Ontario

REVIEW UNDER THE ENVIRONMENTAL ASSESSMENT ACT

REVIEW OF THE ENVIRONMENTAL ASSESSMENT

HIGHWAY 400 - HIGHWAY 404 EXTENSION LINK (BRADFORD BYPASS)

ENVIRONMENTAL ASSESSMENT

Submitted by:

The Ministry of Transportation

EA File No. TC-CE-02

Review prepared pursuant to subsection 7(1) of the *Environmental Assessment Act*, R.S.O. 1990 Province of Ontario

May 2001

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NEED MORE INFORMATION

Public Record Locations

You can view the public record for this Environmental Assessment during normal business hours at the following Ministry offices:

Environmental Assessment and Approvals Branch
2 St. Clair Avenue West, Floor 12A
Toronto, Ontario M4V 1L5
Please call (416) 314-8001
Fax: (416) 314-8452

Additional files containing the environmental assessment, and a copy of the Review and Notices are available at the following location:

Ministry of the Environment
Central Region
5775 Yonge Street
North York, Ontario
M2M 4J1
(416) 326-6700 or Toll Free 1-800-810-8048

Copies of the Review and Notice are available for public review at the offices of the Ministry of Transportation, Regional Municipality of York, County of Simcoe, Township of King, and the Towns of Bradford West Gwillimbury and East Gwillimbury, and the public libraries of Bradford West Gwillimbury, East Gwillimbury, and King Township.

MAKING A SUBMISSION?

A public review period will follow publication of this Review. During this time, any interested party can make submissions on the proposed undertaking, the environmental assessment or this Review. Should you wish to make a submission, please send it to:

Mr. Michael J. Williams, Director
Environmental Assessment and Approvals Branch
Ministry of the Environment
2 St. Clair Ave. W., Floor 12A
Toronto, Ontario M4V 1L5
Fax:(416) 314-8452

RE: Highway 400-Highway 404 Extension Link (Bradford Bypass)
Environmental Assessment

Under the *Freedom of Information and Protection of Privacy Act* and the *Environmental Assessment Act*, unless otherwise stated in the submission, any personal information such as name, address, telephone

PREFACE

This Review has been prepared by staff of the Environmental Assessment and Approvals Branch of the Ministry of Environment in co-operation with various provincial and municipal government agencies.

The Review evaluates the Highway 400-Highway 404 Extension Link (Bradford Bypass) Environmental Assessment (EA) submitted by the Ministry of Transportation based on the requirements of the *Environmental Assessment Act* (EAA). The Review has been prepared to assist the Minister of the Environment in making a decision on whether the EA should be: accepted; amended and accepted; refused; approved; referred to mediation; or referred to the Environmental Review Tribunal for a decision.

On January 1, 1997, amendments to the EAA under the *Environmental Assessment and Consultation Improvement Act, 1996* (as amended by chapter 27 of the 1996 Statutes of Ontario) came into force. The Ministry of Transportation submitted its EA document for review during the transitional period which ended on December 31, 1997. Except as ordered under subsection 12.4(3) of the Act, Part II of the old Act applies to this EA. The Ministry of Transportation requested an order be made under subsection 12.4(3) making certain provisions of the amended Act apply. These provisions include mediation, if required, approval of the undertaking without first accepting the EA, and the application of Section 12.2 activities permitted before approval, to apply to this EA.

Notwithstanding the previous paragraph, the Ministry of the Environment upon receiving a request from the Ministry of Transportation, has the authority under subsection 12.4(3) of the new Act to direct that certain other provisions of the new Act also apply to this EA.

Through the Notice of Completion, the ministry has directed that certain provisions of the new legislation shall apply, including the removal of the acceptance step in the Minister's decision-making process. The ministry has determined there would be no benefit from dividing up the question of whether or not the undertaking should be approved by two separate decisions. The ministry has also directed that other activities identified under Section 12.2 of the amended Act be permitted prior to approval of the EA. Also, the Notice of Completion directs that if a hearing is necessary, it can be held on either the whole EA or on particular matters of concern.

Before a decision is made on this undertaking, any person has the right to submit to the Minister comments on the proposed undertaking, the EA, and this Review document. Any person also has the right, subject to the discretion of the Minister, to request a hearing or mediation on all or part of the EA.

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EXECUTIVE SUMMARY

Highway 400-Highway 404 Extension Link (Bradford Bypass)

The Ministry of Transportation (MTO) is seeking approval under the *Environmental Assessment Act* (EAA) for a 4-lane controlled access freeway between Highway 400 west of Bradford to the proposed extension of Highway 404 in East Gwillimbury. The proposed freeway will be constructed in stages corresponding to existing/future traffic demand. The following Review constitutes the official government review of the MTO's Environmental Assessment (EA) which describes the undertaking and its rationale.

The undertaking for which EAA approval is being sought is for the protection and designation of a Recommended Plan that identifies the location of a proposed 16.2 km rural 4-lane controlled access freeway located in the County of Simcoe and Regional Municipality of York. The location of the proposed freeway alignment for the Highway 400-Highway 404 Extension Link is identified on Figure 1. The proposed freeway runs in an east/west direction and connects Highway 400 in Bradford West Gwillimbury to the proposed extension of Highway 404 in East Gwillimbury. The proposed freeway is located north of and parallel to Highway 88 and the 8th Line in Bradford West Gwillimbury and Queensville Sideroad (York Road 77) in East Gwillimbury. The proposed freeway also traverses a small segment of the Township of King in York Region between the west branch of the Holland River and Bathurst Street adjacent to Hochreiter Road.

Submissions from provincial and federal government agencies indicate their support for the proposal. The proposed undertaking is expected to trigger the Canadian Environmental Assessment Act (CEAA). Approvals from federal agencies will be required by the MTO either before or during the detailed design stage of the project. The MTO has responded to issues identified by the provincial and federal government agencies and identified that they can be addressed during the detailed design phase or through proposed conditions of EAA approval.

Local and regional municipalities support the proposed freeway in general. Technical questions have been expressed by the Township of King regarding the highway design and construction. The Town of Bradford West Gwillimbury expressed concerns with the location of the interchange at Simcoe Road 4. The Town of East Gwillimbury objects to the preferred route as it disrupts established communities and developed areas.

Submissions from the public and other agencies included, but were not limited to, general and site specific concerns regarding the environmental impacts of the undertaking, public consultation, the EA process and the consideration of other alternatives including mass transit alternatives. Some of these issues can be addressed during the design phase of the project. There are some remaining issues related more to government policy regarding transportation which cannot be resolved within the scope of this EA.

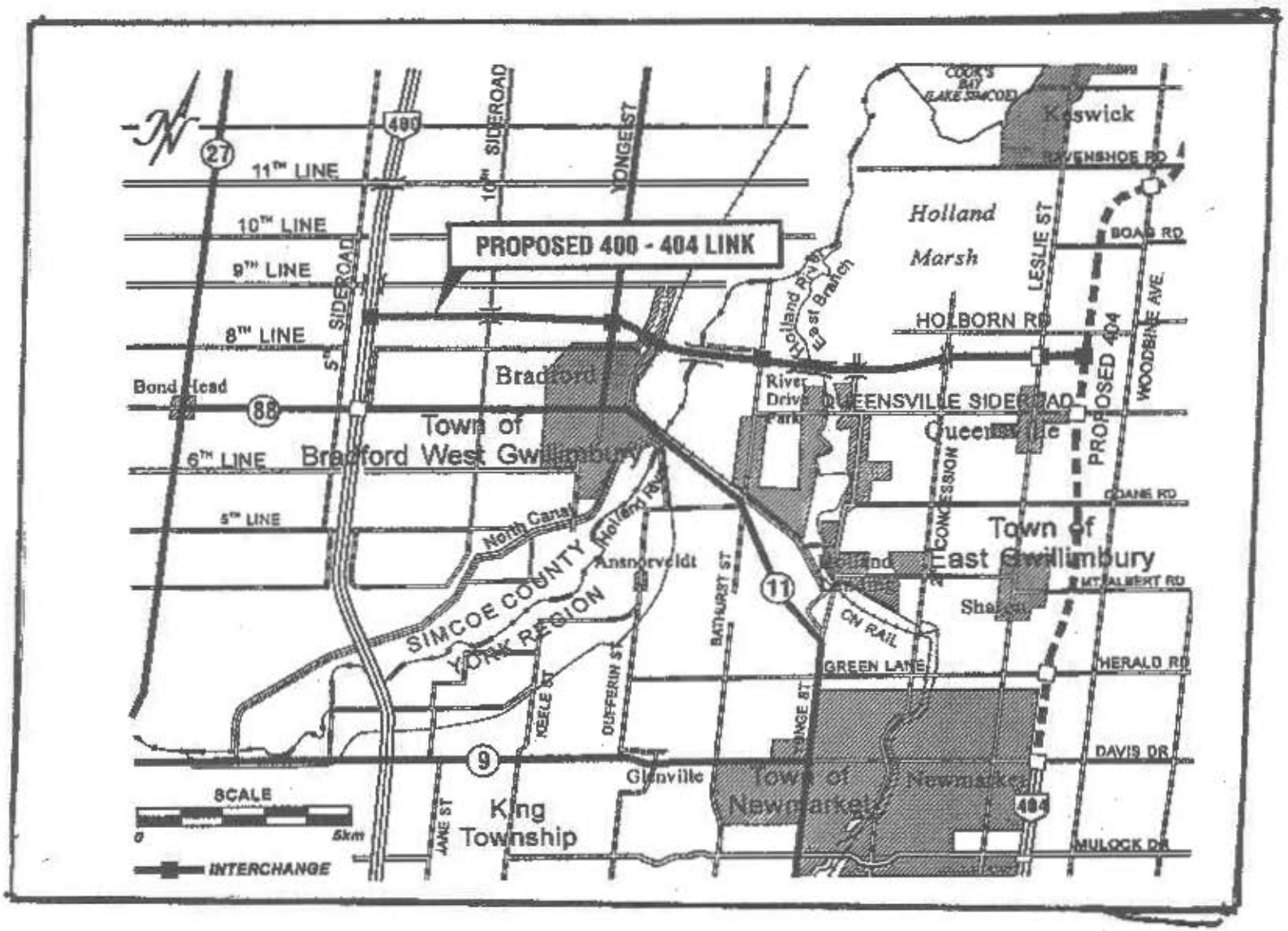


Figure 1
Proposed location of the Highway 400-Highway 404 Extension Link (Bradford Bypass)

1.0 OVERVIEW

1.1 Introduction

This Review evaluates the Highway 400-Highway 404 Extension Link (Bradford Bypass) Environmental Assessment (EA) prepared by the Ministry of Transportation (the proponent) based on the requirements of the *Environmental Assessment Act* (EAA).

The Environmental Assessment (EA) process requires proponents to consider all aspects of the environment, including but not limited to the natural, social and economic effects of any undertaking, and to consult with the public and government agencies regarding any undertaking subject to the EAA. The proponent prepares an EA that outlines the environmental effects of the undertaking and describes the mitigating measures designed to minimize these effects.

The EA is reviewed by the Environmental Assessment and Approvals Branch (EAAB) of the Ministry of the Environment (MOE) and a core review team of government agencies. The Review is designed to assess the EA, identify outstanding issues, and to recommend whether or not the EA meets the requirements of the EAA. The Review also provides the public and the government review agencies an opportunity to see how their concerns have been addressed and provide any additional comments to the ministry, prior to the Minister making a decision on the undertaking.

The Highway 400-Highway 404 Extension Link (Bradford Bypass) EA was reviewed by the EAAB to determine if it meets the requirements of Section 5(3) of the *EAA*. Section 5(3) requires the proponent to describe:

- the purpose and rationale of the undertaking;
- alternatives to the undertaking;
- alternative methods of completing the undertaking;
- the existing environment and the degree in which it may be affected;
- any mitigation proposed to minimize these effects; and
- the advantages and disadvantages of the undertaking.

Based on the information and conclusions provided in this Review, as well as other information, the Minister of the Environment will make one of the following decisions in accordance with Section 9 of the amended EAA:

- give approval to proceed with the undertaking;
- give approval to proceed subject to conditions as the Minister considers necessary;
- refuse to give approval to proceed with the undertaking;
- refer either part or the whole matter to the Environmental Review Tribunal for a decision; or
- refer outstanding matters to mediation.

The publication of the Notice of Completion of Review initiates the public review period whereby comments may be submitted on the undertaking, the EA, and this Review. During this period, any requests for a hearing will be taken under consideration by the Minister.

This Review is divided into four sections. The first section provides a description of the EA process as discussed above, as well as a brief history of the undertaking, an examination of the additional approvals required to complete the undertaking, and a discussion of the study area. The second section includes a description of the undertaking and a discussion about its purpose and rationale, consideration of alternatives and an overview of the environmental effects as these items relate to Section 5(3) of the *EAA*. The third section deals with the agency and public consultation process and the issues identified. The final section provides the conditions and recommendations for the highway project.

1.2 Historical Context

The EA indicates that the proponent, regional and local municipalities have been studying improvements to the transportation system south of Lake Simcoe since the 1960's.

The result of this work was the Highway 89 Extension EA (1979/84) which was for a new 2-lane roadway between Highway 400 and Ravenshoe Road and the upgrading of the latter to resolve problems of out-of-way travel around Lake Simcoe and traffic congestion on other roads. The proponent withdrew the EA in 1986, on the basis that the environmental impacts to the core areas of the Keswick Marsh outweighed the transportation benefits in this particular location.

Through the period of 1986-88 the proponent worked with affected municipalities to continue to study the unresolved transportation problems. In 1989, the proponent undertook the Highway 404/89 Overview Study. This study reviewed travel demand

and justification for an extension of Highway 404 northerly from Newmarket around the east side of Lake Simcoe as far north as Highway 11 near Gravenhurst, and improvements in the Highway 400 corridor. The benefit of an east/west linkage between Highway 400 and the extended Highway 404 south of Lake Simcoe as a means of accommodating travel demand for crossing between corridors was also assessed.

The Overview Study recommended undertaking route planning and EA studies for both a link between Highway 400 and the proposed extension of Highway 404, and the portion of the Highway 404 Extension between Davis Drive and Highway 12. It was on this basis that the proponent initiated the Route Planning and Environmental Assessment Study for the Highway 400 - Highway 404 Extension Link (Bradford Bypass) along with the concurrent separate study of the Extension of Highway 404 to Highway 12.

The Travel Demand Forecast, discussed in detail in Section 3.1.2.2 and Appendix A of the EA, demonstrated the long term capacity shortfall for east/west travel in northern York Region. This problem will persist even with planned improvements such as the upgrading of Highway 9/Bathurst Street/Green Lane to a 4 lane arterial road and the extension of Highway 404 from Davis Drive to Herald Road to meet with Green Lane. It should be noted that during the same period that the Bradford Bypass EA was being prepared, these road improvements were being studied by both the proponent and the Region of York independently under the Ministry of Transportation's Class Environmental Assessment for Provincial Transportation Facilities and the Municipal Engineers Association's Municipal Class Environmental Assessment processes. Although the Highway 9/Green Lane corridor was considered as part of the proponent's corridor analysis it was discarded as it failed to solve long term transportation problems as documented in the EA. The Highway 9/Green Lane corridor improvements were ultimately approved, although a recent addendum to these reports was prepared to recognize the transfer of ownership in this location of Highway 9 to the Region of York and changes in responsibilities for construction to the proponent for the extension of Highway 404 from Davis Drive to Herald Road including the construction of the interchange at Herald Road.

The EA provides documentation that travel demand has grown significantly in the past 25 years in the area south of Lake Simcoe with the conversion of rural areas to more urban communities which are becoming integrated with the Greater Toronto Area. Research in the study indicated that population growth, demographics and economic changes, commuter trips, increased recreational travel, and a shift from rail to road for

goods movement has contributed to this traffic increase. An analysis of municipal planning documents indicates continued growth will contribute to increases in traffic and will lead to increasing congestion on existing roads. This future travel demand is comprised mostly of long distance north/south trips making the cross over between Highway 400 and the extended Highway 404.

1.3 Approvals Required

The Minister of the Environment is responsible for a decision on the undertaking under the EAA. The proponent will require approvals under other applicable provincial and federal statutes and regulations, other than EAA, for certain aspects of the undertaking. These approvals are generally required if the undertaking receives approval under the EAA.

The undertaking is expected to trigger approval under the *Canadian Environmental Assessment Act* (CEAA) as a result of federal approvals required under the *Navigable Waters Protection Act* (NWPA) for the two Holland River crossings, and potentially the *Canadian Transportation Act* (CTA) for the crossing of CN's Newmarket Subdivision. In addition, where it is determined that harmful alteration of fish habitat will occur, authorization under the federal *Fisheries Act* will be required. The proponent has indicated in the EA that applications for these authorizations will be made during the design phase once the EA receives provincial approval under the EAA.

1.4 Study Area

The study area for the EA initially consisted of a large area between Highway 407 and Highway 89/Cooke's Bay/Ravenshoe Road south of Lake Simcoe, extending from Highway 27 easterly toward Kennedy Road. The study area was defined by the initial identification of transportation problems. The study area was more specifically defined through the corridor analysis and evaluation process, and provided the best overall combination of minimizing environmental effects and resolving the transportation problems.

The specific study area for the EA encompasses the existing Highway 400-404 Extension Link (Bradford Bypass) corridor and extends from the Highway 400 in the Town of Bradford West Gwillimbury (County of Simcoe) through the Region of York in the Township of King and to the proposed extension of Highway 404 from Davis Drive northerly to the Town of East Gwillimbury. The study area extends from Bradford West

Gwillimbury 5 Sideroad (westerly limit) to East Gwillimbury Concession Road 5 (easterly limit). The portion of the study area east of Leslie Street was also under study as part of the concurrent and related Highway 404 Extension EA.

To the south, the study area is bounded by Holland Street (Highway 88)/Queensville Sideroad. At the west boundary the northerly limit follows Bradford West Gwillimbury 11th Line, shifting to the 10th Line midway between the 10 Sideroad and Yonge Street, then continues easterly across the Holland River to the easterly limit. The rationale for the study area is discussed in Section 3.5 of the EA and the selection of those limits is summarized in Exhibit 3-17 of the EA (Figure 2)

2.0 EVALUATION OF THE ENVIRONMENTAL ASSESSMENT

2.1 Description of the Undertaking

Section 5.0 of the EA describes the proposed undertaking. The new freeway will be a 4-lane divided controlled access freeway for its entire 16.2 kilometre length with a designed speed, as opposed to the legal speed limit, of 120 kilometres per hour. All intersecting roads will ultimately be grade separated. The freeway cross section will be rural (shoulders - no curbs) within a basic 100 metre right-of-way. The cross section will have a 30 metre grassed median, with the exception of the Holland River crossings east of Bradford, where the median width will narrow to 8 metres with a concrete barrier.

There will be five interchanges along the new freeway:

- Highway 400;
- Simcoe County Road 4 (Yonge Street);
- Bathurst Street;
- York Regional Road 12 (Leslie Street), partial interchange; and
- Proposed Extension of Highway 404.

Other grade-separated crossings include the following:

- 10 Sideroad (Middletown Road) Town of Bradford West Gwillimbury Road;
- Artesian Industrial Parkway Town of Bradford West Gwillimbury Road;
- CN Rail CN North America - Newmarket Subdivision;
- Yonge Street Town of East Gwillimbury Road;
- 2nd Concession Road Town of East Gwillimbury Road.

