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TO:	CHAIR AND MEMBERS CIVIC WORKS COMMITTEE MEETING ON JANUARY 6, 2014
FROM:	EDWARD SOLDI, P.ENG. DIRECTOR, ROADS AND TRANSPORTATION
SUBJECT:	VETERANS MEMORIAL PARKWAY NOISE ATTENUATION WALL

RECOMMENDATION

That on the recommendation of the Director, Roads and Transportation, the following actions **BE TAKEN** in respect to the Veterans Memorial Parkway Noise Attenuation Wall:

- a) A wooden noise wall **BE APPROVED** for the purpose of noise abatement from 151 Martinet Avenue to 272 Simpson Crescent, it being noted that the draft 2014 Capital Budget includes a \$500,000 item for the wall; and,
- b) The noise wall installation **BE SUBJECT TO** property owner execution of a consent-to-enter agreement at no charge to the City.

PREVIOUS REPORTS PERTINENT TO THIS MATTER
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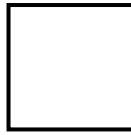
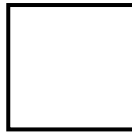
- Environment and Transportation Committee, April 28, 2003 – Environmental Study Report Airport Road Widening – Highway 401 to Oxford Street East.
- Environment and Transportation Committee, January 15, 2007 – Veterans Memorial Parkway Noise Study
- Built and Natural Environment Committee, March 28, 2011 – Veterans Memorial Parkway Noise Study
- Built and Natural Environment Committee, May 16, 2011 – Public Participation Meeting - Veterans Memorial Parkway and Highbury Avenue Noise Study
- Built and Natural Environment Committee, September 26, 2011 – Veterans Memorial Parkway Noise Study
- Civic Works Committee, January 21, 2013 – Veterans Memorial Parkway Noise Study
- Civic Works Committee, April 22, 2013 – Veterans Memorial Parkway Noise Study
- Civic Works Committee, October 7, 2013 - Veterans Memorial Parkway Noise Study

BACKGROUND

Purpose:

At the October 22, 2013 Council meeting, the report related to the Veterans Memorial Parkway Noise Study was referred back to staff to take the following action related to noise abatement:

- a) investigate new materials that may be available for the purpose of noise abatement on Veterans Memorial Parkway, between Simpson Crescent and Trafalgar Street, at an up-set limit of \$500,000, with noise abatement measures to be completed in 2014; and,
- b) after the completion of the works noted in a), above, undertake a review of the noise levels in the area to ensure that they are below 60 decibels.



DISCUSSION

Policy:

The installation of noise attenuation is typically triggered by two mechanisms, during initial land development or adjacent to road widening.

New developments are required to mitigate noise where necessary with noise mitigation installed on private property. Future maintenance is the obligation of the property owner. When noise walls are required, the noise wall must meet the Ministry of the Environment (MOE) surface density requirement of 20 kg/m² (4.1lb/ft²) to achieve effective noise reduction. Developer installed noise walls commonly use wood and concrete noise wall products that meet this criteria.

Road widening projects are required to mitigate associated noise increases in adjacent residential Outdoor Living Areas behind residential homes. When noise walls are triggered by City road widening projects, the walls are installed on City property and are maintained by the City. City of London road widening contracts specify products on the provincial designated sources of materials (DSM) listing. These noise wall products meet the MOE density criteria and are predominantly concrete to incur reduced future maintenance. Installation is subject to the provision of consent-to-enter agreements at no charge to the City to remove existing fences and join existing line fences.

Existing Conditions:

The VMP (formerly Airport Road) is a four lane divided expressway with a 60 metre right-of-way width. The average annual daily traffic volume is 25,000 vehicles per day.

Residential lands exist along the west side of VMP from Dundas Street southerly to Trafalgar Street with a combination of low rise condominiums and single family residential properties. A 3 metre high noise attenuation berm exists along the property line to mitigate noise from the VMP.

The existing noise attenuation berm does not extend along the medium density three-storey residential property at 2230 Trafalgar Street. The noise attenuation warrants described above do not apply to this property because of the absence of an Outdoor Living Area as defined by provincial guidelines. Therefore the recommendations herein do not apply to that property.

Noise Wall Material Alternatives:

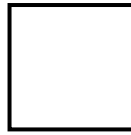
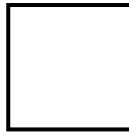
Council directed staff to explore noise abatement wall alternatives in addition to the existing noise attenuation berm between the residences and VMP. Administration has previously provided cost estimates for the installation of DSM noise wall products currently approved for City installations on the right-of-way. In response to the recent request, additional products have been investigated for viability. Cost estimates are provided for the design and installation of a 2.4 m high wall between Simpson Crescent and Trafalgar Street, a length of 1000 m.

