Areas within the inner parts of the Waikawa Bay where moorings will be permitted as of right, or introduce a new restricted discretionary activity status for moorings within the mooring management areas. The proposed private Plan Change also seeks to extend the Marina Zone to provide for future marina capacity in the future.

The overall conclusion is noise likely to be received off-site can be controlled to within Resource Management Plan noise limits. The assessment is that the Plan Change will not introduce and noise sources or noise-making activities that cannot be adequately controlled to limits already existing within the Resource Management Plan. Noise effects of the Plan Change have been calculated to be quite minor with existing cumulative noise levels being unlikely to change significantly with the introduction of additional activities permitted by the proposed Plan Change.

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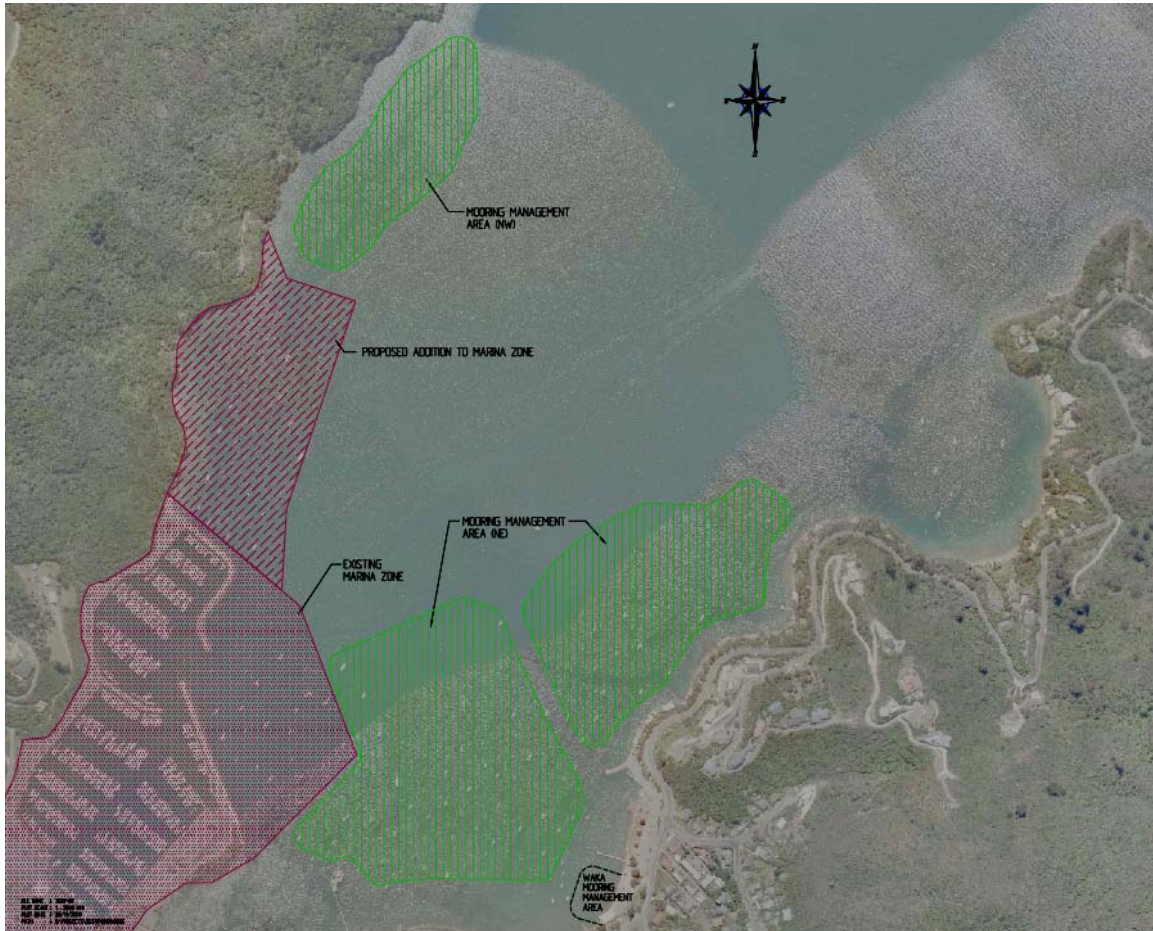

