



A Tyco International Ltd. Company

City of Greater Sudbury

Maley Drive Extension/Lasalle Boulevard Widening Municipal Class EA Addendum

Prepared for:
City of Greater Sudbury
P.O. Box 5000, Station 'A'
200 Brady Street, Tom Davies Square
Sudbury, Ontario
P3A 5P3

Prepared by:
Earth Tech (Canada) Inc.
1040 Lorne Street South, Unit #1
Sudbury, Ontario
P3C 4R9

May 15, 2008

Project No. 91277

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TABLE OF CONTENTS

1.0	INTRODUCTION	1
1.1.	BACKGROUND INFORMATION	6
2.0	THE PROPOSED CHANGES AND RATIONALE FOR THE UNDERTAKING.....	7
3.0	OVERVIEW OF THE CLASS EA ADDENDUM PROCESS	10
4.0	THE PREFERRED SOLUTION	12
4.1.	PHASE 1 - CONSTRUCTION OF NEW INTERCHANGE AT NOTRE DAME AND NEW FLYOVER AT LASALLE BOULEVARD	12
4.2.	PHASE 2 - EXTENSION OF MALEY DRIVE FROM NOTRE DAME TO BARRYDOWNE ROAD	13
4.3.	PHASE 3 - WIDENING OF MALEY DRIVE FROM BARRYDOWNE ROAD TO FALCONBRIDGE HIGHWAY AND ..	13
4.4.	PHASE 4 - WIDENING OF LASALLE BOULEVARD FROM 0.3 KM WEST OF NOTRE DAME TO JUST EAST OF THE CPR OVERHEAD.	13
5.0	ENVIRONMENTAL IMPLICATIONS OF THE PROPOSED CHANGES.....	15
5.1.	NATURAL ENVIRONMENT	15
5.1.1.	<i>Methodology.....</i>	<i>15</i>
5.1.2.	<i>Fisheries and Aquatic Ecosystems</i>	<i>15</i>
5.1.3.	<i>Recommended Mitigation Measures</i>	<i>19</i>
5.2.	TERRESTRIAL ECOSYSTEMS AND WILDLIFE.....	20
5.2.1.	<i>Recommended Mitigation Measures</i>	<i>21</i>
5.3.	SOCIO-ECONOMIC ENVIRONMENT	22
5.3.1.	<i>Effects on Land Uses</i>	<i>22</i>
5.3.2.	<i>Temporary Construction Related Nuisance Effects (Noise, Dust, Odours and Fumes).....</i>	<i>22</i>
5.3.3.	<i>Aesthetics.....</i>	<i>23</i>
5.3.4.	<i>Noise.....</i>	<i>23</i>
5.3.5.	<i>Potential for Loss of Archaeology / Heritage Resources</i>	<i>23</i>
5.4.	ESTIMATED CAPITAL COSTS	24
6.0	NOTIFICATION OF ADDENDUM FILING.....	25
7.0	SUMMARY	25

FIGURES

FIGURE 1: PROPOSED MALEY DRIVE EXTENSION AS IDENTIFIED IN THE 1995 ESR	4
FIGURE 2: REVISED STUDY LIMITS FOR THE MALEY DRIVE EXTENSION / LASALLE BOULEVARD WIDENING PROJECT .5	
FIGURE 3: POSSIBLE PHASES 1A AND 1B OF MALEY DRIVE PROJECT	14
FIGURE 4: PROPOSED PROJECT PHASING	14
FIGURE 5: WATERCOURSE CROSSING LOCATIONS	18

APPENDICES

Appendix A	Noise Study
Appendix B	Public Consultation
Appendix C	Estimated Project Cost
Appendix D	Possible Future Extension - Maley Drive Easterly
Appendix E	FRi Ecological Services Report

1.0 INTRODUCTION

While it has been more than 10 years since the Maley Drive Extension Class Environmental Assessment was completed, the primary purpose for the Maley Drive Extension is still valid - to provide a new east-west arterial road along the northerly edge of the developed areas of the City.¹ All traffic crossing the northern section of the City is currently restricted to using either Lasalle Boulevard or the Kingsway, the only two major through routes.

The Maley Drive Extension Class Environmental Study Report (ESR) identified truck traffic as a key issue that needed to be addressed based on a Trucking Action Plan that was undertaken as part of a Transportation Plan that was completed in 1992. The Trucking Action Plan recommended the extension of Maley Drive and the upgrading of the existing Maley Drive as a preferred route for a northern truck bypass. The idea of a northern bypass of the developed area of the former City of Sudbury arose from a number of sources in the latter part of the 1980's, including:

- The mining and smelting industries which saw potential benefits in terms of more efficient transportation of materials;
- The public, which had concerns with respect to the impacts of large trucks on Lasalle Boulevard and on other streets in the Region; and
- The former Regional Municipality of Sudbury, which saw the need for additional east/west road capacity in the area north of Ramsey Lake.

Therefore, the Maley Drive Extension ESR recommended that the Maley Drive Extension function as a truck bypass of Lasalle Boulevard and the Kingsway in order to reduce truck and auto conflicts on these roads, improve traffic operations, and minimize the degradation of the structure of both roadways (the rate of pavement degradation increases proportionately with truck use).² The possible future extension of Maley Drive easterly to the Kingsway Highway was also discussed, see Appendix D.

The Maley Drive Extension ESR identified the following three primary components to address the above-mentioned issues:

¹ *Regional Municipality of Sudbury. Maley Drive Extension Class Environmental Assessment. October 1995. Page 1-4.*

² *Ibid. Page 1-4.*

- The extension of Maley Drive westerly from its existing western terminus at Barrydowne Road to the Lasalle Boulevard Extension, west of Notre Dame Avenue. This segment would be constructed as a two-lane road;
- The reconstruction of the existing Maley Drive east of Barrydowne Road, as a two-lane road, from Barrydowne Road to Old Falconbridge Road, and as a four-lane road from Old Falconbridge Road to Falconbridge Highway; and
- The widening of Lasalle Boulevard from two lanes to four lanes from Maley Drive to Frood Road.

Once completed, Maley Drive would provide a continuous arterial road connection across the entire northern developed area of the City between Falconbridge Highway and the Lasalle Boulevard Extension. It was proposed at the time that Maley Drive ultimately consist of a four-lane road from Falconbridge Highway to Lasalle Boulevard.

In 2005 the City of Greater Sudbury (COGS) undertook a Transportation Background Study as part of a comprehensive review of its existing official plans that were developed for the former municipalities. There was need to undertake a new Transportation Study since the previous Transportation Study for the former Region of Sudbury was completed in 1992 and focused largely on specific problem areas in the City of Sudbury. While many of the recommendations from the 1992 Transportation Study have been implemented, there are a number of improvements, such as the Maley Drive Extension, that have not been undertaken.

In order to address this issue for increased east-west capacity, analysis presented in the Maley Drive Extension Class Environmental Assessment Report identified the Maley Drive Extension and the reconstruction of existing Maley Drive as the solution. Analysis undertaken as part of the 2005 Transportation Study confirmed these earlier findings.³

Lasalle Boulevard, from 0.3 km west of Notre Dame to just east of the CPR Overhead is a two-lane road while on either side of this section it operates as a four-lane road. The 2005 Transportation Study stated

³ Earth Tech Canada Inc. *City of Greater Sudbury Transportation Study Report. September 2005. Page 68*

that this section of Lasalle Boulevard operates at or near capacity during peak periods, and with increased traffic volumes, this section is expected to experience capacity problems if no improvements are made.

However, by widening this section to four lanes, it is expected to operate at a satisfactory level of service throughout the planning horizon, to 2021. Therefore, the COGS has added this recommendation to reconstruct and widen Lasalle Boulevard in this section to the Maley Drive Extension Class Environmental Assessment.

Therefore, the proposed undertaking subject to the Maley Drive Extension ESR Addendum is (See Figure 1):

- The reconstruction and widening of Lasalle Boulevard from just east of the CPR Overhead to 0.3 km west of Notre Dame Avenue, from two lanes to four lanes.
- The extension of Maley Drive westerly from its existing western terminus at Barrydowne Road to the Lasalle Boulevard Extension, west of Notre Dame Avenue. This segment would be constructed as a four-lane road.
- The reconstruction and widening of the existing Maley Drive, east of Barrydowne Road to Falconbridge Highway, as a four-lane road.
- The COGS is now seeking proposals from qualified Consultants to complete the detail design and contract administration associated with the aforementioned works.

This addendum, therefore, documents the proposed changes to the project and their potential effects. The addendum has been divided into the following sections:

Section 2: The proposed Changes, including the reason and purpose for these changes.

Section 3: The Municipal Class EA Addendum process being followed.

Section 4: A detailed description of the proposed undertaking.

Section 5: The environmental implications associated with the proposed undertaking, including the existing conditions, potential effects and mitigation measures developed for any adverse environmental effects, and any commitments to further work and monitoring.

Section 6: The notification provided.

Figure 1: Proposed Maley Drive Extension as Identified in the 1995 ESR

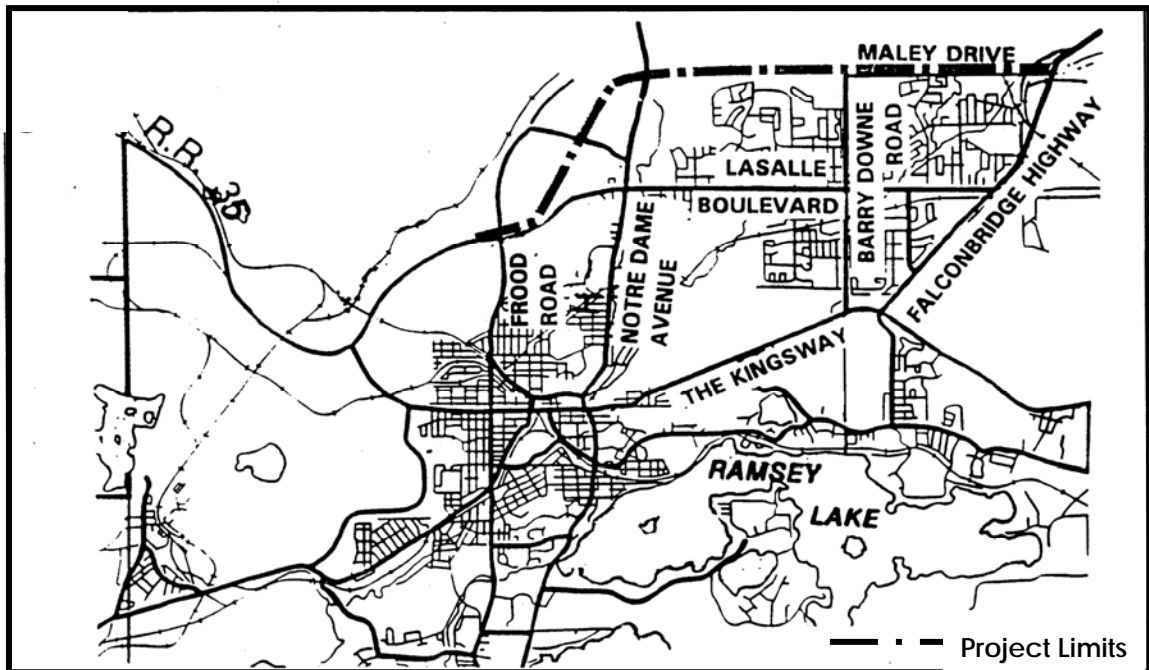
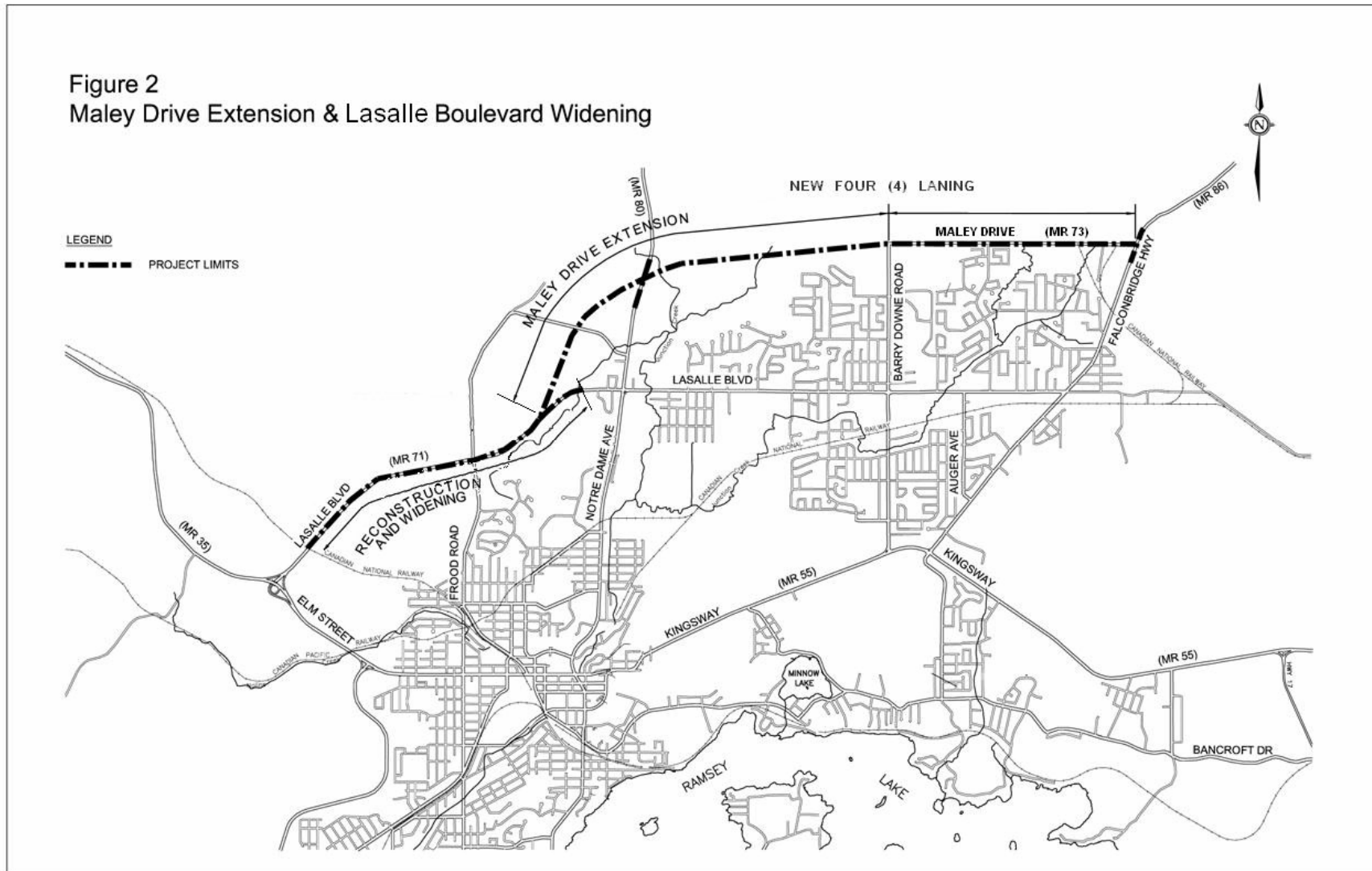


