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OAKVILLE TRANSPORTATION MASTER PLAN UPDATE

Noise Review

Submitted to:
Cole Engineering Group Ltd.
70 Valleywood Drive, Markham
Ontario, L3R 4T5

REPORT



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1.0 INTRODUCTION

Golder Associates Ltd. (Golder) has been retained by Cole Engineering Group Ltd. (Cole) to prepare a noise report (Report) to update the existing Town of Oakville (Oakville), Oakville Transportation Master Plan (TMP) dated March 30, 2007 as it relates to noise. The TMP must: address all modes of transportation, reflect the most current context for policies, plan and forecast issues related to land use planning and transportation for all jurisdictions and areas having an influence upon the geographical area of Oakville up to the year 2031.

It is Golder's understanding that the TMP update will be carried out as per the Municipal Engineers Association's (MEA) Municipal Class Environmental Assessment (EA) – October 2000 – Amended 2007, Phases 1 and 2 of the Planning and Design Process. This Report will provide supporting information relating to noise that can be used for this process.

At the request of Oakville, the TMP update must coordinate with the new Region of Halton Transportation Master Plan and consideration for any planned Metrolinx/GO Transit initiatives and Ontario Ministry of Transportation (MTO) current and future planning work, including 407 ETR.

The update to Oakville's TMP as it relates to noise will focus on the existing applicable noise guidelines and their connection with land use planning and required noise studies. This Report will provide Oakville with an understanding of noise such that future decisions relating to Oakville's transportation network will recognize noise and the necessary effort required to support the decisions accordingly.



2.0 EXISTING OAKVILLE TRANSPORTATION MASTER PLAN

Oakville's existing TMP provides guidance and establishes the transportation policy and infrastructure plan that is currently being implemented in regards to all modes of travel including: cars, public transit, cycling and walking up to 2021. The existing TMP provides a transportation strategy that is based on numerous established goals from Oakville's various stakeholders. It was developed according to a set of transportation interests and vision that were also reflected where appropriate, in the North Oakville East and West Secondary Plans. During Golder's review of Oakville's existing TMP, Golder did not find any specific section or explicit reference relating to any noise policies or guidelines for transportation sources. Based on Oakville's projected growth rate, the existing infrastructure will be inadequate to accommodate the demands of its residents, businesses, and its use as a transportation corridor within southern Ontario. A solution for the next 25 years as proposed in Oakville's existing TMP will involve: expanding current roads, the addition of new roads and bridges, and improving the public transit system.

Oakville's network of roads consists of Major Arterial, Minor Arterial, Multi-purpose Arterial, Major Collector and Collector roads. The majority of arterial roads in Oakville are under the jurisdiction of the Region of Halton (Halton) as shown in Exhibit 4.1 in Oakville's existing TMP. There are three major provincial highways that pass through Oakville, the Queen Elizabeth Way (QEW), Highway 403 and Highway 407 ETR; these highways along with several major roads in Oakville are vital in bringing in over 80% of goods by medium to large trucks for manufacturing and other operations in the Town and play a key role in the Southern Ontario's goods transportation. Oakville's existing TMP was coordinated with similar tasks completed for the Halton Transportation Master Plan dated June 2004. Halton's TMP was recently updated in September 2011.

According to the 2001 Transportation Tomorrow Survey (TTS), of all the daily trips by Oakville's residents, 78% during the AM peak period and 87% during the PM peak period were carried out by automobile. The remaining percentage of trips was completed by local transit, GO Transit, walking, cycling or other, with GO Transit generally having the next highest percentages. It is estimated that several key road links in Oakville are near or at their max volume-to-capacity ratio. Furthermore, 60% of the daily trips are made by the Town's residents and 70% occur within Halton. By 2021 Oakville is expected to have a population increase of 87,000, about a 35% increase in North Oakville and employment growth of 45,000 jobs. Both population and employment growth is anticipated beyond 2021 in North Oakville.

After looking at a number of alternatives to deal with the increase demand and volume on the roads, Oakville decided that the best approach was to increase the use of alternative modes of transportation, specifically increase the number of people using public transit and other non-auto methods of travel and thus decrease the number of automobiles on the roads. At the same time, planned improvements include widening several existing roads and adding new roads to maintain an acceptable level of service, with priority being given to roads that serve public transit.

Improving and adding to the existing road infrastructure will be done in conjunction with Halton and the Government of Ontario. The Government of Ontario, through the MTO, will widen the QEW, improve the interchanges, and add High Occupancy Vehicle (HOV) lanes. Several other roads in the Town will also be widened. Exhibit 8.3 in Oakville's existing TMP summarizes the road network improvements to 2021. In addition to improving the road infrastructure, Oakville will be updating the cycling and pedestrian paths on various arterial roads and expand or add various transit vehicle and facility (terminals, facilities, storage and maintenance) requirements.



