Checklist – CAC071M  
Noise and Vibration Assessment Report (MRTS51, Transport Noise Management Code of Practice: Volume 2 – Construction Noise and Vibration)

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| --- | --- | --- | --- | --- | --- |
| Contractor |  | Date |  | Review No. |  |
| Contract No. |  | Project No. |  | Project Name |  |

This project has been assessed as having a Choose an item. of Choose an item. impacts.

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| Review Decision | |
|  | The Noise and Vibration Assessment Report is considered compliant with the requirements of Transport Noise Code of Practice Volume 2 Construction Noise and Vibration requirements and should be deemed suitable by the Administrator. |
|  | The Noise and Vibration Assessment Report contains minor non‑compliance with the requirements of Transport Noise Code of Practice Volume 2 Construction Noise and Vibration that require to be addressed. However, the submitted Assessment Report is considered suitable as an Interim Assessment Report as part of the EMP(C) under Clause 33.3 of the General Conditions of Contract. The Noise and Vibration Assessment Report shall be updated and re‑submitted by the Contractor prior to the commencement of Click here to enter text.. |
|  | The Noise and Vibration Assessment Report is not considered compliant with the requirements of Transport Noise Code of Practice Volume 2 Construction Noise and Vibration requirements or MRTS51 and not suitable for the noise and vibration risk associated with the Contract. It is advised that the Noise and Vibration Management Plan should not be prepared based on the Noise and Vibration Assessment Report until it is deemed suitable by the Administrator. |

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| Reviewed by: |  | |  | |  | |
| Name |  | Signature |  | Date |  |

# Definitions

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| Conformance (C) | Fulfilment of a requirement, either contractual or legislative. |
| Non-Conformance (NC) | A failure to comply with a requirement of Contract. |
| Not Fully Verifiable (NFV) | There was insufficient evidence to determine conformance or non‑conformance. |
| Observation (O) | A positive or negative comment of the auditor based on evidence and/or an observation made during the audit. Observations may or may not suggest corrective actions. |

| Reference | Noise and Vibration Assessment Report shall: | Addressed | Comments |
| --- | --- | --- | --- |
| Clause 4.4 | Be prepared by or supervised by a RPEQ with relevant experience. |  |  |
| Clause 4.4 | Have a description of construction works. |  |  |
| Clause 4.4 | Review of sensitive and critical receptors. |  | Typically, a pre‑construction survey or surveys are used to ensure that all buildings, building contents, services and utilities and ground and landform elements susceptible to noise and vibration induced disruption or damage, are identified prior to commencement of any construction activity at the Site. |
| Clause 4.4 | Identify noise and vibration issues for consideration. |  | airborne noise  groundborne noise  groundborne vibration (including blasting)  airborne vibration (including airblast overpressure)  from all construction activities including Work Sites construction traffic, excavation and blasting and underground works. |
| Clause 4.4 | A description of measurements conducted. |  | Measurements shall be in accordance with Chapter 5 of Code of Practice Volume 2. |
| Clause 4.4 | Determine applicable noise and vibration criteria (Chapter 3 of the Code of Practice – Volume 2)  Assessment report should consider:  Noise  Airborne noise  General construction criteria (3.2.1.1)  Construction traffic (3.2.1.2)  Groundborne noise (3.2.2)  Blasting – Air blast  Vibration  Groundborne vibration  Human comfort  Blasting  Building damage (3.3.1.2)  Building contents, services, structural impacts (3.3.1.3) |  |  |
| Clause 4.4 | Detail source data used in the determination of noise and vibration. |  | Chapter 6 |
| Clause 4.4 | Detail noise and vibration prediction methods including formulae or algorithms used to determine exposure at sensitive and critical receptors. |  |  |
| Clause 4.4 | Provide results of noise and vibration predictions.  Prediction reporting shall include:  Adopted prediction methods and their general assumptions  Details of noise sources included in the predictions.   * The source of estimated noise emission should be documented including all assumptions in relation to position, adjustment for tonality, impulsivity, and so on, activity, control measures (including estimated mitigation efficiency) and adjustments when based on a similar source. Predictions of LAeq,adj,15 minute should be conducted with and without all reasonable and practicable controls, with residual exceedances noted. * The estimated sound power level for all items of plant and equipment should be included in the report including any octave band level data used and the relevant operating conditions, location and height to which the sound power level data applies.   Details of all noise sensitive receptors, including specifically the receptors’ height in relation to local ground level. Assumptions made regarding façade reflections and reflections from other surfaces in the immediate vicinity of the receptors should also be stated. In some situations it may be acceptable to limit predictions to a smaller group of representative receptors.  Details of all terrain data used in the modelling.  Details of any buildings, structures, walls, bunds or noise barriers considered to be significant and included in the modelling process. This should include specifically height relative to local ground level.  Assumptions made in relation to ground cover (hard ground, soft ground, and so on). This should include specifically any areas where propagation over water would occur for significant distances.  Meteorological data used in the modelling.  Noise prediction results should be tabulated and presented graphically as contours for sensitive receptors and compared against the criteria as defined in Chapter 3. |  |  |
| Clause 4.4 | Provide an assessment of construction noise and vibration predictions and/or measurements against construction noise and vibration criteria. |  |  |
| Clause 4.4 | Review mitigation and management options considering practicality and reasonableness. Refer to Appendix 1. |  |  |
| Clause 4.4 | Identify areas where building / structure / utilities condition surveys are required. |  |  |
| Clause 4.4 | Provide a summary of requirements to be incorporated into an NVMP. |  |  |

