



Nelson City Council
Transport Operations

Programmed night-time road maintenance works Noise risk assessment and management statement

Site address		
Expected work start date		
Expected duration of work		
Planned activity	Milling <input type="checkbox"/> Asphalt surfacing (AC) <input type="checkbox"/> Asphalt surfacing (Chip seal) <input type="checkbox"/> Line marking <input type="checkbox"/> Road sweeping <input type="checkbox"/>	Details/Comments (if required)
Noise risk assessment date		
Contractor representative (see Section 5 for contact details)		
Council representative (see Section 5 for contact details)		

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1.0 PROCESS OVERVIEW

Nelson City Council (the Council) will implement a programme of essential road maintenance activity across the district. Some of the work at certain sites may be identified as needing to be completed during the night-time. The night-time works would be undertaken by an approved contractor between 10:00 pm and 7:00 am. Through effective early planning and informed selection of noise mitigation the Council can minimise the disturbance to neighbouring properties. Noise mitigation will be provided for all programmed night-time road work sites.

This noise risk assessment document is a planning tool developed by Council for the early consideration of noise during the planning and programming of road maintenance activity that will be undertaken during the night-time. The risk assessment will be used to assess the level of noise risk for a specific site and then to select suitable noise mitigation measures in a transparent and uniform manner for all relevant sites.

This risk assessment process is intended to be applied only after the Council decision that a certain site from the annual programme of road maintenance works is to be selected for delivery during the night-time period. Recording details of the decision to undertake the work at night-time is beyond the scope of this document but reasons for that decision may include issues such as opportunities for improved public and worker safety, expectations of enhanced efficiency of delivery, avoiding expected clashes with essential daytime network routes, and some projects can be delivered more cost effectively during the night-time.

During the development of this planning tool, the Council has engaged specialists to undertake detailed noise modelling of the planned work activities, to understand the distances from the work site at which the effects from noise will be greatest. Planning for the works at a specific site will include notification of affected receivers. The setback distances that will be used to plan for notification of the works are shown in table 1.1.

Table 1.1 – Notification distances

Activity	Typical plant used	Average setback distance from site extents for notification purposes (m)
Line marking	Line marking machine	50
Road sweeping	Vacuum sweeper truck	500
Milling	Profiler Trucks Broom	500
Surfacing (AC)	Asphalt paver Trucks Vibratory roller Broom Bobcat	500
Surfacing (Chip Seal)	Spray truck Chip spreader Trucks Broom	500

There are also manual tasks associated with the works that have the potential to generate high noise levels for short periods of times, such as operation of a seal cutting saw and hydraulic rock breaker. Noise mitigation for these two noise sources is outlined in section 3.0.

The following pages provide a method for assessment of noise risk based on factors such as the number of potentially affected receivers and provides a method for the selection of suitable noise mitigation measures.

The documentation should be completed in cooperation between the Council and the approved road works contractor during planning for the work. The completed documentation will be distributed to the contractor representatives undertaking the works and to the Council Monitoring Team at least thirty days prior to the commencement of the works. The completed documentation will provide noise management guidance for the people in control of the site during the time allocated in the document. Other documentation will be generated during planning for the works, including notification information for residents, site plans and contractor's safety management plans. Section 6.0 of this document provides an overview of the document control and record retention process.

The risk assessment process detailed in this document has been developed in consideration of the following guidelines:

- New Zealand Standard NZS 6803:1999 *Acoustics – Construction noise*
- London Good Practice Guide: *Noise and vibration for demolition and construction*, July 2016
- British Standard BS 5228-1:2009 *Code of practice for noise and vibration control on construction and open sites Part 1: Noise*

2.0 SITE NOISE RISK ASSESSMENT

As stated previously, the following risk assessment process is intended to be applied only after the Council decision that a specific site from the annual programme of road works is to be selected for delivery during the night-time period.

The risk assessment process consists of the following tasks:

- Determine the site noise risk level rating.
- Identify noise mitigation measures.
- Acceptance and implementation of mitigation measures.

