



City of Leduc Policy

Policy Title: Surface Transportation Noise

Policy No: 31.00:07

Supersedes: N/A

Revision #: New

Council Authority
Approval Date: September 18, 2023
Effective Date: September 18, 2023
Relevant Legislation: N/A
Relevant Council Date of Resolution(s): N/A
Relevant Bylaw and Date(s): N/A
Authority's Signature:

Purpose:

The intent of the Surface Transportation Noise Policy is to provide the design noise levels descriptors, design criteria, and the responsibility for providing noise attenuation. A consistent framework is necessary for the assessment and the attenuation of forecasted or actual traffic noise in residential neighborhoods.

Definitions:

- A. Sound Level Descriptor – The sound level descriptor to be used in all assessments will be the 24-Hour Energy Equivalent Sound Level or Leq (24 Hour) expressed in A-weighted decibels or dBA. All sound levels in this guideline are Leq (24 Hour).
- B. Major Transportation Facilities – Existing or proposed arterial roadways, primary or secondary highway corridors
- C. Outdoor Amenity Area – defined as the ground level backyard area immediately adjacent a housing unit. This policy excludes the common areas and all amenity spaces in apartment style multifamily developments because they are to be attenuated through the architectural design of the development. No noise attenuation measures will be provided for outdoor spaces at second or subsequent stories of houses, protection should be provided on an individual basis using architectural treatments.
- D. Noise Attenuation – Intervention to reduce noise in a residential area to a level below the design noise level criteria
- E. Community Fencing – Council may authorize fencing (which may or may not be to a noise barrier standard) in the community for reasons outside noise level criteria contained in this policy. This will be determined by a committee of council and is not contemplated in this policy.

Policy:

This policy addresses traffic noise (engine noise from vehicles, tire noise, typical acceleration/deceleration) generated on a typical weekday (dBA Leq24). The City of Leduc's Community Standards Bylaw 995-2018 (or latest version) deals with other noise nuisances from sources such as: motorcycles, engine retarder brakes, construction, neighbours, and garbage collection. Rail noise generated by Federally regulated facilities is not within the jurisdiction of the City of Leduc's Surface Transportation Noise Policy.

Residential development adjacent to a major transportation facility may experience traffic noise problems resulting from proximity to the corridor/facility. Based on field measurements and/or computer calculations, facilities are identified as having a potential noise problem and a noise impact analysis is required. In cases where residential development is proposed adjacent to existing or future transportation corridors/facilities, the developer is responsible for providing a noise impact analysis. This requirement and the analysis methodology is reviewed and approved by the Engineering and Environment Department.

ANALYSIS METHODOLOGY

When field measurements are taken the receiver location will be placed approximately mid yard and 1.5 metres above the ground elevation at that point. Where specific building locations on lots have not yet been determined the test receiver shall be placed at a distance 5 m from the rear lot line.

Modeled noise levels are to predict future sound levels based on the long-term traffic volumes as forecast in the current City of Leduc Transportation Master Plan (TMP). This testing methodology applies to all existing and proposed residential developments that require modeling. When data from the TMP is not available traffic volumes used are to be discussed with the City of Leduc.

In all cases, to maximize benefit/cost, noise attenuation should be constructed to achieve a minimum 5 decibel reduction in the outdoor amenity area. There may be instances where these criteria are not achievable and, therefore, the design noise level cannot be applied in all cases. The achievement of design noise levels must be technically, economically, and administratively feasible. Therefore, feasibility is determined when the city reviews the details of the noise attenuation design and all alternative measures have been evaluated. Construction of noise attenuation fencing, where appropriate and subject to availability, is considered if monitored or modeled data is above the maximum noise criteria.

Noise monitoring for existing development will occur at minimum with every update of the Transportation Master Plan. If the location previously had the noise level monitored and no significant changes in traffic volume have taken place additional testing will only be done at the discretion of the City of Leduc.

RESPONSIBILITY FOR IMPLEMENTATION

The City's responsibility for achieving desirable noise levels is an ongoing process. As a general principle, the timing for providing noise attenuation is the most critical factor in determining responsibility for funding its implementation.

In almost all cases, the assessment of noise attenuation requirements and responsibilities will fall into one of the following categories:

Category 1 – New Residential Development:

Developers will be required to ensure that the modeled maximum outdoor amenity noise level does not exceed 55 dBA as described in the current version of the Leduc Engineering Design Standards. If the modeled sound level exceeds 55 dBA the developer is responsible for providing noise attenuation. Unless site characteristics, such as topography or existing land uses, necessitate the consideration of relief from the requirement. The developer shall construct or provide funds for the construction of the attenuation measures required.

Category 2 – Existing Residential Development:

In the case of existing development areas where the residential dwellings are adjacent to an existing major transportation facility the outdoor criterion sound level is 65 dBA. When a measured outdoor amenity noise level exceeds 65 dBA the City will consider, on a priority and availability of funds basis, the construction of noise attenuation measures that are determined by administration to have the desired attenuating effect where technically and economically feasible.

Category 3 – Upgraded Transportation Facility:

When residential dwellings, in an existing development area, are adjacent to a major transportation facility that is going to be significantly upgraded (i.e. by at least one lane width each direction) noise attenuation may be required. If this upgrade causes the modeled noise levels from the long term TMP traffic volumes to exceed the outdoor amenity sound level of 65 dBA noise attenuation will be included in the project where technically and economically feasible.

Category 4: - Highways Under Provincial Jurisdiction

In the case of existing development areas, where the residential dwellings are adjacent to highways under Provincial jurisdiction (currently only Highway 2) Alberta Transportation is responsible for noise attenuation as described by the Provincial Policy Guidelines. The Provincial Policy Guidelines may be updated or replaced from time to time by the Provincial Government.

Category 5 – Local Improvement:

In the case of existing development areas, where the residential dwellings are directly adjacent to a roadway and the measured outdoor amenity noise levels are below the 65 dBA and the residents want a reduced noise level a local improvement could be applied to implement fencing. The City would construct the noise attenuation barrier and all costs will be funded by the affected residents through a local improvement tax in accordance with the Municipal Government Act RCA 2000, M-26.

GENERAL

Noise Monitoring services must be completed and reviewed by a professional engineer or suitable alternative licensed professional. Type/Class 1 noise monitors should be used, and, at minimum, 24 hours of continuous data must be collected. The City of Leduc prioritizes the construction of noise barriers according to technical and economic feasibility. Candidate locations are ranked according to the expected benefit/cost ratio of the project based on factors such as the severity of the noise levels, the amount of noise reduction and the number of residential units that will benefit. The process involves a feasibility review of candidate locations and ranking based on a benefit/cost analysis. Project priority and funding level is determined by the city. Retrofit request will be dealt with on a case-by-case basis by the City based on this Policy for inclusion in the 10-year Capital Budget.

Noise barriers are only constructed in continuous lengths (with overlapping breaks at existing walkways) and normally for entire city blocks to provide meaningful noise attenuation to the backyard recreation area of residences. The design of the proposed noise barriers will be submitted to the City for approval. When noise attenuation is installed at a shared property line it is the residence's responsibility for all maintenance of the entire barrier. If the noise attenuation was constructed from masonry or specialized non-wood material, it would be the City's responsibility for maintenance. For locations when noise attenuation is installed solely on public land, it is the City's responsibility for all maintenance. Maintenance for any fencing installed under category 4 will be Alberta Transportation responsibility.