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The Regional Municipality of Durham Report

To: Works Committee
From: Commissioner of Works
Report: #2023-W-8
Date: February 8, 2023

Subject:

Outline of Noise Attenuation Guidelines and Policies for Regional Road Corridors

Recommendation:

That the Works Committee recommends that this report be received for information and forwards it to Regional Council for information.

Report:

1. Purpose

- 1.1 The purpose of this report is to provide an outline of the Regional Municipality of Durham's (Region) current noise attenuation guidelines and policies for the installation and maintenance of noise attenuation barriers on or adjacent to Regional road corridors. A noise attenuation barrier is a wall, berm, wall/berm combination or similar structure used as a noise control measure.

2. Background

- 2.1 The Regional Official Plan and Transportation Master Plan both identify the importance of considering noise from transportation facilities, given the appreciation for the resulting impacts on the liveability and health of residents. As development intensifies along Regional road corridors, the number of people exposed to road-related noise will increase. As a result, noise attenuation guidelines and policies are in place to minimize these impacts in accordance with provincial guidelines.
- 2.2 Currently, the Region has guidelines and policies for the installation and maintenance of noise attenuation barriers associated with new residential

development applications and Regional road expansion projects. However, the Region has been receiving petitions from residents requesting assessment and mitigation for existing homes adjacent to Regional roads where no road expansion work is planned (i.e. retrofit). In addition, there have been requests for the replacement of private noise attenuation walls that were built for earlier developments.

2.3 A summary of the four situations of noise mitigation and related guidelines including policies are as follows:

a. New Residential Development

- In 1982, Regional Council adopted a policy authorizing the Planning Department to assume the noise assessment functions and related matters from the Ministry of the Environment (now Ministry of the Environment, Conservation and Parks) in the review of plans of subdivision and other noise related concerns to the Region.
- In 1991, Regional Council adopted a policy stating that the impacts of noise, based on traffic volumes projected for the mature state of development designated in the Official Plan, on residential development proceeding by a plan of subdivision and condominium be considered as a factor in determining the design of the plan, among other policies.
- As part of the development process, applicants will provide the Region and the Local Area Municipality (LAM) with a noise study for developments close to an arterial roadway and in other selected circumstances.
- As a condition of development, the proponent may be required to implement noise mitigation measures that may include a noise attenuation barrier.
- Notices of some noise warnings and mitigation requirements are to be included in developer agreements and individual purchase agreements.
- Property owners or LAM in some locations are responsible for the ownership and maintenance of the noise attenuation barriers, although many residents are not aware of their ownership and maintenance responsibilities.
- Noise attenuation walls are to be constructed entirely on private property. This was previously not the case in the Region with some built on the property line or within the 0.3 metre reserve owned by the Region.

- Minimal lengths of noise attenuation barriers are now being constructed because of changing development style (e.g. window streets, minimal side/rear lot properties adjacent to Regional roads).

b. Regional Road Expansion

- Regional road expansion, including new road construction or the widening of existing roads for new through lanes, near existing residential development may cause noticeably increased noise levels in rear yard outdoor living areas (OLA).
- The need for noise attenuation in these circumstances is normally established through the Municipal Class Environmental Assessment (EA) study process that precedes the detailed design and construction of any project.
- The analysis and recommendations related to noise impacts on existing residential development areas (specifically the OLA) adjacent to the expansion of a Regional road follows the MECP methodology (which uses modelling and not measurements) and current publications on Noise Assessment Criteria.
- In 2012, Regional Council approved a policy which identifies that a noise level threshold of 60 dBA within an OLA, based on the mature state of development, will trigger the installation of a noise attenuation barrier for new road expansion construction projects, provided that a minimum sound level reduction of six decibels is achieved, and it is technically and economically feasible.
- All costs associated with the analysis, design and provision of noise attenuation measures, typically in the form of walls, are the responsibility of the Region.
- Noise attenuation walls are typically constructed within the Regional right-of-way (ROW) or on an easement granted to which the Region has access and are owned and maintained by the Region.
- Noise attenuation walls which must be located outside of a Regional ROW shall be owned and maintained by the LAM or the private property owner.
- Commonly, most urban road expansion projects include noise attenuation wall construction where backyards are immediately abutting the Regional ROW and currently do not have some form of noise mitigation.

