

STAFF REPORT: ENGINEERING AND PUBLIC WORKS DEPARTMENT

REPORT TO: Infrastructure and Recreation
 Committee
MEETING DATE: November 13, 2012
REPORT NO.: EPW.12.068
SUBJECT: Consideration of the Highway 26
 Noise Attenuation Requirement
PREPARED BY: Reg Russwurm, Director of
 Engineering and Public Works

A. Recommendations

THAT Council receive Staff Report EPW.12.068, "Consideration of the Proposed Highway 26 Noise Attenuation Requirement",

AND THAT Council, having determined that the non-construction of a noise attenuation barrier is consistent with the PPS 2005, hereby agrees to the non-construction of the noise attenuation barrier provided:

1. the prospective occupants of the new land use be notified by means of a warning clause to be included in the Agreements of Purchase and Sale and the Development Agreements which shall be registered on title of the property in a form acceptable to the Director of Engineering and Public Works and the Town's solicitor, and
2. a lump sum amount and terms acceptable to the Directors of Engineering and Public Works and Finance and IT Services and the Town's solicitor equal to the cost of the proposed noise wall at assumption of the public works plus 10% contingency allowance be held for 5 years post assumption after which the Developer may apply for the return of the security if Council intends to not install the noise wall.

AND THAT Council direct Staff to incorporate appropriate policies and/or wording in the Town's Official Plan, Engineering Standards and other relevant documents that noise mitigation efforts associated with planning of noise sensitive land uses adjacent to a transportation corridor be accomplished firstly by way of appropriate separation between the transportation corridor and the sensitive land use and secondly by means other than constructed acoustical barriers (i.e. noise walls) that will have a height in excess of 1.5 metres.

B. Background**Purpose**

The purpose of this report is to provide follow-up information on the proposed noise attenuation measures (noise wall) along Highway 26. At the Infrastructure and Recreation Committee (Committee) meeting on July 10, 2012, Report EPW.12.042

(Attachment 1 for background) was presented to inform the Committee on the proposed Noise Wall to be constructed adjacent to the Neighbourhood of Delphi Point (Delphi) and the Residences of Peaks Bay (Peaks Bay) Developments for sound attenuation from Highway 26. Committee referred the report back to Staff to answer Committee questions and to provide options to installing the works as proposed.

I&R Committee Questions

Implications with Town Fence Bylaw

A question was asked whether the Town's Fence By-Law would affect the construction of a noise wall. The Fence By-law contains an exception re fences under an Agreement as provided below.

11. EXCEPTION - SECTIONS 41 AND 51 OF THE *PLANNING ACT*

If an Agreement pursuant to Sections 41 or 51 of the *Planning Act* has been entered into, the provisions of that Agreement respecting fencing shall prevail over the provisions of this By-law.

Town staff further note that the Fence By-law restricts the height of a fence in a front yard to 1.0 metre. This is relevant in that the majority of the properties fronting Highway 26 have a front lot line coincident with Highway 26.

Speed Limit Reduction

The Committee asked if a speed reduction would reduce the need for the noise wall. The amount of noise generated from a roadway is a function of the traffic volume and speed. Consequentially if the speed is reduced, the level of noise would be reduced. Whether a speed limit reduction to 60 or 70 km/hr would result in noise levels being less than that requiring sound attenuation under the MOE Guidelines is not known because that would involve re-running the original noise model. Staff felt the expense of asking the consulting engineer to do that work was not warranted because it is somewhat of a moot point unless there is an expectation that the road speed limit will be reduced in the foreseeable future. Given the amount of effort and time the Town expended to get the highway speed reduced to 70 km/hr west of Thornbury, there is little expectation of a speed reduction before a decision is necessary regarding the level of sound attenuation required.

Rubberised Asphalt

The Committee asked if a different road surface, like rubberised asphalt, will result in sound reduction. There has been extensive research into this topic by federal, state and provincial road authorities. Asphalt pavement surface types such as dense graded friction courses (SMA) or open-graded friction courses (OGFC) can reduce noise by several decibels. Similarly rubberised asphalt reduces road noise by 4 decibels, and in

some cases by as much as 10 decibels¹. Although there are surface treatments and asphalt mixes that will reduce the noise level, there is little expectation that the MTO will be resurfacing, or use a more expensive mix to reduce the noise levels, in the timeframe that would negate the need for sound attenuation in these developments in accordance with the MOE Guidelines. The MTO however is undertaking an operational assessment of the Highway 26 from Grey Rd 21 to Thornbury. During that assessment though, Staff will inquire about noise reducing surfaces.

The Delphi Developer is giving consideration to whether during reconstruction of the Peaks Road Intersection a noise wall will even be required if rubberised asphalt is placed for the area fronting their development. It will not though address the requirement of a noise wall fronting the Peaks Bay Development.