The Oakville Transit system is part of a regional hierarchy with the GO trains being on the top and reducing the dependency on the automobile. A key role of bus service is thus focused around providing connections to the GO trains with the Oakville GO train station as the main focal point. Oakville GO Station is the second busiest station in the GO Rail network with Union Station being the first, with over 11,000 people per day using the station. As GO Transit expands, it will increase bus service and Oakville Transit will need to adapt to accommodate the increase.

Oakville will be improving the infrastructure to decrease travel times (i.e., service times between 2 to 30 minutes) and reduce bottle necks through the introduction of HOV lanes, transit only turning lanes, transit queue jumping lanes, and priority access for transit to stations. As new areas are developed, Oakville will be intentionally ensuring that they are designed to accommodate, and encourage, the use of public transit. In addition to this, new major transit stations will be built to improve both the effective operation of the transit system and passenger service. The new transit stations will be accessible from neighbourhoods, integrated with development and have attractive facilities. The recommended transit service concept for Oakville is shown in Exhibit 9.3.

As part of the North Oakville East and West Secondary Plans, alternative road design cross sections are being reviewed, including the location and intended function of the road. These include reduced setbacks, pavement widths, landscaping and modes of transportation to be used along them.

In regards to scheduling of implementing the existing TMP, a proposed schedule was provided. The 15 year plan estimates approximately 39% of capital investment to occur in the first five years (2007 to 2012), 52% in the second five years and 9% during the remaining period. Funding is expected to be primarily from the public sector.



3.0 RELEVANT DOCUMENTATION

Below are brief summaries of relevant guidelines / documentation considered for the Oakville TMP update. As previously mentioned, during Golder's review of Oakville's existing TMP, Golder did not find any specific section or explicit reference relating to any noise policies or guidelines for transportation sources. The following documentation is the result of a preliminary review carried out by Golder that identified relevant documents relating to noise and transportation planning within Oakville and considered applicable at this stage of Oakville's TMP update process. It should be noted that additional documents are referenced within the documents below. Also, some of the documents below are in the process of being updated and therefore may be considered applicable as the TMP is further discussed or updated. If necessary, these additional and/or updated documents should be reviewed and incorporated for the purposes of Oakville TMP as necessary.

3.1 Noise Documentation and Guidelines

3.1.1 Town of Oakville Noise By-Law

Oakville's Noise By-Law, Number 2008-098 (By-Law), is a by-law to prohibit and regulate noise. According to the By-Law, excessive sound and inadequately controlled noise may impair the public health, safety and welfare and may become a nuisance. The By-Law describes different types of noise sources and their respective times when they can operate or occur. These noise sources include construction equipment and railcars that are stationary on property not owned or controlled by a railway governed by the *Canada Railway Act*. The By-Law identifies sound limits for stationary sources emitting noise at a point of reception located in either a controlled area or residential area. There are limitations and exemptions for some specific stationary sources that may be granted by Oakville. Types of permits include a road use permit allowing construction equipment to operate during the weekend and nighttime periods to minimize traffic impacts.

3.1.2 Ontario Ministry of Environment

The Ontario Ministry of Environment (MOE) provides guidance documents related to noise. The following have been identified as being applicable for this stage of Oakville's TMP update;

- 1) NPC-205 - Sound Level Limits for Stationary Sources in Class 1 & 2 Areas (Urban) (October 1995);
- 2) NPC-232 - Sound Level Limits for Stationary Sources In Class 3 Areas (Rural) (October 1995);
- 3) LU-131 – Noise Assessment Criteria in Land Use Planning (October 1997);
- 4) Guideline D-1 – Land Use Compatibility (July 1995); and
- 5) Guideline D-6 – Compatibility Between Industrial Facilities and Sensitive Land Uses (July 1995).

The above documents are summarized below. The above MOE documents are published documents but the MOE is currently in the process of publishing a new guidance document, *Environmental Noise Guideline – Stationary and Transportation Sources – Approval and Planning Publication NPC-300 Revised Draft April 2011* (NPC-300). NPC-300 is expected to supersede LU-131, NPC-205 and NPC-232. A summary of NPC-300 is also included below.



3.1.2.1 NPC-205 - Sound Level Limits for Stationary Sources in Class 1 & 2 Areas (Urban)

The *Sound Level Limits for Stationary Sources in Class 1 & 2 Areas (Urban) Publication NPC-205* (NPC-205) was released in October 1995. NPC-205 establishes sound level limits for stationary sources such as industrial and commercial establishments or ancillary transportation facilities, affecting points of reception in Class 1 and 2 areas. According to NPC-205, Class 1 and Class 2 are described as follows:

Class 1 areas means an area with an acoustical environment typical of a major population centre where the background noise is dominated by the urban hum.

