Construction Noise Management Plan

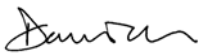
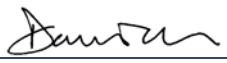
September ~~August~~ 2018

Mt Messenger Alliance

MMA-PLA-RMA-RPT-3143

NZ TRANSPORT AGENCY WAKA KOTAHI | Mt Messenger Bypass

New Zealand Government

Quality Assurance Statement			
Prepared by:	Pp 	Shaun King	Marshall Day Acoustics
Reviewed by:		Damian Ellerton	Marshall Day Acoustics
Reviewed by:		Louise Gibson	Mt Messenger Alliance
Approved for release:		Hugh Milliken	Mt Messenger Alliance

Revision schedule		
Rev. Number	**Date**	**Description**
0.	December 2017	Draft for consent lodgement
1.	May 2018	Updated for Council
2.	July 2018	Updated for Council Hearing
3.	August 2018	Final following Council comments
4.	September 2018	Updated for Council Hearing

ISBN: 978-1-98-851277-8

Disclaimer

This report has been prepared by the Mt Messenger Alliance for the benefit of the NZ Transport Agency. No liability is accepted by the Alliance Partners or any employee of or sub-consultant to the Alliance Partners companies with respect to its use by any other person. This disclaimer shall apply

notwithstanding that the report may be made available to other persons for an application for permission or approval or to fulfil a legal requirement.

Contents

Glossary

Abbreviation	Term
Noise	A sound that is unwanted by, or distracting to, the receiver.
dB	Decibel (dB) is the unit of sound level. Expressed as a logarithmic ratio of sound pressure (P) relative to a reference pressure (Pr), where dB = 20 x log(P/Pr).
dBA	The unit of sound level which has its frequency characteristics modified by a filter (A-weighted) to more closely approximate to the frequency bias of the human ear. A-weighting is used in airborne acoustics.
$L_{Aeq\ (t)}$	The equivalent continuous (time-averaged) A-weighted sound level commonly referred to as the average level. The suffix (t) represents the period, e.g. (8 h) would represent a period of 8 hours, (15 min) would represent a period of 15 minutes and (2200-0700) would represent a measurement time between 10pm and 7am.
L_{AFmax}	The A-weighted maximum noise level. The highest noise level which occurs during the measurement period.
NZS 6803:1999	New Zealand Standard NZS 6803: 1999 "Acoustics - Construction Noise"

1 Introduction

This Construction Noise Management Plan (CNMP) has been prepared for the NZ Transport Agency's Mt Messenger Bypass project (the Project).

1.1 Purpose and Objectives of the CNMP

This CNMP has been prepared to manage and mitigate the adverse effects relating to construction noise during construction of the Project. It identifies the performance standards for the Project and sets out best practicable options (BPO) for construction noise management.

Specifically, the CNMP identifies:

- The general hours of work for the Project;
- The details of any activities that may be undertaken outside of the general hours of work for the Project;
- The necessary setbacks for specific construction plant and equipment in relation to residential dwellings;
- Procedures to comply with the New Zealand Standard NZS 6803:1999 "Acoustics – Construction Noise" (NZS 6803:1999); and
- The management and communication procedures for works that cannot comply with NZS 6803:1999.

This CNMP is an Appendix to the Construction Environmental Management Plan (CEMP) for the Project. The construction methodology for the Project is set out in the CEMP; as well as in the Assessment of Environmental Effects for the Project.

1.2 Review and updates to the CNMP

This CNMP will be the primary tool to inform the Project's management of construction noise effects. It is a live document that will be reviewed and updated during the course of the Project to reflect significant changes associated with construction techniques, mitigation, monitoring results or the natural and physical environment.

A review and amendment process is described in Section 8 of ~~this Plan.~~ the CEMP. The review process for this CNMP shall include reviewing any comments or recommendations from New Plymouth District Council (NPDC). The outcomes of any review shall be provided to NPDC.

The CNMP shall remain in place until the completion of construction.

1.3 Relevant Conditions

Table 1-1 identifies the designation conditions relevant to this CNMP and where they are addressed in the plan.

