



Mt Cass Wind Farm Construction Noise Management Plan



Revision 6 - 31 May 2026

Revision History

Version	Description	Date	Prepared by	Approved By
Rev 1	Draft	03 Mar 2021	HW	SB
Rev 2	Updated Draft	21 Apr 2021	NT	SB
Rev 3	Draft MCD Input	01 Dec 2022	CB	MC
Rev 4	MCD Updates post SQIP and MCWF Review	01 Mar 2023	CB	MC
Rev 5	Post CLG Meeting and HDC submission	23 Mar 2023	MC	GG
Rev 6	Annual review	31 May 2026	LB	JC

TABLE OF CONTENTS

1. Introduction.....	1
1.1 Overview	1
1.2 Consent Conditions	1
2. General Control Measures.....	2
2.1 Key Principles and Approaches.....	2
2.2 Pre-construction Noise Assessment Method	2
2.3 Planned Hours of Work	3
2.4 Affected Persons	3
3. Sources of Noise.....	6
4. Control Measures and Mitigation	7
5. Monitoring and Maintenance During Construction	8
6. Stakeholder Engagement.....	8
7. Training – On-site Personnel	8

1. Introduction

1.1 Overview

This Noise Management Plan (NMP) sets out noise risks and associated management processes for mitigation.

During construction, the contractors will ensure that this plan is correctly implemented for their scope of work and will review all documentation relating to this plan before it is finalised and issued. There may also be a requirement for this plan to be updated, and hence it will remain a live document throughout the duration of the works.

In general, the project is “Low risk” from a construction noise perspective, given the setback from works to houses. Night works (primarily concrete batching) have the potential to cause annoyance and will need to be managed.

Site induction for all personnel must include a briefing on this plan, including the main content of this plan and any Safe Operating Procedures (SOPs) relevant to the tasks being performed.

This plan forms part of the Construction Management Plan (CMP) and must be read in conjunction with the CMP. The project description, roles & responsibilities and complaint procedures are contained in the CMP.

The NMP relates to construction noise only and will be revised to cover operational noise at the completion of construction.

1.2 Consent Conditions

Appendix B of the Construction Management Plan (CMP) includes a matrix of all consent conditions that are included in the Construction Management Plan and Sub plans. The following are the specific conditions that pertain to this plan:

Consent Conditions (RC260077)	Control for Consent Conditions
32) The Construction Management Plan shall include, but not be limited to: g. A description of the sources of noise and the methods to be used to meet condition [131].	Refer to Section 3 Sources of Noise Note Condition 131 relates to operational noise which is not covered by this management plan.
129) The following definitions shall apply for the purposes of these conditions: a. Where noise measurement or assessment is required, these shall be undertaken in accordance with NZS6801:2008 "Acoustics— Measurement of Sound", and NZS 6802:2008 "Acoustics— Environmental Noise". Wind turbine sounds shall be measured and assessed in accordance with NZS 6808:2010 "Acoustics - Wind farm Noise". b. Reference to “dwelling” shall mean any dwelling existing at the time of granting of this consent. c. Notional boundary shall have the meaning set out in NZS 6802:2008.	Refer to Section 2 for noise criteria & Section 5 for noise monitoring requirements.

d. "Noise Sensitive Activities" shall have the meaning set out as "Residential Activity" in paragraph 2.2 of NZS 6802:2008.	
Construction Activities	
130) All construction, earthworks, site remediation and decommissioning, shall be designed and carried out in accordance with the New Zealand Standard NZS 6803:1999 "Acoustics - Construction Noise" and shall comply with Table 2 of that standard for "long term duration".	

2. General Control Measures

2.1 Key Principles and Approaches

Noise control measures will be set up to ensure all construction, earthworks, site remediation and decommissioning, are designed and carried out in accordance with the New Zealand Standard NZS 6803:1999 "Acoustics - Construction Noise" and shall comply with Table 2 of that standard for "long term duration" or more than 20 weeks, as set out in Table 1.