Class 2 means an area with an acoustical environment that has qualities representative of both Class 1 and Class 3 Areas, and in which a low ambient sound level, normally occurring only between 23:00 and 07:00 hours in Class 1 Areas, will typically be realized as early as 19:00 hours. There is an absence of urban hum between 19:00 and 23:00 hours and the evening background sound level is defined by the natural environment and infrequent human activity.

Some noise sources are excluded from the sound level limits presented in NPC-205 which include construction activities and transportation corridors. Measured or predicted one hour equivalent sound level (L_{eq}) and/or Logarithmic Mean Impulse Sound Level (L_{LM}) produced by the stationary noise source is considered under a “predictable worst case” scenario and compared to either the exclusionary sound level limits or existing background sound levels. The exclusionary sound level limits for a Class 1 and Class 2 areas are presented in this guideline.

3.1.2.2 NPC-232 - Sound Level Limits for Stationary Sources in Class 3 Area (Rural)

The *Sound Level Limits for Stationary Sources in Class 3 Area (Rural) Publication NPC-232* (NPC-232) was released in October 1995. NPC-232 establishes sound level limits for stationary sources such as industrial and commercial establishments or ancillary transportation facilities, affecting points of reception in Class 3 areas. According to NPC-232, Class is described as follows:

Class 3 means a rural area with acoustical environment that is dominated by natural sounds having little or no road traffic, such as the a small community with less than 1000 population, agricultural area, a rural recreational area such as a cottage or a resort area or wilderness area.

Some noise sources are excluded from the sound level limits presented in NPC-232 which include construction activities and transportation corridors. Measured or predicted one hour equivalent sound level (L_{eq}) and/or Logarithmic Mean Impulse Sound Level (L_{LM}) produced by the stationary noise source is considered under a “predictable worst case” scenario and compared to either the exclusionary sound level limits or existing background sound levels. The exclusionary sound level limits for a Class 3 area are presented in this guideline.



3.1.2.3 Noise Assessment Criteria in Land Use Planning Publication LU-131

This guideline provides noise criteria for planning of sensitive land uses. It is in support of Provincial Policy Statement under the *Planning Act* and in accordance with the MOE's *Guideline D-1 "Land Use Compatibility"*. This guideline is intended for the planning of noise sensitive land uses adjacent to industrial or commercial facilities. Some of the types of facilities include airports, road and rail transportation corridors, industrial facilities, aggregate facilities, major commercial facilities, sewage treatment facilities and waste sites. It is expected that applying the principles of LU-131 early in the planning process will result in effective planning.

This guideline defines criteria for noise impact assessments of proposed residential or other noise sensitive land uses located in Class 1 and Class 2 Areas. It includes procedures to establish sound level limits on the site of the proposed noise sensitive land uses due to transportation sources (road, rail and air traffic) and stationary sources (such as industrial and commercial activities) to ensure a comfortable living environment. When assessing transportation sources, sound levels are provided for both outdoor and indoor environments for the different modes of transportation during different times of the day. The indoor environments are further separated into either living or sleeping quarters. Sound levels when assessing stationary sources are established according to NPC-205.

This guideline is intended to assist and provide direction to the MOE, municipalities (preparation of official plans, official plan amendments, comprehensive zoning by-laws, rezoning, plans of subdivisions, plans of condominiums, etc.), planning boards and consultants on the expectations in land use planning where noise is a concern. It also includes an Annex where additional noise criteria and details are provided.

Note the developer is responsible for ensuring the sound level criteria are met including the feasibility of the project, outdoor and indoor acoustical environments and ensuring any required noise control measures are included in the development. Therefore if noise controls are required for a nearby stationary source and the preferred option is to mitigate at the source, then a cooperative effort between the developer and owner of the stationary source is preferred.

3.1.2.4 Guideline D-1 – Land Use Compatibility

This guideline identifies the need for buffers (Separation distance, berms, walls, fences, building orientation, etc.) to minimize or prevent exposure to adverse effects associated with the operation of a specified facility. Adverse effects may include, but not limited to, the following; 1) Noise and Vibration 2) Visual Impact 3) Odours and other emissions 4) Litter, dust and other particulates 5) other contaminants. This guideline applies to one of the following; 1) New sensitive land use is proposed within an influence area or potential influence area of an existing facility 2) New facility is proposed where an existing sensitive land use is within the facility's influence area or potential influence area 3) Change in land use places sensitive land use within the influence area of a facility. This guideline does not apply to situations where incompatible land use already exists.