Figure 2: Revised Study Limits for the Maley Drive Extension / Lasalle Boulevard Widening Project



1.1. Background Information

In addition to the ESR Addendum, the 1995 ESR and other background information pertaining to this project resides with the COGS and may be requested for viewing by contacting:

Mr. Robert Falcioni, P.Eng.
Director of Roads and Transportation
City of Greater Sudbury

Address: P.O. Box 5000, Station 'A'
200 Brady Street, Tom Davies Square
Sudbury, ON P3A 5P3
Telephone: (705) 560-2022, ext. 3652
Fax: (705) 560-9641
Email: robert.falcioni@city.greatersudbury.on.ca

The COGSs consultant for this project, Earth Tech (Canada) Inc., may be contacted at the following address to further discuss the project:

Mr. Tony Cecutti, P.Eng.
Project Manager
Earth Tech (Canada) Inc.

Address: 1040 Lorne Street South, Unit #1
Sudbury, ON P3C 4R9
Telephone: (705) 674-8347
Fax: (705) 674-1694
Email: tony.cecutti@earthtech.ca

2.0 THE PROPOSED CHANGES AND RATIONALE FOR THE UNDERTAKING

While it has been more than 10 years since the 1995 ESR was completed, the primary purpose for the Maley Drive Extension provided in that report is still valid - to provide a new east-west arterial road along the northerly edge of the developed areas of the City lying north of Ramsey Lake.⁴ All traffic crossing the northern section of the City is currently restricted to using either Lasalle Boulevard or the Kingsway, the only two major through routes north of Ramsey Lake.

The 1995 ESR identifies truck traffic as a key issue based on a Trucking Action Plan completed as part of a Transportation Plan completed in 1992. The Action Plan recommended the extension of Maley Drive and the upgrading of the existing Maley Drive as a preferred route for a northern truck bypass. The idea of a northern bypass of the developed area of the former City of Sudbury arose from a number of sources in the latter part of the 1980's, including:

- The mining and smelting industries which saw potential benefits in terms of more efficient transportation of materials;
- The public, which had concerns with respect to the impacts of large trucks on Lasalle Boulevard and on other streets in the Region; and
- The former Regional Municipality of Sudbury, which saw the need for additional east/west road capacity in the area north of Ramsey Lake.

As a result, the 1995 ESR recommended that the Maley Drive Extension function as a truck bypass of Lasalle Boulevard and the Kingsway in order to reduce truck and auto conflicts on these roads, improve traffic operations, and minimize the degradation of the structure of both roadways (the rate of pavement degradation increases proportionately with truck use).⁵

The 1995 ESR, for the Maley Drive Extension, identified the following three components to address the above-mentioned issues (see Figure 1):⁶

⁴ *Regional Municipality of Sudbury. Maley Drive Extension Class Environmental Assessment. October 1995. Page 1-4.*

⁵ *Ibid. Page 1-4.*

⁶ *Ibid. Page 1-3.*

- The extension of Maley Drive westerly from its existing western terminus at Barrydowne Road to the Lasalle Boulevard Extension, west of Notre Dame Avenue. This segment would be constructed as a two-lane road;
- The reconstruction of the existing Maley Drive east of Barrydowne Road, as a two-lane road, from Barrydowne Road to Old Falconbridge Road, and as a four-lane road from Old Falconbridge Road to Falconbridge Highway; and
- The widening of Lasalle Boulevard from two lanes to four lanes from Maley Drive to Frood Road.

Once completed, Maley Drive would provide a continuous arterial road connection across the entire northern developed area of the City between Falconbridge Highway and the Lasalle Boulevard Extension. It was proposed at the time that Maley Drive ultimately consist of a four-lane road from Falconbridge Highway to Lasalle Boulevard.

In 2005 the COGS undertook a Transportation Background Study as part of a comprehensive review of its existing official plans that were developed for the former municipalities. There was need to undertake a new Transportation Study since the previous Transportation Study for the former Region of Sudbury was completed in 1992 and focused largely on specific problem areas in the City of Sudbury. While many of the recommendations from the 1992 Transportation Study were implemented, there were a number of improvements, such as the Maley Drive Extension, that were not undertaken.

To address this issue of increased east-west traffic volume, the analysis presented in the in 1995 ESR identified the Maley Drive Extension and the reconstruction of existing Maley Drive as the preferred solution. Based on 2001 traffic data, it was determined that sections of the Lasalle Boulevard were experiencing capacity problems during peak periods. The analysis undertaken as part of the 2005 Transportation Background Study confirmed the recommendations of the 1995 ESR.⁷

Lasalle Boulevard, from 0.3 km west of Notre Dame to just east of the CPR Overhead is a two-lane road while on either side of this section is a four-lane road. The 2005 Transportation Study stated that this

⁷ Earth Tech Canada Inc. *City of Greater Sudbury Transportation Study Report. September 2005. Page 68*

section of Lasalle Boulevard operates at or near capacity during peak periods, and with increased traffic volumes, this section is expected to experience capacity problems if no improvements are made.

However, by widening this section to four lanes, it is expected to operate at a satisfactory level of service throughout the planning horizon, to 2021. Therefore, the COGS has taken this recommendation to reconstruct and widen Lasalle Boulevard in this section and added it to the Maley Drive Extension Class EA.

As a result, the proposed undertaking subject to this ESR Addendum is:

- The reconstruction and widening of the existing Maley Drive, east of Barrydowne Road to Falconbridge Highway, as a four-lane road.
- The extension of Maley Drive westerly from its existing western terminus at Barrydowne Road to the Lasalle Boulevard Extension, west of Notre Dame Avenue. This segment would be constructed as a four-lane road.
- The reconstruction and widening of Lasalle Boulevard from just east of the CPR Overhead to 0.3 km west of Notre Dame Avenue, from two lanes to four lanes.

3.0 OVERVIEW OF THE CLASS EA ADDENDUM PROCESS

The 1995 ESR was undertaken in accordance with the 1993 edition of the Municipal Engineers Association's Class Environmental Assessment for Municipal Road Projects (Class EA).⁸ The Class EA provides a planning and design process approved under the Environmental Assessment Act (EA Act) for municipal transportation projects that fall into a "class" of projects which are similar in nature, have common characteristics, recur frequently and have a generally predictable range of effects for which standard mitigation measures can be applied. Projects undertaken in accordance with the Class EA planning and design process do not require formal review and approval separately under the EA Act. Therefore, Class EA projects are pre-approved once they have fulfilled the Class EA requirements.

The Class EA requires that an Addendum to an ESR be completed under two conditions:

Lapse of Time - The Class EA states that if the period of time from filing of the Notice of Completion of the ESR on the public record to the proposed commencement of construction for the project exceeds five years, the proponent is required to review the planning and design process and the current environmental setting to ensure that the project and the mitigation measures are still valid given the current planning context, and document the review in an addendum to the ESR.⁹

Change in Project or Environment - The Class EA states that any significant modification to the project or change in the environmental setting for the project, which occurs after the filing of the ESR, shall be reviewed by the proponent and an addendum to the ESR written.¹⁰

In this case, both conditions apply. Since the original ESR was filed for public review in 1995, the COGS is required to review the 1995 ESR and produce an addendum before proceeding to construction. Also, since the COGS is proposing to modify the project to include the widening of Lasalle Boulevard where it is currently two lanes (from just east of the CPR Overhead to 0.3 km west of Notre Dame Avenue), which is considered to be a significant modification, and there has been new land use development since the

⁸ *The Municipal Engineers Association's Class EA was updated in June 2000. The current Addendum to the 1995 ESR is therefore being completed under the June 2000 Class EA.*

⁹ *Municipal Engineers Association. Municipal Class Environmental Assessment. June 2000. Page A-71/72.*

¹⁰ *Ibid. Page A-71.*

1995 ESR was filed (change in the environmental setting), the COGS is required to review the ESR and produce an addendum before proceeding to construction.

The review of the 1995 ESR has been documented in this Addendum. The Municipal Class EA process requires that the Addendum include:

- The circumstances necessitating the change;
- The anticipated environmental effects associated with the change; and
- The proposed mitigating measures for any adverse environmental effects.

A Notice of Addendum Filing is required to notify all potentially affected parties (e.g., public members, review agencies and those who were notified of the original ESR filing) that the Addendum is available for review. The Addendum will be filed along with the 1995 ESR for a minimum of 30 calendar days. The Notice will include the public's right to request a Part II Order (a "bump-up")¹¹ within the 30 day review period.

¹¹ *Part II Order or "Bump-up" - The act of requesting that an environmental assessment initiated as a Class EA be required to follow the Individual EA process. The change is a result of a decision by the proponent or by the Minister of the Environment to require that an Individual EA be conducted in light of significant unresolved project issues with a stakeholder.*

4.0 THE PREFERRED SOLUTION

The proposed Maley Drive extension and widening will be separated into four (4) phases of construction, as listed:

- Phase 1** Construction of New Interchange at Notre Dame and New Flyover at Lasalle Boulevard.
- Phase 2** Extension of Maley Drive from Notre Dame to Barrydowne Road.
- Phase 3** Widening of Maley Drive from Barrydowne Road to Falconbridge Highway.
- Phase 4** Widening of Lasalle Boulevard from 0.3 km west of Notre Dame to just east of the CPR Overhead.

The result of these phases of construction will be the creation of a by-pass route along the northern edge of the former City of Sudbury, as shown in Figure 2. The completed Maley Drive will link Lasalle Boulevard in the west to Falconbridge Highway in the east. A description of the detailed design for each phase of development is discussed below.

4.1. Phase 1 - Construction of New Interchange at Notre Dame and New Flyover at Lasalle Boulevard

It is suggested that the facility from Notre Dame Avenue to Frood Road be completed as Phase 1. Within this first phase, the project can be separated into three sections as illustrated on the attached drawings.

Once the volume of materials needing to be excavated has been determined, the construction of the overpass and extension of Maley westerly towards Lasalle should begin, as Phase 1a. It is suggested that the overpass structure/interchange be constructed first. The completed overpass can then be used to transport excavated rock for the following phases of this project, west of Notre Dame, identified in this report as Phase 2.

The construction of the flyover at Lasalle Boulevard and the relocation of the intersection to College Boreal is suggested to be completed as Phase 1b. For the purpose of opening this section of Maley in a timely manner, it is suggested that Phase 1a and b be constructed at the same time.

We envisioned that once these structures are complete, traffic will be able to access Notre Dame Avenue north via the new structures, thereby relieving some traffic from the Notre Dame/Lasalle Intersection.

Finally, to further accommodate the opening of the new structures, it is suggested that the widening of Lasalle Boulevard from the Maley Drive Interchange to Frood Road, be completed as Phase 1c.

4.2. Phase 2 - Extension of Maley Drive from Notre Dame to Barrydowne Road

The COGS can begin the construction of the Maley Drive extension, from the overpass to Barrydowne Road, as Phase 2. The materials stockpiled during the excavation process during Phase 1 can be used to extend Maley Drive.

Like Phase 1, the construction of this section of Maley Drive can be implemented in two (2) phases. This option would result in, 1) the public's awareness that the project is underway, 2) the moving of traffic from Lasalle Boulevard and the Kingsway onto Maley Drive.

4.3. Phase 3 - Widening of Maley Drive from Barrydowne Road to Falconbridge Highway and

4.4. Phase 4 - Widening of Lasalle Boulevard from 0.3 km west of Notre Dame to just east of the CPR Overhead.

Phase 3 and Phase 4 are interchangeable depending upon the outcome of the detailed design and the COGS's future priorities for this project. Phase 3 could potentially include a grade separation over the CN tracks.

As the COGS refines the construction work program, a list of advantages and disadvantages can be developed to assess the most cost effective strategy for the phasing of these works.

The phases of project construction are shown in Figure 3 and Figure 4.