2.1 Site noise risk level rating

The level of noise risk will depend on the type of works planned and various circumstances in relation to the site. To quantify the level of noise risk for a specific site, first tick all the appropriate “Site and work details” cells in table 2.1.

Table 2.1 – Noise risk assessment

Site and work details	Tick	Lower noise risk site	Higher noise risk site
Work scheduling			
No work planned for Sundays or Public Holidays. This means no works will be undertaken later than midnight on Saturday nights.	<input type="checkbox"/>	This applies to all sites	
Line Marking works only			
Noise from line marking works is low level. As such, all sites that involve line marking works only are considered lower noise risk sites. Please see section 3 for noise mitigation measures.	<input type="checkbox"/>	Y	N/A
Existing levels of transport noise			
Site within 500 m of a major transportation noise source (road or port related), or	<input type="checkbox"/>	Y	N
Site further than 500 m from a major transportation noise source (road or port related)	<input type="checkbox"/>	N	Y
Receiver catchment type			
Urban – Medium density of housing Site surrounded by a mix of residential dwellings, open space, commercial properties, or	<input type="checkbox"/>	Y	N
Urban – High density of housing Site surrounded by residential dwellings, or	<input type="checkbox"/>	N	Y
Urban – Inner city	<input type="checkbox"/>	Y	N
Programme duration			
1 to 3 nights at one site, or	<input type="checkbox"/>	Y	N
More than three nights at one site	<input type="checkbox"/>	N	Y
Known risk elevators			
History of noise complaints inside the activity setback distance, or	<input type="checkbox"/>	N	Y
No history of noise complaints inside the setback distance	<input type="checkbox"/>	Y	N
Sensitive use spaces within the activity setback distance, or	<input type="checkbox"/>	N	Y
No known sensitive spaces with the setback distance	<input type="checkbox"/>	Y	N

If any of the ticked cells share a row with a shaded cell in the “High noise risk site” column then that site will be given a “High noise risk site” rating. There are additional noise mitigation measures in table 3.1 below that should be considered for these sites.

3.0 NOISE MITIGATION MEASURES

The measures identified in table 3.1 represent good practice noise mitigation measures identified by the Council as being practicable for the night-time works. Noise mitigation will be provided for all programmed night-time road work sites. The following table includes the minimum mitigation measures which will be provided for all sites and a further list of options that will be selected depending on the risk rating attained in the previous section.

Table 3.1 – Noise mitigation measures

Mitigation measures for all sites
Community notification and communication
<p>At least five days prior to commencing works, use the agreed community notification process to inform the relevant residents of the impending works. Base the notification on the setback distances for the planned activity. The setback distances are to be measured from the extents of the site:</p> <ul style="list-style-type: none"> - Line marking – 50 m - Road sweeping – 500 m - Milling – 500 m - Surfacing (AC) – 500 m - Surfacing (Chip seal) – 500 m <p>The community notification will cover the areas within the setback distances and advise residents about the reasons and duration of work that will be undertaken during the night-time.</p> <p>The communication to residents will include information relating to:</p> <ul style="list-style-type: none"> - Works plan showing the extents of the work. - Planned dates and times of operation. - Arrangement for vehicular access to affected properties, if required. <p>The correspondence will also include contact details for persons in control of the works and allow for feedback from residents about any special needs they may have regarding the expected noise effects during the planned work period.</p>
Site planning and layout
Consider the size of the site necessary to complete the planned works and minimise the extent of the site.
Take advantage of any available screening when planning the site layout.
Locate semi-static plant items such as generators as far from the nearest receivers as possible.
Activity scheduling
<p>Aim to undertake the noisiest activities prior to 11:00 pm.</p> <p>This includes the use of seal cutting saws and hydraulic rock breakers. Further mitigation for these two noise sources is required for High noise risk sites, as outlined in the “Further mitigation measures to be considered” section of this table (below).</p>
Shut down all plant and equipment in intermittent use or throttle it down to a minimum.
Control of the site during the works
Designate responsibility to site staff to take necessary steps on behalf of the contractor to manage noise according to the circumstances relating to the work location.
Readily provide the details for the relevant contact, if any member of the public approaches the site staff to make enquiries about the works.