It is the responsibility of the developer or proponent for ensuring a development (sensitive land use or facility) is environmentally acceptable and that a compatibility issue will not exist. This includes evaluating the impacts and providing information on any necessary control measures required. The municipalities and other planning authorities are expected to separate and/or protect facilities and sensitive land uses and in the end achieving compatibility of land uses. Municipalities can accomplish this by following one of these methods: 1) Ensure



policies and principles relating to planning (official plan, land use schedule, zoning by-laws, etc.) include the principles of this guideline when it is being prepared or updated 2) Carry out feasibility studies 3) Maintain an inventory list of the location of all existing committed and former facilities within their region 4) Identify and locate influence areas and/or potential influence areas 5) Use zoning by-laws to control future permitted uses will be compatible 6) During the Site Plan Control, the location of on-site mitigation controls that allow for compatibility to be achieved should be identified. When mitigation controls are required, the municipalities should require legal agreements be put in place between the developer and the property owners of the affected parties prior to development approval.

3.1.2.5 *Guideline D-6 – Compatibility Between Industrial Facilities and Sensitive Land Uses*

Guideline D-6 is a direct application of Guideline D-1 specifically for evaluating compatibility between sensitive land uses and stationary industrial facilities. Guideline D-1 does identify facilities or land uses that do not apply and that it be implemented similar to Guideline D-6. This guideline provides potential influence areas (separation distances) for three different classes of industrial land uses if an actual influence area is not available. A noise study following LU-131 is required from the proponent to the approving authority.

3.1.2.6 *Environmental Noise Guideline – Stationary and Transportation Sources – Approval and Planning Publication NPC-300 Revised Draft April 2011*

This guideline focuses on the proper control of noise source emissions into the environment and serves the following four (4) purposes;

- 1) Provides sound level limits that are applied by the MOE to Stationary Sources which can include industrial / commercial / auxiliary transportation. Compliance with the sound level limits is required for planned, new, expanded or modified Stationary Sources of sound through an ECA (Section 9), or a Renewable Energy Approval (Section 47.3 – Environmental Protection Act) or under provisions of Environmental Assessment Act and Aggregate Resources Act. Sound level limits also apply to noise-related incidents reported to MOE which can be investigated to determine potential adverse effect in violation of Section 14 of Environmental Protection Act.
- 2) Provides advice, sound level criteria and guidance to land use planning approval authorities (municipalities, planning boards and other ministries, developers and consultants) for planning decisions made under the Planning Act concerning noise sensitive land uses in support of the Provincial Policy Statement. To be used to minimize the potential conflict between proposed noise sensitive land uses and sources of emissions. It is specifically applied to planning decisions concerning noise sensitive land uses adjacent to facilities such as, but not limited to, industrial facilities, major commercial facilities, railway yards, aggregate facilities and waste sites.
- 3) Provides sound level limits that may be included in noise control by-laws which may be developed by municipalities in accordance with the Municipality Act and/or other enabling legislation.



- 4) Provide sound level limits that may be applied for licensing activities of aggregate resource extraction activities applied under the provisions of the Aggregate Resources Act.

NPC-300 is currently a draft document (Revised draft on April 2011) and latest discussions with the MOE indicate NPC-300 is expected to be released some time in 2012. NPC-300 will replace the following publications:

- Publication LU-131 – Noise Assessment Criteria in Land Use Planning: Requirements, Procedures and Implementation;
- Publication NPC-205 – Sound Level Limits for Stationary Sources in Class 1 and 2 Areas (Urban); and
- Publication NPC-232 – Sound Level Limits for Stationary Sources in Class 3 Areas (Rural).

As previously mentioned, LU-131, NPC-205 and NPC-232 are guidance documents currently being used for assessing land use and preparing various noise studies (e.g., Acoustic Assessment Report, Noise Impact Studies). The MOE will continue to accept Acoustic Assessment Reports using the procedures outlined in the documents to be replaced by NPC-300 until its publication date. At the same time, upon a written request from an applicant, applications can be assessed under NPC-300. Upon the release of NPC-300, noise studies will need to comply with its procedures. NPC-300 is still required to be used in conjunction with the MOE D-Series Guidelines (Guideline D-1 and Guideline D-6) and does not address sound produced by blasting, wind turbine generators, landfills or the approval of new or expanded transit corridors.

This guideline provides sound level limits for existing, planned, new, expanded or modified stationary sources affecting points of reception located in noise sensitive land uses (Part B). Sound level limits for stationary sources are considered at the point of reception's plane of window or outdoor point of reception and are either the exclusionary limits presented in this guideline or the lowest monitored background sound level. Existing facilities that have the appropriate approval and are not under investigation for complaints by the MOE and/or municipality can be included as part of background sound level. Note there are separate sound level limits for noise produced by emergency equipment operating in non-emergency situations.