Figure 3: Possible Phases 1a and 1b of Maley Drive Project

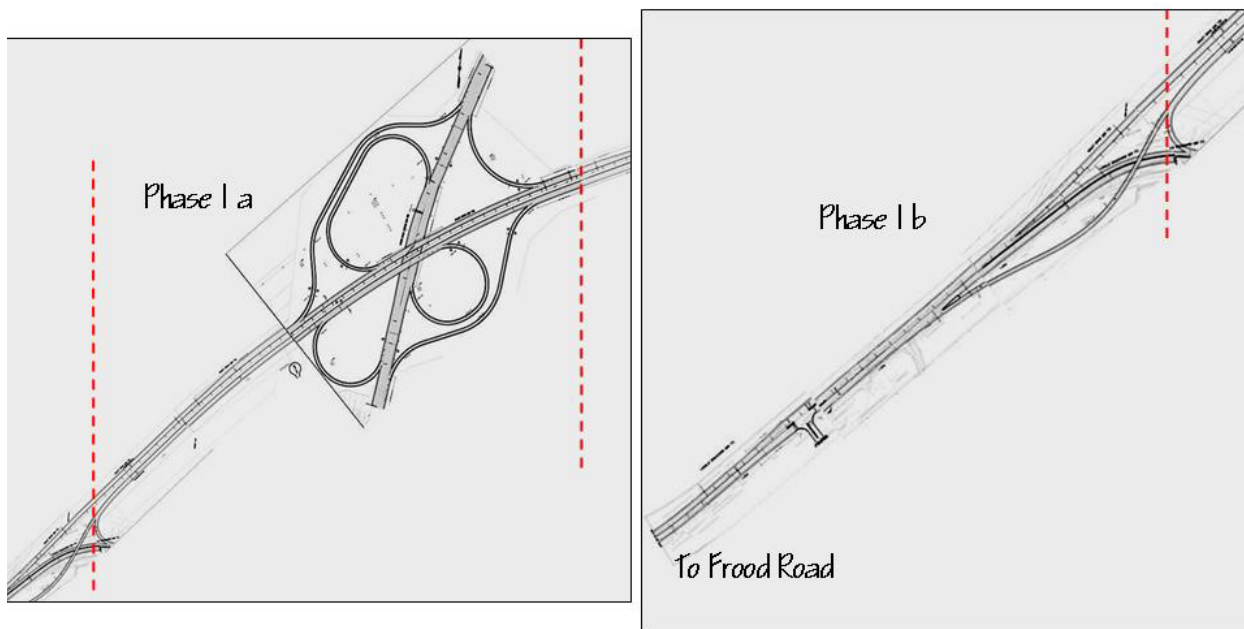
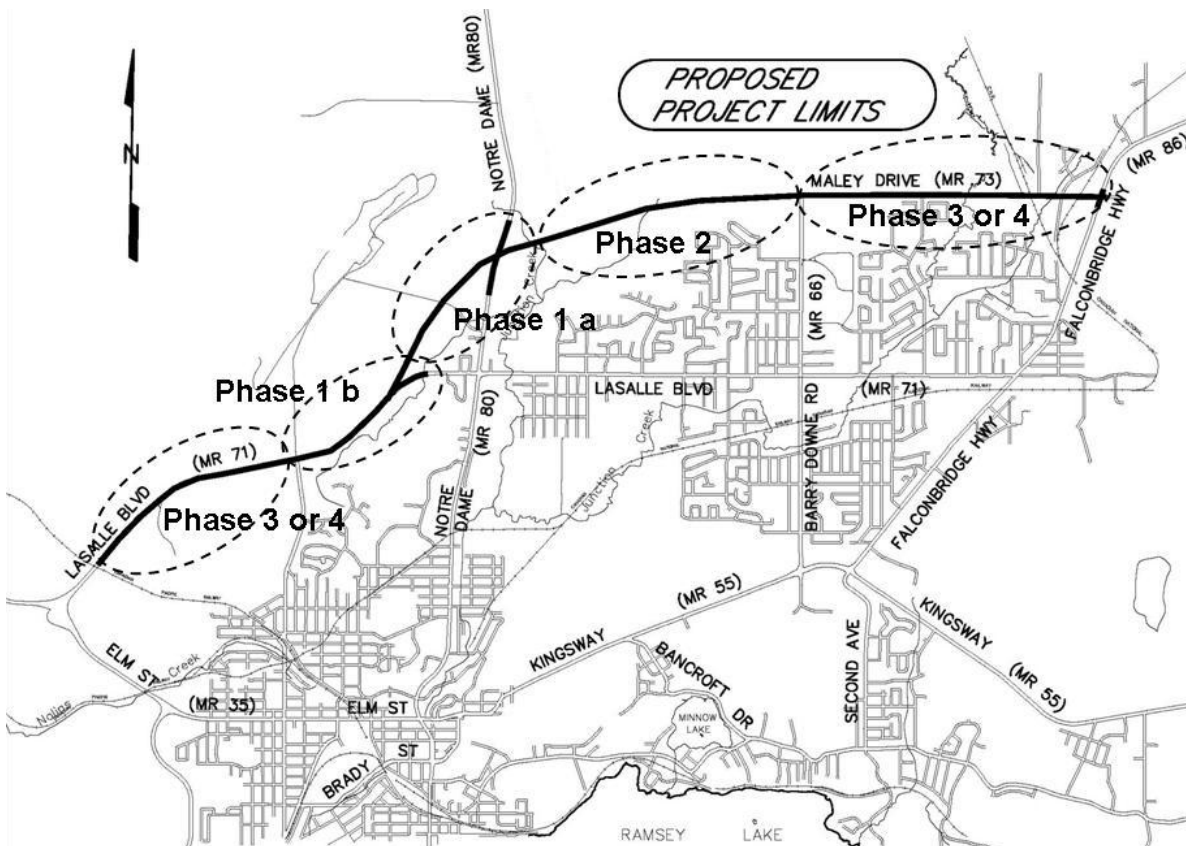


Figure 4: Proposed Project Phasing



5.0 ENVIRONMENTAL IMPLICATIONS OF THE PROPOSED CHANGES

As part of the 1995 Class EA process, the natural and social-cultural environments within the project limits were investigated in order to evaluate the various alternatives and identify the potential effects due to the implementation of the selected alternative.

Based on the proposed undertaking described in the previous section, the environmental implications of implementing the undertaking are summarized in the following sub-sections. The purpose is to provide an update to the 1995 ESR that reflects the potential natural and social-cultural environmental effects of the revised undertaking as proposed in this Addendum. The recommended mitigation strategies to avoid, minimize or eliminate any potential adverse environmental effects associated with the construction and operation of the proposed undertaking are also provided. The potential effects identified in the 1995 Class EA that have not changed as a result of the proposed undertaking are identified as such and restated herein. The results of FRi Ecological Services review are included in Appendix E of this report.

5.1. Natural Environment

5.1.1. Methodology

The text that follows provides information extracted from the 1995 ESR as well as the results of a June 2006 field review¹² of the existing conditions.

Confirmation of fisheries resources was conducted using minnow traps and a backpack electro-fisher. The proposed corridor was traversed by means of an ATV.

If any significant changes were observed, a discussion of the change to the feature/function has also been included.

5.1.2. Fisheries and Aquatic Ecosystems

The 1995 ESR reported eight possible water crossings within the study corridor. Water crossings include watercourses and wetlands. Watercourses along the corridor are located within the Upper Junction Creek Watershed. Three watercourses (Tributary A, Tributary B and the Lasalle Tributary) flow into the Nickledale Reservoir located immediately south of the proposed Maley Drive Extension.

¹² The timing of the field review coincides with the dates of the 1995 field investigations (week of May 30 - June 3).

Field investigations undertaken as part of the 1995 Class EA process assessed the aquatic and terrestrial habitat along the watercourses, including qualitatively sampling of the fish community using back-pack electrofishing equipment and dip nets. In general, the watercourses were found to be small order streams with gradients strongly controlled by the surrounding bedrock topography. The fish populations identified in these watercourses were typical of degraded warmwater systems, including Central Mudminnow, Northern Redbelly Dace and Brook Stickleback. No rare or endangered species were identified at the time.

The 2006 field surveys also involved minnow traps and backpack electrofishing. The results were consistent with the 1995 survey confirming fish populations typical of degraded warmwater systems. The exception to this was the capture of fish in Tributary A (previously no fish species were captured) that included 2 Brook Sticklebacks, 1 Finescale Dace and 2 Central Mudminnows. Overall, fisheries resources were found to be degraded by contaminated surface runoff, lack of thermal protection (canopy) and urban/industrial pollution. However, it should be noted that all of the watercourses in the study corridor exhibited permanent morphological features, and whether or not fish were captured, should still be considered fish habitat. Future watershed rehabilitation plans (i.e. Junction Creek), reduced industrial emissions and proper mitigating development techniques may very well increase productivity in these watercourses.

In addition, the 2006 field surveys identified two other watercourses that were not previously recorded (Figure 5). One is located approximately 100 m east of the intersection of Barrydowne Road and Maley Drive (on Maley Drive). It has been identified as Junction Creek Tributary 1 and is categorized as a Riparian Stream that flows through a Wet Shrub Thicket.¹³ The field work resulted in the capture of 3 Central Mudminnows and 1 Finescale Dace in a minnow trap. The water temperature was 23°C. The other watercourse, identified as Lasalle Tributary East, is a small stream that has a reasonable flow and a narrow defined channel.¹⁴ No fish were captured. The water temperature was 21°C. Overall, with the addition of these two watercourses, the total number of watercourse crossings in the study area is 10.

¹³ This watercourse is located in Plate F4, Volume 2 of - Appendix F in the 1995 EA document.

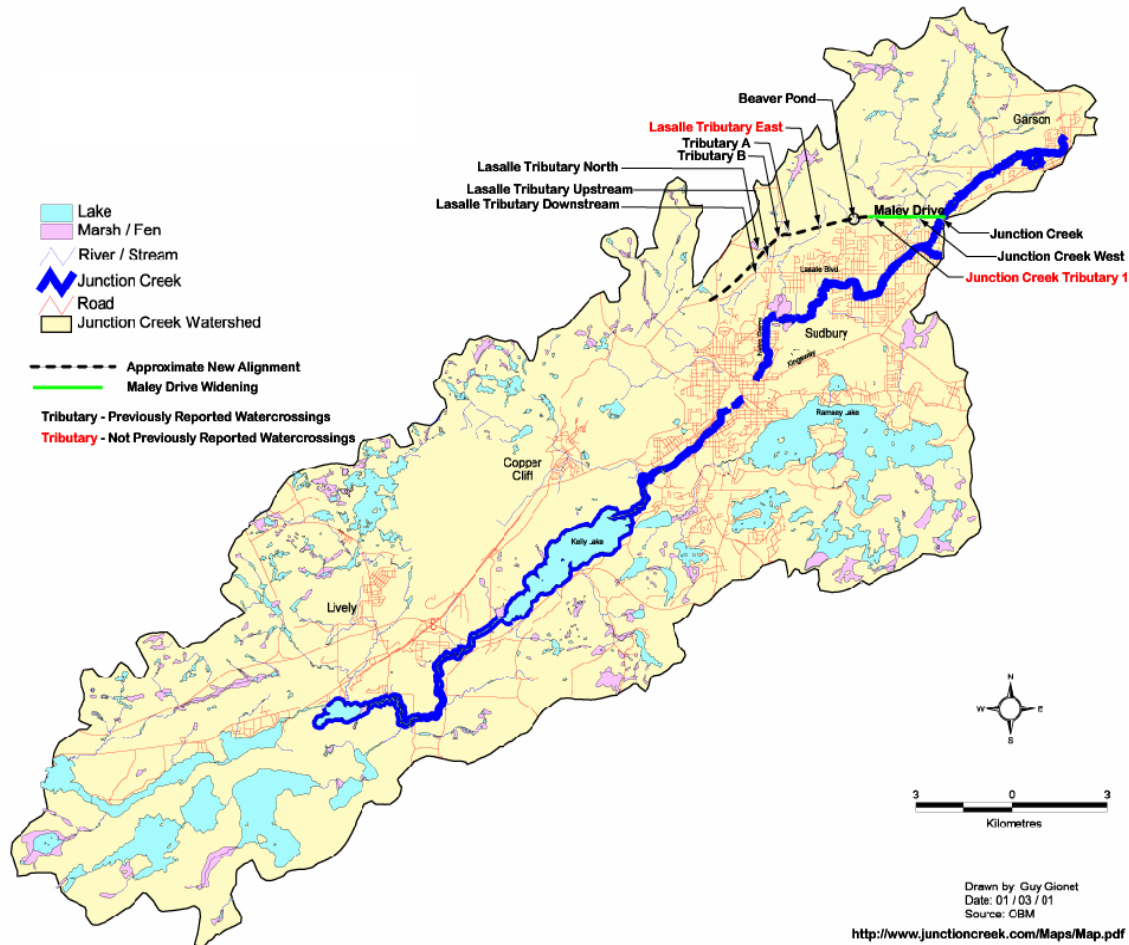
¹⁴ This watercourse is shown (but not identified) on Plate F3, Volume 2 of - Appendix F in the 1995 EA document.

It should also be mentioned that the 1995 ESR indicated that the Junction Creek tributaries "...are indicative of a degraded warmwater system." While this may be valid, efforts to rehabilitate the creek are underway. Ten thousand Brook Trout (*Salvelinus fontinalis*) have been stocked in the upper reaches of the stream since 2000 and the Adopt-a-Creek program was initiated in 2003 to create environmental awareness of this waterbody.

The 1995 ESR reported that most wetlands along the study corridor were riverine in character. Several small palustrine wetlands were also located along the corridor. The 2006 field studies confirmed this assessment.

Overall, no significant changes to the aquatic environment were observed during the 2006 field investigations when compared to the results reported in the 1995 ESR.

Figure 5: Watercourse Crossing Locations



5.1.3. Recommended Mitigation Measures

The 1995 ESR identified the following mitigation strategies to minimize or eliminate potential effects to watercrossings, vegetation and wetlands:

- Soil exposure will be minimized, and silt fencing and check dams will be used to control erosion and sediment dispersal on-site.
- All machinery will be maintained, stored and fueled in a manner consistent with the prevention of accidental contamination of riparian soils or water.
- All areas disturbed by construction activities will be immediately restored and stabilized using native vegetation plantings.
- Road construction at water crossings and wetlands should be scheduled from July 1 to March 31 to avoid habitat disturbance during the spring spawning period.