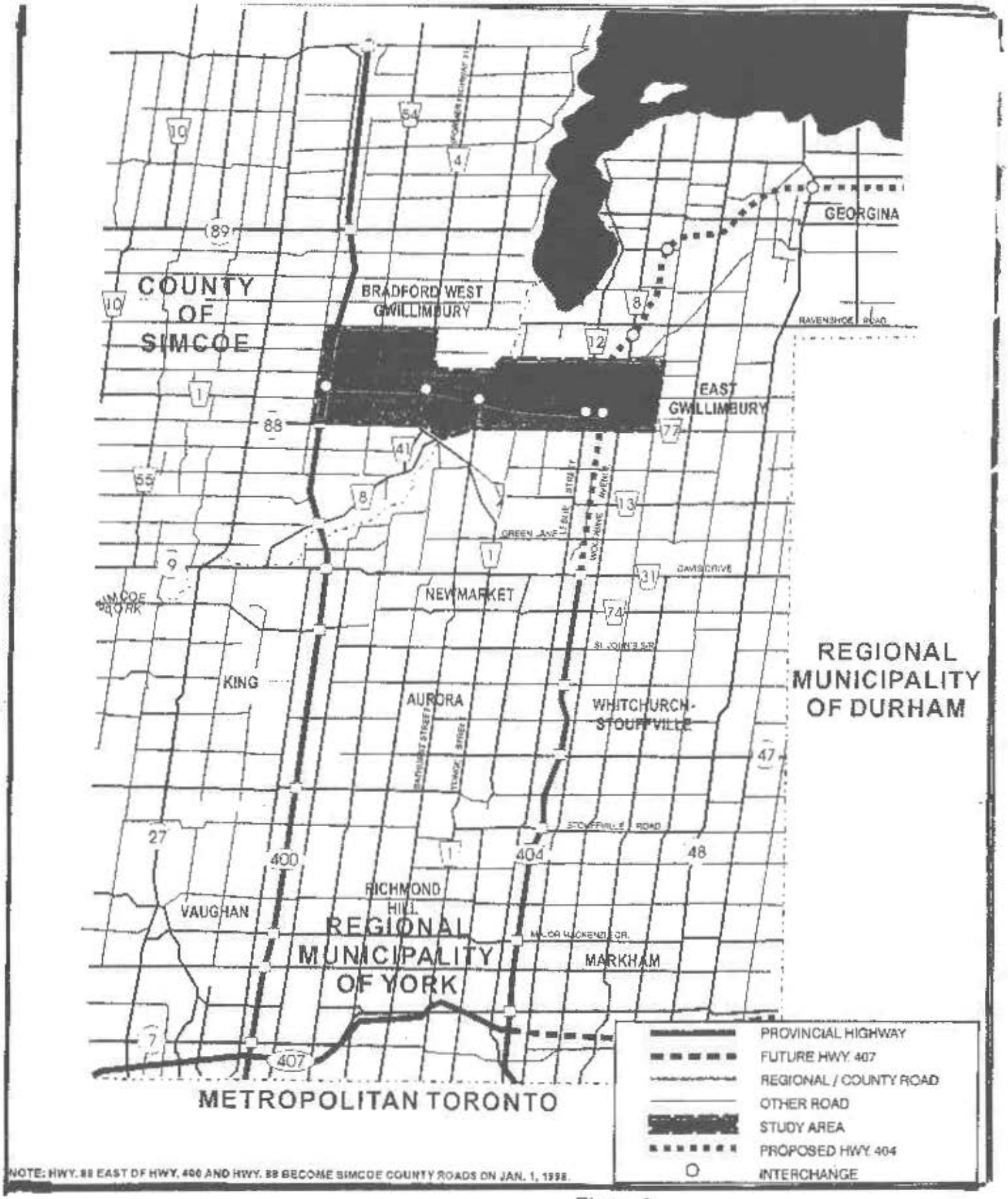


Figure 2
Highway 400-Highway 404 Extension Link (Bradford Bypass)
Study Area

If the undertaking is approved, the proponent will be legally responsible for ensuring the highway is constructed according to the EA and the design specifications. The proponent will also be responsible for obtaining all other applicable legislative approvals.

Conclusions:
In accordance with Section 5(3) of the EAA, the proponent has adequately described the proposed highway undertaking.

2.2 Purpose and Rationale

The proponent has identified the purpose for the undertaking in terms of addressing the problem/opportunity in the study area. Section 1.1.1 of the EA discusses the purpose for the undertaking:

"*The purpose of the proposed roadway is to resolve several outstanding transportation problems and to address significant opportunities in the northern York/southern Simcoe area. The Recommended Plan will:*

- *together with the extension of Highway 404 from its current terminus at Davis Drive northerly to at least the 400 - 404 Link, significantly reduce the traffic operational and distribution problems currently experienced as a result of the incomplete and fragmented nature of the provincial highway system in the study area;*

- *by crossing the barrier to east-west travel formed by the Holland River, reduce the occurrence of inefficient out-of-way travel and the consequential waste of fuel, time, and money;*

- *contribute significantly to the ability of the area transportation system to accommodate future travel demand needs, particularly that generated by planned growth in population and employment within York and Simcoe;*

- *provide land use and transportation planning authorities in the affected area with a clearly-defined roadway plan and an associated property reserve, as input to their critical long-term planning decision-making process;*

- *relieve key municipal roads of long distance 'provincial' inter-regional commuter and recreational traffic, thereby easing congestion and its associated negative impacts on existing communities; and*

- *by identifying and reserving the appropriate property right-of-way now (prior to urban expansion occurring so as to affect or eliminate the feasibility of the corridor), be able to be implemented in a flexible, staged manner and with a minimum of disruption to the surrounding community."*

The EA describes the purpose for the undertaking in terms of the description of the transportation problems as discussed in Section 3.0 of the EA. The proponent provides the rationale for the project throughout the planning process. Section 4.2. of the EA provides a description of the rationale used for selecting route alternatives. Section 4.2.3 provides an evaluation and selection for the preferred route. Section 4.2.3.8 summarizes the rationale for selecting the technically preferred route.

The proponent justifies the undertaking as it offers the best overall package in terms of transportation benefits and potential effects on the environment, and it will allow continued growth in York and Simcoe in accordance with approved planning documents. The proponent has indicated that the transportation benefits would offset potential impacts on natural, agricultural and residential areas which can be mitigated to minimize effects as documented in the EA.

2.3 Consideration of Alternatives

The consideration of alternatives provides proponents with the opportunity to examine each alternative, the environmental effects of each alternative and the selection of a preferred method to address the problem. Typically, the preferred alternative is the one that considers the best overall combination of advantages and disadvantages to the environment, and addresses the provincial transportation needs. The preferred alternative, which becomes the undertaking, must be identified in a systematic manner and should include input from the public and government agencies.

2.3.1 Alternatives to the Undertaking

The proponent identified and evaluated route alternatives which are considered to be functionally different from the recommended plan. The alternatives considered include the "do nothing" option, manage transportation demand, road improvements, and to introduce non-roadway based facilities or modes (Section 3.3 of the EA).

Do Nothing

The Do Nothing alternative did not provide a solution to the current and future transportation problems in the study area. The Do Nothing alternative was used as a base line in the analysis of other alternatives and remained as an option in the event of all other alternatives being unacceptable.

Managing the Transportation System

This alternative included consideration of reducing peak hour congestion, shifting transportation demand to other areas, eliminating increases in transportation demand by freezing development and encouraging telecommuting, controlling access or using congestion pricing, and reducing vehicular demand by encouraging public transit and High Occupancy Vehicle use. The proponent's analysis of this alternative indicated that due to the annual growth in York Region, this alternative would be ineffective as a large scale congestion reduction technique. In addition, several conditions must exist in order for this type of alternative to work. These conditions include: extreme congestion; lack of parking; relatively dense land use with concentrated employment areas; transit-supportive urban planning; a clearly defined and controllable facility or area; and, a commitment from all involved agencies as well as an administrative framework through which Demand Management measures can be implemented and operated.

Introduce New Non-Roadway Based Facilities or Modes

This alternative included consideration of air or water based travel, rail including freight (CN,CP) and passenger (Via and Go Transit), or other forms of mass transit such as a subway, or a bus way/transit way. Both air and water travel were not considered viable to address the transportation needs. The proponent concluded that non-roadway based modes can only contribute to addressing the travel needs of small sectors of the marketplace and are incapable of accommodating the diversity of trip types, directions, and modes with the convenience and cost effectiveness of roadway based modes. The mass transit options considered included new rail services. Rail services was not thought to be viable for freight traffic as the analysis of the study areas indicated that trucking dominates over rail service because of the flexibility, lower transit time, and lower costs. This is also noted as a continuing trend in the Travel Demand analysis in Appendix B of the EA. It was noted in the EA that CN is currently abandoning its rail line north of Bradford which gives an indication of the lack of competitiveness of this type of facility in the marketplace. Passenger rail was reviewed but found to be inadequate as these systems work well in heavily built up areas where there is a commonality of origins and destinations, and where there is existing transit services.

Roadway Improvements

The proponent considered road improvements including roadway operational improvements to the existing systems, roadway infrastructure improvements such as widening or upgrading, roadway infrastructure additions of a new roadway and new road-based modes such as buses or van pools. The only alternative brought forward was the introduction of new roadway infrastructure as this was the only alternative which addressed the problem or opportunity of the EA study. This alternative was thought to be an effective means of relieving congestion, solving the discontinuity of travel around Lake Simcoe and providing benefits to commuter and recreational travellers as well as the movement of goods.

Conclusions

The proponent has adequately described a range of alternatives to the undertaking. The selection of a new roadway as the preferred alternative is supportable as documented in the EA. It is noted that it is unclear how the environmental effects on the natural, cultural and social environments were integrated into the proponent's decision making. However, the proponent was able to demonstrate that the alternatives to the undertaking, which were not selected, were not able to make a significant contribution in addressing the transportation problems/opportunities identified in the study area. The proponent has addressed the requirements of the EAA with respect to the description and evaluation of alternatives to the undertaking. Some public submissions indicate a preference for mass transit options such as railways. The proponent has generally demonstrated in the EA that mass transit systems for goods and people are not economically viable in this instance and have been unsuccessful historically.

2.3.2 Alternatives Methods of Carrying out the Undertaking

The EAA requires proponents to consider not only the alternatives to the undertaking, but also alternative methods to carrying out the undertaking. This requirement involves the proponent identifying alternative types of roadways, different locations for these projects, or any other method that may be necessary to consider, such as different technologies.

In the EA, the proponent identified a new 4-lane freeway (with potential for staging) as the most reasonable alternative to address the transportation deficiencies in the study area as indicated by the Travel Demand Study (Appendix A of the EA). This study is based on the long term growth anticipated from the population, and land use associated with this general area. In addition, safety and the protection of a corridor for highway

purposes, was considered an important part of the consideration for a 4-lane controlled access freeway. The proponent conducted a corridor analysis and an evaluation of the potential impacts of environmental factors such as natural, social, economic, cultural, and transportation effects. The environmental effects of these factors were compared for each alternative corridor (Section 3.5 of the EA) and as result a recommended study area was defined for the preferred corridor in which to investigate alternative alignments.

The identification of alternative corridors was based on the existing freeway network and on historical studies done regarding potential east-west corridors in this general area. These studies included the Highway 89 Extension EA Studies (MTO, 1979,1984), the Highway 404/89 Overview (MTO, Nov. 1989), the Corridor Protection Study Part I (MT, June 1992) (unpublished), the Highway 11 Study for Provincial Highway Transfer (York Region, March 1993) and the Green Lane Corridor Environmental Study Report (York Region, October 1996). As a result of the comparison of east-west corridors identified in these studies (Exhibit 3-9 of the EA) and the environmental constraints of the broader study area (Exhibit 3-10 of the EA), the following five potential corridors were identified as shown on Exhibit 3-11 of the EA.

- **South Oak Ridges** between Richmond Hill and Aurora in the southern part of the Oak Ridges Moraine;
- **Aurora/Newmarket**, roughly in the vicinity of St. John's Sideroad;
- **Bradford corridor** north of the Highway 88/Queensville Sideroad corridor but skirting the southern edge of the Holland Marsh;
- **Highway 9 / Green Lane / Herald Road corridor** skirting the northern edge of Newmarket; and
- **Highway 89/Ravenshoe Road corridor** immediately south of Cook's Bay, connecting to Ravenshoe Road.

During the proponent's initial screening of the above noted corridors the Highway 89/Ravenshoe Road corridor was set aside as this corridor had previously been considered in 1986 by the proponent. The Highway 89/Ravenshoe Road corridor was not considered a reasonable alternative due to the significant impacts to the natural environment where it crossed the Keswick Marsh immediately to the south of Cooke's Bay in Lake Simcoe. The proponent had made a commitment at the time of the withdrawal of the Highway 89 EA to not consider any new highway crossing through this Marsh area in the future.

Also, during the initial highway corridor comparison Highway 9/Green Lane was evaluated as a four lane arterial roadway as improvements were already underway for this purpose under the Ministry of Transportation's Class Environmental Assessment for Provincial Transportation Facilities and Municipal Engineers Association Municipal Class Environmental Assessment processes. The arterial road option was set aside as discussed in Section 3.5.2 of the EA as it did not fully address the transportation problems.

The proponent's analysis of environmental factors and the ability of the corridors to resolve the transportation problems as stated in the EA concluded that the Bradford corridor was the best alternative for the following reasons:

- It had a strong transportation function as it would serve all trips around Lake Simcoe, and it would relieve congestion in downtown Bradford, on Davis Drive in Newmarket and on Yonge Street north of Newmarket.

- It had the least impact on the natural and social environment as corridors to the south were affected by development constraints associated with the Oak Ridges Moraine, and are extensively built up with existing and planned residential development. Both of these factors result in limitations to possible locations for transportation facilities and significant environmental effects in terms of noise and community impacts.

During the preparation of the EA document, the public, government agencies, and interest groups requested that further analysis of the Highway 9/Green Lane be undertaken as a freeway corridor. A separate study was prepared to address this issue and is included in Appendix B of the EA, and is summarized in Section 3.5.2 b of the EA. This study also included the development of freeway concepts in the Highway 9/Green Lane corridor including an alignment located directly to the north of this area. The EA indicates that travel demand modelling showed that both a new 4-lane arterial and a 4-lane highway are needed to accommodate long term demand. The proponent concluded that the Bradford corridor was preferred through the comparison of environmental criteria as outlined in Exhibits 3-12, 3-14 and 3-15 of the EA. The proponent also concluded that the best overall solution was Highway 9/Green Lane as a 4-lane road, and the development of a new freeway in the Bradford corridor. Generally the Bradford corridor was preferred as it offered superior transportation benefits.

Once the EA established that the Bradford corridor was preferred, the broader area study was narrowed to a specific study area in which a substantial number of alternatives were considered.

The alternatives are identified and described in Section 4.2 of the EA. The alternatives were identified by gathering information for the study area as outlined in Section 4.1.1 and Exhibit 4-2 of the EA and by input from study area residents, interest groups, and government agencies.

The identification and development of route alternatives included consideration of environmental constraints in the study area and roadway design. Following the identification of reasonable alternatives, the proponent established five broad environmental factors, 16 evaluation criteria and 130 indicators (both qualitative and quantitative) to analyse the environmental effects, and to determine how well the alternatives addressed the transportation deficiencies (Exhibit 4-6 of the EA). The environmental factors used in the elimination process for alternatives included the natural, social, economic, cultural and transportation aspects. The proponent evaluated the environmental effects of each alternative using data and existing studies provided by the technical review agencies, interest groups and the public. This information was used to measure the potential environmental effects, to evaluate the advantages and disadvantages of each alternative, and to develop mitigation activities and alternative routes.

The evaluation process took place in four stages. An evaluation of 10 alternatives and 43 route segments was completed. A Weighted-Scoring and Trade-Off method was used to identify the preferred route. In each stage, every alternative was either eliminated or promoted to the next stage of evaluation. By the four-stage process of elimination and comparison, and the inclusion of an evaluation of alignment refinements, the proponent identified the preferred alternative (the undertaking).

Conclusions

In accordance with the provisions of Section 5(3) of the EAA, the proponent has identified several alternatives to carrying out the undertaking and has conducted analyses of each alternative. In the process, they have adequately identified the advantages and disadvantages of each alternative. Although complex due to the large number of alternatives which were evaluated, the process outlined in the EA and supporting documents is clear, logical and generally easy to follow. Input from government agencies and the public was sought and incorporated into identifying and evaluating other alternative corridors, defining the study area characteristics and/or

environmental constraints, the identification of alternatives, the factors and evaluation criteria used, and the determination of the technically preferred route.

Although eliminated by the corridor evaluation and analysis initially, additional alternatives were considered in the Highway 9/Green Lane corridor which underwent detailed study, as documented in the EA, as a result of public consultation. Further public consultation regarding the results of this study was undertaken by the proponent during the preparation of the EA in an effort to address concerns. The evaluation of alternatives occurred using an increasing level of detail as alternatives were narrowed down to a preferred alternative.

2.4 Environmental Effects of the Undertaking

Evaluating alternatives involves identifying both positive and negative environmental effects of each alternative. The proponent is also required to identify the actions and measures necessary to mitigate or prevent the negative environmental effects. Mitigation and prevention allow the proponent to measure the "net" environmental effects (the effects to the environment of each alternative after mitigation and/or prevention) of the proposed undertaking. By evaluating the net environmental effects, the proponent identifies the advantages and disadvantages of each alternative and, at the same time, highlights those effects that may not be completely mitigated or prevented.

In Section 4 of the EA, the proponent describes the various alternatives and their net environmental effects. The environment is defined broadly to include the natural, economic, social, cultural and transportation environments of the study area. In Section 5 of the EA, the proponent describes the undertaking in detail and presents an extensive analysis and description of the environment as well as the environmental effects of the undertaking, both the construction of the proposed highway and its continued use. Reference is also made to detailed studies which support the analysis and identification of environmental effects (Appendices F, G, H, I and J of the EA). Exhibit 5.6 of the EA provides a summary of issues, potential effects, proposed mitigation measures and commitments to future work in the detailed design phase.

If and when approval is received for this undertaking, the proponent will proceed to the design phase of this project. This phase will include more detailed technical work as well as further consultation with stakeholders and public/technical agencies as discussed in Section 5.3 of the EA. The proponent has indicated that they are committed to addressing environmental concerns for this undertaking as identified in

the EA. The proponent has committed to addressing other environmental concerns which result from the detailed design phase prior to construction. New concerns will be screened during the design phase and appropriate mitigation measures will also be developed in conjunction with all affected stakeholders.

The proponent recognizes that there may be new concerns identified during the design phase which may represent significant environmental impacts not anticipated as part of the EA. In the event that this occurs and a change is required, the proponent is proposing that they will review this change under the Ministry of Transportation's Class Environmental Assessment for Provincial Transportation Facilities. The preparation of an Environmental Study Report (ESR) for the significant change would be required. This would allow the opportunity to ultimately request the Minister of the Environment to consider a "Request for a Part 2 Order" (previously identified as a "bump-up" request) for the proposed change to an individual EA. This would only relate to the change under consideration and not a re-examination of the EA.

Through the preliminary design and consultation process, the proponent identified several environmentally significant issues that needed to be addressed in the EA. The environmentally significant issues identified in the EA are generally summarized below for convenience to provide a general overview of the environmental effects, mitigation, and commitments. Reference should be made to Section 5.4, Exhibit 5.6, and the Appendices of the EA for a detailed and complete discussion of environmental effects.

Economic Environment

Agriculture: The proponent's route evaluation criteria emphasized the importance of minimizing the impacts on agriculture by avoiding land severances, maintaining access to properties and allowing the continued viability of farming operations. However, the proposed undertaking has the potential to affect approximately 154 hectares of agricultural lands including 18 field crop operations, 6 livestock and 7 speciality crop operations. In recognition of this, the route selection has been located mid concession where possible and along existing property lines to maintain viable farm operations and avoid major severances. Farm access will be reviewed in greater detail at the detailed design phase. The Ministry of Agriculture, Food and Rural Affairs concurs with the process used by the proponent to determine the route.

Special Land Use Strategies: The Regional Municipality of York's Official Plan, approved October 17, 1994 includes, transportation policies that support the planning and protection for the proposed Highway 400-Highway 404 Extension Link (Bradford

Bypass). The County of Simcoe's draft Official Plan, December 19, 1996, also recognizes the Highway 400-Highway 404 Extension Link as a multi-lane highway.

The Town of East Gwillimbury Official Plan, completed in 1979, does not recognize the Highway 400-Highway 404 Extension Link (Bradford Bypass). The Town of Bradford West Gwillimbury is currently updating its Official Plan.

Commercial/Industrial: An economic impact study completed for the Town of Bradford West Gwillimbury as part of the EA, indicated that the Bradford business sector was found to be locally oriented and not dependent on tourist through traffic. The proposed highway will include signage and the orientation of traffic into downtown Bradford where appropriate. The route may also affect two commercial businesses on Artesian Industrial Parkway which may require relocation onto other undeveloped lots nearby. In addition, the route will impact part of Albert's Marina and the Silver Lakes Golf Course on either side of the Holland River East Branch. The proponent has identified that these facilities will remain intact and some reconfiguration may be required to these uses to minimize any impacts during the detailed design phase.

Social Environment

Community Impacts: The objective of the route selection process is to avoid residential properties. The proposed undertaking will displace 6 residences. The new route avoids all other types of community features.

Recreation: The provision of long span bridges crossing the Holland River will allow the continuation of water-based recreational features associated with this area. The Scanlon Creek Conservation Area is also avoided. The proponent has indicated their commitment to provide mitigation for Albert's Marina and the Silver Lakes Golf Course in the detailed design phase.

Aesthetics: There will be visual exposure from east of Yonge Street to the glacial shoreline. The proponent has indicated in the EA that landscaping should be considered in this location. The route will also be exposed north of Bradford but may eventually be screened from view by future urban expansion north of 8th Line. The freeway will be visible from the hillside residential area north of Bradford (Grandview Estates) and cannot be screened. Views in the Holland River will be screened by trees adjacent to the route. The Holland River crossings will be aesthetically designed.

Noise: A detailed noise analysis was carried out to determine the proposed effects of noise in the vicinity of the alignment. Noise Sensitive Areas (NSA) were identified as being all single family homes. Noise levels in these areas for 49 homes could increase by more than 5 decibels (dBA). The Ministry of Transportation's Noise Protocol triggers immediate mitigation efforts for noise levels that increase more than 5 dBA. The proponent has identified a noise abatement strategy for those residences that will be affected by noise (Appendix H of the EA). Construction of the road will also result in temporary noise level increases. The MOE technical comments indicate that they are satisfied with the EA with respect to noise but they have requested a detailed noise report be required as a condition during the design phase in accordance with Ministry of the Environment/Ministry of Transportation (MOE/MTO) Noise Protocol.