Options

Committee also asked what options are available to the Town. Going forward, the Town can consider policies or wording within the Town's Official Plan and Engineering Standards to not permit the construction of a noise wall. Sound attenuation could be achieved using separation distance and/or berms, but not a constructed wall. With respect to the proposed noise wall considered in this report, a range of options are available to the Town and are presented below. In summary, the options are:

1. Status Quo (recognizing the aesthetic impact that the noise wall will have); or,
2. Waive the Requirement for Sound Attenuation (recognizing that Council must determine that the waiving of same must be consistent with the PPS 2005); and,
3. Accept Financial Contribution in Lieu of Construction

Option 1: Status Quo

The current Subdivision Agreements call for the construction of a wooden noise wall. If no action is taken, a noise wall will be installed as designed. It is located 300mm on private property to limit the Town's liability to maintain and ultimately replace the barrier at the end of its life.

The installation of the noise wall as intended will satisfy the MOE Guideline D-1 Land Use Compatibility and Guideline LU-131, "Noise Assessment Criteria in Land Use Planning", and it's associated Annex. The Town can be confident that with the installation of the noise wall that the Town is being consistent with the Provincial Policy Statement (PPS) that indicates the need to recognize land use compatibility and mitigate adverse situations.

Staff anticipate enforcement challenges with the noise wall because some landowners may wish to install openings in the wall to access the trail on the south side of their

¹ http://www.asphaltmagazine.com/archives/2004/Summer/Noise_Reducing_Pavements.pdf

properties or even remove the barrier for visibility. The Town can furthermore expect that at some point the Town will have to enforce integrity of the noise wall. Ultimately, the Town will become involved in some manner to ensure the wall is replaced at the end of its life (20yrs est), which could entail constructing the wall at the cost of the affected properties. Experience from other municipalities leads to the conclusion that coordinating the re-construction of a noise wall, particularly one that is installed over several private properties, is difficult.

It would be appropriate before the wall is to be replaced to consider if the traffic noise still warrants sound attenuation of whether there are alternate solutions.

Option 2: Waive the Requirement for Sound Attenuation

The requirement for the installation of a noise wall for sound attenuation could be removed from the Subdivision Agreement by an amending agreement with the respective Developers and with any owners that have already purchased their lots. For the few lots already sold along the proposed alignment, the Developers have agreed to approach the new owners. The Developers feel that obtaining their cooperation will not be difficult.

The proponents of both developments prepared Noise Assessment Studies (Studies) in accordance with the MOE Guideline D-1 Land Use Compatibility and relevant documentation. The Studies document the expected noise levels and what noise mitigation measures could be proposed. It should be noted that the Guidelines are not enforced by regulation but are instead a tool that a municipality can use to mitigate noise levels if it so chooses. There are planning implications to not installing the recommended sound attenuation that are discussed in Report EPW.12.042 attached. Although the MOE Guidelines indicate the best practice to provide sound attenuation, ultimately it is the decision of Council as to whether or not the installation of a noise wall is in the best interest of the community and consistent with the 2005 PPS.

The risk that the Town runs by removing the requirement for the noise wall from the Subdivision Agreement is that at some time in the future, the area residents may insist on the construction of a noise wall since the Town knew the noise levels exceeded the MOE Guidelines. They may have little regard that the noise wall was explicitly removed from the Subdivision Agreement registered on the title of their property.

The proposed landscaping as designed will still be installed to aid in buffering the properties from the highway. Even though this landscaping will screen the highway, it will not be a solid barrier like a noise wall and will provide the visual feeling of depth.

Another issue that may arise is residents constructing their own fencing for privacy reasons. These fences will be of different heights, materials and construction. There is concern that the mismatch fencing will be a detriment to the area.

Option 3 – Accept Financial Contribution in Lieu of Construction

In the event that it is felt that there is a reasonable risk the Town will be asked to install a noise wall, the Town can take cash in lieu of installation to pay the future cost of a noise wall. The money could be considered a lump sum payment whereby the Town afterward assumes all risk and responsibilities. An alternative sees the cash contribution like a security whereby the Town holds the funds beyond assumption of public works for a pre-determined time (say 5 yrs) or until the Town is satisfied that the area residents will not ask for the erection of the noise wall. One factor to be considered by holding this money is that there may be the expectation that the Town will endorse the erection of the noise wall once a number of owners have requesting the barrier. The final decision whether or not to install the noise wall though will rest with the Council of the day.

Recommendation

The topic of noise attenuation has generated some concern among the senior management team in that the Town may ultimately have to install the wall since the removal of the requirement for a barrier is not consistent with the PPS in the strictest sense. Staff though recognize that the final decision rests with Council and therefore a recommendation has been prepared that enables Council to waive the immediate need for noise attenuation but also enables a future Council to decide that the barrier be installed at no additional cost to the Town.

An appropriate timeline to carry the security is 5 years after assumption of the public works. Currently, the trigger for assumption is after 75% of the residential units are constructed. The security can be established at the estimated current cost of work at assumption plus a 10% contingency. Prior to the release of the security Council may wish to circulate the area residents for feedback.

