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# The Regional Municipality of Durham Report

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To: Committee of the Whole  
From: Acting Commissioner of Works and Commissioner of Finance  
Report: #2023-COW-33  
Date: September 13, 2023

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**Subject:**

Update on Noise Attenuation for Backyards along Regional Road Corridors

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**Recommendations:**

That the Committee of the Whole recommends to Regional Council:

- A) That the Regional Municipality of Durham maintain current policies related to noise attenuation along Regional road corridors and therefore forego further detailed studies that would be necessary for examining the assumption of privately or Local Area Municipality owned noise barriers and the retrofitting of backyards without noise barriers;
  - B) That Regional Municipality of Durham staff explore with Local Area Municipalities opportunities to improve the quality of developer installed noise barriers by proposing the adoption of higher minimum standards; and
  - C) That Regional Municipality of Durham staff discuss opportunities with Local Area Municipalities to clarify noise barrier ownership and maintenance/replacement responsibility by exploring the possibility of requiring that ownership and/or maintenance responsibility clauses be placed on title for new residential units with noise barriers on their property.
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**Report:**

**1. Purpose**

- 1.1 The purpose of this report is to provide an update on preliminary staff

investigations related to potential changes to the Regional Municipality of Durham's (Region) noise attenuation guidelines and policies for the installation and maintenance of noise attenuation barriers ('noise barriers') along residential backyards, on or adjacent to Regional road corridors. A noise barrier is a wall, berm, wall/berm combination or similar structure used for noise control.

## **2. Background**

- 2.1 In February 2023, Works Committee received [Report #2023-W-8](#) 'Outline of Noise Attenuation Guidelines and Policies for Regional Road Corridors' for information and recommended that it be forwarded to Regional Council for information. At that time, an amendment to the original motion, "That staff report back on what it would cost to retrofit all of the rear lot properties, and what the process would look like" was defeated.
- 2.2 On March 8, 2023, during budget deliberations at Works Committee, further discussion ensued about noise barriers. The following motion "That the Works Committee recommends to Regional Council a complete cost report and policy to implement the permanent maintenance of noise attenuation fences [noise barriers] along all Regional roads" was referred back to staff for a report to be brought at their first opportunity. The report was to detail a new Regional program for the installation of noise barriers along all residential backyards that abut Regional road corridors and meet noise level warrants, including replacements of existing privacy fences, contrary to current Regional practice wherein noise barriers are considered as part of road widening projects only.
- 2.3 The remainder of this report outlines:
  - the range of issues that need to be considered as part of any decision by the Region to change Regional policy regarding construction and ownership of noise barriers along Regional roads;
  - a process and estimated high level study costs to determine the cost of retrofitting Regional roads to provide new noise barriers at locations where warranted and feasible to construct but are not expected to be provided in the next 10 years as part of a Regional road expansion project, including lifecycle costs for future maintenance and replacements;
  - the process for determining the lifecycle cost for ongoing maintenance, including future required replacements, should the Region assume

ownership of existing privately owned and Local Area Municipality (LAM) owned noise barriers along Regional roads; and

- a cursory partial scan of Greater Toronto Area (GTA) municipalities' policies and experience with noise barriers.

### **3. Considerations to be examined with any contemplated change in Regional policy regarding construction and ownership of noise barriers along Regional roads**