Day	Time	L _{Aeq} (1h)	L _{AFmax}
Weekdays	0630h - 0730h	55 dB	75 dB
	0730h - 1800h	70 dB	85 dB
	1800h - 2000h	65 dB	80 dB
	2000h - 0630h	45 dB	75 dB
Saturday	0630h - 0730h	45 dB	75 dB
	0730h - 1800h	70 dB	85 dB
	1800h - 2000h	45 dB	75 dB
	2000h - 0630h	45 dB	75 dB
Sundays and public holidays	0630h - 0730h	45 dB	75 dB
	0730h - 1800h	55 dB	85 dB
	1800h - 2000h	45 dB	75 dB
	2000h - 0630h	45 dB	75 dB

Table 1 Construction Noise Limits Outlined in Resource Condition 130

2.2 Pre-construction Noise Assessment Method

A noise assessment was carried out prior to construction to assess the proposed construction plant and equipment.

The noise estimates were assessed by the below method:

1. Each building/sensitive receiver was distance mapped from the specified building site to the closest point of construction works using Google Earth. This assessment identified the following locations for assessment.

- a. The construction yard on Symonds Rd & Mt Cass Rd intersection (no longer part of the project)
 - b. The Mt Cass Rd Upgrade (no longer part of the project, except for a ~120m section immediately before the site entrance)
 - c. The main site offices and start of the windfarm access track.
2. The estimated noise level at 10m for each piece of plant/equipment was gained from NZS 6803:1999 or the NZTA construction noise calculator.
 3. The appropriate estimated noise level was then assessed using the 'Sound decay with distance' calculation method. This calculation method describes each item of equipment as a 'point' source and the sound levels decrease 6dB each time the distance from the source doubles ($20 \times \log_{10}(\text{distance})$). It is also noted that at large distances (e.g. >200m), ground and air absorption can significantly reduce the actual noise levels at receivers, therefore predicted noise levels are generally quite conservative.
 4. The estimated noise level was assessed from the potentially affected building/sensitive receiver to the closest point of construction works, using the distance previously gained from Google Earth. Following this method, the estimated noise levels will reduce as construction progresses up the hill and therefore is currently estimated at the highest noise potential.
 5. Estimated noise levels were then assessed against the noise allowances.

Important considerations:

- The closest building/sensitive receiver to the Mt Cass Wind Farm construction is 860m. Given the rules of the sound decay with distance calculation method, this has been assessed using a 640m distance.
- The closest building/sensitive receiver to the Concrete Batching Plant is 1433m and has been assessed at using a 640m distance (the concrete batching plant location has been moved since the assessment to within the Kate Valley landfill footprint).

As these distances are further away in reality, the noise assessment that has been provided is very conservative for the majority of potentially affected buildings/sensitive receivers.

2.3 Planned Hours of Work

The working hours and planned activities are outlined in Table 2 below:

Day	Working hours:	Planned activities:
Monday - Friday	0600h – 1900h	Main construction works
Saturday	0600h – 1700h	
Monday - Sunday	1800h - 0700h Night works	Concrete batching and concrete pours for the 22 tower foundations. Delivery and installation of Wind turbine components.

Table 2 Planned Hours of Work

2.4 Affected Persons

The site is located and accessed via Mt Cass Rd approximately 7.5 km from State Highway 1 at Waipara. Table 3 below presents the distance of residential houses to the closest parts of the construction site and visually shown in Figure 1.

Reference	Address	Building type/comments	Distance to works
Mt Cass Road and Wind Farm			
1	2 Loffhangen Drive	Waipara Primary School	4700m
2	6 Mt Cass Road	Allied Petroleum SH1 Service Station	4200m
3	Mt Cass Road RD3	Dovedale Farm	1800m
4	Crofts Road, RD3	Hamilton Glens Farm	1400m
5	554 Mt Cass Road, Teviotdale	Tiromoana Station/Transwaste	860m Mt Cass Wind Farm
6	Mt Cass Station, Symonds Road, RD3	Mt Cass Station	2840m
7	1076 Mt Cass Road, Waipara	The Wattles	2000m
8	1306 Mt Cass Road, Waipara	Glenafric	2900m
9	192, 224 Reeces Rd and 21 Crofts Road	Omihi Hills Vineyard Netherwood 21 Crofts Road	2960m
Concrete Batching Plant			
5	554 Mt Cass Road, Teviotdale	Tranwaste / Kate Valley Landfill office	1000

