

NOISE MITIGATION and LIVEABILITY in QTN

A Preventive Practical Proposal by Queensway Terrace North Community Association

Introduction and Background

The Queensway Terrace North neighborhood (QTN) will experience significant change in the next decade because it is located between two major redevelopment areas, in proximity to three new LRT stations. On the north side, the Lincoln Fields Secondary Plan will enable dramatic intensification of the area between QTN and the Lincoln Fields LRT station, including mixed use high rise developments, more street-oriented commercial space, and an expected increase of more than 11,000 housing units. On the south side, under the new Pinecrest/Queensview Secondary Plan, land uses along Queensview Drive will change from light industrial to intensive mixed residential and commercial uses, including high rises on the south side and mid-rises on the north side of Queensview Drive

Residents along the south side of QTN, who have been living with excessive noise from Highway 417 and heavy bus traffic along Queensview Drive, will be exposed to additional noise from the LRT system. There are no noise walls along Highway 417 in this area because Queensview Drive was classified as an industrial area. Other residents of QTN have experienced the negative impacts of high noise levels associated with LRT construction and remain concerned about the long-term impacts of noise associated with operation of the LRT line through this area. Residents in QTN have increased awareness of how much noise impacts their personal health and ability to live well. For this reason, the QTN Community Association (QTNca) is exploring possible ways to mitigate on-going exposure to high noise levels, as QTN transitions from a suburban to an inner-urban neighborhood.

The City of Ottawa Environmental Noise Control Guidelines, revised in 2016, are intended to work in concert with the City's Noise Control By-law (Bylaw 2004-253) and the Environmental Protection Act to comprehensively provide and protect livable and healthy public and private spaces in the city. These policies provide the legislative framework for exploring noise mitigation measures. Three current priorities in QTN are (i) minimizing operational noise impacts from Phase II LRT; (ii) revising the standards in the City of Ottawa's Environmental Noise Guidelines to align with the Ontario Environmental Noise Guidelines and have exclusion limits of 50 dbA for stationary and transportation sources at outdoor points of reception; and (iii) shielding residents and public spaces from persistent Highway 417 traffic noise.

LRT Sound Protection and Monitoring

We appreciate that the City has agreed to install protective sound walls along the LRT right of way north of the flyover bridge and to the west across Cannaught Park. We understand that there

will be no sound barrier on the flyover itself; instead, sound insulators will be installed on the rails on the flyover.

We learned from the LRT Phase I project that sound projection from the LRT is very difficult to predict. A case in point was the unanticipated amplification of sound from LRT vehicles in the trench east of Tunney’s Pasture Station. According to an August 2019 statement attributed to Michael Morgan, the City of Ottawa Director of Rail Construction, the trench track required resilient rail fasteners which reduced vibration at ground level but increased the noise heard at higher levels. CBC reported that a resident at 215 Parkdale Avenue compared the rail wheel sound from passing LRT vehicles to a “CF-18 fighter jet.” This uncertainty highlights the importance of regular monitoring and remediation.

Unique Characteristics of LRT Passing Through QTN

The rail corridor section from Carling Avenue to the flyover bridge near Woodroffe High School has up to four separate regular service rail lines, making it the most complex and active corridor on the electrified LRT system. No other section in the LRT system has as many regular service rail lines or as many trains per hour. This rail section also contains nine turnouts and two diamond crossings to redirect LRT vehicles onto different rail lines, each of which represent additional discrete noise sources (see Figure 1). Because of these factors, we believe that the risk for unanticipated LRT operational noise amplification is high and that it will most likely be evident during testing.



Figure 1: Turnouts and diamond crossings under construction

QTN Request for LRT Noise Monitoring

As part of the LRT operational test program, we request that sound level recordings be made at several locations, drawing on community input about areas with high noise levels.

In addition, the “Ottawa Light Rail Transit Public Inquiry” report, November 2022, gave focus to the phenomena of rail corrugation both as a noise source and a contributing factor to derailments. Rail corrugation increases over time and is most common in curved track sections. Periodic grinding of the rails is a normal maintenance procedure used to control corrugation. To prevent the negative impacts of excessive noise related to corrugation, QTNca requests that permanent noise monitoring stations be installed at critical locations to detect changes in rail corrugation noise and take remedial action.

Highway 417 Traffic Noise

While there are noise barriers along much of Highway 417, there are significant gaps in the area along QTN, from Connaught Avenue to Pinecrest Road and from the transitway underpass to Hindley Street. With the change in land use designation along Queensview, from industrial to mixed residential-commercial use, this area should now meet the eligibility criteria for noise barriers under the provincial legislation that governs Highway 417. Normally, noise studies and the addition of noise barriers are only considered when there are proposals for highway widening. Rather than waiting until there are plans to upgrade the highway, QTNca requests that noise studies be done now because of the combination of additional transportation noise from the LRT and the major intensification planned in the new mixed-use area.

