

Date: 2017-10-24

Subject: **Information Report – Replacement and Relocation of Private Noise Walls onto City Right-of-Way**

Contact: Bishnu Parajuli, Manager Infrastructure Planning, Public Works and Engineering (905 874 3644)
 bishnu.parajuli@brampton.ca

Recommendation:

1. **THAT** the report from Bishnu Parajuli, Manager, Infrastructure Planning, Public Works and Engineering, dated October 24, 2017, to the Committee of Council Meeting of November 15, 2017, re: **Information Report – Replacement and Relocation of Private Noise Walls onto City Right-of-Way** be received;

Overview:

- On November 25, 2015, City Council supported in principle changing the City's Noise Wall Policy to increase the City's cost share to 100% for the replacement and relocation of existing private noise walls adjacent to City roads onto the City's right-of-way. Staff was directed to develop an Implementation Plan that will include a detailed assessment of existing private noise walls and funding requirements for consideration.
- Currently, replacement and relocation of private noise walls is implemented through Local Improvement process driven by homeowners with cost sharing split of 75% by the City and 25% by the homeowners. Only four projects (two replacement of existing and two new) have been implemented in the past 10 years through this process.
- In summer 2016, the City hired a consultant to complete the condition assessment of existing private noise walls adjacent to City roads and prepare a Noise Wall Implementation Plan.
- Private noise wall inventory was updated in Spring 2017. There are approximately 64 km of private noise walls adjacent to City roads in different states of repair.
- The estimated annual cost to replace and relocate these noise walls is approximately \$4.27 million for a period of 30 years and beyond. Additional

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funding of \$4.27 million per year would be required to fund this initiative, which is equivalent to a 1% tax levy increase.

- **The City currently owns approximately 5 km of noise walls. The funding required to inspect, maintain and replace this City asset is part of the annual budget consideration and amounts to \$300,000 per year.**

Background:

Local Improvement Process for Noise Wall Replacement

Noise walls adjacent to City roads are generally located on private properties and homeowners are responsible to maintain and replace them at the end of service life. Currently, replacement of private noise walls is implemented through Local Improvement process where City shares 75% of the cost of replacement and benefitting homeowners share 25%.

Despite substantial subsidy provided by the City, only four Local Improvement projects (two replacement of existing and two new constructions) have been successfully implemented in the past 10 years. The low uptake is due to high cost to the homeowners. Noise walls continue to deteriorate and inability of homeowners to replace them will worsen the aesthetic of street corridors, create safety issues for pedestrians/cyclists and tarnish the overall image of the City.

City of Mississauga and Region of Peel Policies

The City of Mississauga and the Region of Peel both cover the full cost of replacing and relocating private noise walls under their jurisdictions. The City of Mississauga had 58 km of private noise walls to be replaced when the City started the program in 2009. Likewise, the Region of Peel started the program in 2015 and had 33 km of noise walls to be replaced when the Region started the program.

The City assuming responsibility to replace and relocate private noise walls onto City right-of-way will maintain a consistent policy across municipalities across the Region of Peel.

Council Direction

On November 25, 2015 (Resolution P&IS 277-2015), City Council supported in principle to amend the City's Noise Wall Policy and the City's cost share to 100% for the replacement and relocation of existing private noise walls along City roads onto the City right-of-way including their future maintenance based on the condition assessment. Some of the other key resolutions from this Council report included:

- Reporting back to Council with an Implementation Plan that will include a detailed assessment of the condition of existing private noise walls, funding requirements and sources of funding for consideration in the 2017 Capital Budget;
- Amending the City's cost share for new noise walls under the Local Improvement process to 50% with homeowners sharing the remaining 50%;
- Placing new noise walls through the development approval process on public right-of-way;

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- Homeowners be responsible for maintaining any existing noise walls on their properties until such a time that the City replaces the noise wall, unless immediate attention is required due to safety reasons in which case the City will repair and stabilize the damaged noise wall after notification from the property owner

This report summarizes the assessment of both private and City owned noise walls adjacent to City roads and associated cost for keeping them in a state of good repair.

Current Situation:

Condition Based Assessment of Private Noise Walls

In summer 2016, the City hired a consultant to prepare an inventory of existing private noise walls adjacent to City roads and an implementation plan including condition assessment, funding requirements and sources of funding. The consultant conducted a condition-based assessment of existing private noise walls and prepared a noise wall inventory.

Asset Risk Based Assessment for Private Noise Walls

In spring 2017, staff updated the private noise wall inventory. There are approximately 64 kilometres of private noise walls adjacent to City roads. These noise walls are evaluated in accordance with the corporate asset management principles using an asset risk model to identify those assets that are high risk and need to be prioritized for replacement in the future years.

To calculate a risk score for each noise wall, staff estimated its likelihood of failure and the consequence of failure based on its condition, height, material (wood, vinyl, masonry, concrete) and location (residential area, sidewalk, commercial, railway, boulevard). In this asset risk-based approach, noise walls with higher risk get higher priority for replacement. As a prioritization example, a tall noise wall that is located near a sidewalk and is in very poor condition would be replaced before a shorter wall that is located far from vehicular or pedestrian travel routes and is in fair condition.