Table 1-1 -Designation Conditions relevant to this CNMP

Condition No.	Condition	Relevant CNMP section
19	Construction noise shall, subject to the exceptions provided for in the Construction Noise Management Plan (CNMP) set out in conditions 20 and 21, comply with the following criteria in accordance with NZS6803: 1999 [refer to table in Condition 19]	This plan, including Section 3
19a	Should the Requiring Authority not rent or otherwise occupy the dwelling at 2397 Mokau Road during construction: (a) operation of the spoil disposal site at 2397 Mokau Road shall be limited to Monday to Saturday 0730 to 1800 (no works are permitted on Sundays, public holidays or between 1800 and 0730 Monday to Saturday); and (b) Noise mitigation at this site shall be implemented in accordance with the CNMP.	Section 5.6
20	The Requiring Authority shall implement the CNMP, which identifies how the Requiring Authority will manage effects from construction noise that will exceed the criteria in condition 19. The CNMP shall remain in place until the Completion of Construction Works. The CNMP shall be in accordance with: (a) the requirements of Annex E to NZS 6803:1999; and (b) the NZ Transport Agency State highway construction and maintenance noise and vibration guide (2013).	This plan
21	The CNMP includes: (a) the general hours of work for the Project; (b) the details of any activities that may be undertaken outside of the general hours of work for the Project; (c) procedures to comply with NZS6803:1999; (d) the details of any activities that may not comply with NZS6803:1999 and measures to mitigate construction noise from those activities as far as practicable to ensure the effects are appropriate;	Section 2.1 Section 2.1 Section 5 Sections 4 - 7

Condition No.	Condition	Relevant CNMP section
	(e) the necessary setbacks for specific construction plant and equipment in relation to residential dwellings; and (f) the management and communication procedures for Works that may not comply with NZS6803:1999.	Section 4 Sections 5 and 6

2 Construction Methodology

A detailed description of the construction works is provided in the CEMP with key aspects relevant to this CNMP outlined below.

2.1 Construction duration and working hours

The construction phase of the Project is anticipated to take approximately four years. Construction works are programmed to commence in Quarter 4 2018 and be complete around the end of 2022. An indicative programme is set out in the CEMP.

Construction hours will generally be Monday to Sunday 0630 – 2100 hours. These general hours take into account the remote Project location and small number of surrounding dwellings (refer to Section 3.2). There will however be some construction activities undertaken outside the general working hours. These activities may include:

- Works on the existing State Highway 3 (SH3) corridor, including construction of site access points at the start of the Project, and tie-ins of the new alignment to the existing State highway at the end of the Project;
- After-hours material and plant delivery, including bridge and tunnelling equipment and materials where the transport of oversize loads outside working hours will be less disruptive;
- Tunnelling works, which will be undertaken 24 hours a day; seven days a week during the relevant phase of the Project;
- Early morning concrete batching and pours; and
- On-site servicing of plant and equipment to minimise impacts on construction programme.

There is the potential that construction works outside Monday to Saturday 0730—1800 hrs will exceed the relevant construction noise limits when undertaken in proximity to occupied dwellings (refer to Section 3) and will need to be managed in accordance with Sections 5 and 6 of this Plan. However, much of the alignment has large setbacks to the nearest receivers and natural shielding by the local topography, which may enable compliance with the night-time noise limits.

Works on the southern spoil disposal site shall occur Monday to Saturday 0730 - 1800 hrs only, to comply with the NZS 6803:1999 limits.

2.2 Construction Sequencing

Due to the nature and scale of the Project, construction will be undertaken on a number of fronts or work faces, such that different construction operations will, at times, be simultaneously progressed across all construction zones.

Figure 2.1 shows the indicative construction programme and sequencing for the Project.