With regard to culvert design, flow depth and velocity must not limit fish passage. Culvert placement should not interfere with the natural gradient of the watercourse. Culverts should be designed to provide for fish passage under a variety of flow conditions.

It was also noted that proper siting and construction guidelines can mitigate potential impacts. Wetland and watercourse crossings should be avoided wherever possible. Where crossings must occur, proper sizing and positioning of bridges and culverts should maintain existing habitat and flow regimes. Retrofitting poorly constructed structures could be done to enhance wetlands and fisheries opportunities along the route. The use of best management erosion and sediment control practices are recommended to avoid sediment impacts to watercourses.

The 2006 field review concluded that the mitigation strategies presented in the 1995 ESR should be employed to maintain stream connectivity and reduce or eliminate sediment infiltration. In addition, an assessment of the site specific impacts imposed by the alignment footprint should be carried out during detail design. If refinements to the strategies previously developed for mitigating impacts to environmental sensitivities are required during detail design, they should reflect current best management practices.

5.2. Terrestrial Ecosystems and Wildlife

The 1995 Class EA described the vegetation in the study area as “... typical of much of the Sudbury area, the vegetation is presently regenerating after the near total denudation of the landscape. The vegetation found in the study area is controlled by the surrounding topography, depth of soil and drainage...”

The 2006 field review found that the vegetation communities have not changed to any significant degree since 1995, likely because no new development has occurred in the study area. White Birch Heathland (an extensive area of rather level open uncultivated land usually with poor coarse soil, inferior drainage, and a surface rich in peat or peaty humus)¹⁵ is still the dominant community in the corridor. Typically Rock Barrens, devoid of vegetation occupy much of the higher elevations while slopes and bottomlands contain small wetlands and transitional species. Encroachments by urban and commercial/industrial influences have not changed the existing terrestrial conditions to any degree that could be described as “different” to the conditions presented in the 1995 ESR.

The extension now being proposed beyond Frood Road to the west can reasonably fit into the overall description for the original study area, but exhibits more of a disturbed condition due to adjacent mining activities.

Vegetation is an important component of any ecosystem and despite it's sparseness in this case, thermal regulation to ground dwellers as well as aquatic communities is vital to their survival. Shrubs and trees are also important to nesting birds as well as nutrient/chemical interactions with soils and air. Shallow soils over bedrock are maintained for the most part by the binding capabilities of root systems. Once the vegetation is removed, erosion and sediment transport become more of a concern.

The 1995 ESR concluded that due to the degraded landscape within the study corridor the quality and diversity of wildlife habitat and community is considered low. The corridor provides habitat for mammal species that are associated with near urban environments but also supports species that are more typically associated with habitats of greater isolation from the human environment. A wide range of bird species occupy a number of habitats in the study corridor. With respect to herpetofauna, the shallow marsh community located immediately on the north side of the Maley Drive unopened- road allowance, approximately 200 m west of Barrydowne Road, has a significant herpetofaunal association. It provides

¹⁵ Merriam-Webster Dictionary On-Line (<http://www.m-w.com>)

suitable habitat for all life stages of herpetofauna found along the study corridor. The 2006 field review confirmed these findings.

Overall, no significant changes to the terrestrial environment were observed during the 2006 field investigations.

5.2.1. Recommended Mitigation Measures

The 1995 ESR identified that some vegetation removal would be required. As a result, the following mitigation strategies were proposed to minimize the effects associated with the vegetation removal:

- Removal will be conducted in a sensitive manner within predetermined boundaries to minimize impact to wildlife, vegetation and soils.
- Trees which are to be preserved during construction will be tagged and snow fenced at the drip line to prevent root damage through soil compaction and excavation.

In addition, it is recommended that the following additional mitigation strategies be employed:

- Sediment and erosion control measures.
- Minimal clearing and grubbing (remove vegetation only as required).
- Time construction activities to avoid periods when birds are nesting.
- Select construction operations appropriately to minimize adverse effects (e.g., use of wheeled vs. tracked machinery, designated fueling/maintenance areas, etc.)
- Control stockpiles and waste materials (location/disposal sites) to minimize effects on existing vegetation and control erosion and sedimentation.
- Rehabilitate where required using native species.

The 2006 field review concluded that the mitigation strategies presented in the 1995 ESR should be employed to minimize potential adverse effects to the existing terrestrial vegetation. In addition, an assessment of the site specific impacts imposed by the alignment footprint should be carried out during detail design. If refinements to the strategies previously developed for mitigating impacts to

environmental sensitivities are required during detail design, they should reflect current best management practices.

5.3. Socio-Economic Environment

5.3.1. Effects on Land Uses

There is a mix of open space, recreational, low density residential, commercial, institutional and industrial land uses within the study area. At the eastern extent of the study area, commercial and industrial type uses are predominant. Recreational, open space and residential land uses are located closer to the intersection of Barrydowne Road and Maley Drive and again west of Notre Dame Avenue. Also located to the west of Notre Dame Avenue are industrial and institutional land uses. The areas of open space are located between Barrydowne Road and Notre Dame Avenue, and north of existing residential subdivision developments.

It is not expected that this project will pose adverse effects on those land uses within the study area, however indirect effects may occur as a result of: noise, dust, odour, fumes, aesthetics, and the potential loss of natural environment and archaeological/heritage resources.

5.3.2. Temporary Construction Related Nuisance Effects (Noise, Dust, Odours and Fumes)

Some impacts on adjacent properties may occur during the construction period, including a temporary increase in noise, dust, odours and fumes related to construction equipment operation and activities, and aesthetic effects. However, these construction related effects will be short-term in duration with no long lasting effects to the project area receivers following cessation of construction.

COGS Special Provisions will be included in the construction contract to address the requirements for control of construction noise produced by the Contractor's operations. Mitigation measures will include maintaining construction equipment and noise muffling devices in proper working order, operating equipment only as required, and generating noise only as permitted by COGS By-Laws.

Dust Control measures (OPSS 506) will be included in the contract documents in order to ensure the control of dust emissions during construction. Mitigation measures to be incorporated into construction activities include, but are not restricted to: the use of low dust generating construction techniques/equipment and implementing dust suppression techniques such as applying water, calcium chloride, etc. as required (in extreme cases, the termination of dust generating work during periods of high wind). Through these control measures, dust emissions will be prevented from entering surface waters, reaching traffic or pedestrians, or extending beyond the right-of-way. MOE criteria for particulate

matter are not expected to be exceeded as long as the above noted mitigation measures and COGS standard dust control policies are implemented.

It is anticipated that odour emissions and fumes will be short in duration and limited to the periods of construction machinery operation and the application of hot mix asphalt. The implementation of standard mitigation measures such as minimizing combustion emissions from equipment (proper maintenance, operate only as required, and restrict idling to the minimum necessary to perform the specified work) is anticipated to minimize these potential impacts. MOE criteria for noxious gases are not expected to be exceeded as long as COGSs dust control policies are implemented.

5.3.3. Aesthetics

During construction, the Contractor will be required to maintain the work area in a tidy condition free from the accumulation of debris, waste, rubble, etc. in order to minimize the visual impact of the work area. In addition, the Contractor's sheds, site offices, other temporary structures and storage areas for materials and equipment will be grouped in a compact manner and maintained in a neat and orderly condition at all times.

5.3.4. Noise

A noise study was completed in April 2007, assessing the potential impacts of noise due to the proposed Maley Drive extension project. The data assessed for the proposed Maley Drive expansion and extension was obtained from the 1995 ESR, with updated traffic counts. New 2006 traffic data was used for Maley Drive and traffic data from other roads in the area. Where 2006 traffic counts were not available, data was taken from a traffic study completed in 2003. Based on the results of the 2006 noise study, noise mitigation measures in the form of barrier walls and/or earth berms will not be required within the study limits.

The noise study is included in Appendix A of this report.

5.3.5. Potential for Loss of Archaeology / Heritage Resources

The 1995 ESR states that there is a low probability that heritage or archaeological resources could be impacted by the undertaking; no heritage or archaeological surveys were carried out. As a result, it was recommended that route specific archaeological surveys be undertaken prior to construction. This recommendation is carried forward herein for consideration in detail design once a specific route is known.

In general, in the event that human remains and/or deeply buried archaeological features are encountered during construction, or extraction activities associated with the development proposal, the COGS/Contractor should immediately contact both the Ministry of Culture and the Registrar or Deputy Registrar of the Cemeteries Regulation Unit of the Ministry of Consumer and Commercial Relations at 416-326-9382.

5.4. Estimated Capital Costs

In 1995, the estimated construction cost, including contingency, for the two-lane Maley Drive extension was \$12.145 million.

In 2005 the project cost was revised as part of the Transportation Study (City of Greater Sudbury Official Plan Background Report). The difference between the 1995 ESR and the project identified in the 2005 Transportation Background Study is that the two-lane sections would be widened to 4-lanes. Therefore the estimated project cost for a similar scope of work, as identified in 1995 ESR, was approximately \$31.2 million; and with the widening of Lasalle to the CPR Overhead, the project cost increased to \$35.8 million.

The current cost, in 2008 dollars, for the construction of the Maley Drive extension and widening is estimated at \$45.83 million. The increased cost is due to inflation.

A detailed cost breakdown is included in Appendix C.

6.0 NOTIFICATION OF ADDENDUM FILING

In accordance with the Class EA, a letter was mailed to each of the previously contacted review agencies and stakeholders who expressed an interest in the project as documented in the ESR (e.g., those who provided written comments).

The letter introduced the proposed project, explained the Class EA Addendum process being followed, identified the filing of the Addendum and its review period, and solicited their input should they have any comments or questions. A copy of the letter mailed on June 16, 2006 is provided in Appendix B.

7.0 SUMMARY

As a requirement of the Municipal Class EA, the planning process and the conclusions reached for the extension of Maley Drive and the widening of Lasalle Boulevard, have been documented in this Addendum.

The construction of this project is intended to provide an alternative route for vehicular traffic in the northern end of the City, and provide a by-pass for truck traffic from existing City roads. The preferred alternative was identified in the 1995 ESR, confirmed in the 2005 Transportation Study and again supported with the completion of this addendum. The increased cost due to inflation, along with the reconstruction of Maley Drive, has increased the original costing of the project.

An addendum to an ESR is required when one or both of the following occur:

1. Lapse of time; and
2. Change in project or environment.

This project involved a lapse of time as well as a change in project. The project was originally accepted in 1995 however it was never constructed. Therefore, this review involved the following changes to the original project:

- Re-examining of the traffic noise impacts associated with the project;
- Updating of the traffic counts for Maley Drive;
- Increasing the lane width along Maley Drive, between Falconbridge Highway and Barrydowne Road, from 2-lanes to 4-lanes; and

- Increasing the number of lanes along the Lasalle Extension from 2-lanes to 4-lanes.
- Finally, the extension of Maley Drive between Barrydowne Road and Notre Dame Avenue, and from Notre Dame Avenue to the Lasalle Extension, will be constructed as a divided road way.

Appendix A

Noise Study

April 25, 2007

Project No. 91277

Mr. Tony Cecutti
Project Manager
Earth Tech (Canada) Inc.
1040 Lorne Street South, Unit 1
Sudbury, ON
P3C 4R9

Subject: Traffic Noise Study for the Maley Drive Extension in Sudbury, Ontario

Dear Sir:

The Acoustics & Vibration team of Earth Tech (Canada) Inc. (ETC) has undertaken a study of the potential impact of noise due to the proposed Maley Drive Extension project in the Regional Municipality of Sudbury, Ontario. The methodology and results of the study, as well as recommendations for noise attenuation fence(s), are addressed below.

Introduction

A Noise Assessment was previously conducted in conjunction with the proposed extension of Maley Drive in Sudbury, Ontario. That Noise Assessment report was completed in October of 1995 by Marshall Macklin Monaghan and included as Appendix C in the Class Environmental Assessment Report. There were no specific noise mitigation measures recommended by that report, except for the implementation of a construction noise control program.

After the project was put on hold for some years, it was decided that the noise study should be updated to reflect more recent traffic data. The methodology, assumptions and modeling inputs remain unchanged from those used in the original noise assessment except for a few changes such as updated traffic data and speed limits. These deviations from the original noise assessment will be discussed below.

Background

Sound is an air-borne phenomenon that varies over time, whether it is in loudness or pitch or both. When it is measured, a sound level is reported using statistical measures in units of decibels (dB). The

most common statistical measure for sound, and the one that is employed by government and regulatory agencies, is that of the energy-equivalent sound level, or Leq. The Leq is a steady sound level that has the same total sound energy as the measured time-varying sound over a given time period and is, essentially, a sort of average sound level. This study employs the Leq (16), that is, the equivalent sound level averaged over a 16-hour day (0700 to 2300).

An increase in sound level of 3 dB is considered to be the threshold of human perceptibility of change in both noise and vibration. That is to say that increases less than 3 dB are not noticeable by humans. An increase in sound level of 5 dB is considered to be noticeable, and is typically the trigger for mitigation measures in many jurisdictions.

Methodology

The study was carried out in accordance with the guidelines outlined in the MOE/MTO “Protocol for Dealing with Noise Concerns during the Preparation, Review and Evaluation of Provincial Highway Environmental Assessments” (hereafter referred to as ‘the Protocol’). Data and information for the proposed Maley Drive expansion and extension was obtained from the 1995 report, with updated traffic counts. New 2006 traffic data was used for Maley Drive and traffic data from other roads, where 2006 counts were not available, was taken from 2003. Traffic data is summarized in Attachment A.