Table 1: Summary of Risk Levels and Replacement Cost of Private Noise Walls

Priority	Length (metres)	Percentage	Replacement Cost	Replacement Time Horizon	Annual Replacement Cost
Urgent Action	3,512	5.6%	\$6,763,996	2019	\$6,763,996
High Risk	11,794	17.7%	\$22,714,772	2020-2024	\$4,542,954
Medium Risk	36,490	57.9%	\$70,280,217	2025-2039	\$4,685,348
Low Risk	11,953	18.7%	\$23,020,909	2040-2044	\$4,604,182
Insignificant Risk	117	0.2%	\$226,159	2045-2048	\$56,540
Total	63,866	100.0%	\$123,006,052	2019-2048	\$4,100,202

Results of risk analysis of private noise walls are summarized in Table 1. As shown, immediate attention is required to replace and relocate 3,512 metres of private noise walls with an estimated cost of \$6.8 million. These noise walls are recommended to be replaced starting in 2019.

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Similarly, other risk levels have been evaluated. The cost is based on \$1800 per metre plus 7% for contract administration, which is reflective of the current wall replacement cost.

In order to achieve a uniform annual budget, the annual cost shown in Table 1 can be averaged to \$4.1 million for a period of 30 years though actual replacement will depend on urgency and other City priorities. The additional costs include staff cost to implement noise wall program and inspection cost that is estimated to be \$170,000 per year.

Therefore, the overall annual cost to assume responsibility to replace and relocate private noise walls is estimated to be \$4.27 million. For a period of 30 years, the total cost will be approximately \$128 million (\$123 million for replacement plus \$ 5 million for staff/inspection) that will have to be paid from the tax base.

Asset Risk Based Assessment for City Owned Noise Walls:

The City currently owns approximately 5 km of noise walls. Most of these noise walls are in a good state of repair. Similar to private noise walls, an identical asset risk model is used to assess risk levels of City-owned noise walls and replacement timeline.

Table 2: Summary of Risk Levels and Replacement Cost of City-owned Noise Walls

Priority	Replacement Cost	Percentage	Length (metres)	Replacement Time Horizon	Annual Replacement Cost
Urgent Action	\$0	0.0%	0	2018-2019	\$0
High Risk	\$1,871,310	21.7%	972	2020-2024	\$374,262
Medium Risk	\$2,862,839	33.2%	1,486	2025-2039	\$190,856
Low Risk	\$1,371,435	15.9%	712	2040-2044	\$274,287
Insignificant Risk	\$2,521,535	29.2%	1,309	2045-2047	\$840,511
Total	\$8,627,118	100.0%	4,479	2018-2047	\$287,571

Results of risk analysis of City-owned noise walls are summarized in Table 2. Based on this analysis, there is no immediate need to replace any of the City-owned noise walls at this time. However, a long-term inspection and replacement program is required to be in place. As shown in Table 2, the annual replacement cost of City-owned noise walls varies significantly over the years. In order to achieve a uniform annual budget over the next 30 years, the annual cost can be estimated as \$300,000, which is part of the annual budget consideration in 2018.

Total Cost of Noise Wall Program:

Based on discussions above on private and City-owned noise walls, the annual cost for noise wall program is estimated to be \$4.57 million that has to be paid from the tax base. As such, it is recognized that this new program will need to be examined with all the other City priorities as our existing infrastructure ages and requires increased investment to maintain service levels.

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Corporate Implications:

Financial Implications:

The annual estimated cost to replace and relocate private noise walls is \$4.27 million for a period of 30 years. \$4.27M is equivalent to a 1% tax levy increase in 2017 dollars. It should be noted that the noise wall program, if adopted, will lend itself to grant funding opportunities for short term shovel ready projects, should that funding become available.

The funding required to inspect, maintain and replace the City owned noise walls is part of the annual budget consideration and typically amounts to \$300,000 per year.

To ensure sustainable infrastructure management by maintaining current levels of service in the most cost-effective manner, the City has developed a comprehensive asset management plan and demonstrated leadership in municipal asset management planning by adopting the ISO 55000 international standard for asset management.

The City currently manages approximately \$5.3 billion in infrastructure assets excluding land with a funding shortfall of approximately \$200 million to keep all assets in a state of good repair. At existing funding levels with 2% infrastructure levy, the cumulative infrastructure gap is projected to grow to approximately \$650 million over the next 10 years

It is important to note that assuming responsibility to replace and relocate private noise walls without budgeting the additional required funds will negatively affect the City's infrastructure funding gap and the existing levels of service provided to the residents.

Strategic Plan:

This report achieves the Strategic Plan priority "Move and Connect" by keeping people and goods moving efficiently by investing in new infrastructure and maintaining a state of good repair. Implementation of noise wall program will ensure reliability, improve safety of the residents, and uphold reputation of the City.

Conclusions:

This report presents an assessment of both City-owned and private noise walls adjacent to City roads and implementation plan to keep noise walls in a state of good repair. By assuming responsibility, the City would incur approximately \$4.27 million annually for a period of 30 years, which is equivalent to a 1% tax levy increase to replace and relocate private noise walls adjacent to City roads, subject to prioritization with other corporate priorities and Council approval of annual budgets. This will provide relief to homeowners who are struggling to maintain and replace the noise walls on their properties, improve safety, aesthetic of street corridors and the image of the City.

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Approved by:

Approved by:

Bishnu Parajuli, P. Eng.
Manager, Infrastructure Planning
Public Works and Engineering

Jayne Holmes, P. Eng.
Director, Capital Works
Public Works and Engineering

Report authored by: Bishnu Parajuli (Infrastructure Planning) and Salman Zafar (Corporate Asset Management)