c. Retrofit of Privacy Fences to Noise Attenuation Walls

- As communities in the Region continue to grow, so do traffic volumes on Regional roads. Therefore, areas of existing residential development near Regional roadways may experience increased noise levels.
- In corridors where there is no road expansion planned in the near term, residents have requested that the Region replace their privacy fence with a noise attenuation wall.
- There is no legislation compelling the Region to undertake any work related to the provision of noise attenuation measures in a retrofit situation.
- Ontario Regulation 119/03 under the *Municipal Act 2001 (O. Reg. 119/03)*, formerly *Local Improvement Act*, notes that “constructing noise abatement works on a highway” is work that may be undertaken as a local improvement, which provides a mechanism for undertaking, administering and financing infrastructure improvements and can include joint funding through local improvement charges between the property owner(s) and the municipality.
- Some other Ontario municipalities have a retrofit policy in place using this mechanism with varying minimum parameters and conditions, including a cost-sharing between the municipality and the benefiting property owner(s).
- These cost-shared programs have had very limited success due to various factors. For example, York Region has advised that since their policy, which includes a 50/50 cost-sharing, was put in place in 2006 no retrofit noise attenuation barriers have been constructed due to issues such as the minimum benefit criteria not being met (e.g. 6 dB reduction, 5 continuous houses, etc.), residents not agreeing with the assessment criteria, elevated decks not being considered separately, homeowner funding and future responsibility, and impacts to private property.
- The Region does not have a retrofit policy and Regional staff are of the opinion that given the success rate in other jurisdictions, a cost-shared policy can create an unrealistic expectation and frustrating experience for homeowners, along with requiring significant staff resources. However, this does not prevent a group of homeowners from replacing their privacy fence with a noise attenuation wall.
- The estimated cost to retrofit all the rear lot properties adjacent to a Regional road is \$100 million, excluding additional costs for ongoing maintenance and future replacements. Detailed Regionwide study work would be required to develop a detailed and more accurate cost estimate.

d. Replacement of Private Noise Attenuation Walls

- As communities age, noise attenuation walls need to be replaced and the Region has received requests to construct and pay for these replacements.
- The Region has taken the position that private noise attenuation walls, along with privacy fencing, are the responsibility of adjacent homeowners.
- In 2009, Regional Council confirmed that the Region's core maintenance responsibilities continue to exclude maintenance and replacement of rear lot fencing, including noise attenuation barriers, along Regional road corridors.

2.4 Considering the costs of noise attenuation walls constructed as part of Regional road expansion projects, and the recent substantial price increases for materials and supplies, noise attenuation walls are estimated to cost approximately \$2,000/per square metre or \$4,800 per metre for a typical 2.4 metre high wall. This estimate is for a Region standard concrete/composite or cedar wood design, both of which have comparable costs which includes removal of existing fencing, installations of catchbasins/outlets, grading, general items, design, tender and contract administration. Homeowners are likely to be able to replace their privacy fence with a wood fence that includes noise mitigation properties by using a lower design standard and therefore lower cost. The Region's standard, given our maintenance and replacement responsibility, includes items such as structural design for wind resistance and long-life steel posts. Homeowners, having different life-cycle considerations can install a lower cost wall.

3. Previous Reports and Decisions

- 3.1 On July 9, 2003, Regional Council approved Report #2003-W-104 which proposed guidelines for the installation and maintenance of noise attenuation barriers on a site-specific basis and based on specific criteria. (Report provided as Attachment #1 to Report #2012-W-83, link is provided below.)
- 3.2 On November 25, 2009, Regional Council approved Report #2009-J-46 wherein Regional Council confirmed that given the Region has never maintained or replaced rear lot fencing including noise barriers along Regional road corridors, and that the responsibilities associated with maintaining fencing along Regional road corridors would be new to the Region and would require both significant financial and staffing resources, the Region's core maintenance responsibilities continue to exclude maintenance and replacement of rear lot fencing along Regional road corridors.

- 3.3 On June 27, 2012, Regional Council approved [Report #2012-W-83](#) which included a policy and guidelines for the installation and maintenance of noise attenuation barriers associated with Regional road expansion projects.

4. Relationship to Strategic Plan

- 4.1 This report aligns with/addresses the following strategic goals and priorities in the Durham Region Strategic Plan:

a. Goal 2: Community Vitality

2.2 Enhance community safety and well-being

b. Goal 5: Service Excellence

5.1 Optimize resources and partnerships to deliver exceptional quality services and value

5.3 Demonstrate commitment to continuous quality improvement and communicating results

5. Conclusion

- 5.1 The Regional Municipality of Durham's current noise attenuation guidelines and policies for the installation and maintenance of noise attenuation barriers on or adjacent to Regional road rights-of-way will continue to be followed. This includes requirements for privately owned noise mitigation where warranted as part of new residential developments and Region owned noise mitigation where warranted for Regional road expansion projects adjacent to under-protected Outdoor Living Areas (OLA).
- 5.2 This report has been reviewed by the Planning and Economic Development Department.
- 5.3 For additional information, please contact James Garland, Senior Project Manager, Transportation Design, at 905-668-7711 extension 3439, or Paul Gee, Manager, Transportation Infrastructure, at 905-668-7711, extension 3441.

Respectfully submitted,

Original signed by:

John Presta, P.Eng., MPA
Commissioner of Works

Recommended for Presentation to Committee

Original signed by:

Elaine C. Baxter-Trahair
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