The future speed limit for the existing portion of Maley Drive (after expansion) will be 70 km/hr. The posted speed limit for the proposed new extension of Maley Drive will be 80 km/hr. These are slightly different from the assumptions of the previous 1995 study.

The modeling was performed using STAMSON version 5.04 (2000), which is a program by the Ontario Ministry of Environment and Energy and based on the data from the U.S. Federal Highway Administration. Truck traffic was assumed to be 5.5% of the total traffic, split into 3% medium trucks and 2.5% large trucks. The noise levels were predicted as A-weighted 16-hour day-time sound levels, Leq (16) and then the future predicted sound levels at each receptor location were compared to the existing sound levels. According to the Protocol, noise mitigation should be considered if the difference between the existing and future sound levels is 5 dBA or higher.

The modeling was performed with receptor heights taken as 1.5 m above ground elevation, as is typical for MOE noise assessments. Attachment B includes sample STAMSON output for receptor location R7.

Receptors

The most affected receptors for this roadway expansion are those that presently back onto Maley Drive and those that will back onto the future extension of Maley Drive. In addition to the 11 receptors from the 1993 assessment, three more receptors were identified; R12, R13 and R14. R13 is a new residential sub-division development that will be located on the south side of Maley Drive. A Noise Impact Study was performed by HGC Engineering in February 2005, indicating that a 3 metre high berm should be built between the proposed sub-division and Maley Drive. During a site visit in August 2006, it was noted that, while the sub-division had not yet been built, the road and berm were already in place.

Figure 1 presents the limits of the proposed undertaking and Figures 2 and 3 show the locations of the receptors used in the study. Table I below presents the approximate distances from each of the receptors to the existing Maley Drive and new Maley Drive extension.

A site visit was made on August 11th, 2006 and the elevations of the road and each receptor location were noted. Where the changes in elevation were difficult to estimate, the elevation of the receptor was taken with the use of a GPS system. For reference, the elevation of each receptor above the proposed Maley Drive is included in Table I below.

Table I: Approximate Distances from Receptors to Roads

Receptor ID	Description	Distance to Maley Drive*	Elevation of Receptor Above Maley Drive
R1	Turner Avenue by Notre Dame	98 m	Relatively Flat
R2	Drummond Avenue	630 m **	Relatively Flat
R3	Empty Lot at End of Forestdale Drive	720 m **	9 m
R4	Agincourt Avenue	275 m	Relatively Flat
R5	Shelley Drive	190 m	Relatively Flat
R6	Oasis Co-op on Covewood Court	30 m	Relatively Flat
R7	Springdale Cres	40 m	Relatively Flat
R8	Dollard Avenue	320 m	2 m
R9	Maley Drive South Side, south of National Street	35 m	Relatively Flat
R11	Covewood Crt	38 m	Relatively Flat
R12	New Residential Development	16 m	Relatively Flat, with 3 m high berm
R13	College Boreal	260 m	Relatively Flat
R14	Oneil Drive West / Maley Drive (just west of golf course)	270 m	Relatively Flat

Notes:

* Distance is from receptor to centre line of roadway for the purposes of modeling.

** Maximum distance of 500 m used in STAMSON model; conservative compared to actual

Resulting Sound Levels

The traffic noise modeling results for both existing and future (10-year predictions) are presented in Table II, below. Also included in the table is a summary of the criterion for which mitigation would be required. This criterion is different for each receptor and, according to the Protocol, is based on the higher of 55 dBA Leq or the existing ambient plus 5 dB. While 55 dBA Leq is the objective of the Protocol states that, “where noise increases above the ambient do not exceed 5 dBA no mitigation is required.” The last column of Table II indicates whether noise mitigation measures are required due to the proposed undertaking.

Table II: Resulting Sound Levels from STAMSON Modelling

Receptor ID	Description	Existing L_{eq}(16), dBA	Criterion for Mitigation, dBA	Future L_{eq}(16), dBA	Increase in Sound Level, dB	Mitigation Required?
R1	Turner Avenue by Notre Dame	57	62	58	1	No
R2	Drummond Avenue	45	55	46	1	No
R3	Empty Lot at End of Forestdale Drive	-	55	43	-	No
R4	Agincourt Avenue	-	55	49	-	No
R5	Shelley Drive	-	55	52	-	No
R6	Oasis Co-op on Covewood Court	61	66	62	1	No
R7	Springdale Cres	59	64	60	1	No
R8	Dollard Avenue	39	55	43	4	No
R9	Maley Drive South Side, south of National Street	56	61	59	3	No
R11	Covewood Crt	58	63	60	2	No
R12	New Residential Development	52	57	53	1	No
R13	College Boreal	48	55	48	0	No
R14	Oneil Drive West / Maley Drive (just west of golf course)	40	55	42	2	No

Note: Existing levels not available for R3 – R5 since no major road exists there.

The predicted sound levels due to traffic based on the 10-year forecasted volumes is well below the limits requiring the consideration of noise mitigation measures, as set out by the Protocol.

Recommendations

Noise mitigation measures in the form of barrier walls and/or earth berms are not required for the proposed undertaking.

Earth Tech Canada
Maley Drive Extension in Sudbury, Ontario – Traffic Noise Study Update
April 25, 2007

Project No. 91277
Page 6

If there are any questions regarding the above information or attachments, please do not hesitate to contact the undersigned at (905) 886-7022 ext. 2209.

Very truly yours,

Earth Tech Canada Inc.



Deborah Penney, P.Eng.

Acoustics & Vibration

c: Jason Innis, Earth Tech Canada – Sudbury Office
Karl van Kessel, Gartner Lee Ltd.

File Location: P:\Noise\Projects\91277 - Sudbury Maley Drive\Final Files\Traffic Noise Study Letter.doc



A Tyco Infrastructure Services Company

FIGURES



A Tyco Infrastructure Services Company



Figure 1: Proposed Undertaking and Project Limits



Figure 2: Receptors R1-R5 and R13

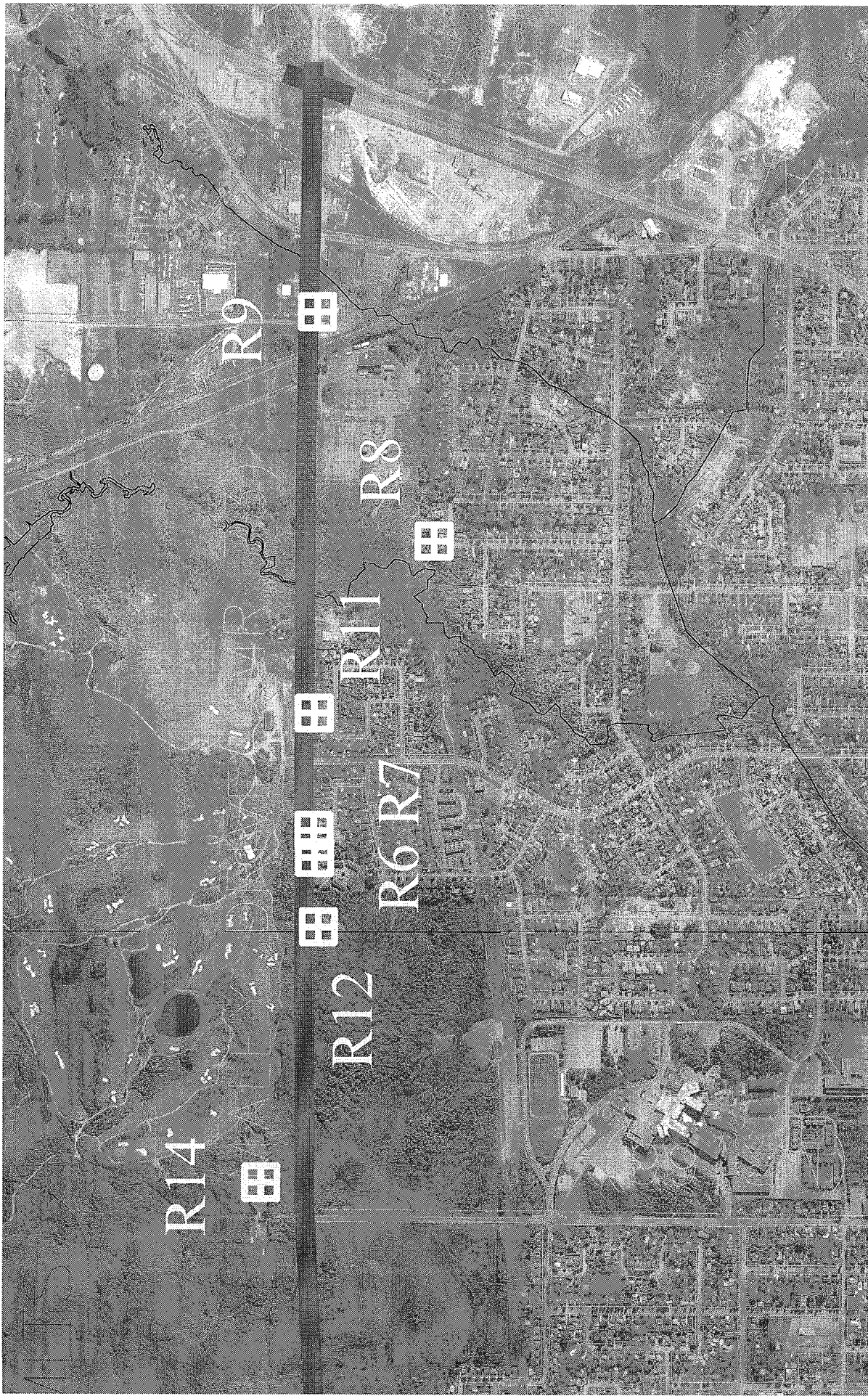


Figure 3: Receptors R6-R14 (excluding R10 an R13)

ATTACHMENT A

TRAFFIC DATA SUMMARY



A Tyco Infrastructure Services Company

Summary of Updated Traffic Counts Used in Modeling

Receptor ID	Description	Existing AADT Traffic Count 2003 or 2006	Future AADT Traffic Count 2016		Change in Traffic Count
R1	Turner Avenue by Notre Dame	30,000*	23,800*	11,500	0.79
R2	Drummond Avenue	30,000*	23,800*	18,400	0.79
R3	Empty Lot at End of Forestdale Drive	N/A	18,400		N/A
R4	Agincourt Avenue	N/A	18,400		N/A
R5	Shelley Drive	N/A	18,400		N/A
R6	Oasis Co-op on Covewood Court	9,392	13,100		1.39
R7	Springdale Cres	9,392	13,100		1.39
R8	Dollard Avenue	7,070	11,900		1.68
R9	Maley Drive South Side, south of National Street	7,070	11,900		1.68
R11	Covewood Crt	7,070	11,900		1.68
R12	New Residential Development	9,392	13,100		1.39
R13	College Boreal	16,600**	16,000**	11,500	0.96
R14	Oneil Drive West / Maley Drive (just west of golf course)	14,800	18,400		1.24

Notes:

* Traffic on Notre Dame Avenue; dominant source of road noise

** Traffic on Lasalle Boulevard; dominant source of road noise



A Tyco Infrastructure Services Company

ATTACHMENT B

SAMPLE STAMSON OUTPUT FOR R7



A Tyco Infrastructure Services Company

Filename: curr7.te Time Period: Day/Night 16/8 hours
 Description: Existing Conditions at R7

Road data, segment # 1: Cur Maley (day/night)

 Car traffic volume : 7988/888 veh/TimePeriod *
 Medium truck volume : 254/28 veh/TimePeriod *
 Heavy truck volume : 211/23 veh/TimePeriod *
 Posted speed limit : 70 km/h
 Road gradient : 0 %
 Road pavement : 1 (Typical asphalt or concrete)

* Refers to calculated road volumes based on the following input:

24 hr Traffic Volume (AADT or SADT): 9392
 Percentage of Annual Growth : 0.00
 Number of Years of Growth : 0.00
 Medium Truck % of Total Volume : 3.00
 Heavy Truck % of Total Volume : 2.50
 Day (16 hrs) % of Total Volume : 90.00

Data for Segment # 1: Cur Maley (day/night)

 Angle1 Angle2 : -85.00 deg 90.00 deg
 wood depth : 0 (No woods.)
 No of house rows : 0 / 0
 Surface : 1 (Absorptive ground surface)
 Receiver source distance : 40.00 / 40.00 m
 Receiver height : 1.50 / 4.50 m
 Topography : 1 (Flat/gentle slope; no barrier)
 Reference angle : 0.00

Result summary (day)

	! source ! height ! (m)	! Road ! Leq ! (dBA)	! Total ! Leq ! (dBA)
1.Cur Maley	! 1.26 !	! 58.54 !	! 58.54
Total			58.54 dBA

Result summary (night)

	! source ! height ! (m)	! Road ! Leq ! (dBA)	! Total ! Leq ! (dBA)
1.Cur Maley	! 1.25 !	! 52.46 !	! 52.46
Total			52.46 dBA

TOTAL Leq FROM ALL SOURCES (DAY): 58.54
 (NIGHT): 52.46

Filename: fur7.te Time Period: Day/Night 16/8 hours
 Description: Future Prediction at R7

Road data, segment # 1: Cur Maley (day/night)

 Car traffic volume : 11142/1238 veh/TimePeriod *
 Medium truck volume : 354/39 veh/TimePeriod *
 Heavy truck volume : 295/33 veh/TimePeriod *
 Posted speed limit : 70 km/h
 Road gradient : 0 %
 Road pavement : 1 (Typical asphalt or concrete)

* Refers to calculated road volumes based on the following input:

24 hr Traffic Volume (AADT or SADT): 13100
 Percentage of Annual Growth : 0.00
 Number of Years of Growth : 0.00
 Medium Truck % of Total Volume : 3.00
 Heavy Truck % of Total Volume : 2.50
 Day (16 hrs) % of Total Volume : 90.00

Data for Segment # 1: Cur Maley (day/night)

 Angle1 Angle2 : -85.00 deg 90.00 deg
 wood depth : 0 (No woods.)
 No of house rows : 0 / 0
 Surface : 1 (Absorptive ground surface)
 Receiver source distance : 40.00 / 40.00 m
 Receiver height : 1.50 / 4.50 m
 Topography : 1 (Flat/gentle slope; no barrier)
 Reference angle : 0.00

Result summary (day)

	! source !	Road !	Total !
	! height !	Leq !	Leq !
	! (m) !	(dBA) !	(dBA) !
1.Cur Maley	! 1.26 !	! 59.99 !	! 59.99 !
Total			59.99 dBA

Result summary (night)

	! source !	Road !	Total !
	! height !	Leq !	Leq !
	! (m) !	(dBA) !	(dBA) !
1.Cur Maley	! 1.26 !	! 53.96 !	! 53.96 !
Total			53.96 dBA

TOTAL Leq FROM ALL SOURCES (DAY): 59.99
 (NIGHT): 53.96

Appendix B

Public Consultation

June 14, 2006

Project No. 91277

«Title» «First_Name» «Last_Name»
«Job_Title»
«Company_Name»
«Address_Line_1»
«Address_Line_2»
«City», «Province» «Postal_Code»

**Re: Environmental Study Report Addendum
Maley Drive Extension and Widening of LaSalle Boulevard**

Dear «Title» «Last_Name»:

The City of Greater Sudbury (the City) has initiated a review of the Environmental Study Report (ESR) completed in 1995 for the extension and reconstruction of Maley Drive from Falconbridge Highway to LaSalle Boulevard.