Table 3 Potentially Affected Receivers

Information within table sourced from Google Earth

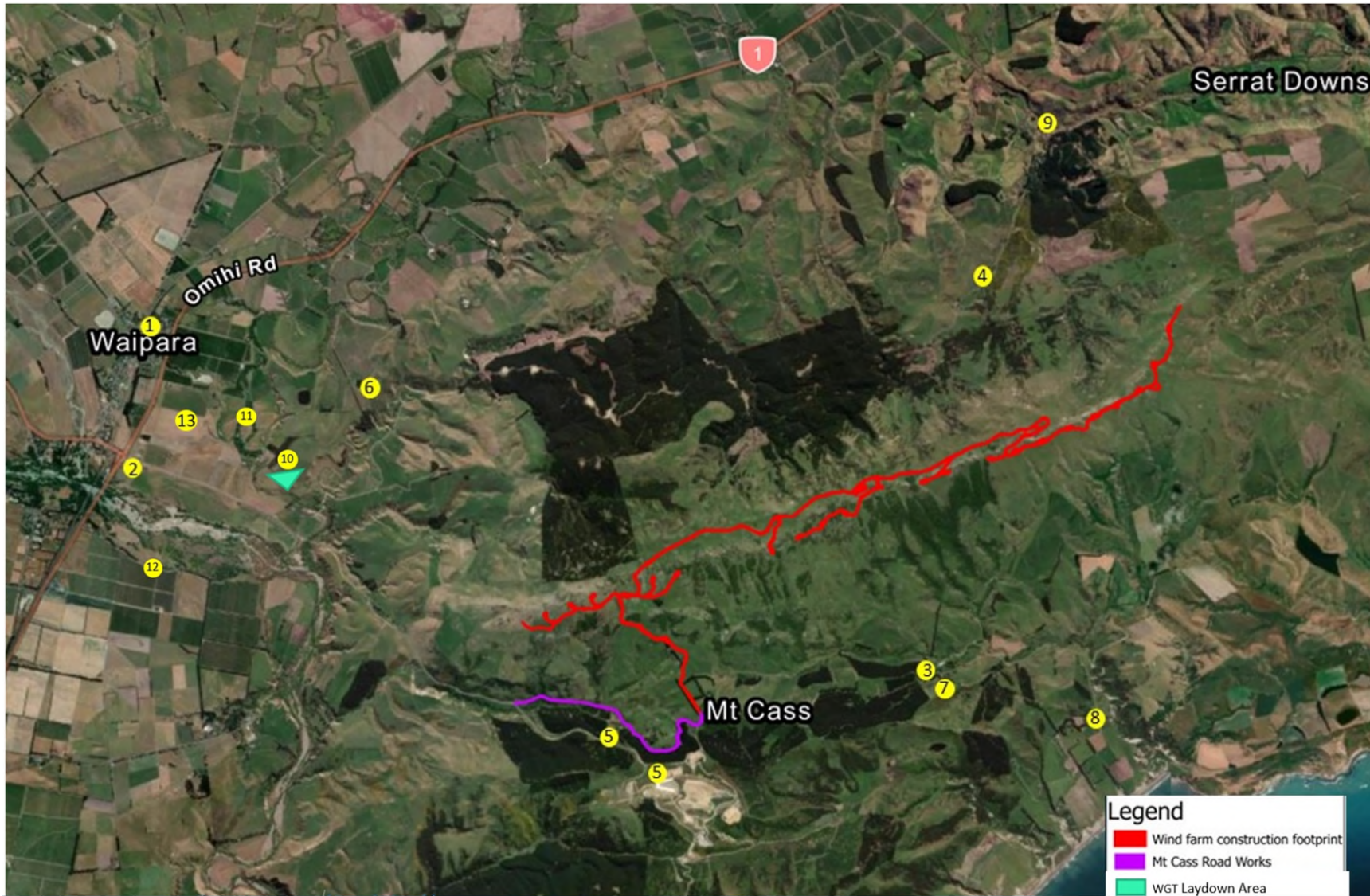


Figure 1 Potential Noise Affected Receivers (Google Earth) (The Mt Cass Road Works & WGT Laydown Area shown are no longer part of the project)