As before, the measured or predicted one hour equivalent sound level (L_{eq}) and/or Logarithmic Mean Impulse Sound Level (L_{LM}) produced by the stationary noise source is considered under a "predictable worst case" scenario and compared to the applicable sound level limits. In this guideline, a "predictable worst case" now also includes infrequent operation of equipment defined as a piece of equipment that operates twice a month or more and emits noise for at least one half hour during each occasion. If noise control measures are required, source based control measures are preferred but in the event certain receptor based noise control measures are required, their implementation and maintenance should be documented in a legally binding agreement between the developer, land use planning authority and the owner(s) of the stationary sources. It is the responsibility of the owner of the stationary source to comply with the sound level limits when applying for MOE approval after completing a noise impact assessment. It will be the responsibility of the proponent/developer of a noise sensitive land use being developed or redeveloped, when building near a stationary source, to ensure compliance with the applicable sound level limits. Under these circumstances, a cooperative effort between the developer and stationary source owner is preferred since it typically results in more efficient and cost effective results.



NPC-300 introduces one (1) new Area Class for the classification of a receptor location, Class 4. Class 4 is defined as follows and has its own specific sound level limits:

Refers to an area that would have been designated as Class 1 or 2 but is an area intended for new developments not already built for noise sensitive land uses; near legitimately established existing stationary source(s); Formal confirmation from the land use planning authority during the land use planning process the area can be designated as Class 4. Noise sensitive land uses designated as Class 1 or Class 2 areas can be reclassified as Class 4 if they are being replaced, redeveloped or rebuilt. The land use planning authority (i.e., Municipality) will still need to provide confirmation the noise sensitive lands can be reclassified as Class 4.

This guideline also provides guidance for land use planning purposes as it relates to transportation and stationary sources of noise (Part C). As stated in NPC-300, the MOE has no authority under the *Planning Act* regarding the land use planning approval process. Similar to LU-131, NPC-300 provides guidance for land use planning authorities that exercise decision-making authority under the *Planning Act*, developers and consultants to address environmental noise in the land use planning process. Note the developer's responsible for ensuring the sound level criteria are met including the feasibility of the project, outdoor and indoor acoustical environments, ensuring any required noise control measures are included in the development and describing the technical details and clarifying the responsibility for the implementation and maintenance of the required noise controls. As previously discussed, it is the responsibility of the owner of the stationary source to comply with the applicable sound level limits in regards to MOE approvals but the responsibility of the proponent/developer of a noise sensitive land use being developed or redeveloped, when building near a stationary source, to ensure compliance with the applicable sound level limits. Therefore a cooperative effort between the developer and stationary source owner is preferred since it typically results in more efficient and cost effective results.

It is also recommended that feasibility and/or detailed noise impact studies be required by the land use planning authority in the early stages of the land use planning stages to support the development for a noise sensitive land use proposal. This guideline highlights the requirements of these studies. The noise impact assessment of transportation sources considers road, rail and aircraft sources. Whether one or multiple sources are considered at the same time, this guideline includes procedures to establish sound level limits for both outdoor and indoor environments for the different modes of transportation during different times of the day. The indoor environments are further separated into either living or sleeping quarters. The noise impact assessment of existing or planned stationary sources potential influence area on a new noise sensitive land use is similar to the procedure described above. Note that all stationary sources, even those that are identified as being exempt in Part A of NPC-300, have to be included for land use planning purposes of new sensitive land uses. The sound level limits of stationary sources for land use planning are the same as in Part B. In addition, this guideline further provides information regarding appropriate noise control measures and warning clauses for transportation and stationary sources.



3.1.3 Ontario Ministry of Transportation Environmental Guide for Noise

The Ontario Ministry of Transportation (MTO) Environmental Guide for Noise Version #1.1 updated in July 2008 (Noise Guide) provides guidance in the analysis of highway noise and its effects through the following stages of a project;

- Transportation Planning;
- Highway Design;
 - Preliminary Design;
 - Detail Design;
- Construction; and
- Operations and Maintenance.

Examples of the types of projects include new alignments, reconstruction of existing roads and minor reconstruction. The Noise Guide updates, improves and supersedes the *Environmental Office Manual – Technical Areas – Noise (1992)*, *MTO/MOE Noise Protocol (1986)* and the *MTO Quality and Standards Directive A-1 – Noise Policy and Acoustical Standards for Provincial Highways*. The following is a summary of the Noise Guide.

The Noise Guide describes the qualification requirements of the acoustical specialist carrying out the noise analysis and noise prediction methodologies approved by both the MOE and MTO (ORNAMENT and Stamina 2.0) when carrying out the noise analysis. The Noise Guide provides requirements for noise assessments and mitigation relating to the construction of new or the expansion of existing Provincial Highways. These requirements are the framework for the policy regarding noise and have been summarized into the following two Environmental Protection Requirements (EPRs) for noise according to the *MTO Environmental Protection Requirements Section 6* and the Noise Guide and are summarized below:

NOISE-1 *During design of a new or modified highway, a noise assessment by a qualified acoustical specialist is required for the Most Exposed Side and the Outdoor Living Areas of Noise Sensitive Areas. As an initial screening, future sound levels shall be assessed with and without the proposed improvements for the Most Exposed Side. The objective for outdoor sound levels is to achieve the future predicted ambient that would occur without the proposed highway. The significance of a noise impact will be quantified by using this objective in addition to the change in sound level above the ambient (i.e. the future sound level without the proposed improvements is compared to the future sound level with the proposed improvement).*



