

**Effective Date**

June 11, 2025

**Approving Authority**

City Council

**Policy Owner**

Director, Roadways &  
Transportation

2025-04-CO

# Noise Attenuation Policy

## Purpose & Scope

### Purpose

- 1 The objective of this policy is to define the currently accepted practices for traffic noise attenuation in the City of Regina. This policy will cover:
  - (a) requirements of traffic noise assessment, such as modelling;
  - (b) noise level limits;
  - (c) direction and clarification on terms and requirements for addressing traffic noise, and
  - (d) requirements for noise attenuation.

### Scope

- 2 This policy applies to the outdoor assessment locations of noise sensitive land uses for road traffic noise in:
  - (a) capital works projects - projects such as the construction of new road alignments, widenings, realignments or other projects affecting traffic noise levels, and
  - (b) new noise sensitive developments - projects in the planning and approval stages where new noise sensitive land uses are proposed or noise attenuation is integrated into the design of the development where applicable.

## Policy Provisions

- 3 The following definitions apply to this policy:
  - 3.1 A-weighting network, dBA means the frequency weighting network intended to represent the variation in the ear's ability to hear different frequencies. Overall sound levels calculated or measured using the A-weighting network are indicated by dBA rather than dB.

- 3.2 Annual average daily traffic (AADT) means the total volume of vehicle traffic of a public highway divided by 365 days.
- 3.3 Decibel, dB means a logarithmic ratio, not strictly a unit, used to describe sound levels. For sound pressure, the reference level is 20 micro pascals (threshold of hearing).
- 3.4  $L_{eq}$  16-hour (day) means the equivalent sound level over the 16-hour daytime period. For this policy, it is taken during the period from 07:00 to 23:00.
- 3.5  $L_{eq}$  - equivalent sound level means the value of a constant sound pressure level which would result in the same total sound energy as would the measured time-varying sound pressure level over equivalent time duration. The  $L_{eq}$  1-hour, for example, describes the equivalent continuous sound level over a 1-hour period.
- 3.6 Noise means sound created by traffic on public roadways. This includes sounds like tires hitting the pavement, engine noise, braking and aerodynamics. It does not include noise from stunting, engine retarder brakes, illegal modifications of vehicles, trains, and airplanes.
- 3.7 Noise barrier feasibility – administrative: means the feasibility of a capital works noise barrier to be located in an allowable location. The barrier or other mitigation option is to be placed within the public right of way, and/or easement where applicable. Locations where noise mitigation is impractical are not feasible.
- 3.8 Noise barrier feasibility – economic: means the feasibility of a capital works noise barrier to be below allowable costing limits. Economic noise barrier feasibility is described in allowable cost per benefited receptor. This cost limit is subject to change based upon market conditions and budgeting constraints. This limit is to be obtained by the City for each project.
- 3.9 Noise barrier feasibility – technical: means for capital works projects, the technical feasibility of a noise barrier to achieve the minimum noise reduction requirements.
- 3.10 Receptor means a property that is considered noise sensitive (see Sections 8 through 10). A property may have multiple receptors such as housing co-ops, townhouse developments and some multi residential unit buildings.
- 3.11 Seasonal average daily traffic means the average daily volume of vehicle traffic on a public highway during a specific season.
- 3.12 Sound means pressure wave traveling through a medium, such as air.
- 3.13 Sound pressure means the instantaneous difference between the air pressure produced by sound and the average barometric pressure at a given location.
- 3.14 Sound pressure level (SPL,  $L_p$ ) means the ratio of the instantaneous sound pressure and a reference sound pressure of 20  $\mu$ Pa (0 dB). Reported and measured in decibels (dB or dBA).

3.15 Ultimate buildout means the final intended lane configuration and design traffic volume for a public highway.

### **Noise Sensitive Land Uses**

- 4 Noise sensitive land uses in the context of new developments are:
  - (a) residential properties with ground level back and/or side/flanking yard, with respect to the subject roadway;
  - (b) multi-dwelling residential properties with common use outdoor space (can be above ground level);
  - (c) schools with common use outdoor space (can be above ground level), and
  - (d) hospitals with common use outdoor space (can be above ground level).
- 5 Noise sensitive land uses in the context of capital works projects are:
  - (a) residential properties with ground level back and/or side/flanking yard, with respect to the subject roadway;
  - (b) multi-dwelling residential properties with ground level common use outdoor location, and
  - (c) hospitals with ground level common use outdoor space.
- 6 Commercial and industrial land uses are not considered noise sensitive.