Vehicle movement to and from the sites
<p>Minimise the quantity of vehicle movements to and from the site. Plan the deliveries and vehicle movements so that vehicles are not waiting or queuing near receiver locations. Use “Just in time” delivery where possible. If waiting or queuing is unavoidable then engines should be turned off.</p>
<p>Loading and unloading should be carried out as far as possible away from sensitive receivers.</p>
<p>Encourage drivers to use behaviour that limits the emission of noise from their vehicles.</p>
<p>Trucks should not use engine brakes when approaching or leaving the sites.</p>
Quiet equipment selection and use
<p>Use trucks and other plant items that have serviceable residential area type exhaust systems and are compliant with the relevant national design rules. Ensure all silencers are in good working order.</p>
<p>Do not use engine compression brakes on or around the site.</p>
<p>Reversing alarms have the potential to create annoyance. The use of the following alternatives will be considered:</p> <ul style="list-style-type: none"> - Broadband reversing alarms. - Variable level alarms. - Non-audible warning systems such as flashing lights, reversing cameras or spotters. - Proximity alarms which detect the distance from objects and generate an audible alarm in the cabin for the driver. <p>Please note, the ability of the alarm system to provide a safe system of work should be considered when selecting an alternative to tonal reversing alarms. Mobile plant and trucks operating on site for a significant portion of the works should have reversing alarm noise emissions minimised in-so-far-as possible, recognising the need to maintain workplace safety.</p>
<p>Vibratory compaction equipment shall be used in a mode which minimises the incident vibration at nearby receivers. Consideration should be given to engaging concentric weights only when running at speed to avoid run-up, run-down resonances, the use of smallest possible equipment, or turning off the mechanical vibration on vibratory rollers and undertaking more passes for areas where there is a risk that disruption may occur at receivers.</p>
<p>Use methods to minimise noise caused by dropping material into truck bodies such as adding finer material to the bed before dropping larger material into the truck body. To reduce drop height, use lower sided trucks without “Hungry boards” fitted.</p>
<p>Delivery vehicles should be fitted with straps instead of chains for securing loads where possible.</p>
On -site communications
<p>No public-address communication systems should be used during the works.</p>
<p>Radios should be operated at volumes no louder than needed to maintain clear communication.</p>
<p>Do not use vehicle horns to communicate between plant and operators. Find alternative methods.</p>

Training for site staff			
Site induction training for all site staff should include a noise awareness component.			
Noise awareness training topics covered at pre-start meetings should include: <ul style="list-style-type: none"> - The requirements of the consent for night-time road works and the team member's personal responsibilities including expected behaviours. - The location/s of the nearest sensitive receivers. - General noise mitigation requirements such as quiet plant operation, on-site communication methods, minimising noise during material handling. - Requirement for site specific controls identified during the project planning. - Designated employee parking areas. - Designated loading/unloading areas. - Scheduling of noise intensive activity. - How to manage the site if obstructions are encountered such as equipment break downs or unexpected events. - Community liaison process including complaint reporting requirements. 			
Further mitigation measures to be considered	Lower noise risk site	Higher noise risk site	Tick
Activity scheduling			
Consider the use of respite periods for projects that are expected to involve more than three nights work at the same site. For example, limit night-time works to no more than three consecutive nights per week, with each period of work separated by no less than one week and the works undertaken for no more than six nights per month.	N/A	Highly recommended	<input type="checkbox"/>
Control of the site			
Undertake regular on-site observation monitoring to check that the best practicable options for noise minimisation are being employed. Such checks should include: <ul style="list-style-type: none"> - Hours for undertaking noisy activity. - Presence of specified mitigation measures, work methods and acoustic screening. - Number and type of plant on-site. 	N/A	Highly recommended	<input type="checkbox"/>
Screening of semi-static noise sources			
Install temporary portable noise barriers adjacent to manual tasks such as seal cutting and hydraulic breaking. Stationary vehicles or site equipment should be located between the noise sources and receivers to provide additional screening, where practical.	N/A	Desirable	<input type="checkbox"/>
Hydraulic breaking			
Consider removing larger sections of spoil by lifting them out and breaking them down either in areas away from receivers, or off-site.	N/A	Highly recommended	<input type="checkbox"/>
Consider using non-percussive breaking equipment such as pulverisers.	N/A	Desirable	<input type="checkbox"/>