SimTek Fence & Integrated Wall Systems

The review of materials included two products brought forward by members of Council - SimTek Fence and Integrated Wall Systems. Staff held discussions with the suppliers of these products and reviewed related materials. While both of these products claim to be a durable & decorative fence, they do **NOT** meet the MOE density requirements for a noise barrier and would provide a reduced level of noise mitigation. The estimated construction value for these two products is \$825,000 + HST.

A review of noise wall products that meet the MOE density requirements indicates the following three alternatives:

1. *Concrete Noise Wall* - Concrete noise walls meet the density requirements and several suppliers are included on the DSM. These are used in City contracts. Installation would require additional foundation engineering (geotechnical investigation and design). Some earthworks disruption to the top plateau & berm slope would be required to create an accessible area for contractor equipment and activities for materials handling due to the significant size and weight of wall panels. This disruption will include tree removal,



placement of fill material, creation of a formal access road for heavier equipment and revegetation of the disturbed areas after the wall is in place.

Estimated construction value = \$1,700,000 + HST.

2. *Wooden (pressure treated) Noise Wall* – Wooden noise walls are constructed of tongue-in-groove pressure treated lumber and are designed & built to meet the MOE density requirements. These are commonly used in private developments and not City road projects. As per the City’s Design Standards and Specifications manual, “Wooden noise walls are to be located entirely on private property, and maintained by the owner”. With the individual panels being smaller and more manageable, the cost estimate includes less effort to widen the top plateau and less removal of existing vegetation to complete the noise wall installation.

Estimated construction value = \$450,000 + HST.

3. *AcoustiGuard Noise Wall* – AcoustiGuard Noise Wall is a product made from recycled PVC with smaller panels that are easier to install. It is not identified on the provincial DSM listing and has not been utilized on any Capital Works projects in the City of London. Staff is not aware of any installations in London. AcoustiGuard is manufactured to meet the MOE density requirements.

Estimated construction value = \$1,425,000 + HST.

Recommendation:

Of the above three alternatives that meet the MOE density criteria (Alternatives 1 to 3), only one is estimated to be within the upset value of \$500,000 established by Council. Therefore, the introduction of a wooden noise wall as described in Alternative 2 is recommended.

Policies require that wood noise walls are installed on private property and maintained by the property owner. In this unique situation, the wall would be built on the City side of the property line.

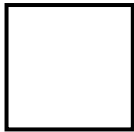
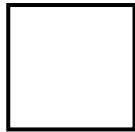
The installation of noise walls triggers the removal of existing fences and new connections to line fences. Prior to any construction, each property must execute a consent-to-enter agreement at no cost to the City in accordance with the City Policy 25 (12), Noise Barriers on Arterial Roads.

Wooden Noise Wall Examples:

Wooden noise walls are very common in the City of London. One local example is along the backyards of 276 to 348 Simpson Crescent at the north end of the study area. Space constraints where the development diverges from the VMP right-of-way appear to have prevented an extension of the noise attenuation berm along this part of the site so a wooden noise wall was installed instead. The start of the wooden noise wall is visible where the horizontal gap-free board fence begins as shown in the photos below.



272 / 276 Simpson Cres



Photos of other typical wooden noise wall installations within London follow:



Sunningdale Road west of South Wenige Dr



Sarnia Road east of Aldersbrook Rd



Hamilton Road east of Clarke Rd



Gainsborough Road west of Limberlost Rd



Exeter Road west of Greenfield Dr



Southdale Road east of Tillman Rd

Decorative wooden panels could be added to enhance the presentation of the wall.

CONCLUSIONS

At the time of residential development along the west side of the VMP between Dundas Street and Trafalgar Street, noise mitigation was installed by the developers. A noise berm was the recommended mitigation due partially to the space available in the wider-than-typical VMP right-of-way. The residential property owners have expressed the need for further mitigation of traffic noise along the rear of their property.

Civic administration was directed to investigate new materials that may be available for the purpose of noise abatement on VMP, between Simpson Crescent and Trafalgar Street with an upset limit of \$500,000. From the above alternatives, it appears only one alternative would be within the budget defined by Council. The installation of wood noise walls is recommended.

Subject to the approval of the \$500,000 budget as previously submitted in the draft 2014 Capital Budget, administration will implement the installation of a wooden noise wall on top of the existing noise berm. The installation will begin at the south end of 151 Martinet Avenue where low density residential development begins to the end of the existing wood noise wall around

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272 Simpson Crescent. Contrary to current policies, the wooden noise wall will be built on the private side of the property line. Consent-to-enter agreements for minor work area encroachments would be requested from all affected property owners and would be required at no cost.

The estimated cost of the wooden noise wall installation is \$450,000 + HST. Following the completion of the wall, staff will undertake a review of the noise levels in the area to ensure that they are below 60 decibels as requested by Council. The estimated value of this study would be \$25,000 + HST.

Acknowledgements:

This report was prepared with assistance from Karl Grabowski, P.Eng., Transportation Design Engineer in the Transportation Planning and Design Division.

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cc: Councilor B. Armstrong