Appendix 1 – Noise and Vibration Mitigation and Management Measures

NOTE: These are example lists of administrative and operational measures identified in the Transport Noise Code of Practice Volume 2 - Construction Noise and Vibration, that may be employed by a Contractor to mitigate and manage noise and vibration impacts from construction activities.

The Contractor does not have to employ all of these measures. The NVMP should however utilise a suite of measures commensurate with the risk of impact from construction noise and vibration. Use this Appendix to identify which measures are to be utilised by the NVMP and consider risk‑management suitability.

| Potential Management Measures | Considered in Assessment Report | Comments |
| --- | --- | --- |
| Administrative | | |
| Provide for an induction to site personnel (including subcontractors) addressing the requirements of the NVMP and their responsibilities with regard to noise and vibration management. |  |  |
| Undertake ongoing education of supervisors, operators and subcontractors on the need to minimise noise and vibration through toolbox meetings and on‑site training. |  |  |
| Include clauses that require minimisation of noise and vibration in subcontractor agreements. |  |  |
| Develop and implement a protocol for handling noise and vibration complaints that includes recording, reporting and acting on complaints.  A complaints handling procedure should consider the following:   * A dedicated phone line should be provided to enable the community to contact a central project representative. * A central point of contact should have the authority to alter mitigation, management and construction activities on‑site. * A register of complaints should be maintained, including time, date, location, persons contact details and any details regarding construction activities which are the focus of the complaint. In addition, the actions taken as well as alterations to the NVMP should be recorded. The timeframe for response as well as likely actions should be provided immediately to the complainant by the recipient of the complaint. * Reporting procedures to notify the department (that is, project manager) within 24 hours of any complaints occurring or within 24 hours of becoming aware of any damage caused by construction activities. * Reporting procedures to notify the EHP within 24 hours of any material environmental harm or serious environmental harm caused by construction activities. |  |  |
| Organise work to be undertaken during the standard hours where reasonable, practicable and safe to do so. |  |  |
| Include a procedure for works outside standard hours to minimise the impact of any significant noise and vibration works. |  |  |
| Develop and implement administrative procedures that:   * avoid the use of radios or stereos outdoors where neighbours may be affected * avoid the overuse of external public address systems or link these systems to the telephone system where neighbours may be affected * avoid shouting and minimise talking loudly and slamming vehicle doors, and * avoid the use of horns within the construction area, except in the case of emergency or a requirement for safety. |  |  |
| Minimise mobile equipment reversing / movement or use alternative beepers, such as ‘broadband noise beepers’ or warning systems where noise assessment indicates reverse beepers / warning signals are likely to result in adverse impacts on amenity. |  |  |
| Construction traffic and deliveries | | |
| Construction traffic and deliveries management procedures include: | | |
| Setting the Site entry and egress points as far from sensitive and critical receptors as practical. |  |  |
| Providing on‑site parking for staff and on‑site truck waiting areas away from residences and other sensitive land uses. |  |  |
| Avoiding unnecessary revving of engines and switching off equipment when not required. |  |  |
| Positioning loading and unloading points away from sensitive and critical receptors. |  |  |
| Avoiding traffic calming devices which may cause loads to shift or securing loads to limit shifting. |  |  |