- 3.1 Financial resources and spending priorities:** Increased Regional participation in construction and ownership of noise barriers will create incremental permanent costs to be funded by property taxpayers. Regional Council has already identified priorities requiring increased tax levy for paramedic services, transit, housing and homelessness supports and police. The 2024 Business Plans and Property Tax Supported Budget Guideline Report (2023-F-22) provides additional background on Council's priorities and fiscal pressures facing the Region in 2024.
- 3.2 Equity for Durham Region residents:** Should the Region modify the existing noise barrier policy to implement installation of Regionally funded noise barriers in areas where no road widening is occurring, questions around equity for Durham Region residents could be raised with taxpayer funds being used to benefit a small portion of residents with private backyards next to Regional arterial roads.
- 3.3 Equal treatment for residents exposed to traffic noise from Regional roads and LAM owned roads:** If all Durham Region residents with backyards impacted by road traffic noise are to be treated equally, there should be consideration of a joint Region/LAM policy to be applied across all arterial roads, whether a Regional road or a LAM road. If the Region adopts a retrofit policy for Regional roads without the LAMs across the Region adopting equal policies for their arterial roads, there will be unequal treatment and possible pressure for increased cost participation for noise mitigation on LAM arterial roads.
- 3.4 The effectiveness of any Regional cost-shared program to create new noise barriers:** Should the Region decide to expand their role in funding or partially funding new noise barriers where none exist today, or replacement noise barriers, experience across the GTA municipalities suggests that implementation using cost-sharing is extremely problematic. Some jurisdictions have adopted 'local improvement' policies (Ontario Regulation 119/03) which apply when residents request retrofit or replacement noise barriers. While this addresses

equity issues by sharing costs with benefitting residents, experience shows that very few noise barriers are constructed in this manner because local improvement enabling petitions rarely garner the required minimum two-thirds support. This is because benefitting residents may not have resources to pay their share, even when financed by an additional charge on their property tax bill, or having purchased adjacent to an arterial road, may not prioritize mitigation of outdoor noise levels.

- 3.5 **Ownership of existing noise barriers and ownership of existing backyard privacy fences:** If the Region assumes ownership of existing private or LAM owned barriers, this is a transfer of responsibility from the benefitting property owners or the LAM taxpayers to all Regional taxpayers. This is also true if the Region retrofits existing backyard fences to Regionally owned noise barriers. Residents with private backyard fences and no warrant for noise barriers (feasibility or distance to patio area) might ask the Region to assume ownership of their fences.
- 3.6 **Other measures to reduce noise levels:** Regional investment to improve pavement condition and electrify Regional fleets, primarily the Durham Region Transit (DRT) bus fleet, may provide greater community noise reduction benefit than making the same investment in noise barriers to reduce outdoor noise levels in backyards. The Region's average pavement condition index (PCI) is 52 compared to the target of 65. Smoother pavements generate less tire noise, and this benefit increases as traffic volumes grow. Electric vehicles have no tailpipe noise emissions and have been shown to have reduced overall noise impact than diesel fueled vehicles in urban lower speed environments. Furthermore, additional investment in Durham Vision Zero initiatives to reduce vehicle speeds will also contribute to reductions in traffic noise.
- 3.7 **Effectiveness of noise barriers to address residents' noise complaints:** Well constructed and maintained noise barriers effectively reduce average daytime noise levels by six dBA or more. They are not effective though at reducing intermittent impact from truck engine braking, motorcycle and car aftermarket tuned mufflers, and sirens. Many residents who have purchased adjacent to an arterial road and seek noise barriers have expectations that may not be met.
- 3.8 **Design standards and ownership of noise barriers constructed in new developments:** If the Region assumes ownership of all new noise barriers being created by developers constructing housing with backyards adjacent to Regional roads, the Region will require that they be constructed to costlier Regional standards compared to if they were a privately owned noise barrier. These added

costs will increase the noise barrier life but will also increase upfront new house prices. One consideration is to seek that all noise barriers, regardless of ownership, be constructed to a higher standard, protecting all owners from the need for earlier replacement. Therefore, it is recommended that Region staff explore with LAMs opportunities to improve the quality of developer installed noise barriers by proposing adoption of higher minimum standards.

**3.9 Ownership clauses provided on title for newly constructed noise barriers:**

There appears to be no standard requirement under Provincial policy or LAM practices requiring that residents be notified on title when a noise barrier is constructed on their property. Noise barriers are expensive assets that require maintenance and ultimate replacement. An individual backyard noise barrier benefits the homeowner and also benefits adjoining residents, so cannot be removed without violating the overall subdivision noise attenuation design. Providing clarity in the form of an ownership notice on title would ensure property owners are informed of the ownership of the noise barrier and reduce pressure on the Region and LAMs to assume ownership. Therefore, it is recommended that Region staff discuss opportunities with LAMs to clarify noise barrier ownership and maintenance/replacement responsibility by exploring the possibility of requiring that ownership clauses be placed on title for new residential units with noise barriers on their property.