The determination of the provision of mitigation is based on the analysis of the predicted noise level at the Outdoor Living Areas. The mitigation efforts to be applied for various noise level increases are as follows:

Change in Noise Level Above Ambient / Projected Noise levels with Proposed Improvements	Mitigation Effort Required
< 5 dBA change & <65 dBA	- None
≥ 5 dBA change OR ≥ 65 dBA	- Investigate noise control measures on right-of-way. - Introduce noise control measures within right-of-way and mitigate to ambient if technically, economically and administratively feasible. - Noise control measures, where introduced, should achieve a minimum of 5 dBA attenuation, over first row receivers.

The implemented mitigation measures (i.e., acoustical barriers, berms, vertical and horizontal alignments and pavement surfaces) must attempt to achieve levels as close to, or lower than, the objective level as is technically, economically, and administratively feasible.

NOISE-2 Highway construction shall be undertaken in a manner to minimize noise levels and identify a process for dealing with public complaints during construction. Pile driving and blasting operations shall be in accordance with Ontario Provincial Standard Specifications (OPSS 120) and Ministry of the Environment Publication NPC-119.

As described in the Noise Guide, the noise analysis is carried out as follows to meet EPR Noise-1;

- Identification of area of investigation;
- Identification of noise sensitive areas (NSAs);
- Determination of future ambient;
- Determination of future noise levels with the undertaking;
- Determination of potential impact;
- Determination of significance;
- Assessment of mitigation; and
- Summarize noise analysis in a Noise Report.

The above were primarily described as part of the Transportation Planning stage in the Noise Guide but apply to all stages and considered in the process to be carried out for the noise analysis. The Noise Guide provides additional details on the noise analysis to be carried out during the Highway Preliminary and Detail Design stages.



3.1.4 Region of Halton Noise Abatement Policy

According to the Region of Halton's website, the Regional Council adopted the *Region of Halton Noise Abatement Policy* on November 1, 2000. This policy identifies the requirements regarding noise control measures for the following scenarios:

- a) Existing Residential Development (Retrofit Situations);
- b) Regional Road Projects; and
- c) New Development Policy.

This policy appears to be based on the MTO Noise Guide and the MOE documents summarized above as some of the key items are similar. It defines items such as noise sensitive land uses, the noise calculation method, sound level limits criteria, noise barrier technical criteria and the responsibilities of Halton and the developer.

3.2 Transportation Plans

3.2.1 Region of Halton Transportation Master Plan

The Region of Halton Transportation Master Plan *The Road to Change* (Halton TMP) lists the strategies, policies and tools for the development of a balanced, sustainable and integrated transportation system that considers all methods of travel and supports policies and objectives arising out of the Halton Region Official Plan Review to the year 2031. It's vision is based on the Transportation Goals and Objectives of Regional Official Plan Amendment No. 38 (ROPA 38), the "Big Move" Metrolinx Regional Transportation Plan for the Greater Toronto and Hamilton Area and input provided through consultation with different groups. Key components of Halton's TMP were defined by the following five guiding principles; 1) Balance Needs 2) Healthy Communities 3) Economic Vitality 4) Sustainability 5) Well-Maintained Infrastructure. All road improvement projects recommended as part of the Halton TMP are identified as Schedule C projects, therefore according to the Municipal Class EA, requires the completion of Phases 3 and 4.

Halton which is comprised of the Town of Oakville, City of Burlington, Town of Milton and Town of Halton Hills, is expected to have a population increase from 492,000 to 780,000 and an employment increase from 262,000 to 390,000 between 2011 and 2031; this will make it one of the fastest growing regions in Ontario. The majority of these increases are expected to be in North Oakville and Milton, with Oakville expected to see a population increase from 174,780 to 246,000, and an employment increase from 90,969 to 128,359.

In order for Halton to deal with the increase, it will be necessary to have an effective transit system in place and to increase the volume of cars the road network can handle. Halton's network of roads consists of Major Arterial, Minor Arterial, Multi-purpose Arterial, Major Collector and Collector roads. Halton is responsible for the Major Arterial roads while the Government of Ontario and municipalities are responsible for the remaining roads. According to the 2006 Transportation Tomorrow Survey, during the afternoon peak period, over 76% of residents in Halton commute by car to work, with only 5% using the public transit, and 16% riding as passengers in cars. Halton's goal by 2031 is to reduce the dependency on single-occupant automobiles to 72% and have 20% of residents using public transit. Although Halton does not directly provide a transit system it does partner with



municipalities such as the Town of Oakville and City of Burlington on major transit related studies. In addition, transit improvements to achieve the 20% ridership are dependent on those identified in the Metrolinx Regional Transportation Plan *The Big Move*. Furthermore, the municipalities in Halton have developed Active Transportation/Cycling/Trail plans in a further attempt to lower the number of cars on the roads.