Property Waste and Contamination: The construction of the undertaking will avoid any known landfill sites in the area. However it is possible that landfill waste or other contamination may be discovered during subsequent design and construction phases. The proponent has committed to manage waste or contaminated soils in accordance with the applicable legislation and guidelines. With respect to on-highway spills, remediation will be required by the owner of the spilled pollutant or the person having control of the pollutant as per the *Environmental Protection Act* and the Transportation of Dangerous Goods Protocol.

Cultural Environment

Heritage Resources: The preferred route traverses several north-south corridors of archaeological potential identified as the Holland River and glacial lake shoreline. Research indicates that the route is well to the north of an early 19th century steam boat landing site and transshipment point. As a result of public concerns, an Archaeological Assessment has also been completed for one portion of the right of way which identified a significant prehistoric site (East Holland River Site). No burial grounds were identified as part of this site. The majority of this site will remain in place with a small corner which will be impacted by the route. Mitigation and removal of these artifacts will be required prior to any construction. Additional archaeological work along the right-of-way will be completed as part of the detailed design phase in accordance with the MTO/Ministry of Tourism, Culture and Recreation (formerly called the Ministry of Citizenship, Culture and Recreation) "Protocol for dealing with Archaeological Concerns on Ministry of Transportation Undertakings." The route selection avoided all historical buildings and features. There is only one historical house adjacent to the route near Simcoe County Road Four. The historic house is in an area where the surrounding

properties have been held for a number of years for development. Mitigation from visual impacts through landscaping will be investigated during the design phase of the project. The Ministry of Tourism, Culture and Recreation is satisfied with the commitments made by the proponent in the EA.

Natural Environment

Vegetation: The avoidance of natural vegetation areas was not possible in some agricultural areas as the impact on the agriculture areas would have been greater than avoiding these vegetated areas. The main areas of concern were the central section of the route associated with major vegetation of both upland and wetland types. Approximately 22.1 hectares of higher quality woodlands will be removed. Also 17.2 hectares of the Holland Marsh Environmentally Sensitive Area will be affected as it is located along both branches of the Holland River. Through consultation with the Ministry of Natural Resources (MNR) the route location was directed where possible to areas of existing openings (road rights-of-way) through areas of previous disturbance, or along vegetative blocks. Also, in order to mitigate and reduce impacts, the alignment will be elevated across the Holland River branches. Additional mitigation measures will be undertaken to minimize impacts including edge management plans, salvage of native vegetation, seed and topsoil for reestablishment, relocation of rare or endangered plants, soil stabilization and natural regeneration.

Wetlands: The undertaking will affect 9.5 hectares of the provincially significant Holland Marsh Wetland Complex which extends along both branches of the Holland River. The greatest effect is 7.5 hectares along the west bank where the route crosses shrub thicket, tree swamp and marsh. In the marsh, 0.6 hectares of degraded fen will be affected. As the route selection runs east-west through the wetland it was not possible to select a route which avoided this feature, however the main body or core of the wetland was avoided to the north. In consideration of the impacts to the provincially significant wetland, the proponent worked with the MNR to scope the consideration of the route alternatives to cross only narrow sections of the Holland Marsh Wetland Complex; utilize only previously disturbed areas; and use an elevated structure on widely spaced piers to cross the wetland to minimize the area of wetland affected and loss of function to the wetland area. The EA details extensive mitigation to be considered during the detailed design phase.

The MNR indicated that they are satisfied with the proponent's approach regarding alignment location and wetland compensation.

Wildlife: Wildlife habitat is associated with the central section of the route (Holland River area). Elsewhere habitat is found in isolated woodlands, shrub thickets and old field systems. Approximately 39 hectares of wildlife habitat will be removed by the route and potentially two provincially and nationally vulnerable nesting areas adjacent to the route may be affected by the undertaking. Negative effects to wildlife will be minimized by using available openings, skirting large wooded areas, using disturbed edge locations minimizing habitat fragmentation, developing a drainage plan sensitive to wildlife areas, using wide grassed medians and fencing, installing signage to address wildlife road crossings and using an elevated structure across wetlands as well as bridges and culverts which assist with wildlife movement along wildlife corridors, and restricting clearing trees in breeding areas to non-critical periods.

Air Quality: An air quality study was done for the existing Highway 404 which indicated that air quality generally falls within provincial guidelines. As a result of the ministry's review of this EA, the ministry requested that the proponent provide site specific air quality information on the proposed undertaking. This air quality information was provided subsequent to the publishing of the EA, and is attached as Appendix E to this review.

Fisheries and Aquatic Life: The proposed undertaking will cross several water courses including the two branches of the Holland River, the Maskinonge River, Penville Creek, Fraser Creek and some agricultural drains. Fish habitat is described in Appendix G to the EA. Warm water fish habitat was the only type discovered in the study area. Mitigation and prevention of negative environmental effects, during both construction and operation, will include standard construction practices such as developing a fish management plan, maximizing riparian vegetation protection and re-establishment as soon as possible, watercourse realignment in dry conditions, slope stability and stabilization, timing constraints during construction to minimize effects during specific times of the year such as low flow months and sensitive spawning periods. The MNR has indicated that impacts to fish habitat, as well as mitigation and compensation will be determined under the *Fisheries Act* and the MTO/MNR Fisheries Accord during the design phase.

Water Resources

Groundwater: The proponent and stakeholders have identified the loss and/or contamination of wells (groundwater) as an environmentally significant issue. Mitigation and prevention of contamination are a priority for both the proponent and local

residents. The proponent has identified 19 properties with at least one well which may be potentially affected either directly by the removal of wells or indirectly by the contamination of wells. Appendix G of the EA identifies possibly 24 wells which may be affected. The Bradford municipal well adjacent to the route will be avoided. The proponent indicates that this well is unlikely to be affected by the route as the aquifer for this well is very deep. The proponent has developed mitigation measures and specific construction techniques to ensure the wells are protected and the effects to groundwater are minimized. The proponent will continuously monitor and sample water quality and liaise with local residents and the farming community (See Section 5.4.2.6 of the EA). The MOE technical comments indicate that they are generally satisfied with the groundwater component of the EA but are also requiring additional analysis during the detailed design to address salt impacts, contaminates, and stormwater runoff.

Surface Water: The undertaking has the potential to affect the water quality and quantity of local rivers and creeks through siltation, erosion and de-icing and to alter the physical nature of the watercourses. Mitigation and prevention of negative effects include those measures outlined in the Sections 5.4.2.1, 5.4.2.2, 5.4.2.4, and 5.4.6.1 of the EA.

Soil: The proponent has developed a number of measures to address the effects of the loss of soil capability with construction techniques, erosion protection, topsoil stripping methods, and spoil storage methods outlined in Section 5 of the EA.

Conclusions

The proponent has addressed the requirements of the EAA (section 5(3)(c)) regarding the identification and consideration of environmental effects. The advantages and disadvantages of the undertaking have been clearly documented. Sufficiently detailed information was provided regarding environmental effects, mitigation, and commitments for further work during the design phase to address environmental effects. The environmental criteria used in the EA, considered all aspects of the environment. Data collection and sources are clearly identified in the EA. The advantages of the undertaking have been described in the proposed highway's ability to adequately address the traffic problems outlined in the EA. Commitments to further work, as well as conditions to address the requirements of MNR and MOE technical are proposed to address the disadvantages of the undertaking.

3.0 AGENCY AND PUBLIC CONSULTATION

The MOE encourages proponents to develop a consultation program early in their decision-making process to ensure that the questions and concerns of the community and reviewing agencies are considered throughout the development of the EA and the undertaking.

3.1 Proponent's Consultation

Details of the proponent's public consultation process are described in Sections 2.2.2.1 and 2.3 and Appendix C of the EA. The public consultation process identified several main public stakeholders throughout the study period and employed several different methods to liaise with these stakeholders, including open public meetings, one-on-one meetings and correspondence.

The EA study organization created a number of different teams which participated in the consultation process including the project team (MTO and consultant, MTO team), Municipal Technical Committee (representatives from affected municipalities), general public, interest groups such as Heritage, Environment, Agriculture, Recreation, Tourism (HEART), Forbid Roads Over Green Spaces (FROGS), the Bradford Chamber of Commerce and others, and the external team (federal, provincial & other agencies).

The proponent used several methods to communicate and liaise with the public including media coverage, direct mailings, free 'info source' hot line, Public Consultation Sessions (PCS), comment sheets at PCSs, correspondence and meetings with interested groups and government agencies (see Sections 2.2, 2.2.2.1 and Appendix C of the EA). Consultation for the project was established over a three-year period which started in 1993 to ensure public awareness and assist the project team in identifying all public and agency concerns and issues, the environmental effects of alignment alternatives, mitigation, and commitments to future work.

Three PCSs were held by the proponent at various stages throughout the project. All affected municipalities were notified of the PCSs and presentations were made to local and regional councils. Also, the government review team, and interested parties were advised of these public meetings by direct mail. In 1993, the proponent sent out 90 copies of their Environmental Study Proposal (EAP) to municipalities, interest groups and members of the public. The 'info source' hot line received approximately 600 calls throughout the study. There were several newspaper articles regarding the proposal, as well as notices in several of the local and regional papers advertising each of the

PCSs held in June 1993 and 1994 in Bradford/Queensville and in November 1996 in Bradford /Sharon. There were also significant bulk mailings of brochures to homes and business to increase awareness of the project and provide notification of PCSs. During the third round of PCSs, registered mail notification to affected property owners and the external team members was provided. Approximately 400-450 people attended each round of PCS. A summary of verbal and written comments received is documented in Appendix C and E and in Section 4.2.4 of the EA. There was also a public meeting in 1995 to discuss the Hwy9/Green Lane alternative which was an alternative suggested through previous public consultation. Approximately 100 residents were in attendance at this meeting. In addition to the PCSs, the proponent attended four other public meetings hosted by interest groups.

As a result of the consultation process, additional work and/or studies were undertaken by the proponent (See Section 2.3 and Appendices of EA). A draft EA Report was also prepared and distributed for review to affected municipalities and government agencies. Concerns which were identified during the preparation of the EA are outlined in the final EA. Section 4.2.4 and Table 4-3 of the EA summarize the actions by the proponent to address the issues raised during the preparation of the EA.

In Section 5.3.2 of the EA, the proponent has also committed to involving the public and agencies in the detailed design.

Conclusions

The proponent has made a reasonable effort to communicate and liaise with the public and government agencies. The proponent has demonstrated that issues raised were considered within the context of the EA process and in the identification of the preferred alternative. Stakeholder consultation was comprehensive and it was generally well documented. These comments have been attached in Appendix B of this Review.

3.2 Agency and Public Comments and Summary of Issues

3.2.1 Agency Comments

Consultation conducted during the preparation of the EA allows agencies and ministries to determine their level of involvement in the study and the manner in which they wish to participate. Consultation is the responsibility of the proponent who must demonstrate that they have consulted with the appropriate government and technical agencies.

During the preparation of the EA the proponent contacted affected municipalities, provincial and federal government agencies, as well as other agencies such as the Lake Simcoe Region Conservation Authority, Nottawasaga Valley Conservation Authority, school boards, United Indian Councils, the local Fire Department, Utilities, CN Rail, Go Transit, and the Health Unit as documented in Exhibit 2-4 of the EA. Comments were received from the Ministry of Agriculture, Food and Rural Affairs, the Ministry of the Environment, the Ministry of Natural Resources, Lake Simcoe Region Conservation Authority, Ministry of Tourism, Culture and Recreation, the Canadian Transportation Agency, the Canadian Coast Guard, and the York Region Public Health Department. These comments, as well as responses by the proponent to the issues identified, are documented in Sections 4.2.4.1 and 4.3, and Appendix E of the EA.

Local and regional municipalities had indicated their support for an east-west alignment between Highway 400 and the proposed extension of Highway 404 since 1990 as noted in the EAP and as discussed in the EA. The Township of King provided comments regarding technical issues such as highway design and construction. The Town of East Gwillimbury objects to the location of the preferred route as it goes through developed areas of the municipality. The proponent has responded to the Town's objections identifying that the location of the preferred alignment avoids community features such as schools, churches, cemeteries, parks, arena and other public facilities. The proponent has identified that no severances are required and in comparison, other alternative routes would have additional community impacts. The ministry is satisfied that the proponent has responded to the Town's concerns. The Town will have an additional opportunity through the publication of this Review to identify whether their concerns have been adequately addressed.

The Chippewas of Georgina Island, First Nation, indicated that they did not support one of the alternatives for the Bradford Bypass due to its impact on the significant Aboriginal site known as the Lower Holland Landing. The proponent has undertaken an Archeological Assessment and determined that the historical Lower Holland Landing Site would not be impacted by the project.

The provincial ministries are in support of the project. The MOE technical comments indicated that they are satisfied with the EA but require that additional work be undertaken during the detailed design phase regarding groundwater. The MOE also identified that commitments be strengthened for the treatment and capture of stormwater runoff from bridges, and detailed reports be prepared and reviewed by MOE. Additional ground water and stormwater work is to be completed during the detailed design as indicated in the EA. A condition of EAA approval is proposed to

clarify that MOE Central Region will be involved in the review of these reports. Detailed noise studies are also proposed as a condition.

The Department of Fisheries and Oceans has not yet made a decision regarding the scoping of the federal EA. Approvals from federal agencies will be required by the proponent either during or before the detailed design stage.

Health Canada identified concerns with the proponent's analysis on air quality and noise impacts. The proponent provided additional information to address their concerns. This information is contained in Appendix D.

The Canadian Coast Guard, the Region of York, and the County of Simcoe either had no specific concerns or were satisfied with the EA.

In 1993 Hydro One (formerly called Ontario Hydro) provided comments to the proponent advising that they were undertaking a study for transmission facilities within the study area. Page 151 of the EA identifies that Hydro One's study was cancelled. No comments were received from Hydro One during the public agency review of the EA. Hydro One will be contacted during detailed design.

No comments were received from the Ministry of Northern Development and Mines, Ministry of Economic Development, Trade and Tourism, the Ontario Realty Corporation, the Canadian Environmental Assessment Agency, and the Department of Canadian Heritage.

The following is a summary of the agency comments received during the public and agency review period of the EA, as well as the proponent's response to these comments and the status of the issues. Copies of these comments are attached as Appendix B to this Review. For a detailed summary of the proponent's responses see the Ministry of Transportation's letter dated August 17, 1999 letter together with Attachment in Appendix D to this Review.

AGENCY COMMENTS

Review Agency	Issue Summary	Proponent's Response & Method to Address Issue
Ministry of the Environment	No objections to the EA but they have provided the following comments and require the following work to be undertaken at the design phase & as conditions of approval:	
	▸ Identify the location of wells affected.	▸ Well locations affected will be addressed during detailed design.
	▸ Provide basic geological cross sections.	▸ Basic geological cross sections will be provided for stakeholders if required. MTO Aug. 17/99 letter pg. 6 of Attachment.
	▸ Additional analysis (qualitative & quantitative) of impacts from road salting and storm runoff on shallow groundwater aquifers including speciality crop agricultural areas or other crop areas using shallow groundwater for irrigation.	▸ Section 5.4.2 of EA addresses groundwater & stormwater runoff work which will be done during detailed design.
	▸ The identification of critical contaminants and their concentration in storm runoff.	
	▸ A stronger commitment to ensure stormwater runoff from bridges is completely captured and treated prior to discharge.	▸ Section 5.4.6.1 of the EA indicates discharge into stormwater management facilities prior to discharge where this can be reasonably achieved. MTO Aug. 17/99 letter pg. 6.
	▸ Additional details requested regarding MTO's air quality assessment;	▸ Revised air quality assessment information provided in Appendix E.
	▸ A detailed noise report shall be prepared and submitted to MOE a minimum of 90 days prior to the construction.	
	▸ The noise report shall reassess the traffic noise impacts, address noise and vibration during construction and for construction activities, indicate mitigation required for all areas experiencing noise levels greater than 5dBA, provide a summary of the proposed noise control measures and their effectiveness, and provide a brief description of the increases in traffic noise levels along roadways leading to the proposed highway as well as proposed mitigation measures and their effectiveness.	▸ A condition is proposed for detailed noise study. See Section 4.1 of this Review.

Review Agency	Issue Summary	Proponent's Response & Method to Address Issue
Ministry of the Solicitor General and Correctional Services	The Ontario Provincial Police (OPP) are pleased with the proposal. Their main concerns relate to traffic disruption that would occur on Highway 400 during construction and have requested that the project design also consider the following: ▸ The speed limit should be 100 kilometers/ hour or less; ▸ Overhead lighting for the entire length of the highway; ▸ Concrete barriers in the middle of the roadway, with barriers around signs; ▸ A 3 metre wide paved shoulder on both sides of the travelled highway for emergencies and breakdowns; ▸ On and off ramps be constructed with enough distance for slowing and accelerating vehicles to enter and exit highway safely; ▸ Traffic control devices at every exit of the highway to ensure proper traffic flow ; ▸ Emergency overhead signs, such as on Highway 401, to advise motorists of problems ▸ Each ramp leading onto the highway should have a gate which can be closed in an emergency to stop traffic entering the highway.	▸ MTO agrees to consult with the OPP during the detailed design. MTO August 17/99 letter, page 5 of the Attachment. See Appendix D of this Review. ▸ MTO standards for rural highways do not require continuous overhead lighting. ▸ The proposed median is 30 metres and barriers would only be required when there is a narrow median. ▸ Shoulder widths will be as shown in Exhibit 5-3 of EA. ▸ All access and egress ramps are to be constructed to current provincial standards. ▸ MTO will provide traffic control devices as warranted at the time of construction.
Ministry of Tourism, Culture and Recreation (formerly called Ministry of Citizenship, Culture and Recreation)	▸ The Ministry is satisfied that the EA has taken sufficient steps to consider the impacts to cultural heritage features. ▸ This Ministry expects to review and approve future reports on cultural heritage assessments, and mitigation plans, prior to mitigation. ▸ The Ministry's concerns regarding built heritage and cultural heritage resources have been satisfied by the commitments made by MTO in the EA.	▸ The Ministry will be consulted during detailed design regarding mitigation strategy prior to construction. See MTO August 17/99 letter, page 3 of Attachment.

Review Agency	Issue Summary	Proponent's Response & Method to Address Issue
Ministry of Natural Resources	▸ In their October 4th, 1999 letter MNR indicated that they were satisfied with MTO's response regarding the proposed routing of the alignment between the East Branch of the Holland River to the on-off ramps at Bathurst Street. They previously had requested that Concept C be used and Concept B as a second choice. ▸ In addition, they confirmed that the wetland habitat compensation proposed in the vicinity of Hocheriter Road from Bathurst Street to the river was acceptable. ▸ Site specific impacts related to fish habitat and requirements for integration and/or compensation under the Fisheries Act will be determined at the detailed design phase.	▸ Alignment options were investigated and it was confirmed that Concept A was the most suitable as outlined in Section 4.2.3.9a of the EA. ▸ MTO August 17/99 letter, page 4 of Attachment reconfirms as well as provides commitments to ensure the inclusion of mitigation measures in wetland areas. ▸ MTO reconfirmed that they would acquire residual portions of the properties in the vicinity of Hocheriter Road that are surplus to MTO's needs. For the purposes of mitigation they agree to allow the lands to revert back to naturalized areas in order to compensate for wetland impacts from highway crossings. See MTO August 17/99 letter, page 5 of Attachment.
Ministry of Municipal Affairs and Housing	The Ministry advises that they have no concerns as the infrastructure proposed in the EA has been incorporated into the land use planning documents in a fashion consistent with the Provincial Policy Statement (PPS) particularly in the case of the Town of Bradford West Gwillimbury which incorporates the proposed 400-404 link in the land use schedules for the new draft Official Plan.	N/A
Ministry of Agriculture, Food and Rural Affairs	The ministry is satisfied with the data, analysis and conclusions that have been outlined in this EA report.	N/A

Review Agency	Issue Summary	Proponent's Response & Method to Address Issue
Lake Simcoe Region Conservation Authority (LSRCA)	▸ The LSRCA has indicated that the loss of wetland and forested areas in the Maskinonge River watershed is significant as the watershed has a limited number of these features remaining. They provided a copy of the Maskinonge Remedial Strategy and requested that MTO review the recommendations of the study as they pertain to wetlands and forested areas. A portion of the Highway budget may be required for reforestation and establishment of new wetland areas. ▸ The Remedial Strategy requires that all new development upstream of Glenwoods Drive provide 80% nutrient removal rates in their stormwater management systems. This requires greater than Level 1 protection. ▸ The remainder is to have Level 1 treatment or better based on state of the art control measures. Infiltration stormwater management measures are to be used where feasible.	▸ MTO has indicated that it is not possible to commit to no net loss of forested land and wetlands. Sections 5.4.2.3 and 5.4.2.4 of the EA detail the effort made to route through existing openings, in areas of previous disturbance, along edges of vegetative strips and to provide mitigation. Compensation and regeneration opportunities for woodlands and wetland habitats on MTO surplus lands will be considered where it is feasible as indicated in the response to MNR. ▸ MTO commits that the Conservation Authority will be consulted on the detailed design regarding specific mitigation measures as well as on the stormwater management plan. ▸ MTO agrees that an 80% nutrient removal rate and level 1 protection are acceptable objectives but indicated that a commitment cannot be made that these objectives will be warranted or feasible at all locations. MTO August 17/99 letter page 8 of Attachment. ▸ Detailed design.
Nottawasaga Valley Conservation Authority	The part of the proposed freeway within the Nottawasaga Valley watershed is located in the area where a full interchange is proposed with Highway 400. There are no natural heritage features in this location however a tributary of the Penville Creek traverses this area. The Conservation Authority requires the following to be implemented at the detailed design stage. ▸ Flood plain management; ▸ Stormwater management; ▸ Fish habitat protection; and ▸ Erosion and sediment control.	▸ MTO will contact the Conservation Authority during the detailed design.
Town of East Gwillimbury	Council objects to the technically preferred route as it disrupts established communities and developed areas.	▸ Sections 3.5.2 and 4.2 of the EA . MTO advises that the route avoids community features-see MTO letter August 17/99, page 7 of Attachment.