**4. Process to determine costs of Region assuming responsibility for construction and ownership of noise barriers along Regional roads**

**4.1 Constructing noise barriers where none exist but noise levels are high:** To develop and cost a Regional program for constructing and owning new noise barriers on a retrofit basis when Regional roads abut residential backyards, a comprehensive study would be required. A specialist noise consultant would need to be hired to inventory all Regional roads and document segments abutting backyards, complete a preliminary noise modelling analysis to determine if any benefit could be provided by the addition of noise barriers, determine feasibility of installation of noise barriers, and estimate the cost to install and maintain (life cycle cost) new noise barriers within the existing right-of-way. Such a study would take approximately 12 months to complete, require dedicated staff resources and significant cost.

**4.2 Constructing noise barriers to replace private or LAM owned noise barriers that are in disrepair:** To develop and cost a Region program for assuming ownership of existing privately owned and LAM owned noise barriers abutting Regional roads, a study would be required. A specialist noise consultant would

need to be hired to inventory all noise barriers abutting Regional roads, determine ownership and feasibility of reconstructing the barrier within the right-of-way or acquiring the property at the location of the existing noise barrier, determine the remaining useful life of the existing barrier and any maintenance requirements, complete a preliminary noise modelling analysis to determine the benefit provided by the existing noise barrier, and determine details of replacement barriers if the existing noise barrier is required to be modified or replaced, either due to condition or to provide appropriate noise mitigation. Where maintenance, replacement or modification of existing noise barriers is identified, a planned year of construction and an estimated cost to complete the work would be established. Such a study would take approximately 12-18 months to complete, require a high level of staff resources and be at a very significant cost.

- 4.3 **Assuming ownership of developer constructed noise barriers:** All noise barriers require maintenance and eventual replacement. If the Region chose to consider assuming ownership of developer-constructed noise barriers, a study would be required to determine expected noise barrier inventory growth, maintenance, and replacement costs over time. This study could be a component of the retrofit (Item 4.1) and replacement (item 4.2) study effort. It would also require Works Department and Planning and Economic Development staff resources.
- 4.4 As outlined above, significant costs (estimated cost of \$200,000-400,000) and work effort (minimum of 12-18 months) are required to complete the various studies needed to develop a cost estimate and inform any potential changes to the Region's current noise attenuation guidelines and policies for the installation and maintenance of noise attenuation barriers on or adjacent to Regional roads. Given the costs and work effort, staff is looking to confirm next steps before proceeding to undertake this work. Should Regional Council direct staff to proceed with these investigative studies, funds will need to be included in the 2024 Business Plans and Budget for these studies.

## 5. **GTA municipalities' policies and experience with noise barriers**

- 5.1 Regional staff have undertaken a partial scan of municipalities across the GTA, along with the Region of Waterloo, to determine practices for implementation of noise barriers, including funding and ownership.
- 5.2 New residential development pays for installation of warranted noise barriers, and in most cases, the noise barriers are owned by the benefitting resident. Few

- municipalities have switched to having noise barriers constructed within the road right-of-way and ownership by the municipality. Where the municipality owns the facility, it is required to be constructed to a more durable standard and in one case require a 55 per cent (of construction cost) cash contribution to a capital replacement reserve. Durham LAMs have many locations where developer constructed noise barriers are located in landscape strips or on 0.3 m (1 foot) reserves and in some cases are being maintained and replaced by the LAM.
- 5.3 Where new noise barriers are required as part of a road expansion capital project, they are funded as a part of the project with the same Development Charge (DC) / tax levy split as the road project and are owned by the municipality. Maintenance and replacement costs are funded by the Works operations and capital program budgets. This is consistent with current Durham Region practice.
- 5.4 Along arterial roads where no noise wall exists or where a privately owned noise wall is in disrepair and needs replacing, residents typically approach the municipality and request a noise barrier be constructed. Many GTA municipalities have adopted 'local improvement' policies (Ontario Regulation 119/03) which they apply when residents request retrofit or replacement noise barriers. Some municipalities offer 50/50 cost sharing or 75/25 cost sharing between the municipality and the benefitting residents. Implementation rates for cost shared projects are universally low, often because some residents are unwilling to fund their portion of the costs and therefore the required minimum two-thirds support petition from benefitting residents cannot be obtained.
- 5.5 At least one GTA municipality is considering a shift to 100 per cent municipal funding of retrofit noise barriers replacing privacy fencing. Some GTA municipalities pay 100 per cent for replacement of private noise barriers. Some municipalities construct these barriers on private property and leave ownership and future maintenance with the residents. Others are locating the retrofit/replacement noise barriers within the right-of-way where they are then owned by the municipality.
- 5.6 Generally, the Region is less involved in ownership, maintenance and replacement of noise barriers than some GTA municipalities, particularly in Peel Region. Durham LAMs vary greatly, with some heavily involved and others having no ownership or maintenance involvement.