It is also proposed for the consideration of Council, that Staff be directed to incorporate wording in the discussions of the Town's Official Plan, Engineering Standards and other relevant documents that sound attenuation will be accomplished by means other than a constructed noise wall.

Next Steps

1. Prepare amending agreements to the Subdivision Agreements which acknowledge that a noise barrier was required under the MOE guidelines, but that the requirement has been waived in the immediate timeframe and that 110% of the estimated cost of the barrier will be held as security in a form agreeable to the Director of Finance and IT until 5 years after assumption.
2. Contact developers and owners of any lands purchased since registration to ensure the amending agreements are registered on title for all affected properties.
3. Consider how wording is incorporated into the Town's Official Plan to ensure sound attenuation is achieved by means other than constructed noise walls.

4. Include wording in Engineering Standards that noise walls will not be utilized for noise attenuation.
5. At five years post assumption, the developer can apply to the Town for the return of the security. Council, at that time, would consider if the Town wanted the noise wall built or to return the security.
 - a. The decision will rest on input received from residents, and which may include a letter to current occupants to get their opinion.
 - b. If wall to be installed, the Developer would need to arrange for that work before receiving LC.
 - c. If wall not to be installed, the Town would return the LC.

EPW Staff will be responsible for ensuring any amendments to the Subdivision Agreements will be implemented as directed by Council, and will respond to any concerns raised over a noise wall not being installed.

C. The Blue Mountains' Strategic Plan

Preserving and enhancing natural and environmental features and cultural heritage of the community.

D. Environmental Impacts

Less on-site construction will reduce greenhouse gas emissions and use of natural products.

There may be an excess over MOE sound criteria for certain units in the development during high traffic volumes on Highway 26.

E. Financial Impact

None

F. In Consultation With

John Metras, municipal solicitor
Troy Speck, CAO

Input Provided By:

David Finbow, Director of Planning and Building Services

G. Attached

1. Report EPW.12.042 entitled "Proposed Highway 26 Sound Attenuation" dated July 10, 2012 with attachments.

Respectfully submitted,

Reg Russwurm

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STAFF REPORT: ENGINEERING AND PUBLIC WORKS DEPARTMENT



REPORT TO: Infrastructure and Recreation
 Committee
MEETING DATE: July 10, 2012
REPORT NO.: EPW.12.042
SUBJECT: Proposed Highway 26 Sound
 Attenuation
PREPARED BY: Reg Russwurm, Director of
 Engineering and Public Works

A. Recommendations

THAT Council receive Staff Report EPW.12.042, "Proposed Highway 26 Sound Attenuation" for their information.

B. Background

The purpose of this Report is to provide Council some background on a noise wall that is planned to be constructed along Highway 26 adjacent to the Neighbourhood of Delphi Point (Delphi) and the Residences of Peaks Bay (Peaks Bay) Developments that EPW Staff feel will garner some feedback from the public. This Report will examine the needs for sound attenuation when considering development, alternatives to mitigate noise and the anticipated impacts of the proposed noise wall.

Introduction

The respective developers of the Delphi and the Peaks Bay are in the process of developing their lands. Both developments have achieved plan registration. Homes are being constructed within the Peaks Bay development while the Delphi development expects to build homes later this year.

As part of the expected development works to be constructed are sound attenuation barriers (noise walls) to mitigate the traffic noise from the Highway 26 corridor. Given the potential impact of 736m of 2.4m (8') high noise wall along 875m of the highway, EPW Staff felt it is important to inform Council on the proposed noise walls, the reasons for their installation and the possible future impact. The noise walls will potentially impair the aesthetic enjoyment of the area from the perspective of both the travelling public and the future home owners whose view of the escarpment will be impacted. EPW Staff have concerns that the height of the proposed wall and berm will generate opposition among both residents and visitors, given it will block historical views of the surrounding area and act to form a highway "tunnel" effect. To mitigate this effect, the noise wall is proposed to be screened by landscape trees to soften the look and distract from the "barrier" impression.

Attachment 1 provides an overall map of the location of the noise walls for both developments. The walls will have architectural features to enhance the look of the walls (Attachment 2). The wall is discontinuous at road openings, lands not under development and at lands subject to lot severances where a noise wall was not required by the Town.

To illustrate the proposed barrier, a mock noise wall was constructed by the developer at the Delphi site at the location and height required. A photograph is provided in Attachment 3 facing the development. Attachment 4 is a view from the backyards of the proposed residential units towards the Georgian Peaks Ski Club at the anticipated ground height at the rear wall of the house.

Noise Assessment Studies

During the technical review phase of the developments, the proponents of both developments prepared Noise Assessment Studies (Studies) in support of the proposed Plan of Subdivisions. The Studies were prepared by the developer's consultant to consider the question of land use compatibility in support of the Provincial Policy Statement under the Planning Act and in accordance with the MOE Guideline D-1 Land Use Compatibility. The Province of Ontario through the Ministry of the Environment (MOE) has published Guideline LU-131, "Noise Assessment Criteria in Land Use Planning", and its associated Annex.