The land ownership of the Project site is shown in Figure 2 below:

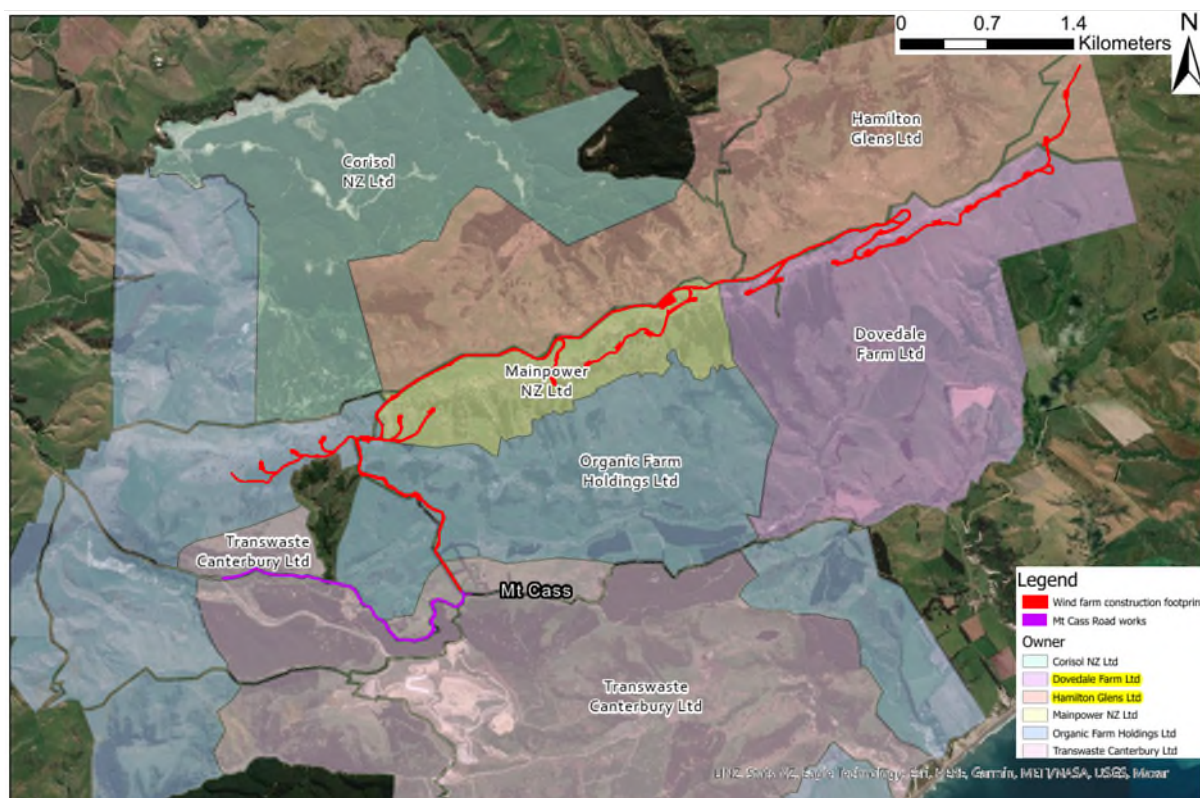


Figure 2 Land Ownership (LINZ Stats NZ)

3. Sources of Noise

Table 4 lists all significant plant proposed to be used on the site. The sound level for each item of plant has been estimated from library data in New Zealand Standard 6803; 1999 Annex C or NZTA Construction Noise Calculator. During initial site noise monitoring the validity of this data will be confirmed and adjusted where necessary for the major items of equipment.

Table 4 lists the planned plant for the construction of Mt Cass wind Farm.