A large component of the 20% projected increase in public transit use in Halton is with people commuting in and out of the region, mainly with GO Transit. New facilities and routes will have to be made to accommodate this. In addition GO Transit plans to increase their overall service frequency on the Lakeshore, Milton, and Georgetown GO Rail lines. Even with these increases in public transit, it will still be necessary to increase the width of current roads to a maximum of six lanes and to add new roads to the existing network. According to Halton's TMP, the preferred transportation strategy to 2031 for Halton includes policies and initiatives to support Transportation Demand Management and Active Transportation, enhanced transit services and additional capacity in the Regional roadway network.

3.2.2 Metrolinx Regional Transportation Plan *The Big Move*

Metrolinx is an agency of the Government of Ontario. It was given the mandate to develop and implement a long-term strategic plan for an integrated, multi-modal, regional transportation system that considers all modes of transportation, makes use of intelligent transportation systems and promotes the integration of local transit systems amongst each other and the GO Transit system within the Greater Toronto and Hamilton Area (GTHA). The Regional Transportation Plan *The Big Move* (RTP) describes this long-term strategic plan up to 25 years into the future and identifies its respective vision, goals and objectives. A total of ten (10) strategies were developed to achieve the vision, goals and objectives. Furthermore, nine priority action items, known as the "Nine Big Moves" are identified as having the largest and most transformational impact on the GTHA's transportation system. They include transit connectivity to Pearson airport, an expanded Union Station, region-wide integrated transit fare system and a system of connected mobility hubs.

In the 1970's and 1980's the GTHA was one of the largest and fastest-growing regions in North America, this was aided by an advanced transportation network that was advanced for its time. Since then there has been no major additions to this network. As a result the GTHA's transportation network is no longer able to accommodate the volume of people living in the GTHA, this has resulted in people driving their own personal cars. During the peak morning commute there is over two million automobile trips made with an average of 1.2 people per car.

By 2031 the population of the GTHA is expected to increase from 6 million in 2008 to 8.6 million people. With this increase in population it is necessary to improve the transit system; Metrolinx is proposing to build over 1,200 km of rapid transit, over 3 times of what exists now, with the goal of having over 80% of people in the GTHA living within 2 km of the rapid transit. In addition, on the highways, HOV lanes will be implemented to encourage carpooling and the use of public transit. In order to achieve this, one of the objectives is to reduce the consumption of urban development to support the goal of more compact and efficient urban forms by carrying out the strategy (Strategy #7 Build Communities that are Pedestrian, Cycling and Transit-Supportive) of placing mobility hubs at the centre of urban centres and within walking distances of transit users. As part of Strategy #10 Commit to Continuous Improvement, a long range plan for land protection and/or acquisition to accommodate future transportation needs will be carried out.



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In the end, the rapid transit system will be expanded and the road network will be improved such that commuting times will be reduced, increase in transit use will occur, urban growth centres will be connected, opportunities for a more competitive economy will exist, a healthier environment and a better quality of life for those in the GTHA will result.



4.0 RECOMMENDATIONS FOR THE OAKVILLE TMP UPDATE

Oakville is updating the TMP to ensure that: all modes of transportation are addressed, it reflects the most current context for policies, plans and forecasts issues related to land use planning and transportation for all jurisdictions and areas having an influence upon the geographical area of Oakville up to the year 2031. In addition, the TMP update must coordinate with the Halton’s new TMP and consideration for any planned Metrolinx/GO Transit initiatives as described in Metrolinx’s *The Big Move* and MTO current and future planning work, including 407 ETR.

During Golder’s review of Oakville’s existing TMP, Golder did not find any specific section or explicit reference relating to any noise policies or guidelines for transportation sources. Based on the document review above, noise will need to be considered from as early as the land use planning stage to when construction is being carried out for the new and existing various transportation systems. Due to the nature of noise, noise concerns will span all of Oakville wherever the transportation project upgrades are occurring but yet typically require localized solutions.

Therefore, Golder recommends the existing Oakville TMP be updated to include the investigation of noise due to transportation sources as part of the process when the various projects that are part of the updated Oakville TMP are carried out. Golder recommends these investigations begin in the early stages of a project (i.e., land use planning) and the appropriate noise studies as identified in the respective noise relevant documents / guidelines discussed in this Report be completed. Note that additional documents / guidelines are referenced while others are in the process of being updated. Therefore at the time of the noise studies, the validity of these documents should be confirmed. The table below summarizes the expected different stages when noise should be reviewed and the respective applicable noise documents / guidelines at the time of this Report. The table also identifies the responsible authority for each stage.