Specifically, J.E. Coulter Associates Limited prepared a Noise Impact Study for the Peaks Bay Development dated December 6, 2006 and C.F. Crozier and Associates prepared a Noise Impact Assessment Study for the Delphi Development dated July 2008. The assessments were based on the expected traffic load 10 years hence, that is 2016 and 2018.

The Studies document by which the MOE guidelines determined acceptable noise levels and how these guidelines were implemented and in these cases, in particular, what noise mitigation measures could be proposed. It should be noted that the guidelines are not enforced by regulation but are instead a tool that a municipality can use to mitigate noise levels if it so chooses. There are planning implications to not installing the recommended sound attenuation that will be discussed later.

Subsection A.2.2 of the Annex notes the allowable road traffic noise level in residential development are 55 decibels (dBA) or less measured in an outdoor living area during daytime and 50 dBA or less measured at bedroom windows during the night-time.

Subsection A.3.2.1.(a) of the Annex notes that where it can be demonstrated that it is not technically feasible to achieve the MOE outdoor living area sound level criterion for road traffic, a tolerance of not more than 5 dBA may be allowed, for a total of not more than 60 dBA. It is further noted the tolerance is not allowable for the bedroom window/indoor sound level criteria, i.e., it remains at 50 dBA. The Annex further notes that any application of the 5 dBA tolerance requires that prospective occupants of the new land use are notified by means of a warning clause within the subdivision agreement to which they are a party.

Table 1 below provides a summary of the expected noise levels without (w/o) the proposed noise walls at each development and phase. The maximum noise levels described within the MOE Guidelines are given for reference.

Table 1 – Expected Sound Levels Without Noise Wall		
Development	Day Time (dBA) (Max 60 dB – MOE Guidelines)	Night Time (dBA) (Max 55 dB – MOE Guidelines)
Delphi Ph 1	62.9	54.2
Delphi Ph 2	62.7	58.9
Peaks Bay West (lot 6-9 & 15)	60	56
Peaks Bay East (lot 9)	59	57
Peaks Bay East (lot 10-15)	63	58

For reference, 60 dB is approximately the sound loudness associated with office or restaurant conversation. Sound is measured on a logarithmic scale. Therefore, a sound loudness of 70 dB is double that of 60 dB. One decibel (1 dB) represents the smallest change in volume a human ear can perceive. The average ear, however, can only detect a 3 dB change¹.

The expected noise levels appear to be only slightly over the MOE Guidelines. Regardless, the projected loudness does exceed the requirements. Furthermore, these noise calculations were based on estimates traffic counts already over 4 years old.

¹ Travis Ludwig © 1996 Internet Sound Institute (www.soundinstitute.com)

The future noise levels are to be estimated on expected traffic volumes 10 years after the development is completed. It then can be expected that the noise levels will be higher than those projected in the Studies.

Means of Sound Attenuation

The goal of sound attenuation when the expected noise levels exceed the MOE Guidelines is to reduce the impact of noise between the generator (road traffic in this instance) and the receiver (future residents). This can be accomplished by either separation distance or the insertion of a solid barrier. A solid barrier can be achieved by an earthen berm, a noise wall, or a combination of both. The noise wall can be constructed of whether proprietary specially-made products or by solid wooden fencing.

During the draft plan development for these sites, the issue of sound attenuation was not considered by means of separation. Therefore, given the proximity of Hwy 26 to the developments, the construction of a combination of earthen berm and wooden wall of varying height was specified by the developers' engineers. The proposed noise wall on top of a berm is to be 2.4m (8') high and is to be made of 50mm (2") thick tongue and groove wood to achieve a finished elevation.

Land Use Planning Implications

The warrants for sound attenuation come from the concept of separating incompatible land uses. In this case, it is the construction of residential units in close proximity to a highway whereby the units will be exposed to noise levels higher than the MOE Guidelines. Had the issue of sound attenuation been considered fully during the draft plan stage, the development may not have been supported in its present form without sound attenuation.

The Town's Planning Services Division has advised that the Planning Act, and the policies made pursuant to the Act, require that Council make decisions that are consistent with the Provincial Policy Statement (PPS). The PPS indicates that it is to be read in its entirety and that all relevant policies are to be applied to each situation. Sections 1.1.1 c) and 1.7.1 e) of the PPS indicate the following:

1.1.1 Healthy, liveable and safe communities are sustained by:

c) avoiding development and land use patterns which may cause environmental or public health and safety concerns

1.7.1 Long-term economic prosperity should be supported by:

e) planning so that major facilities (such as airports, transportation/transit/rail infrastructure and corridors...) and sensitive land uses are appropriately designed, buffered, and/or separated from each other to prevent adverse effects from odours, noise and other contaminants..."