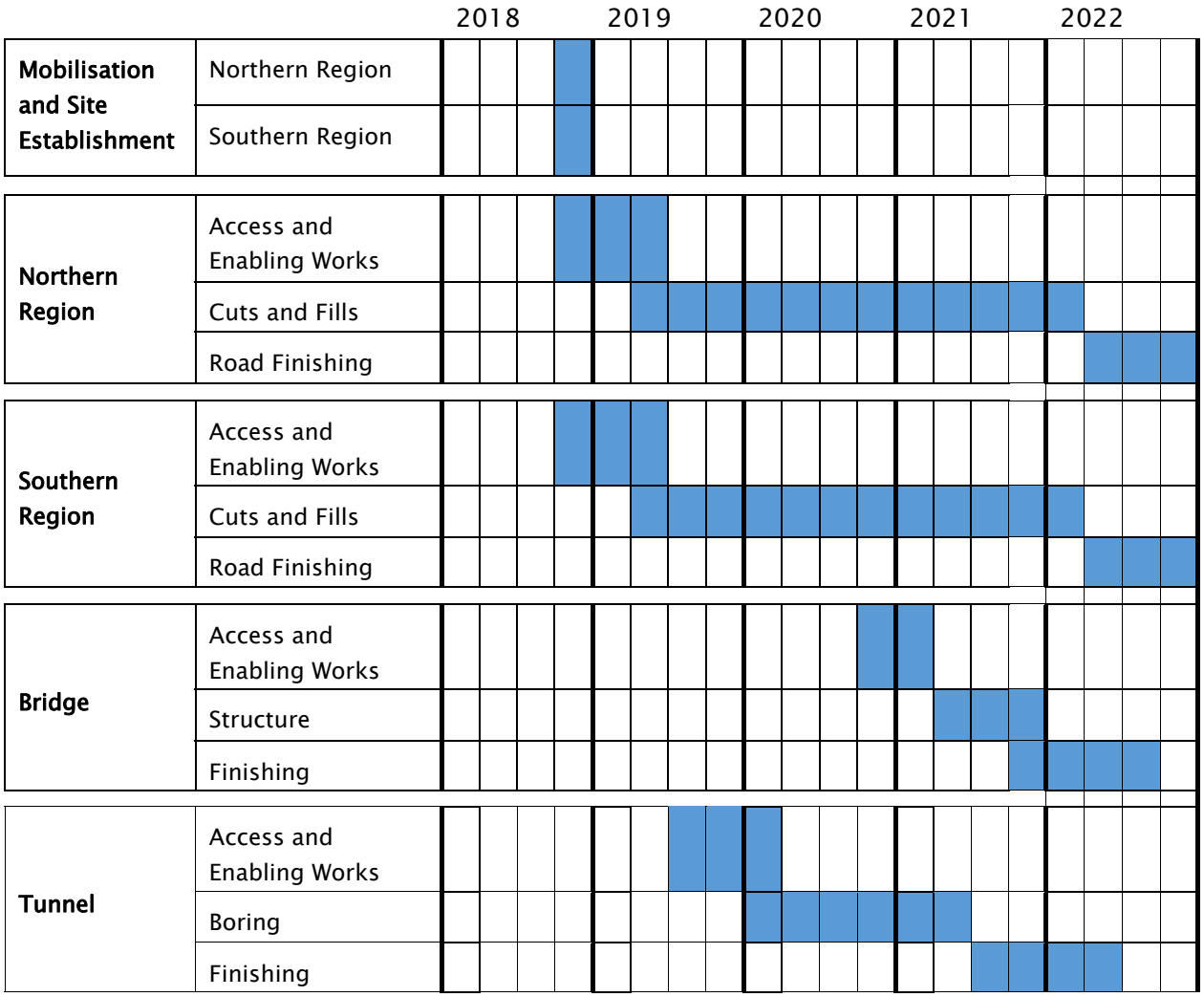


Figure 2.1 – Indicative Construction Programme and Sequencing

2.3 Key Personnel Contact Details

Contact details for key personal responsible for this CNMP are detailed in Table 2-1~~Table 2.1~~ (note these details are to be confirmed prior to construction). Any changes to Table 2.1 shall be communicated to all parties via the Community Liaison Person as and when required. A full copy of Table 2.1 shall be included in that communication. The Alliance Manager and Environmental Manager are ultimately responsible for implementing this CNMP.

Table 2-1~~2.1~~ – Contacts

Role	Name	Organisation	Phone	Email
Alliance Manager	Hugh Milliken	MMA	027 809 8703	hugh.milliken@mtma.co.nz
Environmental Manager	Ed Breese	MMA	021 333 726	ed.breese@mtma.co.nz
Construction Manager	Stuart Haynes	MMA	0274 586 708	stuart haynes@mtma.co.nz
Stakeholder Engagement and Communications Manager	Magila Annandale	MMA	027 272 2656	Magila.Annandale@mtma.co.nz
Acoustic Specialist	TBC	TBC	TBC	TBC

3 Performance Standards

3.1 Noise

Construction noise must be measured and assessed in accordance with the provisions of NZS 6803:1999. The noise limits apply at 1m from external façades of occupied buildings.