Review Agency	Issue Summary	Proponent's Response & Method to Address Issue
Town of Bradford West Gwillimbury	The Town is satisfied with the technically preferred route and has the following comments: ▸ MTO to finance a grade separation for a future north-south arterial crossing the hwy. West of Simcoe Road 4 interchange and aligning with Professor Day Drive. ▸ MTO will work with the County of Simcoe to determine the location of new signalized intersection on Simcoe Road south of Line 9 north of the hwy. ▸ The Town will consult with MTO during the Town's planning and design of the arterial and signalized intersection as described above to ensure compatibility with the hwy. design, construction and operation.	▸ Further to the comments provided in MTO's August 17/99 letter with attachment notes in response to the Town's Dec. 16/98 comments, MTO worked with the Town regarding their technical issues and are in agreement with the Town's understanding of the resolution of their issues. ▸ Detailed design.
Township of King	▸ The Township of King has asked if the issue of drainage from the marsh farm lands adjacent Hochreiter Road has been addressed, and if there will be a need for drainage improvements in terms of the creation of a municipal drain or other works. ▸ Bathurst Street north of Queensville Sideroad is not a Region of York Road. ▸ The alignment north of the existing Hochreiter Road separates farms lands from the north and south. How is access to be provided for lands to the south. ▸ Currently Bathurst Street and Queensville Sideroad are not capable of handling additional traffic from an interchange at Hochreitor Road and future improvements would be required to these roads. ▸ This proposal may alleviate traffic congestion along Hwy. 9.	▸ Questions to be addressed at detailed design as indicated in Section 5.4.6.1 of the EA. ▸ Noted. ▸ MTO advises that a realigned Hochreiter Road is proposed. The feasibility of using an underpass at Holland River will be reviewed during detailed design. ▸ MTO is only responsible for improvements to the portions of roads within their R.O.W . ▸ Section 5.4.1 of EA outlines operational improvements expected.
CN North America	CN is currently under negotiations to sell a portion of their Newmarket subdivision, north of Bradford. If this does not happen, CN will require that portion of the track in the spring of 1999.	MTO will review rail corridor usage and the need for a structure across CN tracks as stated in Section 5.2.8 of the EA.
Health Canada	Provided technical comments on air and noise studies	MTO provided additional information in Appendix E.

Review Agency	Issue Summary	Proponent's Response & Method to Address Issue
Historic Sites and Monuments Board of Canada	Parks Canada reported to the Board that any issues related to the Lower Landing heritage site are under purview of the Province of Ontario, and that the Province is satisfied with the EA for the proposed highway construction adjacent to the Lower Holland Landing site and believes that no further archaeological research is warranted. In the absence of additional archaeological research, the Board concluded that an informed decision could not be made on the possible national historic significance of this site.	The Ministry of Tourism, Culture and Recreation is satisfied with the archaeological work completed and will be involved in the detailed design and mitigation strategy. See MTO August 17/99 letter, page 2 of Attachment. MTO provided clarification that the archaeological site known as Lower Landing is approximately 1.5 miles away from the preferred alignment and the lands referenced in the current study as the East Holland River site have been referred to as Old Indian landing not lower landing.
Chippewas of Georgina Island, First Nation	The Chippewas of Georgina Island is opposed to any construction or development including road construction and archaeological digs at the site known as Lower Holland Landing.	MTO undertook a Stage 2 Archaeological assessment and determined that the Lower Landing site is located approximately 1.5 miles from the recommended alignment.
Environment Canada	▸ Environment Canada advised that no technical review was conducted on the EA and provided general comments on the federal EA process. ▸ The proponent must observe Section 36(3) of the Fisheries Act and the provisions of the Migratory Birds Convention Act. ▸ Environment Canada expects that components of this project may trigger an EA under the Canadian Environmental Assessment Act (CEAA) but does not expect to have any items which would trigger an EA under the CEAA itself. They will participate in the federal EA process and will comment on specific issues related to their mandate at that time.	▸ MTO will involve federal agencies and CEAA in the detailed design. The EA recognizes federal requirements.

Review Agency	Issue Summary	Proponent's Response & Method to Address Issue
The Canadian Transportation Agency (CTA)	The following describes the triggers under the Canadian Transportation Act for the Agency to be involved in the EA under the Canadian Environmental Assessment Act (CEAA): • Section 101(1) the filing of agreements and amendments to agreements for the construction, maintenance, or appointment of costs of road or utility crossings. • Section 101(3) where no agreement is reached the agency may authorize the construction, maintenance or determine the appointment of costs of a road crossing subject to the CEAA. The Agency requires written confirmation of the agreement between the railway and the proponent for the crossings before they can state that they won't be involved. If agreement is not reached an EA under the CEAA will be required.	• Work to be undertaken during detailed design as noted in Sections 5.28 and 5.3.5 of EA.
Department of Fisheries and Oceans (DFO)	A decision to issue an authorization under Section 35(2) of the *Fisheries Act* is a trigger for the *Canadian Environmental Assessment Act* (CEAA). The DFO has not made a decision regarding the scoping of the federal EA. Design details should reflect mitigation to reduce impacts. Documents prepared to meet requirements of the Ontario Environmental Assessment Act can be used for CEAA. Subject to consultation under CEAA additional studies may also be required.	MTO commits to the development of a Fish Habitat Management Strategy in consultation with MNR and the DFO. See MTO August 17 letter, page 1 of Attachment.

3.2.2 Public Comments

The Environmental Assessment and Approvals Branch received approximately 35 submissions from the public during the prescribed public and agency review phase of the EA process. A few submissions were received in support of the proposal. However, most of the submissions were either from individuals or interest groups who had concerns or who were opposed to the proposed undertaking for the following reasons:

Cultural

- Impacts to cultural heritage resources (i.e. Lower Landing site).

Social /Economic

- Concerns were raised regarding impacts to Silver Lakes Golf Course;
- Community impacts including views, urban sprawl, traffic and property values;
- Noise impact from the highway on residential areas was a significant concern.

Alternatives

- Other preferred alternative alignments were the Highway 89 /Ravenshoe Road and the Highway 9/Green Lane corridors;
- Concerns were raised about the proponent's failure to consider mass transit alternatives more fully including rail alternatives.

Natural Environment

- The most cited concerns were those raised about the undertaking's potential effect on the natural environment especially in regard to wetlands, agricultural land, wildlife, the crossing of the flood plain, air quality, and ground and surface water.

Design

- Site specific comments made regarding highway design & property impacts.

Many of the comments received as noted above are similar to the submissions received during the preparation of the EA as documented in the EA. Some individual respondents have general concerns regarding various impacts to the environment. Other public concerns are related to site specific property impacts and highway design

issues. Many of these concerns have been addressed in the EA through consultation and compliance with the requirements of affected government agencies. The EA also indicates that concerns will be addressed as a result of mitigation proposed and commitments to future work at the design stage which will include additional stakeholder consultation. It is also possible to resolve concerns by applying conditions to this undertaking. Some issues raised are beyond the scope of this EA.

Environmental impacts and mitigation proposed is discussed in Section 5.4 and Exhibit 5.6 of the EA, and Section 2.4 of this Review.

Although already documented in Section 5.4.5 and Appendix J of the EA, it should be noted for clarification that the Lower Landing historical site is not affected by the proposed highway. Only one small corner of what is known as the East Holland River Site will be affected by the route which will require excavation. An Archaeological Assessment was done for this site which was approved by the Ministry of Tourism, Culture and Recreation. This assessment indicated there were no burial sites associated with this site and it was not a significant site.

F.R.O.G.S (Forbid Roads Over Greenspace) is an interest group in the study area which has provided a very detailed submission opposing the undertaking through the Holland Marsh Wetland Area for issues such as noise, salt damage, impacts to the natural environment and the Lower Landing site. They are also opposed to the undertaking because they do not feel that there is compliance with the EAA. They contend that the proponent did not consider all alternatives early enough in the process, there hasn't been effective consultation or accurate documentation of the decision making process, the process has been predetermined, and the proponent has not adequately proven the need and justification for the project. They have requested consideration of the other alternatives such as the Ravenshoe Road and the Highway 9/Green Lane alternatives. They indicate that not only will these alternatives have less environmental impact, they will also satisfy the transportation problems. For the above noted reasons, they contend that the Minister of the Environment should not omit the acceptance of the EA Report prior to making a decision on the undertaking. In addition they feel that by allowing the proponent to exercise powers under the new Act it will be the same as granting approval to the undertaking.

There were only a few submissions regarding the need for the highway. The transportation capacity problems and the proponent's process for identifying alternatives have been documented in the EA and generally discussed in Sections 2.3.1 and 2.3.2 of this Review. The proponent did attempt to resolve specific concerns

with respect to consideration of other corridors by completing additional studies such as the Travel Demand Analysis and the Comparison of Alternative Routes within the Highway 9/Green Lane Corridor included as Appendices A and B in the EA as well as a summary of this in Section 3.2 of the EA. A separate public meeting was also held to discuss this issue. The Corporation of the Region of York was involved in the EA process since 1993 and they are supportive of the preferred route. There appears to be a long history with respect to the Highway 9/Green Lane corridor which pre-dates the preparation of this Review. The EA document recognizes that the proponent was unable to resolve the concerns of F.R.O.G.S. The ministry concludes that the proponent did investigate alternative corridor options based on the public's concerns, and provided justification for the rationale and selection of the preferred undertaking.

In Section 5.3.2 of the EA, the proponent has committed to involving the public and agencies in the detailed design. In order to provide a clear process to be used, proposed conditions have been added to this Review.

Although public comments are not attached to this Review, the comments have been generally summarized above to provide a general overview of the concerns and issues raised. Included in Appendix D of this Review is a letter from the Ministry of Transportation dated August 17,1999 with an attachment which provides a detailed summary of the public comments as well as the proponent's response to these submissions. For complete details, public comments are available for review as part of the Ministry's Public Record File.

4.0 PROPOSED CONDITIONS AND CONCLUSIONS

The following section presents the conclusions of the government review process based on the information provided by both the public and the Government Review Team, and provides a summary of the conditions identified in the previous sections. These proposed conditions are provided for discussion purposes only.

1.01 Definitions:

1.1 "Proponent" means the Ministry of Transportation, its agents, successors, transfers and/or assigns who will be carrying out the design, construction, operation and maintenance of the proposed undertaking;

1.2 "MOE" refers to the Ministry of the Environment;

1.3 "Regional Director" refers to the Director of the Ministry of the Environment's Central Region;

1.4 "Director" refers to the Director of the Environmental Assessment and Approvals Branch;

1.5 "EAA" refers to the *Environmental Assessment Act*;

1.6 "EA" refers to the Highway 400-Highway 404 Extension Link (Bradford Bypass) Environmental Assessment Report, One-Stage Submission, dated December 1997.

4.1 Proposed Conditions:

General Conditions

1. The Proponent shall comply with all the provisions of the EA submitted to MOE and the additional commitments made as outlined in the Ministry of Transportation's attachment to their August 17,1999 letter. All of these commitments are hereby incorporated in this approval by reference, except as provided in these conditions and as provided in any other approvals or permits that may be issued.

2. These conditions do not prevent more restrictive conditions being imposed under other statutes.

3. The Proponent shall advise the Director of the Environmental Assessment and Approvals Branch in writing prior to construction how all EAA conditions and commitments outlined in the Proponent's August 17, 1999 letter were addressed.

Public Record

3. Where a document is required for the Public Record, the Proponent shall provide the document to the Director of the Environmental Assessment and Approvals Branch, MOE for filing in the Public Record file maintained for the undertaking. In addition, the Proponent shall provide copies of all such documents to the Regional Director of the MOE Central Region Office; the Clerks of The Corporations of the Towns of Bradford West Gwillimbury, East Gwillimbury, and

Newmarket; the County of Simcoe; the Township of King; the Regional Municipality of York; and to local libraries in Bradford West Gwillimbury, East Gwillimbury, and King Township. These documents will also be provided to other municipalities as considered appropriate by the Proponent.

Public Participation

4. The Transportation Environmental Study Reports (TESRs), Design and Construction Reports (DCRs), other documents as identified in the EA or these conditions, notices to the public and agencies regarding Public Consultation Sessions and notices regarding the availability of the above noted documents for review and comment are required for the Public Record file.

5. Reports required for the Public Record file shall be made available for comment in accordance with procedures outlined in the Ministry of Transportation's Class Environmental Assessment for Provincial Transportation Facilities in effect at the time of design. These reports shall be made available prior to construction to the affected public stakeholders and all those federal, provincial and municipal agencies that have indicated an interest in being involved in the design phases of the undertaking including, but not limited to, the Department of the Environment, the Department of Fisheries and Oceans, the Regional Director of the MOE Central Region Office, the Ministry of Natural Resources and the Ministry of the Solicitor General and Correctional Services (OPP), the Lake Simcoe Region Conservation Authority, the Nottawasaga Conservation Authority, as well as the appropriate planning and/or public works departments of the municipalities listed in Condition 3.

Environmental Effects and Mitigation

6. The Proponent shall prepare at least 90 days prior to construction, the Stormwater Management Plan as identified in Section 5.4.6.1 of the EA. This plan shall be submitted for review to the Regional Director's satisfaction.

7. Prior to the commencement of construction, the Proponent shall prepare a detailed noise report and shall submit the report for review to the Director at least 90 days prior to construction. The report shall be in accordance with MTO/MOE Noise Protocol. The report shall reassess noise impacts and the potential for mitigation at all sensitive locations which are expected to experience noise level increases greater than 5dBA. Where the Proponent is directly responsible for

providing mitigation, the report will contain a description of the control measures required and their acoustical effectiveness. Reasons will also be given if control measures are not used in sensitive locations. The control measures should also identify indirect noise effects on other roadways leading to and from the highway, and the Proponent should alert the appropriate municipal road authority of these potential effects.

8. The Proponent during the design phases of the undertaking shall comply with the environmental standards and principles outlined in the Ministry of Transportation's Class Environmental Assessment for Provincial Transportation Facilities for Group A Projects. This will include the requirement for the preparation of Transportation Environmental Study Reports (TESRs) and/or Design and Construction Reports.

9. Prior to construction, the Proponent shall establish an independent monitoring program for the construction of the project that shall be submitted and reviewed to the satisfaction of the Director of the Environmental Assessment and Approvals Branch.

4.2 Remaining Items

Government and agency reviewers are generally satisfied with the EA however many of their specific concerns will have to be addressed during the detailed design phase for the project or through proposed conditions. The proponent has provided commitments for stakeholder consultation during the detailed design in the EA. The Ministry of Transportation's Class Environmental Assessment for Provincial Highway Facilities has been applied as a proposed condition as it provides for public consultation, identification of stakeholders, methods and timing of notification, the inclusion of bump-up rights for the design and construction phase of the project, and a method of ensuring that if the project does not proceed within a specified time period (5 year period) of a TESR and a DCR that additional work is required to address any changes to the project. These changes could include changes to the study area, government policies, or new engineering methods. In order to ensure that the project is appropriately implemented, a condition is proposed to ensure independent monitoring and implementation of the EA commitments and design during construction.

The Department of Fisheries and Oceans (DFO) has identified triggers under the *Canadian Environmental Assessment Act* (CEAA) under the *Fisheries Act* and the *Navigable Waters Protection Act*. DFO has not yet made a decision regarding the

scoping of the federal EA. Approvals from federal agencies will be required by the proponent either during or before the detailed design stage. As part of this, the DFO has requested that impacts associated with any piers, filling of ponds connected to fisheries, installation of any culverts, changes in flow or temperature, and crossings, that contain water at certain times throughout the year where drainage channel form is not evident, should be considered.

4.3 Conclusions

It is not the purpose of this Review to decide whether the proponent's application should be approved under the EAA. The decision regarding the Ministry's application is the responsibility of the Minister of the Environment or the Environmental Review Tribunal.

The purpose of the Review is to determine whether or not the proponent has complied with subsection 5(3) of the *EAA*. The Review evaluates the EA based on the following criteria:

(a) How did the proponent, according to the assessment of the EAAB, address the provisions of subsection 5(3) of the EAA when identifying the proposed Highway 400-404 Extension Link (Bradford Bypass) as the preferred alternative?

(b) According to the Government Review Team, is the technical quality and level of detail of the documentation satisfactory?

According to the EAAB, the provisions of section 5(3) of the EAA have been satisfied by providing sufficient information and analysis to assess the environmental effects of the proposed new freeway. According to the Government Review Team, the technical quality and level of detail is satisfactory when accompanied by the appropriate consultation processes.

The conclusion of this Review, is only one of many pieces of information the Minister of the Environment must consider when making a decision about the proposed freeway pursuant to section 9 of the EAA. Other matters the Minister considers include: the purpose of the Act, the EA, the comments received, and such other matters as the Minister considers relevant to the application. Section 9 states that the Minister will make one of the following decisions:

- Refer outstanding matters to mediation;

- Give approval to proceed with the undertaking;
- Give approval to proceed subject to those conditions that the Minister considers necessary;
- Refuse to give approval to proceed with the undertaking;
- Refer either a part of or the entire EA to the Environmental Review Tribunal for a decision.

Appendix A

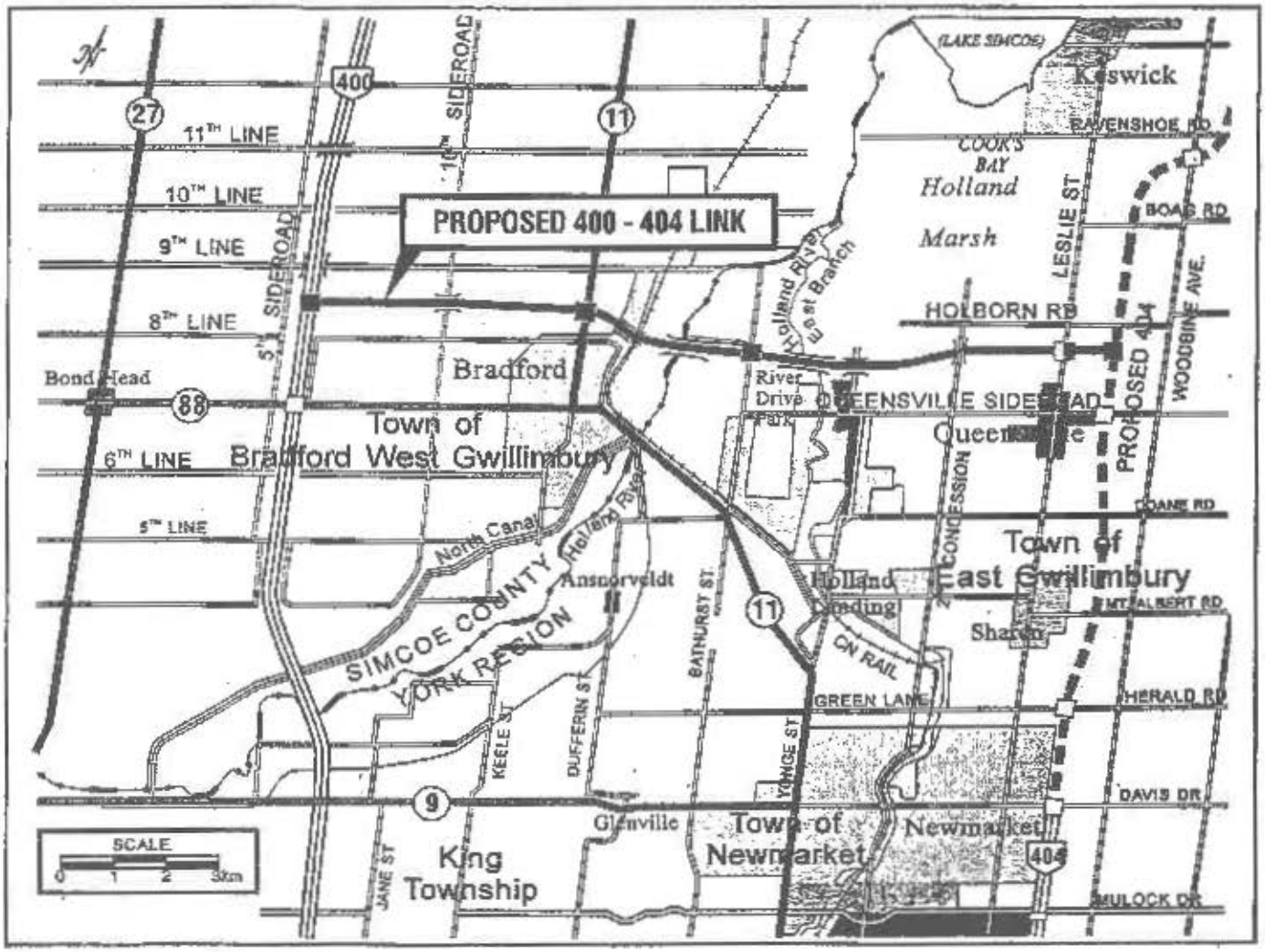
Notice of Submission of EA and Letter of Submission

Ontario

AN INVITATION TO COMMENT ON THE ENVIRONMENTAL ASSESSMENT FOR THE PROPOSED HIGHWAY 400-404 EXTENSION LINK (BRADFORD BYPASS)

NOTICE OF SUBMISSION

The Ministry of Transportation [the proponent] has submitted an Environmental Assessment (EA) for a proposed freeway link connection of Highway 400 west of Bradford to the proposed extension of Highway 404 in East Gwillimbury (see key plan) to the Ministry of the Environment (MOE). Approval under the Environmental Assessment Act (EA Act) is being sought for a 4 lane freeway to be constructed in stages corresponding to existing/future traffic demands.