Quantity	Equipment	Model	Estimated L _{Aeq} at 10 m	Estimated L _{Aeq} at 640m	Data reference
X4	Dozers	John Deere & CAT	81dB	45dB	NZS 6803_1999 Annex C
X8	Dump Truck	Volvo	82dB	46dB	NZS 6803_1999 Annex C
x2	Loader	Hitachi & CAT	84dB	48dB	NZS 6803_1999 Annex C
X2	Roller	CAT	86dB	50dB	NZS 6803_1999 Annex C
X8	Excavator	Hitachi & CAT	88dB	52dB	NZS 6803_1999 Annex C
x1	Crusher	Terex Finlay	93dB	57dB	NZS 6803_1999 Annex C

Quantity	Equipment	Model	Estimated L _{Aeq} at 10 m	Estimated L _{Aeq} at 640m	Data reference
x1	Tracked Crane (moving)	Kabelco	86dB	50dB	NZS 6803_1999 Annex C
x1	Screen	Terex Finlay	48dB	12dB	NZS 6803_1999 Annex C
x2	Grader	John Deere & CAT	84dB	48dB	NZS 6803_1999 Annex C
x1	Concrete saw		90dB	54dB	NZTA
	Batching Plant		80dB	44dB	NZS 6803_1999 Annex C

Table 4 Sound Levels for Construction Equipment for Mt Cass Wind Farm

Table 5 show the key activities likely to generate significant noise and shows the approximate duration of the activity and the equipment that is likely to be used.

Pavements – Mt Cass Wind Farm				
Equipment	Lp@10	Quantity	Duty	Equivalent Lp@10
Rollers	86	2	40%	85
Trucks	77	2	60%	78
Grader	84	1	60%	82
Roller	86	1	70%	84
Compactor	80	1	70%	78
Total				87 dB
Distance				860 m
Level at distance (with facade correction)				51 dB

Table 5 Significant Construction Noise Generating Activities based on percentage used.

4. Control Measures and Mitigation

Initial calculations have been conducted for the main items of equipment based on the outlined construction methodology and minimum distances to the nearest neighbours. On this basis the general noise control measures in Table 6 have been identified as likely to be required to maintain compliance with the construction noise criteria and conform to good practice.

Equipment/process	General noise control measures
Truck and trailers, pavers, ADTs bulldozers, water pumps, graders, compactors	Modern plant will be used, and equipment fitted with exhaust mufflers and sound proofing
Dewatering pumps for drainage and excavations Generators for various works	Fixed items of equipment such as pumps and generators shall, where practicable, be located in positions where noise effects to residents in the vicinity are minimised. Due to the site topography the use of dewatering pumps is unlikely.

Pavement Aggregate importation and compaction	For work involving stationary equipment close to residential areas, the equipment will either have silencers fitted or external noise screen can be employed
All works	All noise generating equipment shall be maintained to a high standard at all times, including regular inspection of all specific noise control devices
All works	Secondary exhaust mufflers may be fitted on noisy machines
All works	Keep equipment well maintained and specify quieter models where possible; use straps rather than chains;
All works	Toolbox training sessions to inform contractors of noise sensitivities

Table 6 Noise Control Measures

5. Monitoring and Maintenance During Construction

There are no nearby noise-sensitive receptors in proximity to the construction areas, and site observations confirm that construction activities have not generated nuisance noise. The primary noise mitigation measure employed on site is the regular maintenance of plant and equipment to ensure they operate efficiently and as quietly as practicable. The occurrence of potential noise concerns will prompt a review of current practices and, if necessary, the implementation of additional mitigation measures to maintain compliance and minimize potential effects.

6. Stakeholder Engagement

A key aspect of this construction noise management plan is stakeholder engagement. There will be the following communication with the community regarding construction noise issues:

- There will be a contact number available on site, and this number will be prominently displayed at the entrance to the site so that they are clearly visible to the public.
- Further information will be regularly provided to the affected neighbours with an update on the progress of the works, and the specific activities (including locations) due to be undertaken next. This may be provided by the WhatsApp group or email updates.
- Prior to any particularly noisy processes identified in a construction noise management schedule, the affected neighbours will be contacted. Neighbours will be informed why the night works are required as well as the proposed timing of the specific works and where practicable any times which are particularly sensitive for neighbours will be avoided.

7. Training – On-site Personnel

Site personnel will undertake a site induction.

Any site personnel who will be responsible for monitoring noise levels will be specifically trained in the use of the monitoring equipment.