The long-duration construction noise limits in NZS 6803:1999 apply to the Project as the construction duration will exceed 20 weeks duration (refer Section 2.2).

The relevant construction noise limits in proposed designation condition 15 are summarised in Table 3-1~~Table 3.1~~ and Table 3.2.

Table 3-1~~3.1~~ – Long duration construction noise criteria for residential buildings[1]

Time of week	Time period	Noise Criteria	
		dB L_{Aeq}	L_{AFmax}
Weekdays	0630 – 0730	55	75
	0730 – 1800	70	85
	1800 – 2000	65	80
	2000 – 0630	45	75
Saturdays	0730 – 1800	70	85
	1800 – 0630	45	75
Sundays and public holidays	0730 – 1800	55	85
	1800 – 0630	45	75

Table 3-2~~3.2~~ – Long duration construction noise criteria for commercial buildings[2]

Time of week	Time period	Noise Criteria
		dB L_{Aeq}
All days	0730 – 1800	70
	1800 – 0730	75

[1] The noise criteria for two time periods recorded separately in NZS 6803:1999, under Saturdays and Sundays and public holidays, have been collated to record the same noise criteria for one time period 1800 – 0630

[2] Commercial buildings include occupied farm sheds.

3.2 Sensitive Receivers

There are 4 dwellings located within 1km of the Project:

- 2397 Mokau Road at the southern end of the alignment, approximately 45m from the southern stockpile area (and approximately 30m from the designation boundary for the area);
- 2528 Mokau Road at the southern end of the alignment, approximately 120m from the nearest point of earthworks; and
- 2750 Mokau Road at the middle of the alignment, approximately 400m from the tunnel construction site.

It is understood that the dwelling at 3072 Mokau Road will be purchased and will be vacant during construction. Therefore, this dwelling is not considered to be a sensitive receptor for the purposes of this Plan.

4 Predicted Noise Levels

Table 4-1~~Table 4.1~~ provides indicative construction noise levels for proposed construction machinery, and setback distances without mitigation or terrain shielding to comply with the Project noise limits.

It should be used by the Environmental Manager (or nominated person) prior to construction to inform what equipment will require mitigation and/or management, and when. The table should be kept up to date by the Acoustic Specialist when new information is available through noise monitoring (refer to Section 7) or other means.

Table 4-1~~4.1~~ – Equipment Noise Levels (without mitigation or topographical shielding)

Equipment	Sound Power	Façade Noise Level (dB LAeq) at a distance (m)				Limit Compliance Setback (m)	
	(dB L_{WA})	10	20	50	100	70dB L_{Aeq}	45dB L_{Aeq}
Concrete/rock breaker (large)	121	93	87	78	71	110	850
Concrete cutting	115	87	81	72	65	60	550
Impact piling (no mitigation)	123	95	89	80	73	130	1000
Impact piling (casing & dolly)	114	86	80	71	64	55	525
Vibratory sheet piling	116	88	82	73	66	70	600
Bored or screw piling	111	83	77	68	61	40	425
Hydrovac excavation	107	79	73	64	57	26	300
Excavator (20T)	103	75	69	60	53	18	215
Excavator (60T)	108	80	74	65	58	30	340
Concrete truck and pump	103	75	69	60	53	18	215
Mobile Crane (35T) operating	98	70	64	55	48	10	140
Crawler crane (600T) operating	99	71	65	55	49	12	160

Equipment	Sound Power	Façade Noise Level (dB LAeq) at a distance (m)				Limit Compliance Setback (m)	
	(dB L_{WA})	10	20	50	100	70dB L_{Aeq}	45dB L_{Aeq}
Hydraulic power pack	97	69	63	54	47	9	120
Generator (150kVA)	93	65	59	50	43	6	80
Generator (1000 kVA)	108	80	74	65	58	30	340
Pump (150mm dia)	93	65	59	50	43	6	80
Compressor	93	65	59	50	43	6	80
Truck idling	91	63	57	48	41	5	70
Articulated dump truck (30T)	109	81	75	66	59	33	360
Milling machine	110	82	76	67	60	35	380
Plate compactor	108	80	74	65	58	30	340
Paving machine	103	75	69	60	53	18	215
Static or vibratory roller	103	75	69	60	53	18	215
Grader	111	83	77	68	61	40	425
Bulldozer	114	86	80	71	64	55	525

The noise level received inside a noise sensitive space (e.g. bedroom or living room) will depend on the external noise level, sound insulation performance of the façade (particularly the glazing) and room constants (such as the room dimensions and surface finishes). These factors can vary widely.