Stage	Relevant Documentation referring to Noise	Responsible Authority
Land use planning (Feasibility Studies, Site Plan Approval, Zoning)	<ul style="list-style-type: none"> ■ LU-131 ■ NPC-205 ■ NPC-232 ■ NPC-300 (Draft April 2011) ■ Guideline D1 ■ Guideline D6 ■ Town of Oakville Noise By-Law ■ MTO Environmental Noise Guidelines ■ Region of Halton Noise Abatement Policy 	<ul style="list-style-type: none"> ■ Municipality
Environmental Assessments and/or Noise Assessments	<ul style="list-style-type: none"> ■ LU-131 ■ NPC-205 ■ NPC-232 ■ NPC-300 (Draft April 2011) ■ MTO Environmental Noise Guidelines 	<ul style="list-style-type: none"> ■ MOE ■ MTO
Permitting of stationary sources	<ul style="list-style-type: none"> ■ NPC-205 ■ NPC-232 ■ NPC-300 (Draft April 2011) 	<ul style="list-style-type: none"> ■ MOE



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Stage	Relevant Documentation referring to Noise	Responsible Authority
Design & Layout	<ul style="list-style-type: none">■ LU-131■ NPC-205■ NPC-232■ NPC-300 (Draft April 2011)■ Guideline D1■ Guideline D6■ Town of Oakville Noise By-Law■ MTO Environmental Noise Guidelines■ Region of Halton Noise Abatement Policy	<ul style="list-style-type: none">■ Municipality■ MOE■ MTO
Construction	<ul style="list-style-type: none">■ Town of Oakville Noise By-Law■ NPC-119■ MTO Environmental Noise Guidelines	<ul style="list-style-type: none">■ Municipality■ MTO



5.0 CONCLUSION

The purpose of this Report is to support the Cole Engineering Group Ltd. update to the existing Town of Oakville, Oakville Transportation Master Plan dated March 30, 2007 to address all modes of transportation, reflect the most current context for policies, plan and forecast issues related to land use planning and transportation for all jurisdictions and areas having an influence upon the geographical area of Oakville up to the year 2031.

The various existing transportation plans spanning the Region of Halton and specifically the Town of Oakville, are proposing upgrading the transit and road networks to help support the expected increase in population. This increase in population will ultimately result in increasing noise levels due to increased traffic volumes. In addition, the number of people exposed to higher noise levels will also be increased due to the densification within the Town of Oakville. As a result, the Town of Oakville must take an active role in planning decisions where noise sensitive land uses may be adversely affected by transportation noise sources.

Therefore, Golder recommends the existing Oakville TMP be updated to include the investigation of noise (and associated reports) due to transportation sources as part of the process when the various projects that are part of updated Oakville TMP are carried out. Golder recommends these investigations begin in the early stages of a project, focusing on the applicable noise guidelines and their connection with land use planning and the required noise studies. This Report provided a summary of the applicable documents / guidelines to be considered in the Oakville TMP update and indicated where these documents may be applicable during different stages of future transportation projects. In addition, this Report identified the Responsible Authority that will be required to address noise for the various phases and/or types of projects. Therefore, it is imperative that the Township of Oakville understand it's responsibility with respect to noise and ensuring that noise is addressed as required and at the appropriate time.



6.0 REFERENCES

- The Big Move – Transforming Transportation in the Greater Toronto and Hamilton Area.* November 2008. Metrolinx.
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- Guideline D-1 – Land Use Compatibility.* July 1995. Ontario Ministry of the Environment.
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- Noise Assessment Criteria in Land Use Planning – Publication LU-131.* October 1997. (http://www.ene.gov.on.ca/stdprodconsume/groups/lr/@ene/@resources/documents/resource/std01_079357.pdf, accessed April, 2012)
- Sound Levels Due to Road Traffic – Publication NPC-206.* October 1995. Ontario Ministry of Environment and Energy.
- Sound Level Limits For Stationary Sources in Class 1 & 2 Areas (Urban) – Publication NPC-205.* October 1995. Ontario Ministry of the Environment.
- Sound Level Limits For Stationary Sources in Class 3 (Rural) –Publication NPC-232.* October 1995. Ontario Ministry of the Environment.



Report Signature Page

GOLDER ASSOCIATES LTD.

Stefan Cicak, B.A.Sc., P.Eng.
Acoustics, Noise and Vibration Engineer

Danny da Silva, B.Sc., B.A.Sc., P.Eng.
Associate

SC/Dd/ng

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Africa	+ 27 11 254 4800
Asia	+ 86 21 6258 5522
Australasia	+ 61 3 8862 3500
Europe	+ 356 21 42 30 20
North America	+ 1 800 275 3281
South America	+ 55 21 3095 9500

solutions@golder.com
www.golder.com

Golder Associates Ltd.
6925 Century Avenue, Suite #100
Mississauga, Ontario, L5N 7K2
Canada
T: +1 (905) 567 4444