The 1995 ESR described the project as having two components: (1) the reconstruction of the existing Maley Drive from Falconbridge Highway to Barrydowne Road; and (2) the extension of Maley Drive westerly from Barrydowne Road to the LaSalle Boulevard Extension. The extension of Maley Drive was intended to include the reconstruction of LaSalle Boulevard from Frood Road in the west to the proposed intersection of Maley Drive at LaSalle Boulevard. The project was approved in accordance with the Municipal Roads Class Environmental Assessment (1993), but was never constructed.

The City's recently completed Transportation Study (2005) confirmed the need for the extension and widening of Maley Drive to function as a truck route and northern bypass of the developed area of the City. In this area, the Kingsway and LaSalle Boulevard are the only two continuous east-west arterials that serve a number of heavy traffic demands, including local traffic, commercial traffic generated by adjacent commercial development and commuter traffic. Existing traffic demand on these two roads exceeds their capacity resulting in traffic delays. Therefore, the Transportation Study (2005) identified this project as a key undertaking to be initiated within the next five years.

In addition, the reconstruction and widening of LaSalle Boulevard from just east of the CPR Overhead to 0.3 km west of Notre Dame Avenue will be included as part of this project. LaSalle Boulevard is currently a two-lane roadway through this section, but a four-lane roadway at either end. As a result, LaSalle Boulevard is currently operating at or near capacity during peak periods through this short section. Therefore, the City revised the previous project limits to include the widening of LaSalle Boulevard in this section as part of the Maley Drive Extension.

«Title» «First_Name» «Last_Name»
«Company_Name»
June 14, 2006

Project No. 91277
Page 2

Since it has been longer than five years since the 1995 ESR was filed for public review, and the City is proposing to modify the project to include the widening of LaSalle Boulevard where it is currently two lanes, the City is reviewing the 1995 ESR in accordance with the Municipal Class EA (2000) prior to proceeding to construction. The review will be documented in an Addendum to the 1995 ESR. The Addendum will describe the reason for the changes, the environmental implications of the changes, and any changes to the proposed mitigation measures. The Addendum, and the 1995 ESR will be filed for public review and comment for a period of 30 calendar days. You will be notified at the appropriate time of the public review opportunity.

We are interested in hearing any comments that you may have about this project. If you wish to provide comments, request additional information or discuss the project in general, please contact me directly by telephone at (705) 674-8713. You may also fax me your comments in writing at (705) 674-1694, or mail them to me.

Very truly yours,

Earth Tech (Canada) Inc.

Bruce Sedgwick, P.Eng.
Project Manager

Encls.

cc: Robert Falcioni, City of Greater Sudbury.

File Location: P:\91000\91277 - COGS - Maley Drive Extension\03-Report\NoticeofCommencement_Letters_June14_06.doc



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EXTERNAL AGENCY CONTACT LIST

Maley Drive Extension and Lasalle Blvd Widening Environmental Study Report Addendum

Project No. 91277

May 2006

Agency Name	Contact Person	Letter Sent	Comments
<i>PROVINCIAL MINISTRIES / AGENCIES</i>			
Ministry of the Environment Sudbury District Office 199 Larch Street, Suite 1101 Sudbury, ON P3E 5P9 Tel.: 705-564-3273 Fax: 705-564-4180	Ms. Paula Allen Environmental Assessment Coordinator	•	
Ontario Ministry of Natural Resources 3767 Highway 69 South, Suite 5 Sudbury, ON P3G 1E7 Tel.: 705-564-7872 Fax: 705-964-7879	Ms. Cindy Blancher-Smith District Manager	•	▪
Ministry of the Environment Environmental Assessments and Approvals Branch 2 St. Clair Avenue west Floor 12 A Toronto, ON M4V 1L5		•	▪

External Agency Contact List (continued)

Agency Name	Contact Person	Letter Sent	Comments
Department of Fisheries and Oceans Ontario Great Lakes Area 1-1500 Paris Street Sudbury, ON P3E 3B8 Tel.: 705-522-8524 Fax: 705 522-6421 orgensenC@dfo-mpo.gc.ca	Mr. Carl Jorgensen Fish Habitat Biologist	•	▪
Ministry of Culture 435 South James Street, Suite 334 Thunder Bay, ON P7E 6S7 Tel.: 807-475-1632	Mr. Andrew Hinshelwood Heritage Planner (Archaeologist)	•	▪
Ministry of Culture 400 University Avenue, 3rd Floor Toronto, ON M7A 2R9 Tel.: 416-314-7128 Fax: 416-314-7175	Ms. Marilyn Miller Environmental Assessment Coordinator	•	
Ministry of Northern Development and Mines Transportation Unit 70 Foster Drive, Suite 200 Sault Ste Marie, ON P6A 6V8 Tel.: 705-945-5836 Fax: 705-945-5931	Mr. Tom Marcolini Senior Transportation Economist	•	
Greater Sudbury Police Service 190 Brady Street Sudbury, ON P3E 1C7 Tel.: 705-675-9171 Fax: 705-674-7090	Mr. Ian Davidson Police Chief	•	

External Agency Contact List (continued)

Agency Name	Contact Person	Letter Sent	Comments
Ontario Provincial Police Sudbury McFarlane Lake Road Detachment 3767 Highway 69 South Sudbury, ON P3G 1E3 Tel.: 705-564-6900 Fax.: 705-564-3115	Mr. Gary Mills Staff Sergeant	•	
MUNICIPALITIES			
City of Greater Sudbury P.O. Box 5000, Station A Sudbury, ON P3A 5P3 Tel.: 705-671-2489 Fax: 705-671-8118	Ms. Angie Haché City Clerk Mr. Alan Stephen General Manager of Infrastructure and Emergency Services Mr. Greg Clausen, P. Eng. Director of Engineering Services Mr. Tim Beadman Director of Emergency Management Joseph Nicolls Chief of Emergency Medical Services Mr. Bill Lautenbach Director of Planning Services Mr. Donald Donaldson Fire Chief	•	

External Agency Contact List (continued)

Agency Name	Contact Person	Letter Sent	Comments
Member of Provincial Parliament Nickel Belt Riding Constituency Office Hammer Valley Mall Hwy 69 North Hammer ON P3P 1P7 Tel.: 705-969-3621 Fax: 705-969-3538 Toll free: 1-877-280-9990 shelley_martel-mpp@ontla.ola.org	Ms. Shelley Martel, MPP	•	
Member of Provincial Parliament Sudbury Riding Constituency Office 100 Elm Street Sudbury ON P3C 1T5 Tel.: 705-675-1914 Fax: 705-675-1456 rbartolucci.mpp.co@liberal.ola.org	Hon. Rick Bartolucci, MPP Minister of Northern Development and Mines		
City Council Tel.: 705-855-9433 Fax: 705-855-7966 claud.berthiaume@greatersudbury.ca	Councillor Claude Berthiaume City of Greater Sudbury – Ward 2		
City Council Tel.: 705-855-4602 Fax: 705-855-8692 ron.bradley@greatersudbury.ca	Councillor Ronald Bradley City of Greater Sudbury – Ward 2		
City Council Tel.: 705-969-1597 Fax: 705-969-0241 andre.rivest@greatersudbury.ca	Councillor André Rivest City of Greater Sudbury – Ward 3		

External Agency Contact List (continued)

Agency Name	Contact Person	Letter Sent	Comments
City Council Tel.: 705-897-6410 Fax: 705-897-7660 ron.dupuis@greatersudbury.ca	Councillor Ron Dupuis City of Greater Sudbury – Ward 3		
City Council Tel.: 705-693-3892 Fax: 705-693-3892 russ.thompson@greatersudbury.ca	Councillor Russ Thompson City of Greater Sudbury – Ward 4		
City Council Tel.: 705-524-0688 Fax: 705-524-9807 ted.callaghan@greatersudbury.ca	Councillor Ted Callaghan City of Greater Sudbury – Ward 4		
City Council	Councillor Eldon Gainer City of Greater Sudbury – Ward 1		
City Council	Councillor Terry Kett City of Greater Sudbury – Ward 1		
City Council	Councillor Doug Craig City of Greater Sudbury – Ward 5		
City Council	Councillor Frances Caldarelli City of Greater Sudbury – Ward 5		

External Agency Contact List (continued)

Agency Name	Contact Person	Letter Sent	Comments
City Council Tel.: 705-524-8825 Fax: 705-524-9123 janet.gasparini@greatersudbury.ca	Councillor Janet Gasparini City of Greater Sudbury – Ward 6		
City Council Tel.: 705-524-0070 Fax: 705-524-0600 lynnereynolds@greatersudbury.ca	Councillor Lynne Reynolds City of Greater Sudbury – Ward 6		
City of Greater Sudbury Transit Department P.O. Box 5000, Station A 200 Brady Street Sudbury, ON P3C 5P3	Mr. Roger Sauve Director of Transit Services		
Environment Canada Regional Headquarters 4905 Dufferin Street Downsview, ON M3H 5T4	Ms. Dominique Labrecque		
Canadian Environmental Assessment Agency Ontario Region 55 St. Clair Avenue East Suite 907 Toronto, ON M4T 1M2	Ms. Darla Cameron Senior Program Officer		
Industry Canada 151 Yonge Street 3 rd Floor Toronto, ON M5C 2W7	Ms. Michele Nagy Environmental Assessment and Monitoring Officer.		

External Agency Contact List (continued)

Agency Name	Contact Person	Letter Sent	Comments
OTHER KEY STAKEHOLDERS			
Nickel District Conservation Authority 200 Brady Street Sudbury, ON P3E 5K3 Tel.: 705-674-5249 Fax: 705-674-7939	Mr. Al Bonnis Director of Operations Mr. Paul Sajatovic Resource Planner	•	<ul style="list-style-type: none"> June 21/06 - Indicated by telephone that NDCA has already transferred property along existing Maley Drive and west of Barry Downe to NotreDame to COGS.
Rainbow Public School Board 69 Yonge Street Sudbury, ON P3E 3G5 Tel.: 705-674-3171 Fax: 705-671-2442	Ms. Jean Hanson Director of Education	•	
Sudbury Catholic District School Board 165A D'Youville Street Sudbury, ON P3C 5E7 Tel.: 705-673-5620 ext.298 Fax: 705-688-1781	Ms. Zandra Zubac Director of Education	•	
Conseil Scolaire Catholique du Nouvel Ontario Sudbury Catholic District School Board 201 Jogues Street Sudbury, ON P3C 5L7 Tel.: 705-673-5626 Fax: 705-669-1270	Ms. Helene Chayer Director of Education	•	

External Agency Contact List (continued)

Agency Name	Contact Person	Letter Sent	Comments
Conseil Scolaire du District du Grand Nord de l'Ontario 296 Van Horne Street Sudbury, ON P3B 1H9 Tel.: 705-671-1533 Fax: 705-671-1794	Ms. Louise D'Amour Director of Education	•	
Sudbury Student Services Consortium 850 Barrydowne Road, Suite 305 Sudbury, ON P3A 3T7 Tel.: 705-521-1234	Ms. Jo-Anne Harrison Manager, CEO	•	
Ontario Federation of Snowmobile Clubs (OFSC) 106 Saunders Road, Unit 12 Barrie, ON L4N 9A8 Tel.: 705-739-7669 Cell: 705-869-9135 Fax: 705-739-5005	Mr. Paul Shaughnessy General Manager	•	
Sudbury Trail Plan P.O. Box 2900, Station A Sudbury, ON P5E 1G4 Tel.: 705-671-2138 ext. 12 Fax: 705-670-2776	Mr. Norm Hein Operations Director for the Sudbury Trail Plan	•	
Greater Sudbury Chamber of Commerce 166 Douglas Street Sudbury, ON P3E 1G1 Tel.: 705-673-7133 Fax: 705-673-2944 Cofc@sudburychamber.com	Ms. Debbi Nicholson President and CEO	•	

External Agency Contact List (continued)