## 6. Previous Reports and Decisions

- 6.1 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.
- 6.2 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.
- 6.3 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.
- 6.4 On March 1, 2023, Regional Council adopted the February 8, 2023 Works Committee Meeting Minutes including a Motion to receive for information [Report #2023-W-8](#) 'Outline of Noise Attenuation Guidelines and Policies for Regional Road Corridors', which outlined four cases for noise barrier construction:
  - a. New residential development, where noise barriers are constructed by the developer and owned by the homeowner;
  - b. Regional road expansion, where noise barriers are constructed and owned by the Region as a part of capital program road projects involving addition of additional through traffic lanes;
  - c. Retrofit of privacy fences to noise barriers, where the Region does not facilitate or fund construction of noise barriers, and residents individually decide how they want to fence their yards and reduce traffic noise levels on their patios; and
  - d. Replacement of private and LAM owned noise barriers, where the Region does not facilitate or fund maintenance or construction of noise barriers.



## **7. Relationship to Strategic Plan**

7.1 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.

## **8. Conclusion**

8.1 It is recommended that the Regional Municipality of Durham's current noise attenuation guidelines and policies for the installation and maintenance of noise barriers on or adjacent to Regional road rights-of-way continue to be followed. Current policy does not involve the Regional Municipality of Durham in facilitating or funding retrofit of privacy fences to noise barriers or replacement of privately owned or Local Area Municipality owned noise barriers adjacent to Regional roads.

8.2 Regional staff do not recommend undertaking further studies to determine program details and costs for Regional participation in construction of retrofit or replacement noise barriers. There are complex issues of equity, equal consideration of noise exposure for residents adjacent to Regional and Local Area Municipality roads, and consideration of no predictable success for local improvement cost shared options. In addition, if the Regional Municipality of Durham assumes greater responsibility for noise barriers, this creates ongoing additional municipal tax burden and need for program staff resources. Greater community noise reduction benefit may be achieved with additional Regional investment on pavement condition improvement, electrifying Regional fleets, primarily Durham Region Transit buses, and Durham Vision Zero initiatives to reduce vehicle speeds. Given the anticipated very high cost to taxpayers if the Regional Municipality of Durham was to assume responsibility for retrofit, replacement and developer constructed noise barriers, undertaking further detailed studies to develop a greater understanding of costs and assessing

needs is not recommended.

- 8.3 Regional staff recommend working with Local Area Municipalities to explore modifications to existing minimum design standards for noise barriers to increase durability of new construction.
- 8.4 Regional staff recommend discussing opportunities with Local Area Municipalities to clarify noise barrier ownership and maintenance/replacement responsibility by exploring the possibility of requiring that ownership clauses be placed on title for new residential units with noise barriers on their property.
- 8.5 This report has been reviewed by Legal Services – Office of the CAO and the Planning and Economic Development Department.
- 8.6 For additional information, please contact James Garland, Senior Project Manager, Transportation Design, Works Department, at 905-668-7711 extension 3439, or Paul Gee, Manager, Transportation Infrastructure, Works Department, at 905-668-7711 extension 3441.

Respectfully submitted,

Original signed by:

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Ramesh Jagannathan, MBA, M.Eng., P.Eng., PTOE  
Acting Commissioner of Works

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Recommended for Presentation to Committee

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