The study will now proceed through a formal government review process under the EA Act. The report is also being made available to the public during this period.

This EA has been submitted in accordance with a transitional process implemented with amendments to the EA Act which came into force on January 1, 1997. Under subsections 12.4(2) and 12.4(3) of the EA Act, certain provisions of the former and the new Part II of the Act will apply to this environmental assessment.

Under these new provisions there would be one opportunity, after the Notice of Completion of Review is published, to make submissions and request a hearing. MOE is also proposing to apply the new provisions which would allow a hearing to be requested either on the whole environmental assessment or only on particular matters of concern. MOE will consider requests to refer matters to mediation as appropriate. MOE is also considering the application of Section 12.2, which permits certain activities prior to approval.

You have the right to submit comments on the proposed undertaking, the environmental assessment and the proposed application of any particular new provision of the amended Act to this EA.

Ontario

HOW DO YOU GET THE INFORMATION YOU NEED?

You may inspect the documents during normal business hours at the following locations:

MOE - Environmental Assessment Branch
250 Davisville Avenue
5th Floor
Toronto, Ontario M4S 1H2
(416) 314-7030

MTO-Central Region
Planning and Environmental Office
Atrium Tower, 3rd Floor
1201 Wilson Avenue
Downsview, Ontario M3M 1J8
(416) 235-5485

MOE - Central Region
5775 Yonge Str., 8th Floor
North York, Ontario M2M 4J1
(416) 326-6700

Municipalities

Clerk, County of Simcoe
Administration Centre
Midhurst, Ontario L0L 1X0
(705) 726-9300

Clerk, Region of York
17250 Yonge Street
Newmarket, Ontario L3Y 6Z1
(905) 731-0201

Clerk, Town of Bradford West Gwillimbury
Box 160, 61 Holland Street East
Bradford, Ontario L3Z 2A8
(905) 775-5366

Clerk, Town of East Gwillimbury
19000 Leslie Street
Sharon, Ontario L0G 1V0
(905) 478-4282

Clerk, Township of King
King City, Ontario L7B 1A1
(905) 833-5321

Libraries

Bradford West Gwillimbury Public Library
Holland Court, Bradford, Ontario

East Gwillimbury Public Library
Holland Landing Branch
Yonge Street, Holland Landing, Ontario

Mount Albert Branch
Main Street, Mount Albert, Ontario

King Township Public Library
Dufferin Street, Ansnorveldt, Ontario

Written comments from the public are requested by December 16, 1998.

Please send your comments to:

Highway 400-404 Extension Link EA
Mr. Tim Sharp, Review Co-ordinator
Ministry of the Environment
Environmental Assessment Branch
250 Davisville Avenue, 5th Floor
Toronto, Ontario M4S 1H2

Please send a copy to:

Highway 400-404 Extension Link EA
Ministry of Transportation
Planning and Environmental Office
Central Region, 3rd Floor, Atrium Tower
1201 Wilson Avenue
Downsview, Ontario M3M 1J8

TAKE THE OPPORTUNITY TO EXPRESS YOUR VIEWS

If you make a written submission to the Review Co-ordinator before the above date, your comments will be considered during the preparation of the MOE review. A Notice of Completion of the Review will be published in a local newspaper when the Ministry review has been completed.

Under the *Freedom of Information and Protection of Privacy Act* and the *Environmental Assessment Act*, unless otherwise stated in the submission, any personal information such as name, address, telephone number and property location included in all submissions become part of the public record files for this matter and can be released if requested by any person.

Des renseignements sur ce programme sont disponibles en français en composant (416) 235-5633.

Ministry of Transportation
Office of the Minister
Ferguson Block, 3rd Floor
77 Wellesley St. West
Toronto, Ontario
M7A 1Z8
(416) 327-9200

Ministère des Transports
Bureau du ministre
Édifice Ferguson, 3e étage
77, rue Wellesley ouest
Toronto (Ontario)
M7A 1Z8
(416) 327-9200

Ontario

December 18, 1997

The Honourable Norm Sterling
Minister of the Environment
12th Floor, 135 St. Clair Avenue West
Toronto, Ontario
M4V 1P5

60522

NSN

Dear Mr. Sterling:

I hereby submit the environmental assessment, (EA), for the Highway 400 - Highway 404 Extension Link, (the Bradford Bypass), under the "transition" provisions of the amended Environmental Assessment Act. Copies of the environmental assessment have been forwarded to the Director of the Environmental Assessment Branch of your ministry. This application is made in conformance with the requirements of the former Part II of the Act. In addition, in accordance with the transition provisions, I request that provisions of Part II of the amended Act with respect to mediation (section 8), approval of the undertaking, without first accepting the environmental assessment (section 9), and activities permitted under section 12.2 be applied to this environmental assessment.

In accordance with the requirements of section 6.3 of the amended Act, the Ministry of Transportation will prepare a notice of submission, notices to the clerks of municipalities, and notices to other persons as the Director appointed under Section 31.1 of the Act may require.

The undertaking will include:

- Designation of the plan for the undertaking;
- Refinement of the alignment and property requirements during the design phase of the undertaking;
- Acquisition of property required for implementation of the undertaking; and
- Design, construction, operation and maintenance of the undertaking.

...2

I hereby request approval pursuant to the Environmental Assessment Act for this undertaking and trust that the aforementioned information will be sufficient to proceed with the review and approval of the undertaking following publication of the Notice of Submission of Environmental Assessment.

Yours very truly,

<Original signed by>

Tony Clement
Minister

cc: Ms. Julia Munro, MPP, Durham -York
Mr. Frank Klees, MPP, York Mackenzie
Mr. Joe Tascona, MPP, Simcoe Centre
Mr. G. Zegarac, MOEE

Appendix B

Government Review Team Comments

Ministry of the Environment
Ministère de l'Environnement

135 St. Clair Avenue West
Toronto ON M4V 1P5

135, avenue St. Clair ouest
Toronto ON M4V 1P5

Ontario

LAND USE POLICY BRANCH
PHONE: (416) 314-7047 FAX: (416) 314-0461

MEMORANDUM

April 20, 1999

TO: Solange Desaintels, Planner
Environmental Assessment and Approvals Branch

FROM Graham Whitelaw, Acting Manager
Program Development and Support Section
Land Use Policy Branch

CC: Ellen Schmarje, Water Scientist
Technical Assessment, Central Region

Roman Krawczynuik
Project Analyst, Acoustics
Air and Noise Section

Doug Huber
Southwestern Region

RE: Highway 400 - 404 Extension Link (Bradford By-Pass)
Environmental Assessment Report

This office has completed its review of the formal Environmental Assessment (EA) submission on the Highway 400-404 Extension Link (Bradford By-Pass) in the County of Simcoe and the Regional Municipality of York. The Report was prepared by McCormick Rankin Corporation and was dated December 1997.

The Ministry of the Environment's (MOE's) technical comments are based on the Environmental Protection Act, the Ontario Water Resources Act, and the Pesticides Act. This review includes comments from the Ministry's Central Regional Office and the Air and Noise Section of the Environmental Assessment and Approvals Branch.

Based on the information provided by the proponent, all major impacts to ground and surface water can be avoided if the information gaps identified are addressed by implementing the outlined suggestions. The review concludes that conditions pertaining to noise must be fulfilled to address MOE's mandated areas of interest. This information, however, can be addressed in the future reports identified by the proponent as well as through the recommended terms and conditions of approval.

The following comments are provided on the formal Environmental Assessment (EA) for this undertaking:

1. ECOSYSTEMS BASED WATERSHED MANAGEMENT

MOE encourages proponents to incorporate ecosystem principles in their decision-making processes when conducting environmental assessments. Ecosystem principles are important in evaluating the cause and effect relationships between the proposed undertaking and the biophysical environment, and in evaluating structural and functional relationships among air, land and water. Ecosystem principles can assist proponents in their selection of mitigation measures and in the determination of advantages and disadvantages to the biophysical environment. This Ministry, jointly with the Ministry of Natural Resources, has produced a number of documents, including Watershed Management on a Watershed Basis and Subwatershed Planning (June, 1993) which provides a framework for achieving ecologically sound management of ecosystems.

The proponent is encouraged to reference any relevant information related to ongoing or completed watershed/subwatershed plans for the study area in future consultations. In addition, goals and objectives from these plans should be incorporated, where applicable, into future planning, design and construction elements of the undertaking.

3. GROUNDWATER

The locations of wells that may potentially be (directly or indirectly) impacted should be clearly identified. In addition, the location of the municipal well shown on Figure 3.3 in Appendix G should be corrected to correspond with Exhibit 5-2.

Basic geological cross sections for the area along the proposed extension should be provided to provide a clear reference for stakeholders.

Impacts from road salting on shallow groundwater aquifers must be more thoroughly analyzed. Specifically, the impacts of road salting and storm runoff on the specialty crop agricultural areas located between the branches of the Holland River and to the east (or anywhere where the crops are reliant on shallow groundwater for irrigation) should be addressed. Potential qualitative effects should be considered during mitigation instead of focusing primarily on potential quantitative interference effects.

Information should be provided on the expected critical contaminants present in stormwater runoff. Estimates on the concentrations of these contaminants should also be determined.

4. SURFACE WATER

While there appears to be a commitment to manage the stormwater run-off from bridges, the statement in section 5.4.6.1 (Page 177) is qualified by the phrase "can be reasonably achieved". MOE feels a stronger commitment should be made to ensure that stormwater run-off from the bridges is, indeed, completely captured and treated before being discharged. Direct discharge from bridges to surface watercourses is not acceptable.

5. NOISE/VIBRATION

In general, the Ministry is satisfied with the evaluation of alternatives. The detailed comparison was sufficient to accurately assess the relative merits of each alternative route from the noise aspect. However, CFJSYB is not the preferred route as far as noise is concerned.

With respect to the issue of noise/vibration impacts, exhibit 5-5 of the EA report concludes that

approximately 49 homes may experience an *increase* in noise levels greater than 5dB on the selected route, CFJSYB. Of these, approximately 16 homes may experience increases in noise levels of greater than 10 dB, i.e. noise levels at least 2 to 3 times louder than those which would be experienced without the highway in place. With respect to this rather large number of homes which may be impacted by the highway, it should be noted that: (a) extremely conservative assumptions were used in the preliminary assessment of these impacts and (b) in Section 5.4.3.2 (Page 170) of the EA Report , according to preliminary assessments, there is a potential for providing mitigation for at least some of these homes and that further opportunities for noise control will be investigated during the detailed design of the facility.

With the exception of a commitment to submit the detailed noise report for review by the Environmental Assessment and Approvals Branch of the Ministry, all concerns regarding the Draft EA have been adequately addressed. However, it is recommended that in addition to the commitments contained in the formal EA Report, the following Conditions of Approval be applied indicating:

That a detailed report dealing with noise and vibration shall be submitted to the Director of the Environmental Assessment and Approvals Branch of the Ministry of the Environment a minimum of 90 days prior to the construction of the Highway or any portion thereof.

That the Report shall be subject to approval by the Director and that it shall be prepared in accordance with the guidelines contained in the MOE/MTO Noise Protocol in effect at the time of the study.

The Report shall address the noise/vibration impacts which will be generated during the construction of the facility as well as the control measures for all major construction activities including those due to possible pile driving/blasting operations. In addition, the Report shall re-assess the traffic noise impacts. As a minimum requirement, the re-assessment of these impacts as well as of the potential for their mitigation shall be performed at all sensitive locations which are expected to experience an increase in noise levels greater than 5 dB. In addition to the summary of the traffic noise impacts, the Report shall contain a description of th proposed noise control measures and their acoustical effectiveness. Reasons (technical/economic) must be given if measures are not applied. Furthermore, a brief description shall be given of the possible increases in traffic noise levels which may occur along the various roadways leading to/from the proposed highway as well as the proposed mitigating measures and their anticipated acoustical effectiveness.

If you have any questions or comments, please contact Bronwen Smith, Environmental Planner, at (416) 314-7113.

Sincerely,

<Original signed by>

Graham Whitelaw

Ontario

Ministry of the Environment
Ministère de l'Environnement

Central Region Technical Support Section
Région du Centre Section d'appui technique

6776 Yonge Street
6th Floor
North York, Ontario
M6M 4J1
Tel. (416) 326-6700
Fax (416) 325-6347

6775, rue Yonge
6e étage
North York (Ontario)
M2M 4J1

April 21, 1999

MEMORANDUM

To: Bronwen Smith
Land Use Policy Branch

From: Sara Darker
Central Region

Re: Environmental Assessment Report
Highway 400 - Highway 404 Extension Link (Bradford Bypass)
File: EA03-03-05

This memorandum is in response to your telephone call this morning regarding one of the groundwater comments provided on the above proposal.

It is my understanding that you require clarification on Groundwater Comment 4., (see Ellen Schmarje's memorandum dated April 9, 1999 to Maria Allen-DeVos) which states that the mitigation measures provided by the proponent appear to deal mainly with the quantitative interference effects of the proposal rather than the potential qualitative effects.

To elaborate:

> Exhibit E-11 in the main report identifies five proposed mitigation measures to deal with the potential environmental effects of the proposal on groundwater. Only one of these mitigation measures deals with the potential quality impacts from highway runoff. This one mitigation measure proposes detailed stormwater management plans which address both quantity and quality.
>
> Since the proponent has identified a "major" impact to shallow sandy soils associated with the Holland River Lowlands and speciality crop areas (see Indicator 2.5 b), Appendix G), it is felt that a more detailed mitigation measure should be provided that deals with this specific impact. In particular, the proponent should indicate how the specialty crop areas and shallow sandy soil deposits will be protected from chloride contamination.

I hope that this clarifies matters. If you need any additional information, please feel free to contact me at (416) 326-3706.

<Original signed by>

[redacted]

cc: file

Ontario Provincial Police

Police provinciale de l'Ontario

Barrie Detachment
20 Rose Street
Barrie Ontario
L4M 2T2

Telephone (705)726-6484
Fax (705)726-6487

File: 145 21

13-Nov-98

Mr. Tim Sharp
Review Coordinator
Environmental Assessment Branch
Ministry of the Environment
250 Davisville Avenue, 5th Floor
Toronto, Ontario
M4S 1H2

RE: Highway 400 - Future Highway 404 Extension Link
(Bradford Bypass)

Thank you for the opportunity to provide input into the proposed new Highway 404/400 link (Bradford By Pass). My main concerns would center around the traffic disruption on the 400 Highway during the construction phase, the configurations of the highway itself and the signed during the construction phase. Prior to this construction taking place, I would welcome the opportunity to sit down with the project manager and take a look at the design of the construction area to ensure that we understand the entire project.

This highway will certainly be welcome as there is ,right know, no alternative route to Highway 404 except by going through NewMarket or down to the 407 Highway.

The following are only suggestions as to the project design that I would request be considered.

The speed limit be maintained at 100 Km/h or less for the entire route.

The entire route have overhead lighting for safety of persons driving and those who require to walk in an emergency situation.

Concrete barriers in the middle of the roadway, as is being constructed on Hwy. 400 at this time, with barriers around any and all signs and posts which are on the Hwy.

There should be a paved shoulder on both sides of the traveled portion at least 3 meters wide to be used for emergency vehicles and breakdowns.

On and off ramps be constructed with enough distance for slowing and accelerating vehicles to enter and exit the highway in safety.

That each ramp leading onto the highway be equipped with a gate which can be closed in an emergency to stop traffic from entering the highway.

Proper traffic control devices be erected at each exit of the highway to ensure for proper traffic flow.

Emergency overhead signs be in place ,such as on Hwy. 401, to advise motorist of problems ahead and emergency messages.

Again I thank you for the opportunity to be able to provide input into this project.

<Original signed by>

L.J. Hassberger
Detachment Commander

Ministry of Citizenship, Culture and Recreation
77 Bloor St W
Toronto ON M7A 2R9

Ministère des Affaires civiques, de la Culture et des Loisirs
77 rue Bloor O
Toronto ON M7A 2R9

Ontario

Cultural Programs Branch
Archaeology and Heritage Planning Unit
Tel: (416) 314-7146 Fax: (314) 314-7175

16 December 1998

Tim Sharp
Review Coordinator
Environmental Assessment Branch
Ministry of the Environment
250 Davisville Avenue, 5th Floor
Toronto ON M4S 1H2

Dear Mr. Sharp :

RE : Environmental Assessment Report, One-Stage Submission, Highway 400 – Highway 404 Extension Link (Bradford Bypass), W.P. 377-90-00, MCZCR File 444H001

Thank you for the opportunity to review the environmental assessment report. We are satisfied that the Environmental Assessment study took sufficient steps to consider impacts to cultural heritage features in the consideration of route alternatives. We are further satisfied that the statements and commitments made in the environmental assessment report regarding the proposed assessment and mitigation process will satisfactorily address the conservation of cultural heritage features where those features are to be impacted by the construction of the highway. We would like to offer the following comments regarding the assessment and mitigation process.

We wish to emphasise that all activities associated with highway construction may impact cultural heritage resources. There may not only be impacts within and adjacent to the proposed right-of-way, but also impacts arising from activities involving associated features such as stormwater management facilities, service stations, temporary construction easements, mitigation/compensation measures, access roads, staging and storage areas, and others. All these activities should be assessed for their impacts to cultural heritage resources, and, where necessary, those impacts should be mitigated.

This office expects to review and comment on future reports on assessment and mitigation of cultural heritage resources to be impacted by this project. Any impacts to cultural heritage resources and plans for their mitigation should be reviewed by staff of this Ministry and

approved prior to mitigation. Technical assistance and advice in the conservation of cultural heritage resources is available at all times from this Ministry.

Concerns have been raised by the public regarding impacts to archaeological resources along the proposed route. This Ministry has not been provided with evidence that demonstrates that there are archaeological sites of such significance that the proposed route should be altered. However, as noted in the report, archaeological assessment has to date taken place for only a very small portion of the proposed right-of-way and there are considerable areas of high potential along the proposed right of way. In order to answer these concerns, we recommend that archaeological assessment, and any necessary mitigation of significant sites, take place as early as possible at every stage in the process of design and construction in order to allow for the maximum flexibility and sensitivity and consequently the best management of any significant sites. We note that page 174 refers to commencing archaeological assessment in the Design phase and we encourage the proponent to be strongly proactive in that regard.

Our concerns regarding built heritage and cultural heritage landscapes have been satisfied by the commitments made in the environmental assessment report to the assessment and mitigation of resources to be impacted by the eventual construction of the highway. Built heritage resources and cultural heritage landscapes are best conserved in place and within their original context. The moving of a significant built heritage feature should be avoided if at all possible. This Ministry does recognise that displacement and disruption will take place as the result of the construction of this highway. We expect the involvement of a qualified heritage consultant in all decisions and ongoing consultation and approval with this Ministry regarding the evaluation and proposed mitigation of all built heritage resources and cultural landscapes. This should take place as early as possible in the process of design and construction.

Should you wish to discuss this matter further, please do not hesitate to contact me.

Sincerely,

<Original signed by>

Malcolm Horne
Heritage Planner

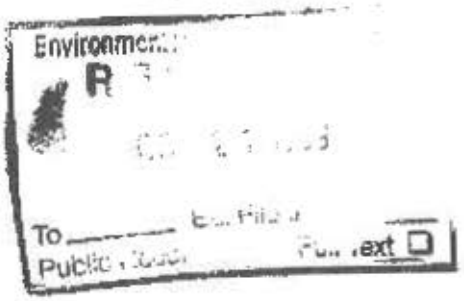
c. Gary Warrick, Environmental Services Unit, Ministry of Transportation, 3rd Floor, Atrium Tower, 1201 Wilson Avenue, Downsview ON M3M 1J8

Ministry of
Natural Resources

Ministère des
Richesses naturelles

Ontario

50 Bloomington Road West
Aurora, Ontario
L4G 3G8



October 4, 1999

Ms. Solange Desautels
Environmental Planner
Environmental Assessment and Approvals Branch
Ministry of Environment
2 St. Clair Avenue West
Toronto, Ont.
M4S 1H2

BY FAX: 416 314-7166 (paper copy to follow)

Dear Ms. Desautels:

RE: Highway 400-404 Link (Bradford By-pass) and Highway 404 Extension.