As to buffering and/or separation of sensitive land uses, the Province of Ontario has published Guideline LU-131. The “guideline outlines the position of the Ministry of the Environment (MOE) on noise criteria for planning of sensitive land uses, in support of the Provincial Policy Statement under the Planning Act and in accordance with the MOE Guideline D-1 Land Use Compatibility”.

Planning Services therefore advises that any decision which is made with respect to this issue that Council must be satisfied that same is consistent with the direction of the PPS. With respect to this, Planning Services are of the opinion that the developments as currently proposed are not supportable from a land use planning perspective without appropriate noise mitigation measures being implemented.

Implications of Not Installing of Noise Wall

EPW Staff have researched the flexibility that the Town has in requiring the construction of a noise wall. Other than the planning implications as outlined, the decision whether or not to install the noise wall rests with the approval authority, being Town Council. There are however implications with not installing a noise wall that otherwise is required by implementing the MOE Guidelines.

1. The residents will be exposed to noise levels higher than that recommended by the MOE. Via the purchase and sale agreements, the Town can ask that any future owners be informed that a noise wall is required to satisfy the MOE Guidelines but that it was deferred for the betterment of the area for aesthetic or other reasons. Few buyers will read and understand this clause. The Town should expect complaints from the future residents who feel the highway noise is too loud. In the extreme the residents will want the Town to install the noise wall as originally contemplated. Council will need to decide at that time whether or not to install a noise wall that otherwise would have been installed by the developer.
2. The design for the proposed noise wall will provide a consistent architectural look and feel to the area. Without a developer constructed noise wall, the residents will most likely build privacy fences, albeit shorter, that will be mismatched and non-continuous.

Other Considerations

1. The noise fence will have a 20 – 25 year design life at which time the wall should be replaced. The noise wall is planned to be placed on private property and therefore the responsibility to maintain and replace the noise wall falls to the property owner. A significant problem being experienced by other municipalities is that replacement coordination of noise walls is very difficult. Often times the municipalities is asked to step in to either assist in the re-construction or assume the works in their entirety.

2. Another challenge that the Town should expect is intentional damage. This could be from outsiders vandalizing the wall facing the highway given the accessibility to a Town trail adjacent to the south side of the noise wall. The other concern is residents who want access to the trail installing a door or cut out in the wall. Any such opening will compromise the integrity of the sound attenuation. The Town may be required to step into a disagreement between neighbours to keep the integrity of the noise walls, not unlike drainage difficulties.

Engineer's Opinion

A letter from C.F. Crozier and Associates who prepared the noise assessment for the Delphi development is attached for reference as Attachment #5. They concluded "that outdoor sound attenuation at this development is a quality of life issue, as opposed to a health and safety issue". They state that "the height (of the noise wall) is well in excess of normal privacy walls and may be seen as aesthetically excessive".

Input from MTO

In an email received from Mr. Ian Smyth, Corridor Management Planner, he stated that the Ministry of Transportation (MTO) is not responsible for noise attenuation, except when it is constructing a new facility or expanding an existing facility in the vicinity of existing subdivisions. The Ministry does not review or comment on noise assessments provided by developers, as that is the purview of MOE. Municipalities are responsible for ensuring that MOE and MMAH policies are followed when developers plan residential subdivisions near provincial highways. He further stated that a developer who builds a residential subdivision must provide noise mitigation if sound levels are expected to exceed 60 decibels in the outdoor recreational areas within 10 years after development approval.

Mr. Smyth indicated the decision of whether or not to have the developer construct a noise barrier along the highway frontage of the property lies with the approval authority. He also stated that if a noise wall is not constructed, the MTO will not construct one due to resident complaints.

Conclusion

This report has been provided for the benefit of Council to be aware of and understand why a noise wall is being planned adjacent Highway 26 fronting the Neighbourhood of Delphi Point and Residences of Peaks Bay Developments.

C. The Blue Mountains' Strategic Plan

Preserving and enhancing natural and environmental features and cultural heritage of the community.

D. Environmental Impacts

None

E. Financial Impact

None

F. In Consultation With

Troy Speck, CAO
David Finbow, Director of Planning and Building
John Metras, Town solicitor