Agency Name	Contact Person	Letter Sent	Comments
Canadian National Railway 1 Administration Road Concord, ON L4K 1B9	Mr. David Zoratto		
TransCanada Pipeline 450 1 st Street Calgary, AB T2P 5H1	Ms. Marilyn Carpenter Manager of Environmental and Climate Change		
Canadian Pacific Railway 40 University Avenue Suite 807 Toronto, ON M5J 1T1	Mr. Rick Buckle		
UTILITIES			
Persona Communications 500 Barrydowne Road P.O. Box 4500 Sudbury, ON P3E 5W1 Tel.: 705-560-1560 Fax: 705-560-8119	Mr. Peter Jokinen	•	
Union Gas P.O. Box 3040 36 Charles Street North Bay, ON P1B 8K7 Tel.: 705-566-4301	Mr. Jeff Peroff	•	
Hydro One 957 Falconbridge Road Box 2040, Station A Sudbury, ON P3A 4R8 Email: jimkrats@hydroone.com	Mr. Jim Krats Technician	•	

External Agency Contact List (continued)

Agency Name	Contact Person	Letter Sent	Comments
Greater Sudbury Hydro Plus 500 Regent Street P.O. Box 250 Sudbury, ON P3E 4P1 Tel.: 705-675-7536 Fax: 705-675-3594	Mr. Kerry Taylor	•	
Bell Canada 100 Brady Street, 1 st Floor Sudbury, ON P3E 3L9	Mr. Dwight Messenger	•	
Sudbury Metro Centre 43 Elm Street Sudbury, ON P3C 1S4 LANDOWNERS Albona Investments Inc. RR 1 2477 Maley Drive Sudbury, ON P3A 4R7	Ms. Maureen Luoma		
Superior Propane Inc. Attention: Properties Department 1111 49 Avenue Northeast Calgary, AB T2E 8V2			
1425134 Ontario Ltd. 215 River Road Saulte Saint Marie, ON P6A 6C3			
Mervin J McNamara Inc. 1066 Barrydowne Road Sudbury, ON P3A 3V3			

External Agency Contact List (continued)

Agency Name	Contact Person	Letter Sent	Comments
City of Greater Sudbury P.O. Box 5000, Station A 200 Brady Street, Tom Davies Square Sudbury, ON P3A 5P3	Ms. Danielle Braney Acting Director of Assets and Solid Waste		
City of Greater Sudbury Attention: Property Appraiser P.O. Box 5000 Station A Sudbury, ON P3A 5P3			
Robert Joseph Brisebois 2018 Valleystream Drive Sudbury, ON P3A 6A9			
Julia Ann Kam RR 1 2297 Maley Drive Sudbury, ON P3A 4R7			
Allan Frederick Lachance T/A The Battery Warehouse P.O. Box 2352 Station A Sudbury, ON P3A 4S8			
Hydro One Networks Inc. Assessment and Taxation Real Estate Services & Security P.O. Box 4300 Markham, ON L3R 5Z5			
Adam & Eve's Garden & Patio Centre 1991 Maley Drive Sudbury, ON P3A 4R8			

External Agency Contact List (continued)

Agency Name	Contact Person	Letter Sent	Comments
Sharon Diane Carter 1820 Springdale Crescent Sudbury, ON P3A 5J1			
Jean-Paul Marc Dion 1826 Springdale Crescent Sudbury, ON P3A 5J1			
Denis Desmeules 1287 Barrydowne Road Sudbury, ON P3A 3V9			
Guy Jacques Chartrand 1832 Springdale Crescent Sudbury, ON P3A 5J1			
Denis Castonguay 1838 Springdale Crescent Sudbury, ON P3A 5J1			
Harold Raymond Jones 1840 Springdale Crescent Sudbury, ON P3A 5J1			
Joanne Lorraine Hickson 1844 Springdale Crescent Sudbury, ON P3A 5J1			
Roy David Wood 1846 Springdale Crescent Sudbury, ON P3A 5J1			

External Agency Contact List (continued)

Agency Name	Contact Person	Letter Sent	Comments
Robert McDonald 1850 Springdale Crescent Sudbury, ON P3A 5J1			
Joanne Sylvia Lindquist 1856 Springdale Crescent Sudbury, ON P3A 5J1			
Edward Rennie 1860 Springdale Crescent Sudbury, ON P3A 5J1			
Rene Alcide Thibault 1862 Springdale Crescent Sudbury, ON P3A 5J1			
Aaron Clifford Wright 1868 Springdale Crescent Sudbury, ON P3A 5J1			
Wayne Cayen 1870 Springdale Crescent Sudbury, ON P3A 5J1			
Allan Robert Thompson 1874 Springdale Crescent Sudbury, ON P3A 5J1			
Dave Boudreault 1876 Springdale Crescent Sudbury, ON P3A 5J1			

External Agency Contact List (continued)

Agency Name	Contact Person	Letter Sent	Comments
Richard Howell 90 Sumach Loft 621 Toronto, ON M5A 4R4			
Sharon June McKenelley 1884 Springdale Crescent Sudbury, ON P3A 5J1			
Gaetan Doucet 1888 Springdale Crescent Sudbury, ON P3A 5J1			
Patricia Sivia Chiasson 1890 Springdale Crescent Sudbury, ON P3A 5J1			
Gwendolyn Dorothy Chmilar 1894 Springdale Crescent Sudbury, ON P3A 5J1			
David Marshall Duffy 1854 Covewood Crescent Sudbury, ON P3A 5T1			
Normand Donat Bodson 1850 Covewood Crescent Sudbury, ON P3A 5T1			
Gerald Laurin 1842 Covewood Crescent Sudbury, ON P3A 5T1			

External Agency Contact List (continued)

Agency Name	Contact Person	Letter Sent	Comments
Avtar Singh Sandhu 1836 Covewood Crescent Sudbury, ON P3A 5S9			
Jacques Michel J Marcoux 1830 Covewood Crescent Sudbury, ON P3A 5S9	Nicole Marcoux Jacques Marcoux		<ul style="list-style-type: none"> June 22/06 - Ms. Nicole Marcoux phoned to indicate she had sent e-mail to Mayor's office indicating she was not happy with proposed Maley Drive expansion. Indicated a bypass route should go further north towards the airport road rather than Maley Drive.
Michael Claude Giroux 1818 Covewood Crescent Sudbury, ON P3A 5S9			
Denis R Coulombre 1812 Covewood Crescent Sudbury, ON P3A 5S9			
Robert Paul Arsenault 1806 Covewood Crescent Sudbury, ON P3A 5S9			
Christopher Mathews 1796 Covewood Crescent Sudbury, ON P3A 5S9			
Oasis Co-operative Homes Inc. RR 1 1771 Mailey Drive Sudbury, ON P3A 4R7			

External Agency Contact List (continued)

Agency Name	Contact Person	Letter Sent	Comments
Bonaventure Development Company Limited 1365 Rideau Street Sudbury, ON P3A 5B7			
Board Governors Cambrian College Applied Arts and Technology 1400 Barrydowne Road Sudbury, ON P3A 3V8			
Nickel District Conservation Authority Tom Davies Square 200 Brady Street Sudbury, ON P3E 5K3			
Inco Limited Attention Tax Department Copper Cliff, ON P0M 1N0			
Dalron Construction Limited 130 Elm Street Sudbury, ON P3C 1T6			
Joseph Pancel P.O. Box 2261 Sudbury, ON P3A 4S1			
Stewart McGregor 1990 Maley Drive Garson, ON P3L 1M5			
Conseil Scolaire du District du Grand Nord de L'Ontario 296 Rue Van Horne Sudbury, ON P3B 1H9			

External Agency Contact List (continued)

Agency Name	Contact Person	Letter Sent	Comments
College Boreal D'Arts Appliques et de Technologies 21 Lasalle Boulevard Sudbury, On P3A 6B1	Mr. Alain Larocque Coordinator of Chemistry and Construction		
George Laurin 2288 Maley Drive Garson, ON P3L 1M5			
484649 Ontario Ltd. 43 Elmhurst Crescent Sudbury, ON P3A 2P2			
Gilles Dubien Rentals Inc. 2300 Maley Drive Unit 1 Garson, ON P3L 1R4			
1594792 Ontario Inc. 2344-2346 Maley Drive Garson, ON P3L 1R5			
485191 Ontario Inc. C/O Metalbestos Erectors 2354 Maley Drive Unit 101 Garson, ON P3L 1P7			
INTERESTED PUBLIC MEMBERS			

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Appendix C

Estimated Project Cost

**Maley Drive Extension - Construction Estimate
(April 2008)**

A - Major Widening - Lasalle from CPR Overhead to Frood Road

3.6 km	\$	2,300,000	/ km	\$8.28M	Major Widening
Sub Total:				\$8.28M	

B - New 4-Lane Alignment from Frood to 0.3 west of Notre Dame

2.1 km	\$	6,120,000	/ km	\$12.85M	New Divided 4-Lane
2.8 km	\$	1,000,000	/ km	\$2.80M	New Single Lane Ramps
260 m2	\$	2,000	/m2	\$.52M	Structure at Lasalle
1260 m2	\$	2,000	/m2	\$2.52M	WB Structure at Notre Dame
1260 m2	\$	2,000	/m2	\$2.52M	EB Structure at Notre Dame
Sub Total:				\$21.21M	

C - New 4-Lane Alignment from east of Notre Dame to Barrydowne Rd.

2.45 km	\$	3,200,000	/ km	\$7.84M	New Divided 4-Lane
Sub Total:				\$7.84M	

D - New 4-Lane Alignment / Widening from Barrydowne Rd. to Falconbridge Rd.

2.0 km	\$	3,200,000	/ km	\$6.40M	New Divided 4-Lane
0.7 km	\$	3,000,000	/ km	\$2.10M	Urban Widening
Sub Total:				\$8.50M	

	<u>Total:</u>	\$45.83M
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Appendix D

Possible Future Extension Maley Drive Easterly

It is the City's intent to examine, through a future Municipal Class EA process, the possible future extension of Maley Drive easterly (Northeast Bypass) connecting to the existing Southwest Bypass (Highway 17).

The information contained in the 1995 Maley Drive Municipal Class EA identified the possible need for Maley Drive to be extended easterly, beyond Falconbridge Highway, connecting with Lasalle Boulevard East and Garson-Coniston Road. The following statement was made in the 1995 study regarding the long range perspective for a future Maley Drive Extension easterly:

The Maley Drive extension would provide the initial links in a complete northern bypass of the City of Sudbury. This bypass eventually could be completed by extending Maley Drive easterly from Falconbridge Highway and south to meet the Kingsway (Highway 17) at the recently completed Southeast Bypass, as shown in Figure 4.1.

Figure 4.1 is shown on the following page.

The potential future easterly extension was reiterated in the 2005 Transportation Background Study (2005); part of the City of Greater Sudbury Official Plan Program. The Background Study labeled the extension of Maley Drive as a potential Northeast Bypass. The following recommendations were provided based on technical analysis, evaluation of alternatives, and are also reflective of the input and comments received from the general public and key stakeholders during the study process:

- The need for a Northeast Bypass from Maley Drive to Highway 17 in the long-term (beyond the planning horizon); and
- The extension of LaSalle Boulevard easterly to the future Northeast Bypass.

Finally, Schedule 6 of the Official Plan, Transportation Network, shows the extension as a Potential Local Network Improvement, where the improvement is expected to address localized capacity and operational issues (section 11.2.2.2 Localized Road Improvements).

The City, therefore, maintains their interest to evaluate the possibility extending Maley Drive easterly beyond Falconbridge Highway, as part of a future Municipal Class EA process. However, the addendum's primary focus is on improving the circulation of traffic within the project limits of LaSalle Boulevard to Falconbridge Highway.

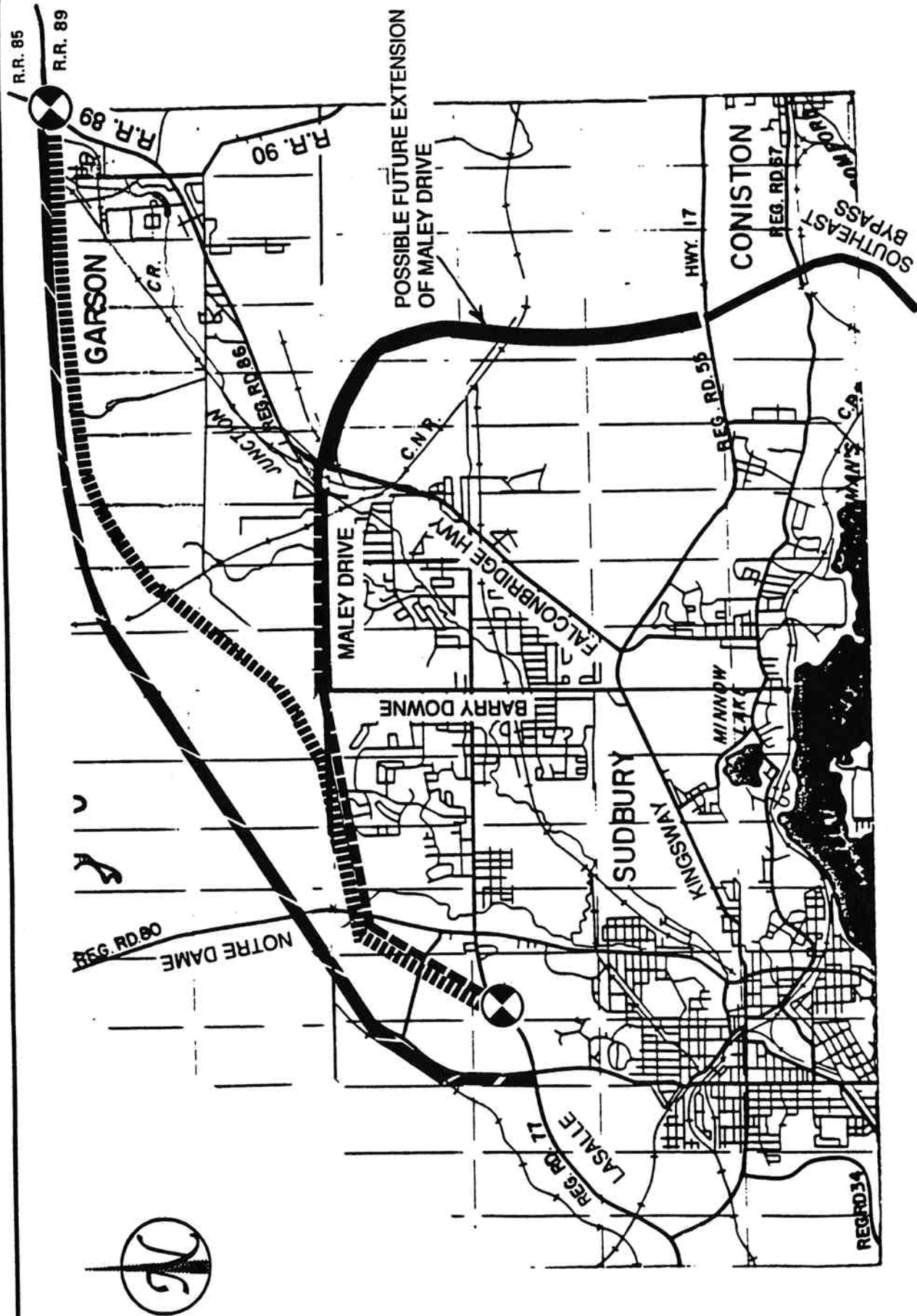


FIGURE 4.1
ALTERNATIVES
FOR NEW ROADS

Alternative 1 : Maley Drive extension plus reconstruction of existing Maley Drive