Noise control at receivers			
Provide information about "masking noise" that residents can use inside the home, such as white noise or ambient sounds available from free online sources.	N/A	Desirable	<input type="checkbox"/>
Issue residents with ear plugs and provide instruction for fitment. Free earplugs are available to collect at Nelson City Council Customer Services Centre with instructions on their use (should people want them).	N/A	Desirable	<input type="checkbox"/>

When the mitigation measures for the site have been agreed, a record of the acceptance of the mitigation measures should be made in table 3.2.

Table 3.2 - Acceptance by people responsible for implementation of mitigation measures

Task	Details/Comments (if required)	Contractor representative	Council representative
Community notification completed, in accordance with requirements outlined in table 3.1.			
Specific noise related issues raised during the community notification process have been managed.			
Mitigation measures (for all sites) accepted.			
Further mitigation measures (for high noise risk sites) accepted.			

4.0 NOISE COMPLAINT MANAGEMENT

The Council has established methods for managing complaints received about noise. If complaints are made directly to the Council, they will typically be received by the Council's 24/7 phone service (03 546 0200¹).

Details of the complaint are recorded in the Council MagiQ Service Request System and include:

- Name of customer
- Date and time of complaint
- Address of affected property
- Specific details of the complaint
- Method of communication (phone, email)
- Any other similar or related complaints
- Customer contact details for feedback

Upon receiving a complaint, a Service Request (SR) is created and assigned to a Monitoring Officer. The Monitoring Officer investigates the details of the complaint, contacts any relevant Council teams, carries out a site visit if warranted and responds to the customer. Details of the SR are saved on site against the resource consent as/where required. When the matter is resolved, the SR is closed out and the customer responded too (if they have requested a call back).

The Transport Operations team review the SR (generally the next morning) and action any findings or improvement opportunities that were identified during the investigation.

There are examples where complaints about noise are made directly to staff and contractors while they are carrying out their work in the field. To prepare for that possibility, all staff on-site will be informed of the correct procedure for handling noise complaints during the site induction training. Any complaint received by field staff in relation to the night-time works will initially be communicated to the project's Council representative and they will notify the Council Monitoring Team. The relevant field staff and contractor representatives will assist the Monitoring Officer with the complaint investigation as required.

Noise complaint investigations will be recorded in a brief report format for Council's record keeping purposes. The report will include the findings of the investigation and any further action required to address any identified areas for improvement.

¹ <http://www.nelson.govt.nz/footer-elements/contact/>

5.0 PROJECT CONTACT DETAILS

5.1 Nelson City Council

Matthew Bruce

Team Leader – Transport Operations

Matt.bruce@ncc.govt.nz

M 022 010 5194

Roy Miles

Transport Operations

Roy.miles@ncc.govt.nz

M 027 471 8320

5.2 Approved contractor

Fred Ludik

Higgins Contractors Ltd

f.ludik@higgins.co.nz

M 027 200 9309

6.0 DOCUMENT CONTROL AND RECORD RETENTION



All noise related site documents, including a completed version of this document for each site and any noise complaint investigation reports should be kept by the Council for a period of at least seven years.

6.1 AC19355 – 03 – R3: Noise risk assessment and management statement

Document revision history

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AC19355 – 03 – R3	Revision 3	31 July 2020

Document acceptance

Author	Signature
James Boland Senior Acoustic Engineer Acoustic Engineering Services Ltd	
Reviewer	Signature
William Reeve Senior Acoustic Engineer Acoustic Engineering Services Ltd	
Approver	Signature
Matthew Bruce Team Leader – Transport Operations Nelson City Council	