As per your fax to this office (Terri Fancy MNR, September 14, 1999) we offer the following comments for clarification. The fax included two tables outlining the Ministry of Transportation (MTO) response to Ministry of Natural Resources (MNR) comments received by the Ministry of Environment (MOE) for the above noted Environmental Assessments.

HIGHWAY 404 EXTENSION – Attachment 1 June 23, 1999 MTO comments table:

- **MNR COMMENT GA 9**

(1) MNR raised concerns about the consideration of wildlife corridors and connecting links, and the provision of adequate wildlife crossings. MTO has committed to ensuring that an appropriate analysis is undertaken, with technical assistance from MNR, to ensure wildlife passage is maintained or enhanced. The results of this work, including identifying zones of concern, and design and construction criteria, will feed back into the detailed design phase with appropriate input and consultation with the MNR. We find this to be an acceptable approach.

(2) The table also presents a series of comments (bullet points) from MTO which discuss and present specific design details at a number of locations (as per faxed Table noted as page 4 and 5 of 24). These details include the following potential crossings; Vachelle Swamp, culvert and crossings west and east of Weir's Road, Morning Glory Swamp, Port Bolster and Gibson Hill Swamp. It is premature at this time to agree to these design details, as the study and analysis to prescribe these details has not taken place.

Once the wildlife crossing analysis and synthesis of information is complete, its conclusions will then set the specific location by location design requirements to achieve wildlife passage. MNR will participate in meetings at the start of each design phase as

.../2

referenced in the Highway 404 Extension Route Planning Study and Environmental Assessment Main Report - Section 5.3.2 The Design Process (Cole, Sherman & Associates Ltd. December 1997).

(3) MNR had previously raised concerns about the protection of Sod Swamp. Following a meeting (December 22, 1998) with MTO and the Ontario Ministry of Agriculture and Food (OMAFRA) it was concluded that the road alignment would remain through the Sod Swamp. However, it was agreed that during detailed design (i) the alignment would be moved north and west out of the wetland as much as possible, and that (ii) an Environmental Impact Study summarizing site specific mitigative requirements would be provided to protect the wetland and its functions (MNR letter to MTO January 18, 1999).

BRADFORD BY-PASS – June 22, 1999 MTO comments table:

- **MNR COMMENT GA 9**

The MTO response regarding MNR concerns regarding the alignment and the consideration for 'wetland habitat compensation' is acceptable.

In addition, MNR is satisfied that to date the fisheries resource has been appropriately dealt with. Site specific concerns relating to the protection of the fisheries resource and implications of the fish habitat provisions of the Fisheries Act will be dealt with during detailed design. Consultation with MNR staff, the Department of Fisheries and Oceans and other stakeholders will occur on a reach by reach basis as per Section 5.3.2 The Design Process in the Highway 404 Extension Route Planning Study and Environmental Assessment Main Report - (Cole, Sherman & Associates Ltd. December 1997).

Should you have any questions regarding these matters please contact me at your convenience.

Yours sincerely,

<Original signed by>

Ian D. Buchanan
Fish and Wildlife Biologist
York /Durham Area
Aurora District

PH: (905) 713-7405
FX: (905) 713-7361

cc. Dave Ross, DFO, Fish Habitat Management, CCIW, Burlington
Rob Dobos, EA Coordinator, DOE, CCIW, Burlington.
Pat Reynolds, Ministry of Transportation

FAXED

Ministry of
Natural Resources

Ministère des
Richesses naturelles

Ontario

50 Bloomington Road W
Aurora, Ontario
L4G 3G8

Our Ref: 8538.8.520 Y

January 15, 1999

Environmental Assessment Branch
Ministry of Environment
250 Davisville Avenue
Toronto, Ontario
M4S 3G8

ATTENTION: Mr. Tim Sharp
Review Coordinator
Environmental Assessment Branch

Dear Sir:

SUBJECT: **Environmental Assessment Report**
Highway 400 - Highway 404
Extension Link (Bradford Bypass)
W. P. - 377 - 90 - 00 October 1998

We have reviewed the above document and offer the following comments. These comments also reflect recent discussions between Ministry of Transportation (MTO) and Ministry of Natural Resources (MNR) staff (December 22, 1998). The following outstanding issues remain unresolved:

1. **Site Specific Alignment - Holland River**

We are concerned with the proposed routing over the East Branch of the Holland River and the alignment from that point westward to the proposed system of on-off ramps at Bathurst Street.

Our previous correspondence to MTO in this regard was our letters of December 3, 1996, and November 28, 1997. In these letters we outlined that the position of MNR was to endorse the concept which is now represented as **Concept C** in the **Draft Review Document** (previously outlined in past documentation as Concept D - November 28 1998 comments). We note that the preferred route as outlined on page 123 of the Draft Report, does not follow Concept C. MNR is reiterating its position that the proposed alignment follow **Concept C**, or as a secondary position **Concept B**. The final document appears to have not taken our position into account. Our reasons as previously stated for ranking these Concepts high are:

1: They follow to a great extent the areas of previous disturbance

2: They position the alignment more northward on the west side of Bathurst Street which ensures that the wetland and forest habitat south of the existing Trussler Road right of way will be least disturbed.

3: They present the least disturbance to forest and wetland habitat.

4: The span water course crossings will mininize disturbance to the river channel and productive wetland margins. However, the requirement for mitigation or compensation will be determined under the Federal Fisheries Act and through the MTO/MNR Fisheries Accord at the detailed design stage.

...2

2. Wetland Compensation

We are concerned that the final design did not take into account previous discussions and committments from MTO regarding wetland habitat compensation (MNR/MTO meeting minutes October 14, 1993). It was agreed that any loss of wetland habitat associated with the crossing of the Provincially Significant Holland River Marsh would require the following components:

a insures satisfactory highway connections meeting engineering requirements,

b adequately addresses "Provincial Wetland Policy Statement" " Environmental Impact Statement (EIS) requirements.

And also that, with the possible exception of the widening of existing Highway 11 any crossing will involve:

a construction of lengthy span structures with sufficient clearance in order to minimize intrusions into the wetland (essentially span over it);

b creative construction methods in order to minimize construction intrusion including direct and indirect impacts to the wetland; and

c acquisition of extra lands (e.g. the entire property rather than just that portion required for MTO ROW in order that such lands can be re naturalized to provide wetland habitat and functions, and thereby offset some of the negative impacts of the highway crossing.

At the December 22, 1998 meeting we were informed that with regard to the crossing of the Holland River Marsh that point (c) above had not been adhered to. It is the position on MNR that this is unacceptable.

In conclusion, given the above outstanding concerns MNR is not satisfied with the routing for the Bradford Bypass. We would be glad to meet with the proponent to discuss a resolution to these concerns. Should you have any questions regarding this correspondence, please contact Mr. Christopher Tschirhart, 905 713-7366.

[redacted]

<Original signed by>

[redacted]

CT: aoh

cc: T. Smith, MNR Aurora
K. Woller, MNR Midhurst

Ministry of Natural Resources | Ministère des Richesses naturelles

Ontario

Ministry of Natural Resources
Aurora District

50 Bloomington Rd. W.
Aurora, Ontario
L4G 3G8

November 18, 1998

Environmental Assessment Branch
Ministry of the Environment
250 Davisville Avenue
Toronto, Ontario
M4S 1H2

ATTENTION:: Mr. Tim Sharpe
Review Co-ordinator
Environmental Assessment Branch

Dear Sirs:

Subject: **Environmental Assessment Branch for the Proposed Highway 404 Extension from Davis Drive (York Regional Rd 31) Northerly to Highway 12 EA File No. TR-CE-02**

We have reviewed the above document and have the following concerns. We the Ministry of Natural Resources have been involved in this project since 1992. Within that time we have undertaken numerous meetings and written more correspondence than is reflected in the Appendix section of this document. We acknowledge that the meeting minutes of all of our interagency meetings have been placed within the Appendix. However, without the correspondence which we have written to MTO over the span of this project, members of the public may find the minutes alone out of context. Also as an arm of the Ontario Government we have received numerous public inquiries over the span of this Environmental Assessment as to what our role and actions have been in regard to this E. A.. For these reasons we feel that our correspondence as documented in the attached chart and, copies should become part of the Appendix to this Environmental Assessment, and part of the public record.

Should you have any questions, please contact **Mr. Christopher Tschirhart** (905-713-7366) at this office.

Yours sincerely,

<Original signed by>

C. T. Tschirhart
Senior Planner
Strategic Planning and Operations
Aurora District

CT: mh

Attachments:

cc: Steve Jachobs, MTO

Summary of Ministry of Natural Resources Official Correspondence for 404 Extension Environmental Assessment

Date	*Author*	*Recipient*	*# of Pages*	*Subject*
March 11, 1997	Chris Tschirhart (MNR)	Heather Preston *Sr. Transportation Planner (MTO)*	11 Pages	Highway 404 Review Comments of the Preferred Route
November 28, 1997	Chris Tschirhart (MNR)	Steven Jacobs *Sr. Project Manager (MTO)*	6 Pages	404 Extension; Route Planning Study and E.A. Draft
November 28, 1997	Chris Tschirhart (MNR)	Steven Jacobs *Sr. Project Manager (MTO)*	2 Pages	Draft for Pre-submission Review Environmental Assessment Report
December 5, 1997	Chris Tschirhart (MNR)	Steven Jacobs *Sr. Project Manager (MTO)*	5 Pages	Route Planning Study and Environmental Assessment Draft

400 - 404 extension Bradford By-pass

Ministry of Natural Resources
Ministère des Richesses naturelles
Ontario

FUMSY

10401 Dufferin Street
Maple, Ontario
L6A 1S9

Our Ref: 8538.8.520
521

January 16, 1994

Ministry of Transportation Ontario
Planning and Design Section
Environmental Assessment Unit
Area 1 Central Region
4th Floor, Atrium Tower
1201 Wilson Avenue
Downsview, Ontario
M3M 1J8

Attention: Mr. Fred Leach

Dear Sirs:

Subject: Route Planning and Study Area Selection
Environmental Assessment Studies for the
Bradford Bypass

I am writing in response to our December 16, 1993 meeting with yourselves, representatives of OMAF and my staff in regard to refining the study area for the Bradford by-pass in the vicinity of the Holland Marsh. Further to our meeting we are sending a copy of the revised map and study area as agreed to in our meeting.

The principles for the defining of this study area are as outlined in our previous letter on this same subject of October 28, 1993.

We hope the attached map clarifies our mutual position and we look forward to working with you in the review of this project.

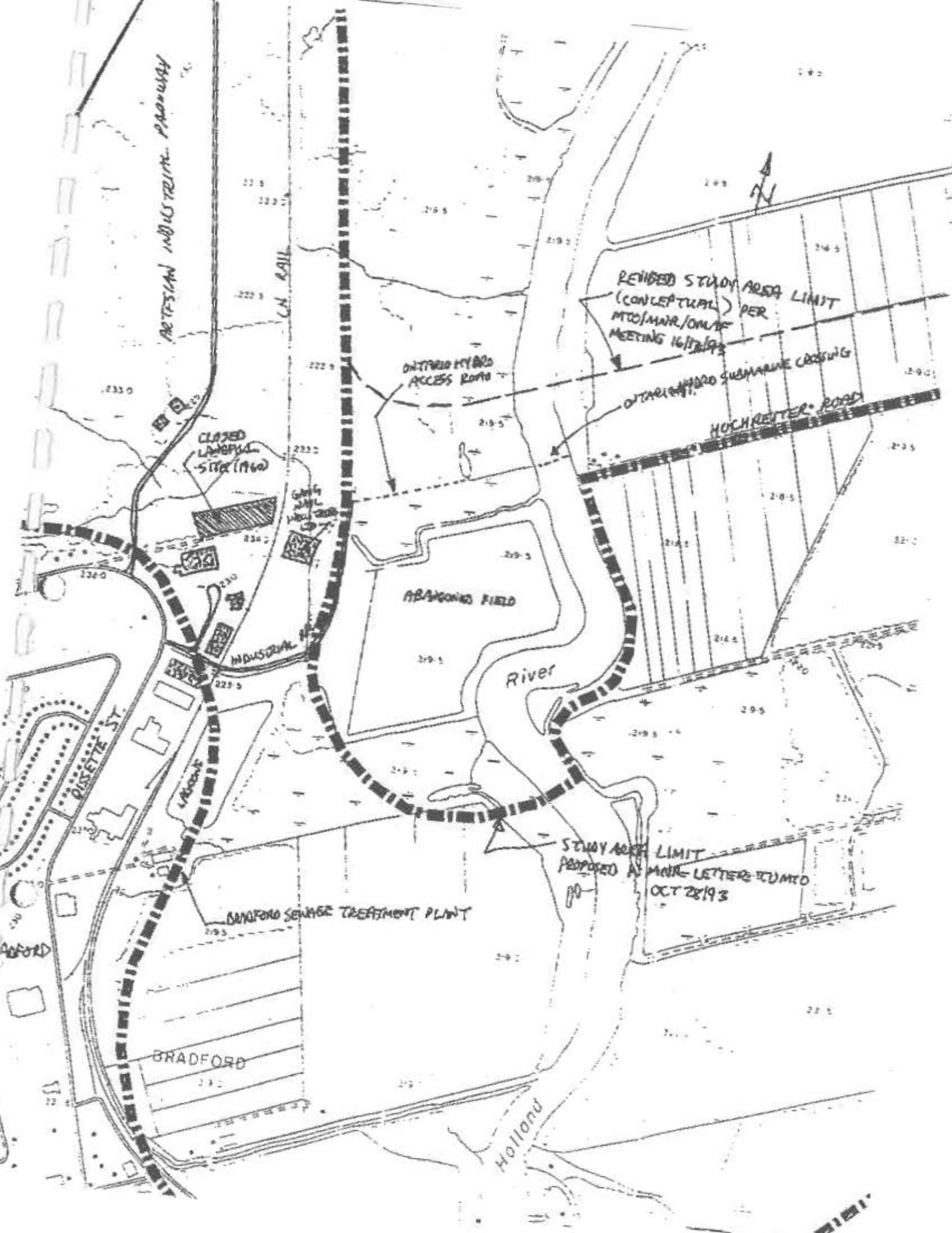
Yours truly,

<Original signed by>

T. C. Smith
Area Supervisor
York North Team
Greater Toronto Area District
Maple

CT:

Attachment


ARTESIAN INDUSTRIAL PARKWAY
C.N. RAIL
REVISED STUDY AREA LIMIT (CONCEPTUAL) PER MTO/MNR/ONLAE MEETING 16/12/93
ONTARIO HYDRO ACCESS ROAD
ONTARIO HYDRO SUBMARINE CROSSING
HOCHREITER ROAD
CLOSED LANDFILL SITE (1960)
ABANDONED FIELD
INDUSTRIAL RD.
River
DISSETTE ST.
LAWSON
STUDY AREA LIMIT PROPOSED AT MNR LETTER TO MTO OCT 28/93
BRADFORD SEWAGE TREATMENT PLANT
BRADFORD
Holland
N

Ministry of Natural Resources
Ministère des Richesses naturelles
Ontario

50 Bloomington Road W
Aurora, Ontario
L4G 3G8

Our Ref: 8538.8.520 Y

November 28, 1997

Mr. Steve Jacobs
Senior Project Manager
Planning Office, Central Region
Ministry of Transportation
3rd Floor Atrium Tower
1201 Wilson Avenue
M3M 1J8

Dear Sir

Subject **Draft for Pre Submission Review**
Environmental Assessment Report
One - Stage Submission
Highway 400 - Highway 404
Extension Link (Bradford Bypass)
W. P. - 377 - 90 - 00 October 1997

At this point in time the Ministry of Natural Resources offers the following comment. Our principle concern is associated with the proposed routing over the East Branch of the Holland River, and the alignment from that point westward to the proposed system of on-off ramps at Bathurst Street.

During a site inspection at this location with MTO staff we discussed our concerns. Our previous correspondence (December 3, 1996) to MTO outlined that the position of MNR was to endorse the concept which is now represented in the above noted report (pg. 123) as **Concept C** (previously outlined in past documentation as 'concept D'). However, we note that the preferred route does not follow Concept C.

...2

MNR is reiterating its position that through this sensitive area, the proposed alignment follow **Concept C** and as a second position **Concept B**. Our reasons as previously stated for ranking these Concepts high are:

1: They follow to a great extent possible the areas of previous disturbance

2: They position the alignments north on the west side of Bathurst Street which ensures that the wetland area south of the existing Trussler Road right of way will be least disturbed.

3: They present the least disturbance to forest and wetland habitat.

4: The span water course crossings will minimize disturbance to the river channel and productive wetland margins. However, the requirement for mitigation or compensation will be determined under the Federal Fisheries Act and through the MTO/MNR Fisheries Accord at the detailed design stage.

Should you have any questions regarding this correspondence, please contact Mr. Christopher Tschirhart, 905 713 -7366.

Yours truly,

<Original signed by>

C. T. Tschirhart
D. Senior Planner
E. Aurora District

IB/CT: aoh

cc: T. Smith, MNR Aurora
K. Woller, MNR Midhurst

Ministry of
Municipal Affairs
and Housing
Provincial Planning Services Branch
777 Bay St 14th Flr
Toronto ON M5G 2E5
Telephone Toll Free: 1-800-935-0696
Fax Number: (416) 585-4245

Ministère des
Affaires municipales
et du Logement
Direction des services provinciaux d'aménagement
777, rue Bay 14e étage
Toronto ON M5G 2E5
Téléphone (sans frais): 1-800-935-0696
Télécopieur: (416) 585-4245

Ontario

December 16, 1998

Tim Sharp
Review Coordinator
Environmental Assessment Branch
Ministry of the Environment
250 Davisville Avenue, 5th Floor
Toronto, Ontario
M4S 1H2

Re: Comments on Highway 400 - 404 Extension Link EA Document

We are in receipt of your letter of October 15, 1998, requesting the comments of this Ministry on the Highway 400 - 404 Extension Link Environmental Assessment document submitted to us for our review.

We have reviewed the EA documentation in light of the policies contained in the Provincial Policy Statement (PPS) dealing with land use planning and transportation and infrastructure corridors, more specifically section 1.3.3. This section speaks to the protection of significant transportation corridors and rights-of-way.

Presently, we have before us for review the new draft Official Plan for the Town of Bradford West Gwillimbury. This document does contemplate the proposed Highway 400 - 404 Extension Link and this infrastructure is shown on the proposed land use schedules for the Town. From a technical perspective, the Ministry of Transportation Corridor Policy Office has also reviewed this draft Official Plan and save for some minor wording suggestions is satisfied that the 400 - 404 Extension Link is adequately provided for in the draft Official Plan.

Therefore, the infrastructure proposed through the EA documents have been incorporated into the land use planning documents in a fashion consistent with the PPS. Accordingly, we have no concerns with the EA documents.

We appreciate the ability to comment on this matter, if there are any questions please call me at (416) 585-6058.

Yours truly,
<Original signed by>

John Taylor
Area Planner
Provincial Planning Services Branch

Ontario

Ministry of
Agriculture, Food
and Rural Affairs

R.R. #3, 95 Dundas St.,
Brighton, Ontario K0K 1H0
Tel: (613) 475-1630
(800) 263-2883
Fax: (613) 475-3635

Ministère de
l'Agriculture, de l'Alimentation
et des Affaires rurales

R.R. #3, 95 rue Dundas
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(800) 263-2883
Téléc.: (613) 475-3635

Agriculture & Rural Division

December 8, 1998

Mr. Tim Sharp
Review Co-ordinator
Environmental Assessment Branch
Ministry of the Environment
250 Davisville Avenue, 5th Floor
Toronto, Ontario
M4S 1H2

Dear Mr. Sharp:

Subject: Environmental Assessment
Future Highway 404 Extension Link to Highway 400 (Bradford By-pass)
York Region & Simcoe County
MOE File Number: TC-CE-02

Staff of this Ministry have completed a review of the above-noted report. Consideration has been given to the matter in terms of the goals, objectives, programs and policies of this Ministry. The following comments are provided.

This Ministry is satisfied with the data, analysis and conclusion that have been outlined within this EA report.

Should you have any questions or wish to discuss this matter further, please contact this office.

Yours truly,

<Original signed by>

Ray Valaitis
Rural Planner

copy: Mike Toombs, Manager - Land Use Planning, OMAFRA
(1EABradBypas.rcv)

Lake Simcoe Region Conservation Authority

120 Bayview Parkway, Newmarket, Ontario L3Y 4X1
Telephone: (905) 895-1281 Fax: (905) 853-5881

December 10, 1998

Mr. Tim Sharp
Senior Environmental Planner
Environmental Assessment Branch
Ministry of Environment
250 Davisville Avenue, 5th Floor
Toronto, Ontario, M4S 1H2

Dear Mr. Sharp:

Re: Highway 404 Extension, Davis Drive to Hwy. 12
Highway 404-400 Bradford Bypass
Route Planning Study and Environmental Assessment

We have reviewed the above noted reports and have the following comments:

1) The Davis Drive - Highway 12 report does not address our previous comments regarding possible encroachments into the Maskinonge River floodplain (November 27, 1997 letter to Steve Jacobs, attached). Any loss of floodplain storage could have significant impacts on upstream and downstream flooding.

