Noise and Vibration Study

The purpose of this document is to provide a term of reference for the preparation of a Noise and Vibration Study, which may be required as part of the submission of an application for Official Plan Amendment, Zoning By-law Amendment/Community Planning Permit, Draft Plan of Subdivision/Condominium, Site Plan, Consent and Minor Variance.

A Noise and Vibration Study determines the projected sound and vibration exposures for a proposed development both from and to adjacent uses, for stationary and transportation related noise sources including but not limited to railway and aggregate operations, and any mitigation measures needed.

Required by Legislation

The Ontario Planning Act, the Provincial Planning Statement, the District of Muskoka Official Plan and Area Municipal Official Plans.

Who should prepare this study?

A Noise and Vibration Study must be completed by a registered professional engineer qualified in acoustical engineering and experienced in the preparation of noise and vibration studies.

Why do we need this study?

The study is required to assess the potential environmental impacts on a proposed development and ensure mitigation, if required, is compliant with the Environmental Protection Act ensuring the projected sound levels on the proposed development do not exceed the Ministry of the Environment regulated sound limits. The study also is required to support land use compatibility assessments in implementing the objectives of the Planning Act as well as provincial policies and plans.

How should this study be prepared?

A Noise and Vibrations Study should at a minimum contain:

Introduction

- Address of the subject property
- General site location of the subject property
- Project Name (if applicable)
- Applicant and owner's contact information
- Author name, title, qualifications, company name and appropriate stamp
- Brief description of the proposal

- Overview of the study area
- Purpose of the study
- Location and context map

Proposal Description and Context

- A description of the proposal, development stats (such as number of units, site area) type of development proposed, height, parking areas, access points, location of amenity areas, specified receptor location(s), proposed phasing
- A description of the existing on-site conditions as well as surrounding areas, roads, natural areas, buildings, parking areas
- Concept Plan for the development including building location, parking, access, amenity area, grading, natural features and any natural hazards, proposed streets

Investigation/Evaluation

- Identification of the noise source(s)

Noise Impact Study

- Description of the sound level guidelines/standards applied (methodology and approaches)
- Identification of both Transportation and Stationary noise source(s), all the assumptions related to the stationary noise sources should be clearly documented in the report
- Data collection (e.g. ultimate AADT, truck percentage, reference sound power data, noise measurement, etc.)
- Receptor selection process
- Noise impact assessment (including low frequency noise impacts)
- Unmitigated and mitigated noise level forecasts (e.g. tables showing ultimate road traffic and predicted unmitigated sound energy exposures outdoors)
- The report must be stamped, dated, and signed by a Professional Engineer

Impacts and Mitigation Measures

- Indoor: architectural requirements, ventilation requirements
- Outdoor: at source requirements, sound barriers (i.e. description and site plan with noise mitigation)
- Warning clauses
- Vibration mitigation requirement

Recommendations

- Summary and conclusions of the supporting studies and how they support the development and any special considerations or conditions that should be imposed
- Any recommendations, or conditions that should form part of a decision on the matter

Drawings and Supporting Information

- Base Noise Level Calculations (Noise Source Data)
- STC calculations
- Ministry of Environment Noise Guidelines
- Sample Sound Exposure Calculation (depending on the needs of the District/Municipality)
- Field data for vibration measurement data

What else should we know?

The scope of the study should be discussed with the district and/or area municipal planning staff and or other staff or agencies as part of the consultation process.

A noise and vibration study (or environmental noise analysis) should be based on the applicable guidelines established by the Association of Professional Engineers of Ontario, the Ministry of the Environment, Conservation and Parks, CNR, District of Muskoka, District Engineering Design Standards and Municipal By-laws.

Additional Terms

To be identified by the District and/or Area Municipality where proposed development is located.

Study Submission Instructions

To be identified by the District and/or Area Municipality where proposed development is located.

What other resources are there?

Environmental Protection Act, R.S.O. 1990, c. E.19
O. Reg. 419/05: Air Pollution - Local Air Quality under Environmental Protection Act, R.S.O. 1990, c. E.19
Environmental Noise Guideline - Stationary and Transportation Sources - Approval and Planning (NPC-300)
FCM Guidelines for New development in proximity to Railway Operations (May 2013)
Ontario Environmental Land Use Planning Guides
Professional Engineers of Ontario
District Municipality of Muskoka Design Criteria and Standards Manual
Ontario Professional Planners Institute (OPPI) – Hire an RPP
Ontario Planning Act, R.S.O. 1990
Provincial Planning Statement 2024 (PPS)
Muskoka Official Plan (MOP)

Applicable Area Municipal Official Plans:
Town of Huntsville Official Plan
Town of Bracebridge Official Plan
Town of Gravenhurst Official Plan
Township of Lake of Bays Official Plan
Township of Muskoka Lakes Official Plan
Township of Georgian Bay Official Plan

About these Terms of Reference

The need and scope for this study will be decided by the District and/or Area Municipality during initial pre-consultation process with input from partner agencies. This pre-consultation process may include:

- Determination if this study is applicable
- Confirmation of criteria within these Terms of Reference that are appropriate for your development project
- Identification of specific technical components that need to be addressed
- Identification of detailed standards to be met

Notes:

If the proposed development is revised, the study/report shall reflect the revisions by an updated report or letter from the author indicating the changes and whether or not the recommendations and conclusions are the same (Note: this is subject to the extent of the revisions).

A peer review may be required. The cost of the peer review will be borne by the applicant.

If the submitted study is incomplete, is authored by an unqualified individual or does not contain adequate analysis, the applications will be considered incomplete and returned to the applicant.