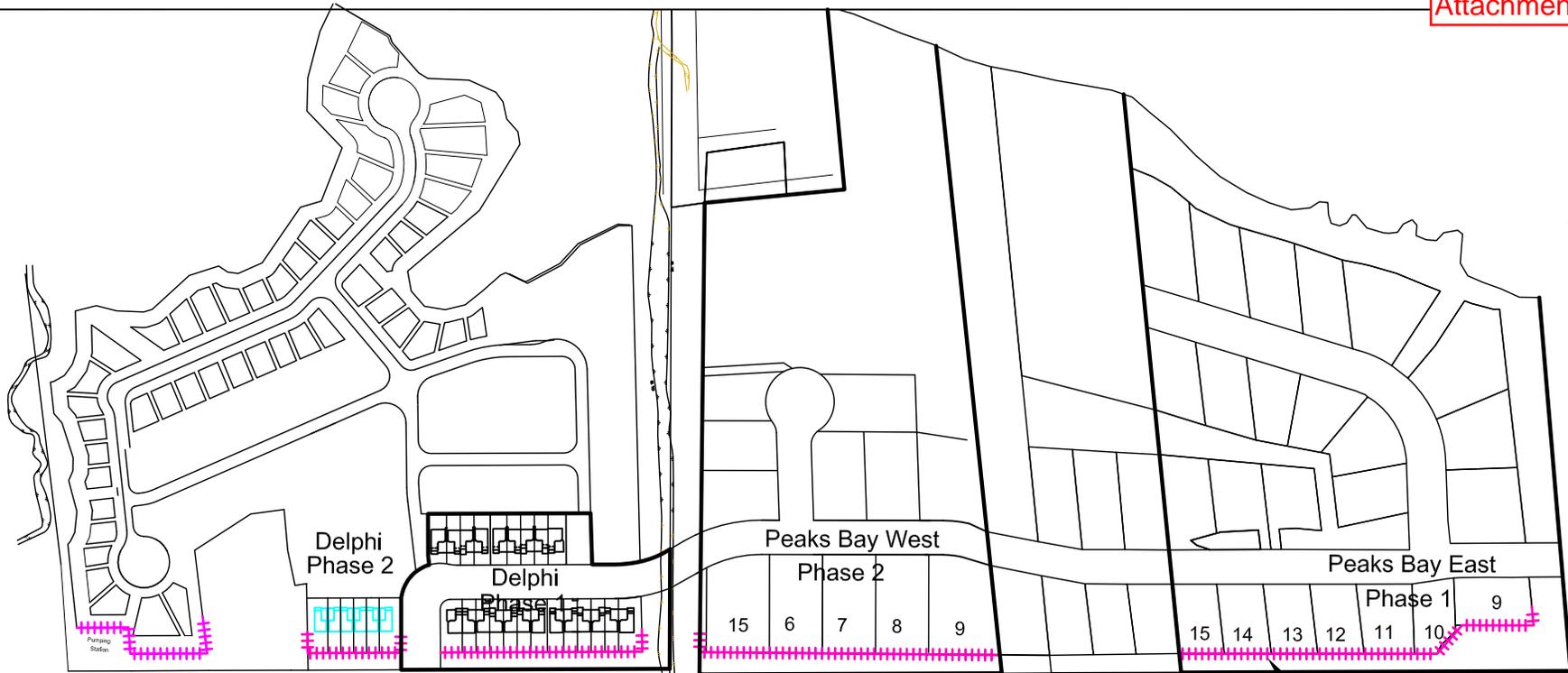
G. Attached

1. Highway 26 Sound Attenuation Barriers – Location Map
2. Proposed Noise Barrier Architectural Details
3. Photograph of Mock Noise Wall from Intersection of Peaks Road and Highway 26.
4. Photograph of Mock Noise Wall towards Georgian Peaks Ski Club
5. Opinion Letter, C.F. Crozier and Associates, May 18, 2012