### **Traffic Noise Assessment**

- 7 All traffic noise assessments for capitals works and new development projects shall be completed by a qualified professional engineer experienced with traffic noise mitigation.
- 8 Noise Screening
  - 8.1 The City of Regina's design standards include a screening table to determine if traffic noise assessments are required for new developments. Noise screening is not required for capital works projects due to their proximity to noise sensitive land uses.
  - 8.2 Noise screening can be conducted and supporting document(s) submitted to the City of Regina, in lieu of a traffic noise assessment report submission, for new developments outside of the screening distances. Developers shall comply with the screening distance requirements in the City's design standards.
  - 8.3 Regardless of requirements for submission of a traffic noise assessment to the City of Regina, all new developments are required to meet the noise level limits in this policy at the time of approval.
- 9 Assessment Time Horizon: Traffic noise assessments for new developments shall be based upon the anticipated road traffic in a mature state of development which is defined

as the ultimate buildout. The City of Regina will provide anticipated traffic volumes for the ultimate buildout of the development.

## 10 Field Measurements

10.1 Field measurements may only be used for the assessment of traffic noise when traffic noise predictions cannot be conducted. These field noise measurements shall only be used:

- (a) with prior approval from the City of Regina, and
- (b) only to establish pre-project noise conditions where:
  - (i) background noise levels are expected to be uniform, and
  - (ii) predictions of existing road traffic noise are not feasible.

10.2 These field measurements shall be conducted during periods where traffic conditions are representative of the traffic volumes being assessed (seasonal average daily traffic vs annual average daily traffic).

10.3 All persons taking field measurements shall do so in accordance with the City of Regina's design standards.

## 11 Traffic Noise Prediction Method

11.1 Traffic noise predictions should be conducted using noise models currently accepted by the United States Federal Highway Administration (FHWA). As of the approval date of this policy, the FHWA's traffic noise model (TNM) prediction algorithms are used. It is incumbent on the proponent to determine and confirm the algorithm accepted by the FHWA at the time of the assessment. Alternative noise prediction methods may be used at the discretion of and upon prior approval by the City of Regina. Noise modeling should be conducted by a qualified professional engineer experienced with traffic noise prediction and mitigation.

11.2 All noise modeling shall be done in accordance with the City of Regina's design standards.

## Capital Works Projects

12 For capital works projects, noise attenuation will be required when the post-project noise level exceeds the overall noise level limit of 60 dBA  $L_{eq}$  16-hour (day) at outdoor assessment locations, and when the post-project noise level is at least 5 dB greater than the pre-project noise level. A noise study will be required comparing noise levels between the future ultimate buildout "no project" scenario and the future ultimate buildout "project" scenario.

Criteria Type	Mitigation Investigation Trigger
Overall Noise Level	60 dBA $L_{eq}$ 16-hour (day) or greater; and
Change in Noise Level	5 dB or greater increase

## Noise Sensitive Developments

- 13 During the planning of new noise sensitive developments, developers shall consider noise attenuation to ensure traffic noise levels are below 60 dBA  $L_{eq}$  16-hour (day).
- 14 Noise screening can be conducted by a developer as described above, in lieu of a noise assessment report, for submission to the City of Regina. Regardless of report submission requirements, the new noise sensitive development is required to meet the noise level limit in this section.
- 15 The noise level limit at outdoor assessment locations is a maximum of 60 dBA  $L_{eq}$  16-hour (day), based upon the roadway ultimate buildout traffic volumes.

## Noise Mitigation Measures

- 16 When required, noise barriers installed to meet outdoor noise criteria shall:
  - (a) for capital works projects:
    - (i) provide a minimum noise attenuation of 5 dB averaged over the first row of receivers;
    - (ii) have a design target (as close to or below) of 60 dBA  $L_{eq}$  16-hour (day) where feasible, and
    - (iii) meet noise barrier feasibility (administrative, technical, economic), and
  - (b) for new developments:
    - (i) ensure noise levels are below the 60 dBA  $L_{eq}$  16-hour (day) criterion, and
    - (ii) be maintained by the owners of the development during the one-year warranty period, and
  - (c) meet all other noise barrier requirements as specified in the City's design standards.
- 18 The City shall attain ownership and maintenance responsibilities of the noise attenuation infrastructure after the warranty period expires.

<b>Date Approved</b>	June 11, 2025
<b>Date of Last Review</b>	June 1, 2025
<b>Date of Next Review</b>	June 1, 2027