The Construction Noise Standard (NZS 6803:1999) recommends noise limits assessed at 1m from the external façade of a building, assuming a façade sound level difference of 20 decibels. However, 20 decibels may not be appropriate for houses with windows open for ventilation. With knowledge of the façade glazing type, the sound insulation performance can generally be estimated as follows:

- Openable windows (closed) 20 – 25 decibels façade sound level difference
- Open windows 15 decibels façade sound level difference

Table 4-2 and Table 4-3 provide guidance on the effects in noise sensitive spaces during the day and night respectively, depending on the external noise level and façade glazing type. The potential effects are colour coded as follows:

- Typically acceptable
- Annoyance and reduction in work efficiency for some occupants (day)
  Sleep disturbance for some occupants (night)
- Annoyance and degradation of communication quality for most occupants (day)
  Sleep disturbance for most occupants (night)

Table 4-24.2 - Daytime noise levels habitable rooms in dwellings

External Noise Level (dB LAeq)	Estimated Internal Noise Level (dB LAeq)	
	Closed Windows	Open Windows
90 - 95	65 - 70	75 - 80
85 - 90	60 - 65	70 - 75
80 - 85	55 - 60	65 - 70
75 - 80	50 - 55	60 - 65
70 - 75	45 - 50	55 - 60

Table 4-34.3 - Night time noise levels in bedrooms of dwellings

External Noise Level (dB LAeq)	Estimated Internal Noise Level (dB LAeq)	
	Closed Windows	Open Windows
70 – 75	45 – 50	55 – 60
65 – 70	40 – 45	50 – 55
60 – 65	35 – 40	45 – 50
55 – 60	30 – 35	40 – 45
50 – 55	25 – 30	35 – 40
45 – 50	20 – 25	30 – 35

5 Mitigation and Management

5.1 Training

All staff will participate in a Project induction training session prior to the start of construction, with attention given to the following matters:

- Construction noise limits (refer to Section 3.1);
- Activities with the potential to generate high levels of noise and/or vibration (refer to Section 4);
- Noise mitigation and management procedures (refer to Section 5); and
- The sensitivity of receivers and any operational requirements and constraints identified through communication and consultation (refer to Section 6)

Awareness of current noise matters on, or near, active worksites, will be addressed during regular site meetings and/or 'toolbox' training sessions.

Refer to the CEMP for further detail on staff training.

5.2 Equipment Selection

When selecting construction equipment to be used in proximity to sensitive receivers, where practicable:

- Use quieter construction methodologies (e.g. bored piling instead of drop hammer piling);
- Use electric motors over diesel engines;
- Use rubber tracked equipment over steel tracked equipment;
- Equipment shall be suitably sized for the proposed task;
- Equipment shall be maintained and fitted with exhaust silencers and engine covers; and
- Use alternative reversing or warning alarms including flashing lights, broadband audible alarms or reversing cameras inside vehicles in preference to standard tonal reversing alarms.

The above points are particularly important in the event of night-time works in proximity to dwellings.

5.3 Scheduling of works

Works near sensitive receivers (determine setback using Table 4-1~~Table 4.1~~) shall be scheduled to, where practicable, avoid night works. Where night works are necessary, noisy works shall be programmed early in the evening or night-time period to avoid sleep disturbance. Note that people tend to be less disturbed by low frequency, continuous engine noise, than intermittent noise or activities with special audible character (e.g. reversing beepers, whistling, banging tailgates or shouting).

Night works which exceed the relevant limits should be no longer than 5 consecutive nights at any one receiver, depending on overall level and duration. The Acoustic Specialist (refer to Table 2.1) shall be involved in scheduling of night works and monitoring to ensure BPO is adopted

Stakeholder engagement will be critical and shall be undertaken with occupiers of buildings located within 400m of the night works (refer to Section 6).

