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CN Milton Logistics Hub Noise Reduction Plan

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1.0 Introduction

This Noise Reduction Plan describes protocols and mitigations for the reduction of noise during the construction phase of the Milton Logistics Hub (Project), located in Milton in the Province of Ontario. Construction activities will include the operation of several types of construction machinery, such as excavators, loaders, graders, and other equipment.

Construction is slated to occur during daytime hours (7am to 11pm), 7 days a week with the following potential nighttime work exceptions:

1. Isolated night-time activities including those associated with Lower Base Line grade separation
2. In circumstances where work is not technically feasible before 11:00 pm
3. Other limited activities subject to approval by the CN Engineer.

1.1 Project Background

Dufferin has been retained as the Construction Contractor for Canadian National Railway Company (CN). CN intends to construct and operate a new intermodal terminal in Milton, Ontario. The project includes the construction of an administration/garage building, six new rail tracks and associated work pads, the realignment and extension of existing mainline tracks, a new grade separation on Lower Base Line, a truck entrance, gate and queuing area, and an employee entrance, among other ancillary facilities. It also includes the establishment of an on-site stormwater management system, the realignment of Indian Creek and two of its tributaries, and the creation of on-site habitat restoration and enhancement areas.

1.2 Scope and Purpose of the Noise Reduction Plan

The Noise Reduction Plan (NRP) was prepared to identify measures to reduce noise during the construction phase 1 of the Project. This document provides mitigation measures or recommendations to minimize noise during construction on the site and off the site.

The Contractor and subcontractors will be required to abide by the mitigation measures outlined in the NRP while working on the Project and when travelling between the site and the 400-series highway network. A glossary of important definitions can be found in Section 8 of this report.

2.0 Construction Noise Control and Best Practices

Construction related noise is temporary and occurs only during active construction periods. The Contractor and subcontractors will undertake mitigation measures to minimize noise during construction as provided in the sections below.

2.1 On-Site Best Practices for Construction Noise

Contractors and subcontractors associated with the Project will abide by best practices for noise reduction including:

- All construction equipment should be properly maintained according to manufacturer's recommendations and fitted with efficient muffling devices as well as be in accordance with criteria stated in the Environmental Protection Plan (EPP).

- Limit operating time within the daytime period (7am to 11pm) whenever possible. If construction needs to be undertaken outside of the normal daytime hours, the Contractor will get CN's approval at least 7 days prior to. CN will advise local residents well in advance as outlined in the Noise Communication Protocol.
- Siting construction staging and laydown areas away from residential areas and other sensitive receptors.
- Limiting the sound power level of generators to 107 dBA for each individual unit.
- Minimize drop heights of materials and use positive noise attenuation for all construction zones where repetitive metal to metal contact may generate excessive noise, i.e. muck cars, tipping chains, dump trucks and excavators.
- Educate operators, use experienced operators and develop clean-out areas to avoid uncontrolled tailgate banging.
- Minimize reverse operations by arranging equipment to enter and leave the Site in the same direction where possible.
- Where feasible, use bidirectional equipment in order to avoid the need to reverse.
- All mobile equipment and vehicles are to be equipped with broadband backup alarms only. Emergency alarms and horns shall be used as needed for safety.
- Designated parking areas for project-related vehicles will be identified away from residential and sensitive areas.
- Use of high-capacity compressed air storage to limit compressor usage.
- Enforce speed limits of 30 km/h on the Project, including education, signage.
- Implement a no idling policy for mobile equipment and vehicles where applicable (i.e. construction equipment will be turned off when not in use).

During work adjacent to residential areas or in proximity to the Lower Base Line grade separation work, additional noise mitigation may be considered and implemented where appropriate:

- Offset usage of active heavy equipment (schedule non concurrent use).
- Where possible, investigate and implement the use of alternative construction equipment or methods to reduce noise such as electric rather than internal combustion engine or optimize silencer/muffler/enclosure performance.
- Use rubber linings in chutes and dumpers.
- Install acoustic enclosures, noise shrouds or noise curtains around noisy equipment.
- Install additional temporary noise barriers such as construction hoarding (Sound attenuating hoarding will be installed in accordance with criteria stated in the EPP).