QTNca also requests consideration for installation of a second section of noise barrier from the transitway underpass to Hindley Street, bordering Connaught Park and the picturesque Pinecrest Creek. Connaught Park and Pinecrest Creek will be the closest natural space for thousands of new residents in the planned intensification along Queensview Drive. This natural woodland area, which is a treasured green space, will be heavily used in the future. Reducing noise pollution in this area will contribute to its preservation and enjoyment as a natural retreat in the midst of urban intensification.



Figure 2: Pinecrest Creek alongside Connaught Park

Noise Analysis Method

The City of Ottawa’s Environmental Noise Control Guidelines, published in 2016, are based on the United States Federal Transit Administration (FTA) Transit Noise and Vibration Impact Assessment Standards. The FTA standards were updated in 2018. The City of Ottawa guidelines differ from the FTA Standards with respect to the required noise level analysis method. The city analysis method is now outdated and we respectfully request that it be updated to best practice.

Specifically, the City of Ottawa guidelines recommend using Equivalent Sound Level analysis (Leq(t)) where the time envelope can be 16, 8 or 1 hour. The updated FTA standard requires that a 1-hour time interval be used to calculate (Leq(1)) “computed for the noisiest hour of transit-related activity during which human activities occur at the noise-sensitive location.” The FTA 1-hour time interval is a better noise assessment method for community noise protection than the one specified in the City of Ottawa guidelines. The City takes pride in using best practice methods; therefore it follows that the noise guidelines be updated to the FTA analysis requirements. Using best practices will increase public confidence in the City’s noise control efforts.

Standards in City of Ottawa Environmental Noise Guidelines

Other jurisdictions, such as the City of Toronto, have upgraded the noise limits in their city policies, based on growing research evidence about the negative impacts of noise for physical

and mental health. While the City of Ottawa’s Environmental Noise Control Guidelines are comprehensive and well-developed, there is good reason to review the adequacy of the various standards it uses, to ensure that Ottawa is following the best practices in this field. It is noteworthy that the Ontario Environmental Noise Guidelines for Stationary and Transportation sources recommends a 50 dbA limit at outdoor points of reception, compared to the 55dbA limit in Ottawa’s guidelines. Making the City of Ottawa Guidelines consistent with the Ontario Guidelines would be a substantive improvement for residents who live with transportation noise on a daily basis. (See Table below from Ontario Guidelines)

**Table B-1 Exclusion Limit Values of One-Hour Equivalent Sound Level (L_{eq}, dBA)
Outdoor Points of Reception**

Time of Day	Class 1 Area	Class 2 Area	Class 3 Area	Class 4 Area
07:00 - 19:00	50	50	45	55
19:00 - 23:00	50	45	40	55

(Government of Ontario (2013). [Environmental Noise Guidelines – Stationary and Transportation Source – Approval and Planning \(NPC-300\), paragraph B7.1. Table B.1](#))

Requests:

- 1) QTNca requests that residents in the most affected areas be involved in the identification of locations that experience noticeably louder LRT operational noise. Early engagement during the LRT testing phase may help identify areas of excessive noise exposure.
- 2) QTNca requests that permanent noise monitoring stations be installed at the locations experiencing higher levels of LRT operational noise. This includes locations where rail corrugation is most likely and where the nine turnouts and two diamond crossings are located.
- 3) The QTNca Noise Committee wishes to have access to processed data and analysis from noise monitoring stations. We request that access to the data be provided monthly, on a non-aggregated basis, to foster greater transparency and public accountability in monitoring noise issues.
- 4) QTNca recommends that noise data be processed (a) in accordance with the City of Ottawa’s Environmental Noise Control Guidelines and (b) in accordance with the FTA standards requiring a 1-hour time interval computed for the noisiest hour of transit-related activity during which human activities occur at the noise-sensitive location.
- 5) QTNca requests that the City review the standards in the City of Ottawa’s Environmental Noise Control Guidelines in light of international research about the negative health impacts of high noise levels and revise the exclusion limits for one-hour equivalent sound levels for outdoor points of reception from 55dbA to 50 dbA, to be consistent with the Ontario Environmental Noise Guidelines for Stationary and Transportation Sources.
- 6) QTNca requests that the City of Ottawa work with the Ontario Ministry of Transportation to construct noise barriers along the north side of Hwy 417, from Connaught Ave to Pinecrest Road and from the transitway underpass at Hwy 417 to Hindley St.

Next Steps

The QTNca Noise Committee would like to discuss this proposal with relevant City officials in greater detail. We are open to exploring alternative means to achieve the goal of preventing exposure to excessive noise levels, which has a significant negative impact on liveability for the public and private spaces in our neighborhood. We hope we can work together in practical ways that benefit all the residents of the community and also help achieve the City's goals for liveable neighborhoods.

Prepared by: QTNca Noise Committee, appointed by the board of QTNca
For more information, please contact Kathy Vandergrift, President, QTNca,
qtncommunity@gmail.com.