5.4 General Measures

Complaints can arise whether or not noise levels comply with the Project limits. To avoid complaints, general mitigation and management measures include, but are not be limited to, the following:

- Avoid unnecessary noise, such as shouting, the use of horns, loud site radios, rough handling of material and equipment, and banging or shaking excavator buckets.
- Avoid steel on steel contact such as during the loading of scaffolding on trucks.
- Avoid high engine revs through appropriate equipment selection and turn engines off when idle.
- Maintain site access ways to avoid pot holes and corrugations.
- Mitigate track squeal from tracked equipment, such as excavators (may include tensioning and watering or lubricating the tracks regularly).
- Minimise construction duration near sensitive receivers.
- Stationary equipment (e.g. generators) shall be located away from noise sensitive receivers and site buildings and material stores used to screen them.
- Orient mobile machinery to maximise the distance between the engine exhaust and the nearest sensitive building façade (e.g. excavators).
- Utilise noise barriers where appropriate (refer to Section 0).
- Ensure advanced communication is complete (refer to Section 6) prior to commencing activities that are predicted to exceed the noise performance standards (refer to Section 4).
- Where nearby sensitive receivers are identified with particularly noise sensitive equipment and/or activities, a suitably qualified and experienced specialist (e.g. Member of the Acoustical Society of New Zealand) will review the performance standards (Section 4) to ensure they are appropriate and participate in consultation (refer to Section 6.2).
- Undertake monitoring as appropriate (refer to Section 7).

5.5 Noise Barriers

Temporary noise barriers will be used where a construction noise limit is predicted to be exceeded (refer to Section 4) and the barriers would noticeably reduce the construction noise level. They shall be installed prior to works commencing and maintained throughout the works. Effective noise barriers typically reduce the received noise level by 10 decibels.

The following guidelines shall be incorporated in the design and utilisation of temporary noise barriers:

- The panels shall be constructed from materials with a minimum surface mass of 6.5kg/m^2. Suitable panels include 12mm plywood or the following proprietary 'noise curtains':
    - Duraflex 'Noise Control Barrier – Performance Series' (www.duraflex.co.nz)
    - Soundex 'Acoustic Curtain – Performance Series' (www.ultimate-solutions.co.nz)
    - Flexshield 'Sonic Curtain with 4kg/m^2 mass loaded vinyl backing' (www.flexshield.co.nz)
    - Alternatives should be approved by a suitably qualified acoustic specialist because some proprietary noise curtains have insufficient surface mass for general use.
- The panels shall be a minimum height of 2m, and higher if practicable to block line-of-sight.
- The panels shall be abutted or overlapped to provide a continuous screen without gaps at the bottom or sides of the panels.
- The panels shall be positioned as close as practicable to the noisy construction activity to block line-of-sight between the activity and noise sensitive receivers.

5.6 Southern Spoil Disposal Site

The southern spoil disposal site is located adjacent to the dwelling at 2397 Mokau Road. Given the proximity of the dwelling (approximately 45m) to the spoil disposal site, there is a potential for construction works to exceed the Project's Monday to Saturday daytime construction noise limits. The following management procedures shall be implemented to ensure activities at the southern spoil site comply with the relevant noise limits.

- Spoil disposal site shall only be used Monday to Saturday 0730 – 1800 hours.

  The limitation on hours and days only applies if the house is not occupied by persons working on the project or written approval has not been secured.
- Select quiet equipment with the purpose of minimising setback distances (refer to Section 5.2).
- Staff shall be inducted and trained on minimising noise levels (refer to Section 5.1).
- Measure initial activities to determine appropriate setbacks (refer to Section 7 and Table 4.1).
- If selection of quiet equipment cannot enable compliance, investigate the effectiveness of bunds and/or temporary noise barriers to reduce noise levels.

6 Stakeholder Engagement

6.1 Communication

Communication with key stakeholders in relation to construction works is described in Section 6 of the CEMP. A Project hotline will be operational 24/7 during construction and clearly included on any written Project notifications and Project signage.

6.1.1 Day time works

Communication (meeting or written communications) should be undertaken with occupiers of dwellings located within 200m of where noise due to construction works are predicted to exceed the relevant limits.

Some construction activities are predicted to generate high noise levels that may exceed the Project noise criteria or result in disturbance to sensitive receivers. Communication will be undertaken with these receivers prior to the commencement of the relevant construction activities and will provide receivers with details of the construction works, timing and duration of high noise generating works, anticipated noise effects and Project contact details.