2) The loss of wetland area and forested area in the Maskinonge River watershed is extremely significant as this watershed has very little of these features remaining. We have enclosed a copy of the Maskinonge River Remedial Strategy for your perusal. Please refer to the recommendations contained in this report as they pertain to wetlands and forested areas.

3) In general, the "no net loss" principal should be applied to mitigate impacts on forested areas and wetlands. This may require that a portion of the highway budget be set aside for reforestation and establishment of new wetlands in order to compensate for the loss of these natural features.

4) The Remedial Strategy requires that all new development in the Maskinonge River watershed (upstream of Glenwoods Drive) provide 80% nutrient removal rates in their stormwater treatment systems. This is greater than Level 1 protection and should be applied to the design of the Highway 404 extension and Bradford Bypass roadway within the Maskinonge River catchment..

5) The remainder of the Highway 404 / Bradford Bypass SWM system is to have Level 1 water quality treatment (or better) based on state of the art control measures. Infiltration techniques SWM are to be employed where feasible.

... /2

Should you have any questions regarding the above, please do not hesitate to contact the undersigned.

Yours truly,

<Original signed by>

Tom Hogenbirk, P.Eng.,
Conservation Engineer.

TH/mz

cc: • Ms. Margaret Jordan, LSRCA Member
• Mr. Bob Magloughlen, Town of Georgina

Encl.

Nottawasaga Valley Conservation Authority

266 Mill Street, Highway 90, R.R. #1, Angus, ON, L0M 1B0,
TEL (705) 424-1479, FAX (705) 424-2115
e-mail address: nvca@bconnex.net

December 2, 1998

Ministry of Environment
Environmental Assessment Branch
250 Davisville Avenue, 5th Floor
TORONTO, Ontario
M4S 1H2

Attention: Tim Sharp
Review Coordinator

Dear Mr. Sharp,

Subject: Environmental Assessment
Highways 400-404 Extension Link (Bradford Bypass)
EA File No. TC-CE-02

Thank you for providing the Nottawasaga Valley Conservation Authority (NVCA) with a copy of the Environmental Assessment Report (EAR) prepared in accordance with the provisions of the Environmental Assessment Act. We understand that this environmental assessment deals with the Ministry of Transportation's proposal for a new east-west freeway in south Simcoe County and north York Region. As you are aware, a small part of the 400-404 extension link is located within the NVCA's watershed while a considerable part is within the Lake Simcoe Region Conservation Authority's (LSRCA) jurisdiction. We note from the EAR that the LSRCA has been actively involved in this environmental assessment process.

The part of the proposed freeway within our watershed is the area where the full interchange is proposed at Highway 400. While there appears to be no significant natural heritage features within this part of our watershed, a tributary of Penville Creek traverses the proposed interchange area. This watercourse generally flows from the northeast to the west traversing Highway 400 at this interchange area. As you know, it is the NVCA's objective to protect the quality and quantity of surface and ground water resources including fish habitat and to prevent flooding on adjacent lands as a result of new development and infrastructure. As such, the NVCA will require plans that relate to the following through the detailed design stage:

- flood plain management;
- storm water management;
- fish habitat protection; and
- erosion and sediment control.

.../2

The NVCA would be willing to work closely with your Ministry, the Ministry of Natural Resources, and the LSRCA through the design phase in order to provide a coordinated approach to the input and review of detailed studies. Please contact Fred Dobbs, Fisheries Biologist with regard to fish habitat protection and Dave Burritt, P.Eng. Water Resources Engineer, regarding the engineering and technical aspects of the design at extensions 240 and 232 respectively.

We trust that these comments will be of assistance.

If you have any further comments with regard to the above, please contact the undersigned at (705) 424-1479 extension 229.

Sincerely,

<Original signed by>

Charles F. Burgess
Planner

/cfb

pc: Mr. R. Vos
Director of Watershed Management
Lake Simcoe Region Conservation Authority
Box 282, 120 Bayview Parkway
NEWMARKET, Ontario
L3Y 4X1

Town of East Gwillimbury

MUNICIPAL OFFICE
19000 LESLIE STREET
SHARON, ONT. L0G 1V0
TEL: (905) 478-4282
FAX: (905) 478-2808

February 1, 1999

Ministry of the Environment
250 Davisville Avenue
Toronto, ON M4S 1H2

Attention: Solange Desautels, Environmental Planner

Dear Sirs:

Re: Bradford By-pass and Highway 404

Further to your letter of January 11, 1999, I enclose copies of the following letters for your information and review:

Bradford By-pass

1. Letter dated December 9, 1997 from Beth A. McKay, Clerk-Administrator to Mr. Steve Jacobs, Ministry of Transportation indicating that East Gwillimbury Council objects to the technically preferred route for the Bradford By-pass because it disrupts established communities and is routed through a developed area.

2. Letter dated January 29, 1998 from Beth A. McKay to Steve Jacobs reiterating East Gwillimbury Council's strong concerns about the Bradford By-pass going through built-up residential areas.

Highway 404

3. Letter dated July 23, 1998 from Denis Kelly, Clerk-Administrator addressed to the Minister of Transportation stating East Gwillimbury Council's decision to request that the Ministry of Transportation prepare an addendum to the Highway 404 Environmental Assessment Report, examining the route of the Highway 404 extension in the context of the Queensville Community Plan and the Master Servicing Plan Process established in Official Plan Amendment No. 89.

I trust that these letters sufficiently outline East Gwillimbury Council's position on these matters.

Yours truly,

<Original signed by>

Denis Kelly
Clerk-Administrator
encl.

DK/smf

c: W. Hunt, Town Engineer
R. Coursey, Director of Planning

Town of East Gwillimbury

MUNICIPAL OFFICE
19000 LESLIE STREET,
SHARON, ONTARIO L0G 1V0
TELEPHONE: (905) 478-4282
FAX: (905) 478-2808

9 December 1997

Mr. Steve Jacobs, P.Eng.
Senior Project Manager
Ministry of Transportation
1201 Wilson Ave., 3rd floor, Atrium Tower
Downsview, ON M3M 1J8

Dear Mr. Jacobs:

Re: Highway 400-404 Link (Bradford Bypass) Route Location and Environmental Assessment Study

This will acknowledge receipt of your letter dated 3 November 1997 with regard to the above issue.

At an East Gwillimbury Council meeting on 3 November 1997, the attached resolution was passed. East Gwillimbury Council objects to the technically preferred route for the Bradford Bypass because it disrupts established communities and is routed through a developed area.. We urgently request that other locations for the Bypass be given very serious consideration

Sincerely,

<Original signed by>

Beth A. McKay, CMO
Clerk-Administrator.

:eh
encl.
c. B. Wayne Hunt, P.Eng.
Town Engineer
c. F.R.O.G.S., c/o Bill Foster

TOWN OF EAST GWILLIMBURY

COUNCIL

C 97-474

MOVED BY "James R. Young" DATE November 3 19 97

SECONDED BY "Frank E. Kelly"

THAT correspondence dated October 27, 1997 from FROGS and a letter dated November 3, 1997 from MTO with regard to the Bradford By-Pass be received;

AND FURTHER that the Town advise the Ministry of Transportation that it objects to the technically peferred route for the Bradford By-Pass because it disrupts established communities and is routed through a developed area, and request that other locations for the By-Pass are given serious consideration.

Carried ☑
Defeated ☐
Tied(Lost) ☐

"James Mortson"

Mayor

Town of East Gwillimbury

MUNICIPAL OFFICE
19000 LESLIE STREET
SHARON, ONTARIO L0G 1V0
TELEPHONE: (905) 478-4282
FAX: (905) 478-2808

January 29, 1998

Ministry of Transportation
Planning and Environmental Office
Central Region
3rd Floor, Atrium Tower
1201 Wilson Avenue
Downsview, ON M3M 1J8

Attention: Steve Jacob

Dear Sir:

Re: Bradford By-pass Route

At the regular Council meeting held on January 19, 1998, your correspondence to me dated December 23, 1997 was reviewed and the attached resolution was passed.

Council asked that I write to you and reiterate their strong concerns about the By-pass route going through built-up residential areas. They would like to ensure that their comments are considered in the review of the Environmental Assessment Report by the Minister of Environment referred to in your correspondence.

Sincerely,

<Original signed by>

Beth A. McKay, CMO
Clerk-Administrator

cc Wayne Hunt, Town Engineer

COPY

TOWN OF EAST GWILLIMBURY

COUNCIL

C 98-29

OVED BY "Frank Kelly" DATE 19 January 19 98

ONDED BY "Marlene Johnston"

THAT the Town of East Gwillimbury reiterate its concerns over the proposed route for the Bradford By-pass as expressed in a resolution passed on November 3, 1997.

arried ☑
ated ☐
d(Lost) ☐

"James Mortson"

Mayor

Town of East Gwillimbury

MUNICIPAL OFFICE
19000 LESLIE STREET
SHARON, ONT. L0G 1V0
TEL: (905) 478-4282
FAX: (905) 478-2808

23 JULY 1998

The Honourable Norman Sterling
Minister
Ministry of Environment and Energy
135 St. Clair Ave.W., 15th floor
Toronto, ON M4V 1P5

Dear Mr. Minister:

Re: Highway 404 Alignment and Environmental Assessment

At its meeting of July 20, 1998, the Council of the Town of East Gwillimbury considered the matter of the Highway 404 alignment through the Queensville Community.

It was Council's decision that the Ministry of Transportation be requested to prepare an Addendum to the Highway 404 Environmental Assessment Report, examining the route of the Highway 404 extension in the context of the Queensville Community Plan and the Master Servicing Plan Process established in Official Plan Amendment No. 89.

A copy of this letter has been sent to the Honourable Tony Clement, Minister of Transportation.

Your assistance in considering this request is appreciated.

Yours truly,

<Original signed by>

Denis Kelly
Clerk-Administrator.

DK:eh

Town of Bradford West Gwillimbury

P.O. Box 160, Bradford, Ontario L3Z 2A8

Administration Centre: 3541 Line 11 at Hwy. 400 • Tel. (905) 775-5366 • Fax (905) 775-0153

September 7, 2000

FAXED (416-235-4940; 2 pages)
AND MAILED

Ministry of Transportation
Planning & Environmental Office
Central Region
1201 Wilson Avenue
3rd Floor, Building 'D'
Downsview, ON M3M 1J8

Attn: Mr. Patrick Reynolds

Dear Mr. Reynolds:

Re: Highway 400 - Highway 404 Extension Link (Bradford Bypass)
Environmental Assessment

The Council of the Town of Bradford West Gwillimbury, at its meeting of August 22, 2000, passed the following resolution regarding the Highway 400-Highway 404 Extension Link (Bradford Bypass) Environmental Assessment:

"That Council support the Ministry of Transportation's Recommended Plan for the proposed "Highway 400-Highway 404 Extension" (Bradford Bypass), as submitted in December 1997 to the Ministry of Environment for review and approval under the requirements of the Ontario Environmental Assessment Act; and

That this support is with the understanding that:

1. *A grade separation for a future north-south arterial road crossing at the Bypass in the area west of the Bypass/Simcoe Road 4 interchange and aligning with the extension of Professor Day Drive will be financed by the Ministry;*

2. *The Ministry will work with the Town and the County of Simcoe to determine the location of a new signalized intersection on Simcoe Road 4 south of the Line 9 and north of the proposed Bradford Bypass Right-of-way;*

3. *The Town will consult with the Ministry of Transportation during the Town's planning and design of the above arterial road and signalized intersection to ensure their compatibility with the planning and design, construction and operation requirements of the Bradford Bypass; and*

That this resolution replaces the Town's letter dated December 16, 1998 submitted to the Ministry of the Environment, Environmental Assessment Branch."

Finance Department: 61 Holland Street East • Tel. (905) 775-5303 • Fax (905) 775-4472

Should you have any questions in this regard, please do not hesitate to call.

Yours very truly,

<Original signed by>

Eric H. Hodgins, M.C.I.P., R.P.P.
Town Planner

EHH/mm

cc: Mayor Jonkman (Faxed)

Corporation of the Town of Bradford West Gwillimbury

Post Office Box 160, Bradford, Ontario L3Z 2A8

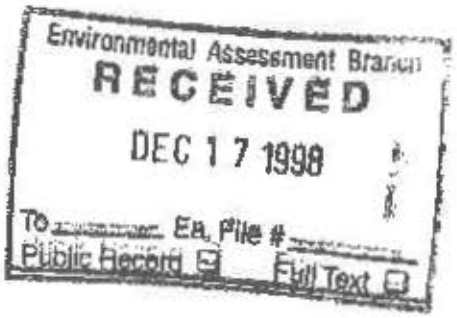
Admistration Centre
11th Line, West of 10th Sideroad
Phone: (905) 775-5366
Fax: (905) 775-0153

Finance Department
61 Holland St. E.,
Phone: (905) 775-5366
Fax: (905) 775-4472

Office of the Mayor

December 16, 1998

FAXED (416-314-7271; 3 pages)
AND COURIERED



Ministry of the Environment
Environmental Assessment Branch
250 Davisville Avenue, 5th Floor
Toronto, ON M4S 1H2

Attn: Mr. Tim Sharp
Review Coordinator

Dear Mr. Sharp:

Re: Highway 400-404 Extension Link EA
Town of Bradford West Gwillimbury

Since the release of the Environmental Assessment Report on the Highway 400-404 Extension Link (Bradford Bypass) in January 1998, members of our staff have been reviewing the impact of the proposed freeway on the future development of the urban area of our Town. The conclusion reached after consultation with our affected citizens is that the location of the Technically Preferred Route for this new facility is satisfactory.

However, there are two matters that concern Council when the long term impact of the freeway is considered in the light of the future development of the Bradford Urban Area. These are:

1. The layout of the proposed cloverleaf at the intersection of the Bypass with County Road 4 (formerly Highway 11) causes a severe loss of access to the adjacent lands both east and west of CR 4. This restriction prevents the construction of service roads along the south side of the Bypass through lands that are in the process of being designated for urban use following a yearlong Official Plan update process. To construct the interchange in the proposed manner will result in the isolation of the parcels of land on either side of CR 4 and an increase in the flow of industrial and commercial traffic through residential streets. What is needed is a commitment by the Ministry of Transportation that the interchange will be constructed in such a way that service roads can be integrated with the ramps and use the same signalized intersections; and

2. The proposed flyover on Sideroad 10 (formerly Middletown Sideroad) should be constructed as a minor cloverleaf when the Bypass is built. The reason for this claim is the proximity of an existing, partially developed industrial area on the east side of the Sideroad. If the cloverleaf access is not provided, industrial traffic on the Bypass destined for this area will have to use existing routes through residential areas that now exist.

These two locations have been highlighted on the attached map(s). Council has resolved to request consideration of these two requests while the EA is being reviewed. Representatives of Council, appropriate staff members or consultants retained by the Town will be available to consult with you on these issues at any time which is convenient.

In closing, would you please advise me if these negotiations can take place during your review of this EA. If not, Council will opt for a mediation process after the Notice of Completion of Review is published in an attempt to avoid requesting a hearing.

Yours very truly,

<Original signed by>

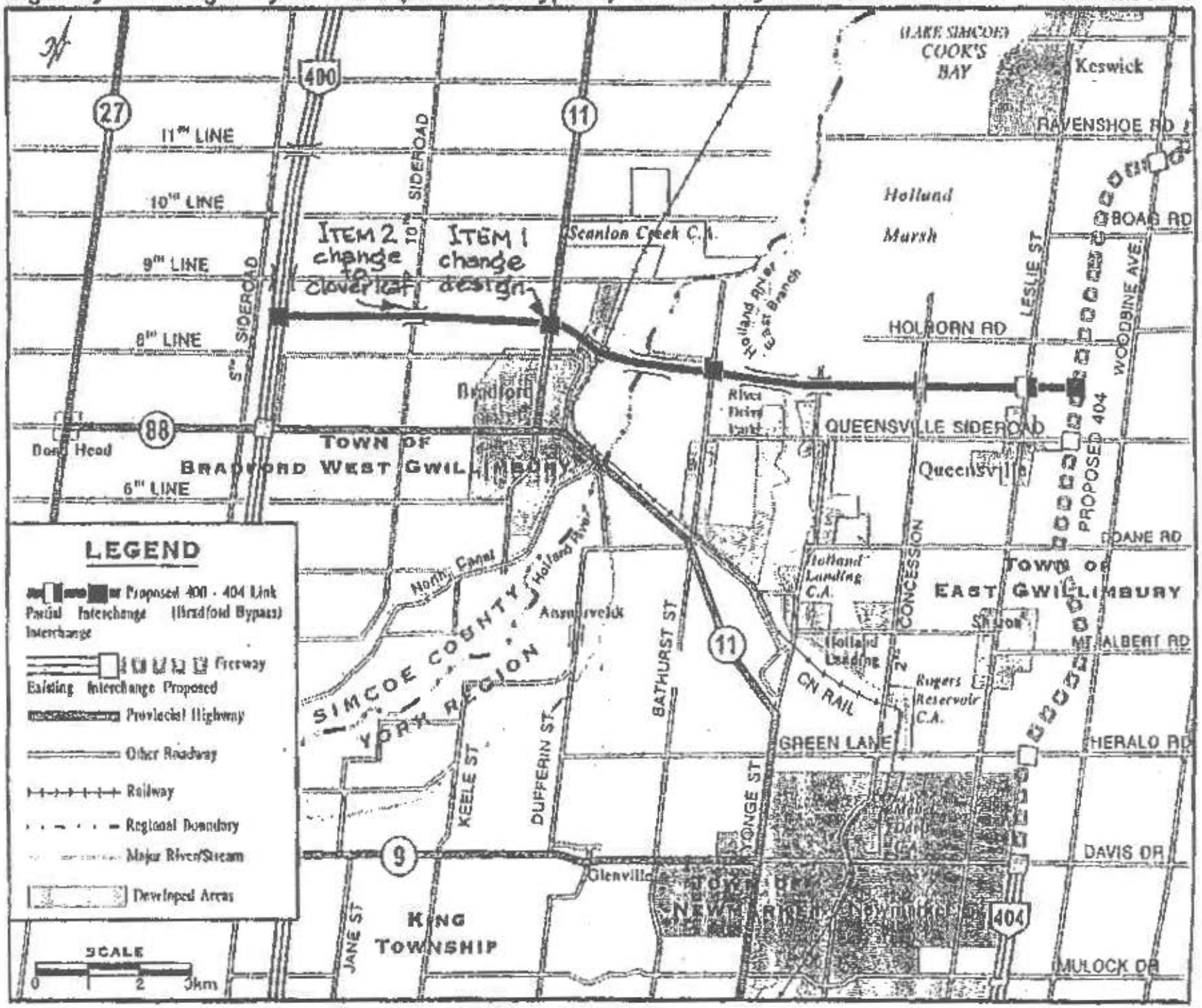
Frank Jonkman
Mayor

JRR/mm

Encl.
cc: Highway 400-404 Extension Link EA (Faxed • 416-235-4940)
Ministry of Transportation
Planning and Environment Office
Central Region, 3rd Floor, Atrium Tower
1201 Wilson Avenue
Downsview, ON M3M 1J8

Highway 400 - Highway 404 Link (Bradford Bypass) Technically Preferred Route

EXHIBIT 6



TOWNSHIP OF KING

3585 KING ROAD
KING CITY, ONTARIO
L7B 1A1

(905) 833-6321
(905) 939-5000
FAX: (905) 833-2300
EMAIL: online@township.king.on.ca
WEBSITE: www.township.king.on.ca

December 4, 1998

DEC 11 1998

McCormick Rankin Corporation
2655 Sheridan Way
Mississauga, Ontario
L5K 2P8

Attention: Stephen Schijns, P.Eng.

Dear Sir:

Re: Highway 400 to Future 404 Extension Link (Bradford Bypass)
Environmental Assessment Report
WP 371-90-00

We have reviewed the above noted Environmental Assessment document and provide the following:

1. Has the issue of drainage from the Marsh farm lands adjacent to Hochreiter Road (private road) been addressed? Will there now need to be drainage improvements in terms of the creation of a municipal drain or other works to provide drainage?

2. Bathurst Street north of the Queensville Sideroad is a boundary road between King Township and the Town of East Gwillimbury and not a Region of York road as shown on Exhibit E-1 and other plans. Bathurst Street south of the Queensville Sideroad is a Region of York Road #38.

3. Exhibit 5-2 shows the Highway 400 to 404 extension link to be proposed generally to the north of existing Hochreiter Road and a realigned Hochreiter Road to the north of the extension link.

   The extension link effectively separates the farm lands from the north and south. How is access to be provided for the lands to the south of the highway extension?

continued...

4. Currently Bathurst Street and the Queensville Sideroad are not capable of handling the traffic that would be generated from an interchange on Bathurst Street at Hoohreitor Road and future improvements to said roads would be required.

5. Township Council at its November 9, 1998 meeting received the invitation to comment on the Highway 400 - Highway 404 extension link (Bradford Bypass) and indicated that "perhaps this bypass would alleviate traffic congestion along Highway #9".