| Ensuring traffic movement is kept to a minimum (for example, ensuring trucks are fully loaded so that the volume of each delivery is maximised) and night time construction traffic is redirected away from sensitive and critical receptors where possible. |  |  |
| Regularly grading unsealed areas or fill potholes in sealed access roads and hardstand areas to reduce noise and vibration from vehicles. |  |  |
| Refilling aggregate bins prior to the bins being completely empty. |  |  |
| Plant and equipment | | |
| Plant and equipment management procedures include: | | |
| Selecting plant and equipment based on noise and vibration emission levels. |  |  |
| Turning off plant and equipment or throttling them down to a minimum when not in use. |  |  |
| Selecting appropriately sized equipment for the task, such as vibratory compactors and rock excavation equipment. |  |  |
| Avoiding use of plant and equipment simultaneously adjacent to sensitive receptors where possible. |  |  |
| Using alternative construction methods to minimise noise and vibration levels (for example, during clearing, excavators with grabs and rake attachments may be used instead of chainsaws, for piling, an alternative piling method may be selected. |  |  |
| Using mufflers and engine covers / screens where appropriate. |  |  |
| Ensuring equipment is operated in the correct manner and correctly maintained including replacement of engine covers, repair of defective silencing equipment, tightening of rattling components, repair of leakages in compressed air lines and shutting down of equipment not in use. |  |  |
| Avoiding where possible the night‑time use of equipment which generates impulsive noise:   * impact piling * dropping materials from a height, and * metal-to-metal contact on equipment. |  |  |
| Lining aggregate bins and chutes with a rubber material, to dampen the vibration of the structure. |  |  |
| Minimising drop height of materials when transferring (for example, loading and unloading vehicles and storage areas). |  |  |
| Using damped tips on rock breakers where appropriate. |  |  |
| Replacing noisy, fatigued sealed bearings on conveyor rollers. |  |  |
| Silencing dust extraction fan exhausts and orienting them away from sensitive receptors. |  |  |
| Enclosing standby generators or fitting them with an effective muffler. |  |  |
| Isolating stationary plant located near sensitive receptors with resilient mounts. |  |  |
| Piling and compaction | | |
| **Piling and compaction mitigation and management procedures may include the following:** | | |
| Avoiding impact pile driving where possible near noise and vibration sensitive receptors. |  |  |
| Avoiding dynamic compaction using large tamping weights near sensitive and critical receptors. |  |  |
| Providing acoustic screens to hammer head and top of pile. |  |  |
| Providing acoustic damping to sheet steel piles to reduce vibration and resonance. |  |  |
| Using resilient pad between pile and hammerhead. |  |  |
| Providing careful alignment of pile and rig. |  |  |
| Minimising cable slap and chain clink. |  |  |
| Providing mufflers and engine covers / screens where appropriate. |  |  |
| Removing obstructions which may exacerbate vibration transmission (for example, old foundations) where appropriate, prior to piling operations. |  |  |
| Providing cut‑off trenches to interrupt the direct transmission path of vibrations between source and receptors where reasonable and safe to do so. Refer to British Standard BS 5228 Part 2:2008 for further details. |  |  |
| Reducing energy per blow when piling (consider first whether this may result in prolonged exposure with no realised reduction in community disturbance). |  |  |
| Blasting | | |
| **Blasting mitigation and management procedures may include:** |  |  |
| Reducing the maximum instantaneous charge (MIC) by use of delays, reduced hole diameter, and/or deck loading. |  |  |
| Ensuring adequate stemming and eliminating exposed detonating cord. |  |  |
| Avoiding secondary blasting where possible; the use of rock breakers or drop hammers may be an acceptable alternative. |  |  |
| Avoiding toe shots where appropriate. |  |  |
| Avoiding blasting during heavy cloud cover or temperature inversions where possible. |  |  |
| Avoiding blasting during strong winds blowing towards sensitive receptors. |  |  |