6.1.2 Night time works

Occupants of dwellings located within 400m of construction activities that are to be undertaken at night shall be advised of the works at least 5 days prior to the works commencing. Occupants shall be advised as to the work details, duration, timing, anticipated noise effects and Project contact details.

An acoustic engineer should be involved in scheduling and monitoring of potentially noisy night-time works to ensure the BPO is adopted.

6.2 Consultation

Consultation shall be undertaken to address any/all construction noise concerns on a case-by-case basis. The Stakeholder Engagement and Communications Manager shall address any concerns and complaints in accordance with Section 6.3. A copy of all correspondence will be made available to Council upon request.

The following process will be implemented by the Environmental Manager (or nominated person) should the measured noise levels from any construction activity exceed the Project noise limits:

- Review the construction methodology, mitigation and management strategies to ensure they represent the BPO.
- Undertake consultation with affected parties to understand their sensitivities, including times, activities and locations. Consultation should focus on a collaborative approach to managing the adverse effects from construction noise. A record of consultation should be kept at the site office and be available to the affected parties and Council if requested.

- Implement measures as practicable to avoid significant adverse effects as agreed with the affected party and monitor the activity to verify the extent of any adverse effects.
- Temporary relocation should be considered for sensitive receivers where all practicable noise management and mitigation measures have been implemented and significant adverse noise effects are predicted. This will be in exceptional cases only, and advice from the Acoustic Specialist will be sought prior.

6.3 Complaints Response

All construction noise complaints should be recorded in accordance with the Project complaints response process outlined in Section 6 of the CEMP. For complaints related to construction noise, an investigation should be undertaken involving the following steps as soon as practicable following receiving the complaint:

- Acknowledge receipt of the concern or complaint within 24 hours and record:
  - Time and date the complaint was received and who received it.
  - Time and date of the activity subject to the complaint (estimated where not known).
  - The name, address and contact details of the complainant (unless they elect not to provide).
  - The complainant's description of the activity and its resulting effects.
  - Any relief sought by the complainant (e.g. scheduling of the activity).
- Identify the relevant activity and the nature of the works at the time of the complaint.
- Review the activity noise levels (refer to Section 4) to determine if the activity is predicted to comply with the relevant performance standards (refer to Section 3.1) at the complainants building. Consider attended monitoring (refer to Section 7) to verify the underlying reference level assumptions.
- Review the mitigation and management measures in to ensure the activity represents the BPO. Review the relief sought by the complainant. Adopt further mitigation and management measures as appropriate.
- Review the potential residual effects (refer to Section 4) of activities that are predicted to exceed the relevant performance standards (refer to Section 3.1).
- Report the findings and recommendations to the Environmental Manager, implement changes and update this CNMP as appropriate.
- Report the outcomes of the investigation to the complainant, identifying where the relief sought by the complainant has been adopted or the reason(s) otherwise.

In most cases, ceasing the activity would provide immediate relief. In some cases, this may not be practicable for safety or other reasons. The complainant shall be kept updated regularly during the time it takes to resolve the matter.

7 Monitoring

Construction noise levels will be monitored:

- By a suitably qualified and experienced specialist (e.g. Member of the Acoustical Society of New Zealand) in accordance with the requirements of New Zealand Standard NZS 6803: 1999 *"Acoustics – Construction Noise".*
- During the first occurrence of activities that are predicted to exceed the noise limits (refer to Section 3.1).
- In response to a reasonable noise complaint (refer to Section 6.3).
- At 1m from the most affected building façade, or proxy position and adjusted for distance and façade reflections where appropriate.
- For a representative duration, reported with the measured level (e.g. 65 dB $L_{Aeq\ (30min)}$).
- The results should be used to update Section 4 if appropriate.

A noise monitoring flowchart is presented in Figure 7.1.