Respectfully submitted,

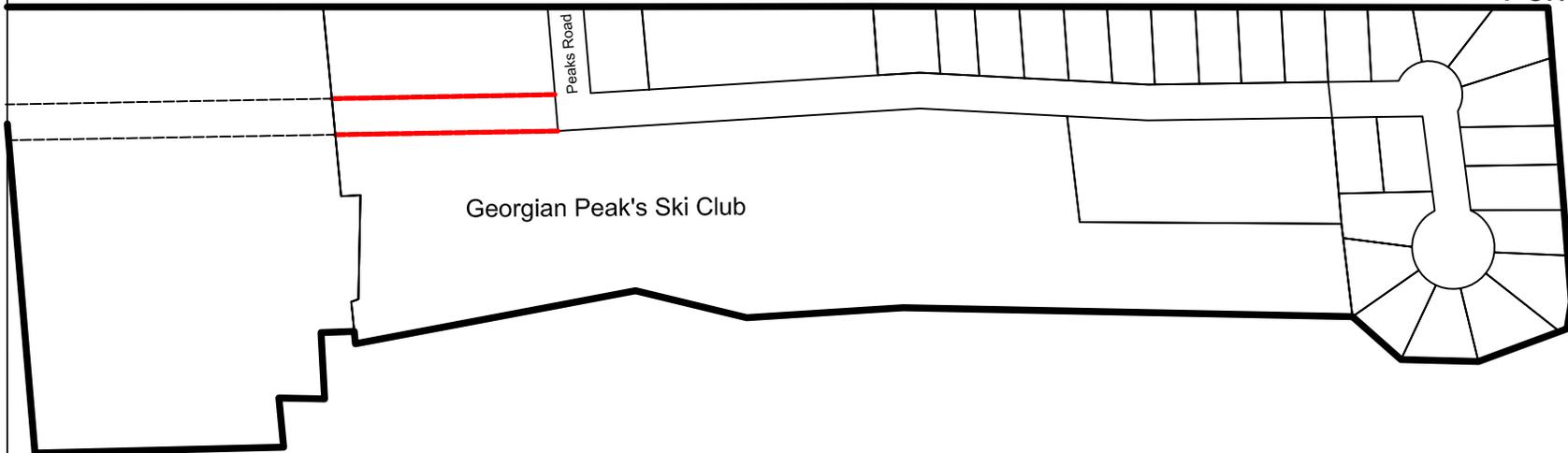
Reg Russwurm

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Hwy 26

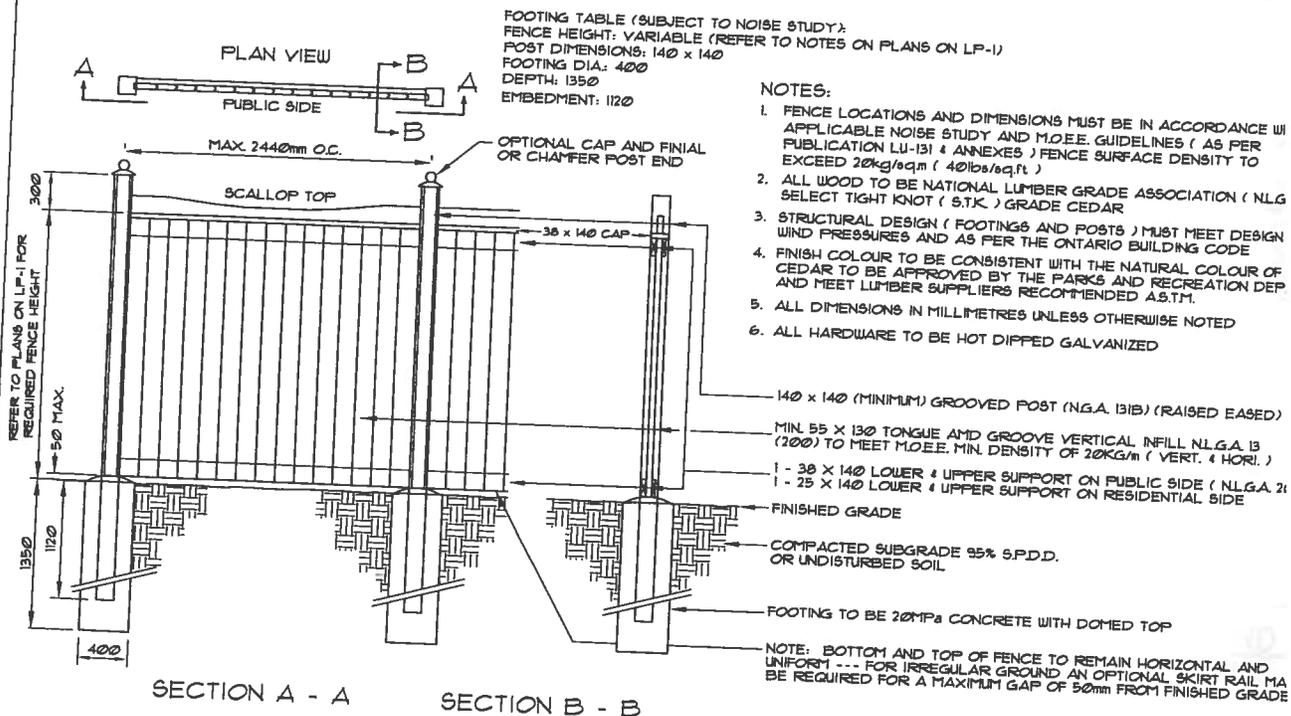
Proposed Noise Fence Locations



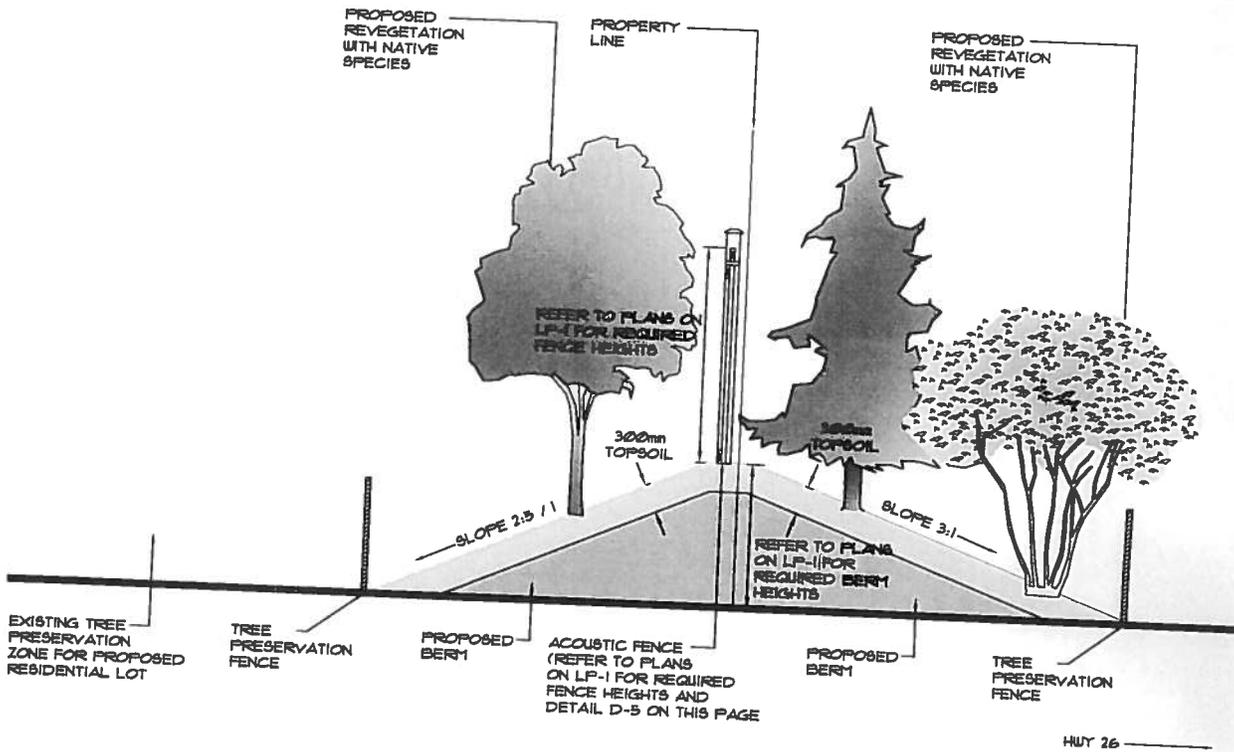
NOTE 1) LOCATIONS OF UTILITIES ARE APPROXIMATE.

SCALE: N.T.S.
DESIGN:
DRAWN: TJO
CHECKED:
DATE: JUNE 2012

TOWN OF THE BLUE MOUNTAINS
NEIGHBOURS OF DELPHI
AND PEAKS BAY
NOISE FENCE



D-6 NOISE ATTENUATION FENCE DETAIL



D-7 BERM / FENCE SECTION





MAY 18, 2012

PROJECT NO.: 226-2678

SENT VIA EMAIL

Town of The Blue Mountains
32 Mill Street, P.O. Box 310
Thornbury, ON N0H 2P0

**Attention: Reg Russwurm, MBA, P.Eng.
Director of Engineering & Public Works Department**

**RE: TECHNICAL COMMENTS ON SOUND BARRIER WALL
THE NEIGHBOURHOODS AT DELPHI POINT PHASE 1A
TOWN OF THE BLUE MOUNTAINS**

Dear Reg,

This letter will serve to address and comment on engineering issues associated with the recommended sound barrier wall for The Neighbourhoods at Delphi Point Phase 1A development.

A Noise Impact Assessment (Crozier, July 2008) was undertaken for the development as part of the planning applications. The purpose of a noise impact assessment is to quantify sound intensity levels inside a residential unit (daytime and nighttime) as well as outside (daytime). The Ministry of the Environment Publication LU-131 provides the applicable guidelines for conducting a noise impact assessment, as well as detailing the sound intensity criteria to be achieved. Mitigation of indoor sound intensity levels can be accomplished through building materials that provide enhanced reduction of sound transmission. Outdoor sound intensity levels are mitigated through the construction of a sound barrier wall.

