

**Date:** 2021-10-07

**Subject:** **Recommendation Report Brussels Avenue Noise Wall Ward 2**

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**Report Number:** Public Works & Engineering-2021-1117

**Recommendations:**

1. **THAT** the report titled **Recommendation Report – Brussels Avenue Noise Wall – Ward 2**, to the Committee of Council Meeting of October 27, 2021, be received; and,
2. **THAT** Council approve the construction of a new noise wall along Brussels Avenue from the south end of Brussels Avenue to the location of the existing noise wall at an approximate cost of \$2.0 million; with funding to be provided from external tax supported debt, and will be included in the 2022 budget.

**Overview:**

- **Discovery Phase III subdivision (21T-00001B, 43M-1680) that is located on the west side of Highway 410 north of Bovaird Drive was registered June in 2005.**
- **Noise walls were constructed at the ends of townhouses facing Brussels Avenue including gates between them as per the recommendations of the noise study completed as part of the subdivision development in 2004. The 2004 noise study did not recommend any noise wall between Brussels Avenue and Highway 410.**
- **It was noted that the 2004 noise study completed as part of the Discovery Phase III subdivision used a standard noise prediction model without considering the additional noise effect of concrete pavement on Highway 410 that was under construction at the time. As a result of the concrete pavement, the subdivision receives additional noise of approximately 1.7 dBA. Additionally, the current prediction of design traffic volume on Highway**

**410 is higher than that used in the 2004 noise study. This also contributes additional noise to the subdivision.**

- **After the opening of the Highway 410 extension north of Bovaird Drive, the City received noise complaints from homeowners on Brussels Avenue.**
- **In May 2009, a staff report was presented to Committee of Council related to the noise issue. The report recommended that the City act as a facilitator and bring all parties (Province of Ontario and the developer) together to address the noise issue. The report also recommended that any cost associated with the noise mitigation not be borne by the City.**
- **A follow up with the Province of Ontario and the subdivision developer could not secure funding for the construction of the noise wall.**
- **Chinguacousy Farm subdivision was constructed north of the Discovery Phase III subdivision after the opening of the Highway 410 extension. A noise wall was constructed by the developer between Brussels Avenue and Highway 410.**
- **In January 2019, homeowners of Brussels Avenue brought the noise issue to the Ministry of Transportation (MTO) through their Member of Provincial Parliament. MTO forwarded the matter to the City stating that it is the City's responsibility to address the concern.**
- **A new noise study was completed in February 2021 that identified the need to install a noise wall between Highway 410 and Brussels Avenue.**
- **Based on the findings of the noise study and site specific circumstances, it is recommended that a noise wall be constructed between Highway 410 and Brussels Avenue at an approximate cost of \$2.0 million to be funded through external tax supported debt.**

### **Background:**

Discovery Phase III subdivision (21T-00001B, 43M-1680) is generally located between Heart Lake Road and Highway 410 north of Bovaird Drive (Appendix A). The subdivision was registered in June 2005.

A noise study was completed in 2004 as part of the Discovery Phase III subdivision development using the traffic data received from the Ministry of Transportation at that time. The noise study recommended noise walls of 2.2 to 2.4 m in height at the ends of townhouse buildings including gates between them to mitigate noise. The noise study did not recommend a noise wall between Brussels Avenue and Highway 410.

Noise walls are intended to mitigate noise on Outdoor Living Areas of dwelling units (backyards/side yards). Since the townhouse buildings are facing Brussels Avenue and Highway 410, the noise study took into consideration the noise attenuation effect of townhouses on backyards as backyards are shielded from noise by buildings themselves.

After the opening of the Highway 410 extension north of Bovaird Drive, several homeowners from the Discovery Phase III subdivision, particularly those living along the southern part of Brussels Avenue, have raised concerns about the noise coming from Highway 410.

In May 2009, staff presented a report to Committee of Council (Appendix B) regarding the noise issue that included the following recommendations:

1. Staff be directed to approach the Province of Ontario requesting that they participate in the cost sharing of any mitigation measure, including the construction of a fence (noise wall) adjacent to Highway 410.
2. Staff continue discussions with the developer, Senator Homes, to investigate mitigation measures, including construction of a fence (noise wall) adjacent to Highway 410.
3. Any costs associated with the construction of a noise wall or any mutually agreed solution not be borne by the City and that the City will act as a facilitator to bring all parties together including convening a community meeting with the residents of Brussels Avenue upon hearing from the Province and developer.

Subsequent follow up was done with the Province of Ontario and the subdivision developer but funding support for the installation of a noise wall could not be secured. The Province indicated that it is the responsibility of the City or the developer to provide any noise mitigations required as the subdivision was constructed after the start of the Highway 410 extension north of Bovaird Drive. The developer complied with the recommendations of the initial noise study completed as part of the Discovery Phase III development that was approved by the City.