Alternative 2 : Inco Road

Alternative 3 : Maley Drive Extension plus new road

Intersection Re-Alignment

Marshall
Macklin
Monaghan

CONSULTING ENGINEERS - SURVEYORS - PLANNERS

Maley Drive Extension Class Environmental Assessment

Appendix E

FRi Ecological Services Report

INTRODUCTION

In 1995, Marshall Macklin Monaghan Consulting Engineers had undertaken a Class Environmental Assessment (EA) for a proposed extension of Maley Drive in the north end of Greater Sudbury on behalf of the Municipality. For whatever reason(s), that project did not get to the implementation phase. Currently, Earth Tech (Canada) has been retained by the Municipality to provide an update to this document since there has been a substantial lapse in time since the original one was issued.

In this regard, Earth Tech has retained FRi Ecological Services to confirm whether or not the Natural Sciences values as identified in the previous EA document are still applicable and/or valid.

METHODOLOGY

The following text in bold/italics was extracted from the 1995 document. Immediately following, comments are provided that describe 2006 conditions and the information source. Recent field investigations were conducted on June 5, 2006. This somewhat coincides with the dates of the 1995 field investigations (week of May 30 - June 3).

Confirmation of fisheries resources was conducted using minnow traps and a backpack electro-fisher. The proposed corridor was traversed by means of an ATV.

If any significant changes were observed, a discussion of the change to the feature/function is also included.

DISCUSSION

NATURAL ENVIRONMENT OVERVIEW

Environmentally Significant Areas: No Environmentally Significant Areas, Areas of Natural and Scientific Interest or Provincially Significant Wetlands are located within the study corridor.

- No change. Source: Natural Heritage Information Center Database

Physiography and Topography: The physiography is dominated by the Canadian Shield. Bedrock is predominantly exposed and is composed of belts of greenstone and metamorphosed sediments. Glacial deposits composed of shallow, sandy tills are also present within the region. The surface topography is characterized by a rounded landscape of low hills and ridges. On-site geotechnical investigations have identified rock outcrops, low-lying wetlands, and areas with shallow overburden conditions.

- No Change.

Water Resources: Eight water crossings have been identified along the study corridor. Water crossings include watercourses and wetlands. Watercourses along the corridor are located within the Kelley Lake watershed. Three watercourses (Tributary A,

Tributary B and the LaSalle Tributary) flow into the Nickledale Reservoir located immediately south of the proposed Maley Drive Extension. In general, they are small in scale and support, where present, degraded warmwater fish communities. Habitat degradation has occurred through transportation corridor construction and beaver activity.

- The study area should be categorized as being in the Upper Junction Creek Watershed. Source: <http://www.junctioncreek.com/Maps/Map.pdf>
- Two other watercourses were identified in the field that were not previously recorded. One is located approximately 100m east of the intersection of Barrydowne Road and Maley Drive (on Maley Drive). It has been identified as Junction Creek Tributary 1. This watercourse is located in Plate F4 (Volume 2 - Appendix F of the 1995 EA document) and is categorized as a *Riparian Stream* that flows through a *Wet Shrub Thicket*. We captured 3 Central Mudminnows (*Umbra limi*), and 1 Finescale Dace (*phoxinus neogaeus*) in a minnow trap. The water temperature was 23°C. The other, identified as Lasalle Tributary East, is a small stream that has a reasonable flow and a narrow defined channel. It is shown (but not identified) on Plate F3. No fish were captured here. The water temperature was 21°C. See Figure 1. This brings the total watercourse crossing number to ten. Source: 2006 Field Observations.

Wetlands: Most wetlands along the study corridor are riverine in character. Several small palustrine wetlands are also located along the corridor. Drainage and depressional storage along the alignment are largely controlled by the bedrock physiography of the Social and Cultural Environment

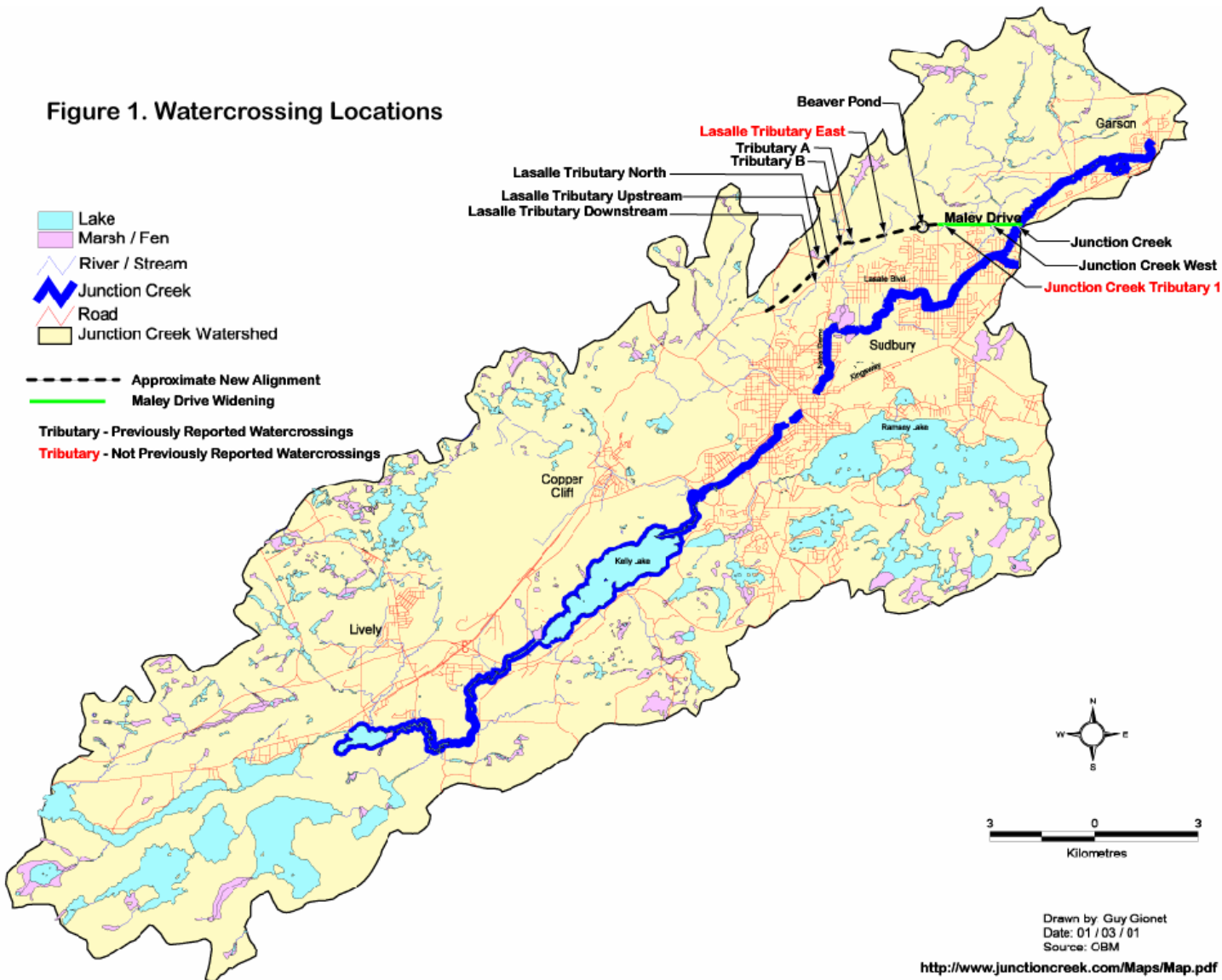
No change. Source: 2006 Field Observations.

Fisheries: Eight present and/or potential water crossings were identified within the study corridor. Field investigations were conducted to assess aquatic and terrestrial habitat along the watercourses. The fish community was qualitatively sampled using back-pack electrofishing equipment and dip nets. The species identified were indicative of degraded warmwater systems.

- The only change to the information presented in the 1995 EA document is that we captured fish in Tributary A. We captured 2 Brook Sticklebacks (*Culaea inconstans*), 1 Finescale Dace and 2 Central Mudminnows. Source: 2006 Field Observations.
- It should also be mentioned that the 1995 study indicated that the Junction Creek tributaries “...are indicative of a degraded warmwater system”. While this may be valid, efforts to rehabilitate the creek are underway. Ten thousand Brook Trout (*Salvelinus fontinalis*) have been stocked in the upper reaches of the stream since 2000. As well, the Adopt-a-Creek program was initiated in 2003 to create environmental awareness. Source: Sudbury Star. June 3, 2006.

Wildlife: Due to the degraded landscape within the study corridor the quality and diversity of wildlife habitat and community is considered low. The corridor provides habitat for mammal species which are associated with near urban environments but also supports species which are more typically associated, with habitats of greater

Figure 1. Watercrossing Locations



isolation from the human environment. A wide range of bird species occupy a number of habitats in the study corridor. With respect to herpetofauna, the shallow marsh community located immediately on the north side of the Maley Drive unopened- road allowance, approximately 200 m west of Barry Downe Road, has a significant herpetofaunal association. It provides suitable habitat for all life stages of herpetofauna found along the study corridor.

No Change. Source: 2006 Field Observations

Significant Species: *No significant plant or animal species were observed along the study corridor.*

No Change. Source: 2006 Field Observations

Agricultural Resources: *No agricultural resources will be impacted through the project construction within the corridor.*

No Change. Source: 2006 Field Observations

SUMMARY

No significant changes to the natural environment were observed during our follow-up study. Since this is currently a corridor evaluation, the features identified in both the 1995 and 2006 inventory are referred to in broad terms. However, it provides planners with an overview of what types of natural features may be expected to be impacted during construction of the preferred alignment.

Vegetation communities have not changed to any degree since 1995, likely because no new development has occurred in the study area.

Fisheries resources are typically degraded by contaminated surface runoff, lack of thermal protection (canopy) and urban/industrial pollution. It should be realized that all of the watercourses in the study corridor exhibited permanent morphological features, and whether or not fish were captured, should still be considered fish habitat. Future watershed rehabilitation plans (i.e. Junction Creek), reduced industrial emissions and proper mitigating development techniques may very well increase productivity in these watercourses. Mitigation strategies presented in the 1995 EA Document should be employed at a minimum to maintain stream connectivity and reduce or eliminate sediment infiltration.

An accurate inventory of site specific impacts imposed by the alignment footprint should be carried out during detail design. If refinements to the strategies previously developed for mitigating impacts to environmental sensitivities are required during detail design, they should reflect current best management practices.

Vegetation

The 1995 EA described the vegetation in the study area as “... *typical of much of the Sudbury area, the vegetation is presently regenerating after the near total denudation of the landscape. The vegetation found in the study area is controlled by the surrounding topography, depth of soil and drainage...*”

During our reconnaissance of the study area we did not notice any significant change to the vegetative condition. White Birch Heathland (an extensive area of rather level open uncultivated land usually with poor coarse soil, inferior drainage, and a surface rich in peat or peaty humus)* is still the dominant community in the corridor. Typically Rock Barrens, devoid of vegetation occupy much of the higher elevations while slopes and bottom lands contain small wetlands and transitional species. Encroachments by urban and commercial/industrial influences have not changed to any degree that could be considered as “different” to the conditions presented in the original study. The extension now being proposed beyond Frood Road to the west can reasonably fit into the overall description for the original study area, but exhibits more of a disturbed condition due to adjacent mining activities.

Vegetation is an important component of any ecosystem and despite it's sparseness in this case, thermal regulation to ground dwellers as well as aquatic communities is vital to their survival. Shrubs and trees are also important to nesting birds as well as nutrient/chemical interactions with soils and air. Shallow soils over bedrock are maintained for the most part by the binding capabilities of root systems. Once the vegetation is removed, erosion and sediment transport become more of a concern.

Mitigation strategies to afford protection of vegetated areas may include: sediment and erosion control; minimal clearing and grubbing; timing of work (nesting birds); construction operations (use of wheeled vs. tracked machinery, fueling areas etc.); control of stockpiles and waste materials (location/disposal sites); and rehabilitation where required.

*Merriam-Webster Dictionary On-Line (<http://www.m-w.com>)