2.2 Off-Site Best Practices for Construction Noise Impacts due to Haul Route Vehicles

Contractors and subcontractors associated with the Project are expected to abide by best practices for noise reduction when travelling between the Project and the 400-series highway network. These measures include:

- Written instructions/directions provided to construction trucks (multiple languages) that include preferential routing, access points, Rules of the Road, use of traffic circles, cyclists/pedestrians, speed, avoidance of engine retarders within City limits.
- Access to the Project will be restricted to approved access points.
- Labeled project specific signage near entry/exit points that include reminders on speed limits, no idling, no tailgate bumping, no engine retarders, etc.



3.0 Noise Management Procedure

CN has committed to undertaking noise verification during the course of construction. The Noise Follow-up Plan outlines the timing, methodology and locations for when this verification process will be undertaken. An adaptive management process is part of this plan in the event noise levels do not meet thresholds and additional mitigation measures are necessary. If this should occur, CN will work with the Contractor to implement any additional measures as outline in this plan or identify other measures as necessary to ensure noise thresholds are respected.

To inform the community and interested parties of construction activities occurring during the nighttime hours, CN has developed a Noise Communication Protocol. This document also outlines the process and methodology of advising CN of noise concerns. CN and the contractor is committed to reviewing complaints to determine if they are Project related and working to help mitigate them as necessary.

4.0 Vibration Mitigation Measures and Best Practices

Construction equipment has the potential to produce ground borne vibration. As a result, 50m setbacks will be established around the heritage buildings. In the event construction needs to occur closer than 50m from a heritage structure, CN's Environmental Monitor will be advised in advance to arrange vibration monitoring to ensure levels of PPV do not exceed vibration threshold. In the event exceedances occur, additional mitigation such as alternative equipment, reducing quantity of equipment and others as determined with the Contractor will be implemented.

5.0 Responsibilities and Training Requirements

The Contractor is responsible for ensuring the requirements of this Noise Reduction Plan are appropriately implemented. To accomplish this, select employees will be trained on this NRP based on their job function and role. This includes: the deployment, maintenance and inspections of equipment, and operations. The employee's responsibilities will be designated with regard to these activities.

- Communicate the best management practices to the responsible supervisors, who shall ensure personnel are following operating procedures as defined in this NRP.
- Ensure is reviewed regularly for changes or updates.

The contractor will ensure the Site Managers have the following responsibilities:

- Ensure that this NRP is followed, and formal training is provided to the appropriate staff.
- Knowledge and understanding of the practices and control measures as outlined in this NRP in order to provide guidance where required.
- Maintaining this plan along with complaints and maintenance logs.

All applicable workers are to receive training so they are competent in the best management practices regarding acoustic controls appropriate for the work they would be undertaking.

The Site Manager shall provide formal training on these procedures to all site personnel and subcontractors, and in the event of changes to this NRP.

The Site Manager will also be responsible for identifying a list of personnel who are trained in acoustic control measures. Records of the training and attendees will be maintained on-site.

The Site Manager or trained individuals will be responsible for the inspection and maintenance of on-site equipment. All inspections and maintenance will be included in the inspection log.

As a minimum, the following activities or events shall be inspected and recorded in the inspection logs:

- Weekly inspection of haul routes and roadways will be carried out and maintenance will be performed as soon as conditions allow.
- Unpaved roads and regularly travelled portions of the site will be re-graded as required.
- All on-site heavy mobile equipment is to be inspected before first use to ensure properly functioning, with necessary noise controls as identified in the NRP and compliant with NPC-115 equipment guidelines.
- All heavy mobile equipment shall be kept in good working order and fitted with working mufflers, appropriate broadband back up alarms as required.

6.0 Definitions

Decibel: Logarithmic unit associated with Sound Pressure Level, sound power level, or acceleration level. Symbol: dB.

Decibel, A Weighted: Logarithmic unit associated with Sound Pressure Level, where Sound Pressure signal has been filtered using frequency weighting that mimics response of human ear to quiet sound levels. Resultant Sound Pressure Level is representative of subjective loudness response of human ear.

A weighted Sound Pressure Levels are denoted by suffix 'A' (for example dBA), and the term pressure is normally omitted from description (for example, sound level or noise level).

Symbol: dBA.

Sound Pressure: At a point in space, root mean square determined over specified time interval of Instantaneous Sound Pressure. Unit: Pascal (Pa). Symbol: p.

The term Sound Pressure is also used generically to mean fluctuating pressure that is superimposed on atmospheric static pressure due to presence of sound wave. For purpose of this Section, it has the restricted meaning, noted above.

Sound Pressure Level: Ten times the common logarithm of the square of the ratio of the Sound Pressure to the reference Sound Pressure of 20 micropascals. Unit: Decibel (dB). Symbol: Lp.