### **Site Specific Circumstances:**

A noise study was conducted as part of the Discovery Phase III subdivision development when the construction of the Highway 410 extension north of Bovaird Drive was in progress. The noise study used a standard noise prediction model and did not account for the additional noise effect of concrete pavement on Highway 410. Additionally, it was found that the ultimate traffic volume on Highway 410 that was used in the Discovery Phase III noise report is lower than the recently projected ultimate traffic volume on Highway 410 (163,000 vehicles per day vs 180,000 vehicles per day). The concrete pavement on Highway 410 resulted in an additional noise of approximately 1.7 dBA when compared with a traditional asphalt surface. The noise levels were further increased due to higher traffic volume.

The Chingaucousy Farm subdivision (21T-95028B, 43M-1880), that is located to the north of Discovery Phase III subdivision was registered in 2012. A noise wall was constructed by the developer between Brussels Avenue and Highway 410 on the northern part of Brussels

Avenue (Appendix C). Constructing a noise wall at the southern part of Brussels Avenue will maintain consistency and continuity of the noise wall throughout the length of Brussels Avenue adjacent to Highway 410 providing the necessary noise mitigation.

### **Current Situation:**

In December 2019, homeowners of Discovery Phase III brought up the noise issue to the Ministry of Transportation (MTO) through the office of their Member of Provincial Parliament (MPP). The MTO's response was that since the start of construction of the Highway 410 extension preceded development of the Discovery Phase III subdivision and the Municipality approved the development, the responsibility to address this issue falls to the Municipality.

In February 2021, the City completed a noise study at Brussels Avenue. The study considered the noise effect of traffic from Highway 410, mitigation provided by the berm, townhouses and the noise walls installed at the time of the subdivision development.

It was found that the existing noise levels in Outdoor Living Areas of residential units at the southern part of Brussels Avenue facing Highway 410 range from 63 dBA to 65 dBA depending on the location. The noise levels will further increase upto 66 dBA at critical locations when traffic on Highway 410 reaches ultimate capacity in the future.

As per the City's noise wall policy, if noise levels on Outdoor Living Areas exceed 60 dBA and reduction of noise level by 5 dBA can be achieved through mitigation measures, a mitigation measure is warranted. Based on the City's noise wall policy and the recommendation of the 2021 noise study, a noise wall is required between Highway 410 and Brussels Avenue from the south end of Brussels Avenue to the existing noise wall constructed as part of the Chinguacousy Farm subdivision. With a 4 m high noise wall, similar to the one installed at the northern part of Brussels Avenue, noise levels at Outdoor Living Areas can be reduced to 54 to 56 dBA depending on the location. The cost for such a noise wall is estimated to be \$2.0 million.

City staff met with MTO staff in June 2021 to discuss potential financial contribution for the installation of the noise wall. MTO staff clarified that MTO has no policy to provide financial support for the noise wall installation. As such, no external funding for the construction of the noise wall is available.

Based on the site specific circumstances mentioned above and recommendations of the 2021 noise study, it is recommended that a noise wall be constructed at the southern part of Brussels Avenue between Highway 410 and Brussels Avenue. This will address the noise concerns and maintain consistency and continuity of the noise wall along Brussels Avenue.

### **Corporate Implications:**

#### Financial Implications:

Construction of the proposed noise wall at an estimated cost of \$ 2.0 million is to be funded through the issuance of external tax supported debt which will result in an increased annual

operating impact of \$112,300 in order to account for the annual debt repayment obligation (based on a 30 year term at a rate of 3.15%). This would equate to a 0.02% property tax impact. This project will be incorporated in the 2022 Capital Budget for Public Works and Engineering, pending Council approval.

### **Term of Council Priorities:**

This report achieves the Term of Council Priority “Brampton is a Safe & Healthy City” by addressing neighborhood noise issue to uphold health and wellbeing of its residents.

### **Conclusion:**

The 2021 Noise Study identifies that the noise level at the outdoor living areas of residences facing the southern part of Brussels Avenue exceed 60 dBA. Based on the site specific circumstances and recommendation of the 2021 noise study, this report recommends to install a noise wall between Highway 410 and Brussels Avenue from the south end of Brussels Avenue to the existing noise wall to the north. This will maintain consistency and continuity of the noise wall along Brussels Avenue and address the noise concerns of the residents. Since no external funding is available, it is recommended that the cost for the installation of this noise wall be covered through external tax supported debt.

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### **Attachments:**

Appendix A: Approximate Limits of the Proposed Noise Wall

Appendix B: Committee of Council Report, May 20, 2009

Appendix C: Pictures of Noise Wall Constructed as Part of Chinguacousy Farm Subdivision