To provide a sound intensity level consistent with the outdoor requirements of 60 dBA or less, a 2.4 metre sound barrier wall is required to provide outdoor sound attenuation of roadway transportation noise for the Phase 1A townhouse units backing onto the Highway 26 road allowance.

Section 1.3 of Publication LU-131 states that "it is the developer's responsibility to ensure that the applicable sound level criteria are met." Thus the engineering drawings for the Phase 1A development include the sound barrier system.

The unmitigated sound levels in the backyards of the Phase 1A townhouses are forecast to be 62.9 dBA in the 2018 horizon year, assuming summer level traffic volumes. This sound level is not associated with hearing damage, and is more in line with a typical conversation at one metre (60 dBA).

Thus, it is our opinion that outdoor sound attenuation at this development is a quality of life issue, as opposed to a health and safety issue. We are also of the opinion that the construction of the 2.4 metres sound barrier wall is a quality of life issue, as the height is well in excess of normal privacy fences and may be seen as aesthetically excessive.



We trust the above is of assistance to the Town in determining the necessity and desirability of installing the sound barrier wall.

Yours truly,

C.F. CROZIER & ASSOCIATES INC.



Alexander Fleming, MBA, P.Eng., PTOE
Traffic Engineer
AF/let

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	D. Finbow	dfinbow@thebluemountains.ca	(Letter only)
	R. Hodge	rwhodge@ucc.com	(Letter only)

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