| Establishing a blasting timetable through community consultation for example, blasts times negotiated with surrounding sensitive receptors. |  |  |
| Transmission Path | | |
| Transmission path mitigation and management procedures may include: | | |
| Locating construction equipment in a position that provides the most acoustic shielding from buildings and topography. |  |  |
| Scheduling construction of permanent acoustic barriers as early as possible (for example, mitigation provided by operational noise barriers may be of use during construction phase). |  |  |
| Locating temporary noise barriers between the construction site and sensitive receptors. Temporary barriers may be constructed using soil stockpiles, shipping containers and temporary site offices. The barriers should be positioned to limit gaps. |  |  |
| Constructing temporary enclosures / screens around especially noisy activities, or clusters of noisy equipment (for example, loaded vinyl or plywood temporary acoustic barriers). |  |  |
| Constructing an enclosure around significant points of construction activity (for example, tunnel portals) for construction activities greater than 12 months, if appropriate. |  |  |
| Facility layout | | |
| Maximising acoustic shielding from existing topography and buildings and from structures and buildings associated with the facility, for the nearest adjacent sensitive sites. |  |  |
| Minimising reversing movements (and use of audible reversing alarms). |  |  |
| Considering the layout and orientation of individual items of plant and equipment to ensure that, where at all practicable, intake and exhaust vents from fans, blowers and other items of powered mechanical plant are orientated away from noise sensitive sites (that is, maximise use of ‘directivity’ effects). |  |  |
| Avoiding on‑site fabrication work where possible. The use of enclosures (for example, well‑sealed shed) may be an alternative, but ventilation should be adequate and not degrade the acoustic performance of the enclosure. |  |  |
| Respite  Where all reasonable and practicable measures are implemented and noise and vibration impacts are unavoidable and significant, respite measures may be used. | | |
| Scheduling work when premises are not in operation (for example, commercial and educational facilities may not operate outside typical business hours). |  |  |
| Restricting the number of nights per week that the works are undertaken near residences. |  |  |
| Alternative mitigation and management | | |
| Where noise and vibration impacts are unavoidable and significant after all reasonable and practicable measures and respite periods are implemented, alternative mitigation measures may be used. Alternative mitigation is limited to:   * temporary relocation - involves the relocation of affected occupants for short periods of time where all reasonable and practicable measures and respite periods are implemented and further mitigation is impractical, and * architectural treatments - may involve the provision of alternative ventilation where the windows are to remain closed. |  |  |
| Community consultation | | |
| Method for disseminating information regarding the project schedule and potential impacts to the surrounding sensitive locations. The following may be used:   * letterbox drops * community meetings * newsletters * website, and * a point of contact for information (dedicated phone line). |  |  |
| Initiating a procedure for complaints response including a dedicated phone line for standard and non‑standard hours. |  |  |
| Notification regarding specific construction activities should be provided to adjacent residents and property owners likely to be affected by noise and vibration from the activity. Such notification should be provided prior to the activity commencing (typically one week notice):   * the reason for the activity * types of equipment required * the expected hours of operation, including any permitted site preparation works which will * occur outside standard hours * the likely duration and impact of operation at the Site and any requirement for subsequent   additional works   * contact details for further information and complaints. |  |  |