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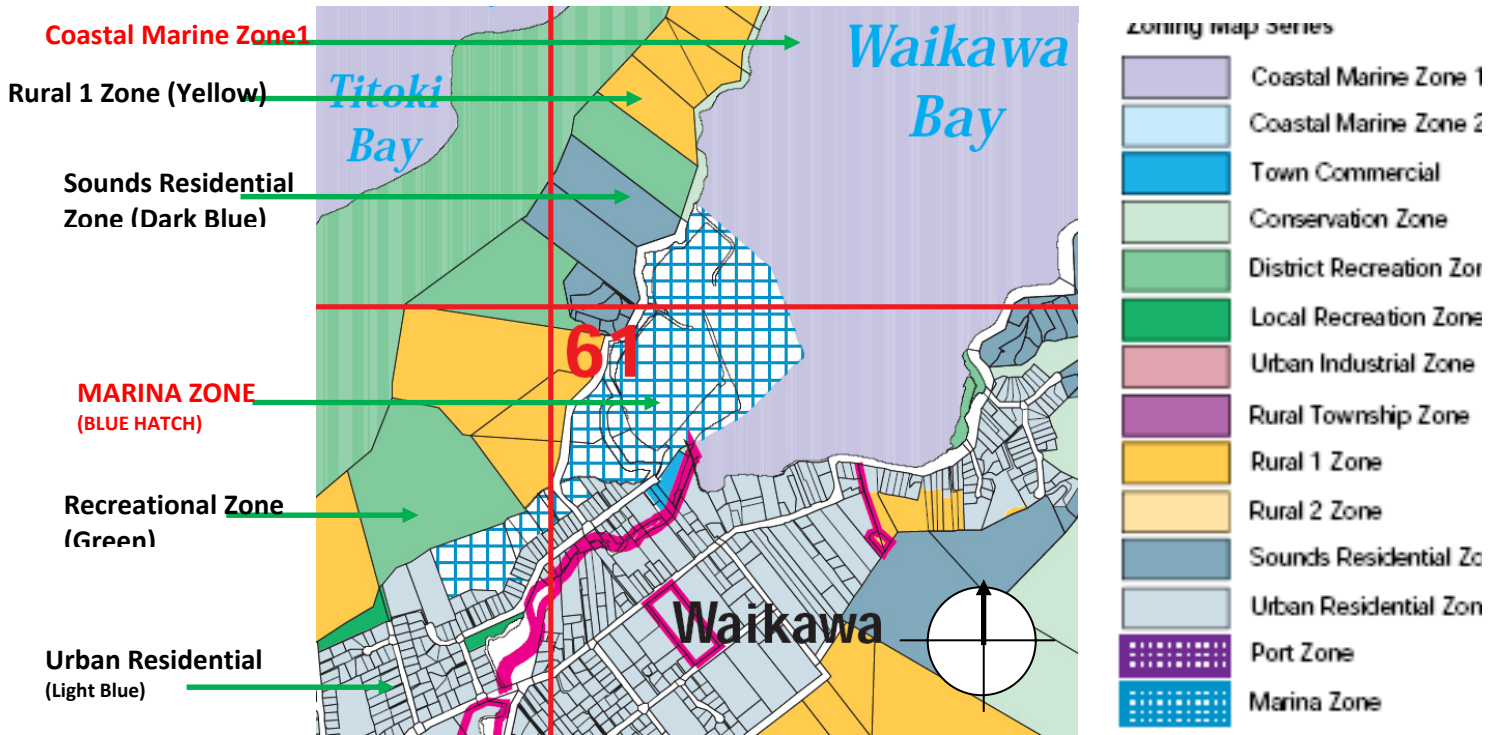
Appendix A

Proposed Moorings and Marinas Zone

Marlborough Sound Resource Management



Appendix B Existing Marlborough Sound Resource Management Plan Map



Appendix C

Marlborough Sound Resource Management

Noise Emission Rules – Coastal Marine Zone, Marina Zone, Rural Zone

Coastal Marine Zone (Noise Emission Rule)

All permitted activities shall be conducted so as to ensure that noise arising from such activities does not exceed the following noise limits at the closest boundary of the Coastal Marine Zone.

- 0700 hours - 2200 hours Monday to Friday, and 0700 hours - 1200 hours Saturday 55 dBA L10
- On any day between 0700 hours and 2200 hours No L_{max} limit
- At all other times including any public holiday 45 dBA L10, and 75 dBA L_{max}

Noise shall be measured in accordance with NZS 6801: 1991. Corrected levels shall be determined in accordance with NZS 6801: 1991. Any construction activities will meet standards specified in NZS 6803P:1984.

35.1.1.4.2 Exception

Provided these rules shall not apply to the following:

- a) Noise generated by navigational aids, safety signals, warning devices, or emergency pressure relief valves;
- b) Noise generated by emergency work arising from the need to protect life or limb or prevent loss or serious damage to property or minimise or prevent environmental damage; or
- c) Noise generated by ships under way.
- d) Noise ordinarily generated by commercial fishing activities including marine farm servicing and harvesting ships in Coastal Marine Zones One and Two.

Marina Zone - Noise Emission Rule

34.1.3.1.1 Limits

All permitted activities shall be conducted so as to ensure that noise arising from such activities does not exceed the following noise limits at any point on the boundary of the Marina Zone:

- 0700 hours - 2200 hours Monday to Friday and 0700 hours - 1200 hours Saturday 55 dBA L10
- On any day between 0700 hours and 2200 hours No L_{max} limit
- At any other time including any public holiday 45 dBA L10 and 75 dBA L_{max}

Except where expressly provide elsewhere noise shall be measured in accordance with the provisions of NZS 6801:1991 Measurement of Sound, and assessed on accordance with NZS 6802:1991 Assessment of Environmental Sound.

Marina Zone - *Construction Noise Rules (including blasting and vibration)*

34.1.3.1.2 Construction Noise

Construction noise shall not exceed the recommended limits in and shall be measured and assessed in accordance with the provisions of NZS6803P:1984 The Measurement and Assessment of Noise from Construction, Maintenance and Demolition Work.

34.1.3.2 Blasting

34.1.3.2.1 Airblast Overpressure

Airblast overpressure from blasting on any land shall not exceed a peak non-frequency weighted (Linear or Flat) level of 115 dB, provided this level may be exceed by up to 5% of the total number of blasts over any 12 month period. The level should not exceed 120 dB (Linear Peak) at any time.

Except where expressly provided elsewhere noise shall be measured in accordance with the provisions of NZS 6801:1991 Measurement of Sound, and assessed on accordance with NZS 6802:1991 Assessment of Environmental Sound.

34.1.3.2.2 Vibration

Vibration from a site due to blasting shall not exceed a peak particle velocity of 5mm per second provided this level may be exceeded on up to 5% of the total number of blasts over a period of 12 months. The level shall not exceed 10mm per second at any time.

Note the District Plan does not contain construction noise rules for the Coastal Marine Zone