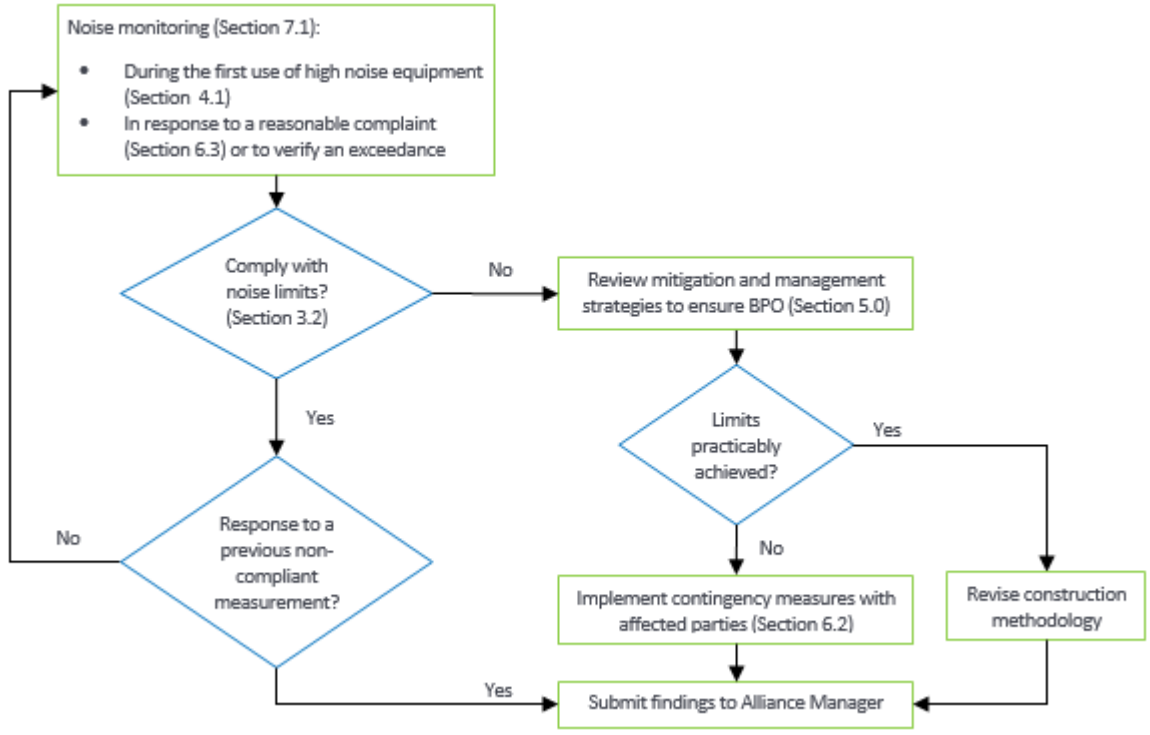


Figure 7.1 – Noise Monitoring Flow Chart

8 Review Process

8.1 Review process

A review of the CNMP will be undertaken at least annually by the Alliance. The management review will be organised by the Environmental Manager and the Project team will be informed of any changes to this CNMP through the regular Project communications processes. The review will take into consideration:

- Compliance with the Project consent / designation conditions, the CEMP and other management plans.
- Any significant changes to construction activities or methods that require the description of construction activities to be updated and/or unanticipated more than minor adverse effects resulting from the Project.
- Key changes to roles and responsibilities within the Project team.
- Results of inspections, monitoring and reporting procedures associated with the management of adverse effects during construction.
- Comments or recommendations from TRC / NPDC regarding the CEMP or management plans.
- Unresolved complaints and any response to complaints and remedial action taken to address the complaint.

The outcomes of any review will be provided to NPDC.

Where the CNMP is updated as part of a review, the on-site version shall be promptly updated prior to any works associated with the amendment being implemented.

8.2 Minor amendment

In accordance with the consent conditions, minor amendments may be made to this final CNMP at any time. Minor amendment is any amendment where the adverse environmental effect arising from the amendment is the same or less than the effect that would result in the absence of the amendment.

Any amendment to the CNMP shall remain consistent with the overall intent of the original version of the final CNMP.

The Alliance shall provide NPDC with a copy of any amendment as soon as practicable and before any construction works associated with that amendment are implemented.

8.3 Material Amendment

Material amendments to this CNMP may be made at any time subject to certification by NPDC. Material amendments are any amendments that are consistent with the overall intent of the original version of the final CNMP, but that are not minor amendments in accordance with Section 8.2.

~~In the event of material amendment the amendment shall be submitted to NPDC for certification 20 working days before the commencement of works to which the amendment applies.~~

~~Works unaffected by the material amendment may continue during the certification process~~.


35