Yours truly,

<Original signed by>

Kevin D. Young, C.E.T., C.R.S., C.M.M. I
Director of Public Works

Engineering Services
Field Operations
Suite 702
277 Front St. W.
Toronto, Ontario
M5V 2X7

16 November, 1998

Our File: 1600-NMT-42.53
Your File: TR-CE-02

Envrionmental Assessment Branch
Ministry of Environment & Energy
250 Davisville Avenue
5th Floor
Toronto, Ontario
M4S 1H2

Attn.: Mr. Tim Sharp
Review Coordinator

Subject: **Highway 400 - Future Highway 404 Extension Link (Bradford Bypass)**
EA File No. TR-CE-02

Dear Sir:

We are in receipt of your Environmental Assessment submission, dated 15 October, 1998, for the above noted project.

CN is currently under negotiations to sell a portion of our Newmarket Subdivision, north of Bradford. In the event that the sale does not materialize, CN will retire that portion of track in the Spring of 1999.

Should you have any questions please contact the undersigned at (416) 217-6535.

[redacted]
<Original signed by>

Marissa K. Timbol
for
John F. MacTaggart
Public Works Engineer

cc. Ministry of Transportation - Central Region Planning and Environmental Office

Health Canada
Santé Canada

Healthy Environments and Consumer Safety Branch
Direction générale, Santé environnementale et sécurité des consommateurs

Office of Environmental Health Assessment
Jeanne-Mance Building, 1904C
Tunney's Pasture
Ottawa, ON K1A 0K9

Confirmation of FAX:
Document envoyé par télécopieur

Your file Votre référence

Our file Notre référence

December 2, 2000

Ms Solange Desautels
Ministry of the Environment
Environmental Assessment & Approvals Branch
2 St. Clair Avenue West, Floor 12A
Toronto, Ontario
M4V 1L5

Subject: Health Canada's Comments Re: Extension of Highway 404 and Bradford Bypass Link

Dear Ms Desautels,

As requested, Health Canada officials have reviewed the Environmental Assessments (December 1997) pertaining to the Extension of Highway 404 and the Highway 400-404 Extension Link (Bradford Bypass). Further to our comments specific to noise issues that was sent out in November, please find attached our comments as they relate to air quality issues.

Should you require clarification or require further information, please do not hesitate to contact me at (613) 952-8712.

Sincerely yours,
<Original signed by>

Maria Ooi
EA Coordinator - Central Region

Attach.

c.c. : Barry Jessiman (HECSB - HC)
Roy Kwiatkowski (HECSB - HC)
Dan Thompson (DFO)

Canada

Health Canada Review of the Highway 404 Extension/Bypass Air Quality Assessment
December 1, 2000

General Comment

The assessment approach involves calculating the impact of a section of highway that will be an integral component of a larger highway system on the air quality in nearby areas. This approach has been used before for other parts of this highway, but suffers from two major limitations that bring into question the conclusions reached in the assessment.

The first limitation is that of assessing small sections of highway. For any source of pollution, be it a factory or highway, if we reduce the size of the component being assessed, it will always be possible to demonstrate that there is no impact. This approach is acceptable if we are only concerned about the population living nearby and there is no intent to assess the impact of the larger installation on regional air quality. The assessment takes this approach, and concludes that since the emissions are minimal compared to "other" sources, then there will be no impact on regional air quality. Having reviewed assessments of other highway components in the local area (highway 407 for example) in which the same conclusions were drawn, it is becoming obvious that the approach to these assessments (i.e. that of addressing only small components of the highway) will always be able to conclude that there is no impact of the highway on local residents or regional air quality. If this approach and logic is applied to air quality assessments of all sources, then it is likely that we could conclude that there is no source that impacts air quality. The approach therefore is inappropriate.

The second limitation involves the use of air quality objectives to determine if the impact of the highway is acceptable to local residents. An analysis of the recent health literature (the objectives are based on literature at least 10 years old), would indicate that carbon monoxide and nitrogen oxides are implicated in mortality and hospital admissions at levels below the objectives. Because the objectives were developed when no such implications existed in the literature, and because the literature on this subject has expanded enormously in the last several years, the approach of using only the objectives was appropriate until the last year or two. The approach continues to be valid since the objectives still exist and have not been updated, at least partly because the literature is so new and a new and extensive risk assessment is necessary before new objectives are considered. However to ignore this new literature and not even acknowledge the potential impacts if this newer information should prove valid is inappropriate. At the least, the assessment should have noted the emergence of this new information, and raised the possibility of impacts of carbon monoxide and nitrogen oxides at the levels expected to be generated by the proposed highways.

Specific Comment

In Table 1 of both assessment reports, the road transportation share of total pollutant emissions for carbon monoxide is listed as 50%. Recent figures from Environment Canada studies in Toronto indicate the figure to be above 80% and it would be worthwhile to determine if using these more recent figures would have a measurable impact on the conclusions drawn.

In Table 4 of both assessment reports the future AAQC for PM_{10} is listed as 30 $\mu g/m^3$. In fact, this is the current Canada Wide Standard for $PM_{2.5}$ and should not be confused with any PM_{10} standards

or objectives. Additionally, the background concentrations for PM and ozone listed in these tables are considerably different from background concentrations supplied previously by the Ministry of Environment. A more appropriate and specific attribution of the source of the data is required than is currently provided.

Health Canada
Santé Canada

Healthy Environments and Consumer Safety Branch
Direction générale, Santé environnementale et sécurité des consommateurs

Office of Environmental Health Assessment
Jeanne-Mance Building, 1904C
Tunney's Pasture
Ottawa, ON K1A 0K9

Confirmation of FAX:
Document envoyé par télécopieur

Your file Votre référence

Our file Notre référence

November 17, 2000

Ms Solange Desautels
Ministry of the Environment
Environmental Assessment & Approvals Branch
2 St. Clair Avenue West, Floor 12A
Toronto, Ontario
M4V 1L5

Subject: Health Canada's Comments Re: Extension of Highway 404 and Bradford Bypass Link

Dear Ms Desautels,

As requested, Health Canada officials have reviewed the Environmental Assessments (December 1997) pertaining to the Extension of Highway 404 and the Highway 400-404 Extension Link (Bradford Bypass). Our review focuses on the aforementioned projects as they relate to the noise levels generated. As the additional air quality information arrived in November, we will send our comments specific to air issues under separate cover once they are ready.

Should you require clarification or require further information, please do not hesitate to contact me at (613) 952-8712.

Sincerely yours,
<Original signed by>

Maria Ooi
EA Coordinator - Central Region

Attach.

c.c.: Steven Bly (HC)
Stephen Keith (HC)
Roy Kwiatkowski (HC)
Dan Thompson (DFO)

Canada

HEALTH CANADA
November 17, 2000

Comments from the Acoustics Unit re: Hwy. 404 Extension and Bradford Bypass. As requested, and as described below, the Acoustics Unit has identified deficiencies in the EA Reports with respect to noise issues. The EA reports will be referred to as reports 1(a), 1(b), 2(a) and 2(b) and are identified as follows:

1(a)Highway 400-Highway 404 Extension link (Bradford Bypass), Route Planning and Environmental Assessment Study, Environmental Assessment Report.

1(b)Highway 400-Highway 404 Extension link (Bradford Bypass) W.P. 377-90-00 (Noise Analysis).

2(a)Executive Summary - Highway 404 Extension, Davis Drive (York Regional Rd.31) to Highway 12, Route Planning Study and Environmental Assessment, Central Region, W.P. 299-86-00.

2(b)Appendices - Highway 404 Extension, Davis Drive (York Regional Rd.31) to Highway 12, Route Planning Study and Environmental Assessment, Central Region, W.P. 299-86-00.

General Deficiency

The subject reports did not provide a clear indication of the impact on health due to noise levels arising from the project(s).

Recommendations

Additional data required to rectify this deficiency include the daytime and nighttime noise levels for the present situation and the nighttime levels for the future situations, with and without the proposed highways. Nighttime refers to the hours from 23:00 - 07:00 and daytime refers to the hours from 07:00 to 23:00. The noise levels should be expressed as the time averaged sound levels (Leq), in A-weighted decibels (dBA), where the time averaging is carried out over the respective periods of daytime and nighttime.

To assess the impact on health, comparisons are needed of the severity of the effects of the environmental noise levels and the number of noise exposed households for the present situation, and for future predicted situations with and without the proposed highways. The comparisons should be clearly indicated in the text and tables.

To determine the severity of the effects between the different scenarios, the environmental noise levels can be compared to Health Canada's National Guidelines for Environmental Noise Control (NGENC) and to published dose-response relationships for the percentage of people highly annoyed by environmental noise in a typical exposed community. The NGENC classifies the severity of a noise impact (Table 5.3 NGENC attached) according to the amount by which the noise levels exceed recommended point of reception sound level limits (Table 3.3 NGENC attached).

The general recommended point of reception sound level limits are 50 dBA Leq from 23:00 to 07:00 (nighttime) and 55 dBA from 07:00 to 23:00 (daytime) in suburban outdoor areas. Indoors, the recommended levels are 10 dBA lower. The daytime limits are based on approximate estimates of thresholds at which the noise can start to significantly interfere with activities such as person-to-person communication, listening to music, radio or TV. The nighttime limits are based on approximate estimates of thresholds at which awakenings due to traffic noise may begin.

As noted above, the impact can also be described via dose-response relationships for the percentage of people, in a typical community, highly annoyed by traffic noise. The percentage highly annoyed is given as a function of the day-night sound level. Above the point of reception sound level limits recommended in the NGENC, this annoyance appears to result from interference with sleep, rest, relaxation and communication related activities as described above. In a typical urban community, the percentage of people highly annoyed by environmental noise at the recommended outdoor levels in the NGENC is about 5% (Miedema and Vos 1998, Finegold et al 1994). This percentage rises to about 17% at outdoor levels that are about 10 dB higher. Both daytime and nighttime noise levels are needed to estimate the day-night sound level.

Although it has not been adequately quantified, it should be noted that there is some evidence that, on average, compared to the dose response relationships of Miedema and Vos (1999) and Finegold et al(1994), people in quiet rural areas may experience greater annoyance with a given increase in environmental noise level (WHO 1999).

It should also be noted that, although the available evidence is far from convincing in demonstrating a cause and effect relationship, one recent epidemiological study (Babisch et al 1999), which has yet to be independently replicated, suggested a weak statistical association between long term exposure to daily average traffic noise levels above 65 dBA and ischaemic heart disease.

Specific Deficiencies

1. There appears to be data missing in Exhibit 5-5 of report 1(a) (Holland River West Branch) and Appendix 3 of report 1(b)(Bathurst Street).

2. The attenuation due to trees appears to be overestimated by as much as 5 dB (eg., clause 2 of report 1(b) and clause 3.3.3 of report 2(b)). It is also unclear as to which value of attenuation is used in clause 4.2b of report 2(b). As a result, in locations where the effect of attenuation due to trees played a significant role, the attenuation estimates and corresponding noise levels should be re-calculated.

3. In the subject reports, quiet pavement is noted as a potential method for mitigation, but it is not considered in the summary Tables of mitigation methods. The reason for this omission should be provided. This can include an indication of the feasibility of quiet pavement as a mitigation method.

4. The stated 1.5 dB accuracy stated in clause 3.1(5) of report 2(b)appears to be somewhat overstated based on comparison with ISO 9613-2 (1996) and the fact that, as noted by the proponent, the generalized sound level contour is used rather than detailed calculations with the cited method for individual receivers. The accuracy of the noise level predictions should be verified, and, if needed,

modified accordingly.

5. In the calculation of noise levels, it is not clear why source height is discontinuous, and jumps from 1 to 0.5 when the percentage of heavy trucks (PHT) decreases from 0.01 to any value less than 0.01. Also, the definition of PHT should be more clearly expressed. In the current reports it is described as both a percentage and a fraction which is somewhat confusing.

References

Babisch W, Ising H, Gallacher JE, Sweetnam PM, Elwood PC (1999) Traffic noise and cardiovascular risk: The Caerphilly and Speedwell studies, third phase 10-year follow up. Archives of Environmental Health 54:210-216.

Health Canada (1989) National Guidelines for Environmental Noise Control.

World Health Organization (1999) Guidelines for Community Noise, ed. B. Berglund, Thomas Lindvall and Dietrich H Schwela (1999) (clauses 2.3.4 and 3.8).

Miedema and Vos (1998) Exposure response functions for transportation noise. Journal of the Acoustical Society of America 104: 3432-3445.

Finegold LS, Harris CS and von Gierke HE (1994) Community annoyance and sleep disturbance: Updated criteria for assessing the impacts of general transportation noise on people. Noise Control Engineering Journal, 42:25-30.

Table 3.3 Recommended Point of Reception Sound Level Limits (dBA)

General

Location	Time	Sound level limit (Leq) at point of reception (dBA) over time period specified on left
Surburban outdoor areas	23:00-07:00	50
Surburban outdoor recreational areas	07:00-23:00	55
Indoors: Bedrooms, sleeping quarters, hospitals, etc.	23:00-07:00	40
Indoors: Living rooms, hotels, motels, etc.	07:00-23:00	45
Indoors: Private offices, classrooms, reading rooms, small conference rooms, etc.	07:00-23:00	45
Indoors: General offices, reception areas, retail shops, etc.	07:00-23:00	50

Stationary Sources

Type of noise	Sound level limit at point of reception (dBA)
Steady noise	Leq/h due to road traffic noise increase (Leq/h of less than 40 dBA not considered)
Specific impulsive sounds	50 dBAI
Firearms	50 dBAI
Pest control devices	70 dBAI 60 dBA Leq 1h

Such documents must outline the review and enforcement procedures of various components of the noise control program. These publications might include the following: planning, abatement and audit procedures.

3.2.4.1 Planning

The following planning process procedures may be useful to administer the planning segments of a noise control program.

When plans for a new source or new receivers are submitted for review, the first step is that the approving agency prepare initial comments. The comments should establish anticipated noise levels for the site and be compared with the objective sound levels. This examination should indicate the existence and extent of the noise problem. At this stage, it should not be necessary to investigate detailed noise abatement or control measures.

The next step is to prepare guidelines issued by the approving authority to inform development proponents, architects, consultants and contractors about what data must be provided for the initial review. These guidelines should include acceptable prediction techniques. Approving staff should have computerized prediction methods to perform rapid and accurate sound level predictions.

These techniques enable staff with minimum training in noise level assessment to respond quickly to proposals that have potential to create noise conflict between a source and a receiver. Section 6 addresses noise measurements and predictions.

It is recommended that the task of designing acceptable noise control measures for specific sites be left to the proponent who can be assisted considerably by documents and references from the approving agency. Discussions may have to be arranged among the approving authority, the developer and the consultant to institute agreed-upon noise control measures.

There may be special circumstances in which the proponent of a new source or receiver may need to negotiate with existing sources or receivers, or in which the control agency may have such interest, in order to implement the most effective measures. Planning is discussed in more detail in Section 5.

Table 5.3 Applying Recommended Sound Level Limits to Residential Land Use Developments

Excess above Recommended Sound Level Limits dBA	Change in Subjective Loudness Above	Magnitude of the Noise Problem	Noise Control Measures (or action to be taken)
No excess	--	No expected noise problem	None
1 to 5 inclusive	Noticeably louder	Slight noise problem	Optional (if no physical measures are taken then prospective purchasers or tenants should be made aware by a clause in the deed or rental agreement)
6 to 10 inclusive	Almost twice as loud	Definite noise problem	Recommended
11 to 15 inclusive	Almost three times louder	Serious noise problem	Strongly recommended
16 and over	Almost four times louder	Very serious noise problem	Strongly recommended (may be mandatory)

NOTE: When the excess is more than 5 dBA, the recommended control measures must reduce the sound level to the sound level limit and not with a 5 dBA tolerance (e.g., outdoor level during daytime must be reduced to 55 dBA and not 60 dBA).

5.1.1.4 Building and Site Plans

This step is the last opportunity for the approving authority to ensure that the agreed upon noise control measures (incorporated into the previous plans and agreements) will, in fact, be incorporated into the plans that would be used by the proponent to award contracts for construction of the project.

After considering the level of training of personnel who examine and approve building plans and the complexity of evaluating detailed noise control measures, it may be prudent for the approving agency to require that the proponent retain the services of a specialized acoustical consultant to certify building permit drawings and plans.

The acoustical consultant would be engaged by the proponent to review the plans, and provide a certificate (or stamp the drawings) to indicate the fact that all the necessary noise control measures have been incorporated into the construction documents and drawings.

The person who examines and approves the building plans then would release the drawings after receiving the consultant's verification.

5.1.1.5 Inspections

Depending on the complexity of the noise control measures and the time available to the building inspector, the approving authority may require that the proponent (in this case the builder) provide the building department with a certificate to verify the appropriateness of the noise control measures after construction or installation is complete. The development then would be released for occupancy. Some provinces require occupancy permits to be issued.

5.1.2 Controlling New Sources of Noise

Sources such as airports and railways are federal responsibilities. Federal-provincial consultation in such cases usually is encouraged to achieve an adequate degree of environmental protection.

Provincial responsibilities cover all other areas (e.g., environmental compatibility of sensitive land uses and transportation, utility and industrial facilities). Proper planning and control is required to prevent potential land use conflicts.

The procedures to deal with new potential sources of noise may be similar to those described for new receivers in Section 5.1.1. The process involves preparing initial comments, investigating and approving noise control measures at the source (as discussed in Section 7), incorporating noise control measures into plans, agreements and permit applications, and inspecting constructed noise control measures.

5.1.2.1 Initial Comments

When evaluating a proposed new source of noise/vibration, two problems may be encountered. The first may be the lack of information on the type and nature of the source(s) of noise to be developed (e.g., zoning a parcel of industrial land near existing residential dwellings). In many cases, the type of industry likely to build on this property would not be known.

The second problem may be the lack of simple and accurate noise prediction models on many sources of noise. The multiplicity of different types of equipment and machinery, as well as the extreme variability in the final design and installation of such sources, make it nearly impossible to provide one simple noise prediction model to enable planners and reviewers to assess the total significance of the noise source(s) impact.

Initial comments normally are prepared by the authority with the overall responsibility for approving new proposals for establishing new potential sources of noise. Table 5.4 illustrates the three primary groups of noise sources and their predictability.

Health Canada | Santé Canada
Health Protection Branch | Direction générale de la protection de la santé

Office of Environmental Health Assessment
Jeanne-Mance Building, 1904C
Tunney's Pasture
Ottawa, ON K1A 0K9

July 24, 2000

Ms Solange Desautels
Ministry of the Environment
Environmental Assessment and
Approvals Branch
2 St. Clair Avenue West, 14th Floor
Toronto, Ontario
M4V 1L5

Subject: Highway 400-404 Link & Highway 404 Extension

Dear Ms Desautels:

Thank you for providing Health Canada with the EA Report for the Highway 400-404 Extension Link and the Highway 404 Extension Main Report which was received on July 4, 2000. By way of this letter, we wish to provide you with information on Health Canada's potential role and participation in the environmental assessment under the *Canadian Environmental Assessment Act* (CEAA).

We have reviewed the information submitted and have determined that Health Canada would not require an EA under the CEAA and is therefore not a Responsible Authority in accordance with the Act.

The Department, however, has scientific health information and knowledge in a number of areas which could possibly, but not necessarily, be of assistance in the environmental assessment being conducted. Examples of the areas of expertise available include:

- environmental and occupational toxicology;
- health promotion in the workplace;
- epidemiology;
- community health (First Nations);
- food chemical safety;
- radiation protection (ionizing and non-ionizing, including impacts of noise on human health);
- toxicology (multimedia - air, water, soil, food);
- air, water, food and soil quality guidelines/standards;
- drinking water and sewage management; and
- health risk assessment and risk management.

.../2

This list should not be considered an exhaustive one, but rather a sample of Health Canada's areas of expertise.

Health Canada has special interests in projects which have the potential to impact on the use of lands and resources for traditional purposes by aboriginal persons, and on public and occupational health and safety in general. These issues are of particular interest to this Department as Health Canada is primarily responsible for the health of First Nation peoples living on reserve, federal employees and more generally for the health of all Canadians.

Should any potential health concerns be identified with respect to the aforementioned project, and Health Canada is requested by a Responsible Authority under the CEAA, we would be pleased to provide relevant information and knowledge at our disposal, pursuant to subsection 12(3) of the CEAA. The extent of Health Canada's involvement in this environmental assessment will largely depend on whether the project impacts on federal lands, whether there are First Nation concerns associated with this project or whether the Department receives a CEAA subsection 12(3) request for specialist or expert information or knowledge relating to a specific health issue. Our participation as a Federal Authority for this assessment hinges on the scope of the assessment and a request for advice from a Responsible Authority.

Should you have any further questions, please feel free to contact me at (613) 952-8712.

Sincerely yours,

<Original signed by>

Maria Ooi
EA Coordinator - Central Region

Historic Sites and Monuments Board of Canada
Commission des lieux et monuments historiques du Canada
OTTAWA (Canada) K1A 0M5

December 4, 1998

Mr. Willard Peterson
Canadian Heritage Landscape
20877 Yonge Street
R.R. # 1
Newmarket, Ontario
L3Y 4V8

Dear Sir:

I am writing to you at this time to formally advise you of the outcome of the Historic Sites and Monuments Board of Canada's deliberations at its July 1998 meeting regarding the possible national historic significance of Lower Holland Landing in Ontario.

The Honourable Andy Mitchell, Secretary of State (Parks), Canadian Heritage, recently approved the recommendations arising from that meeting and following is the relevant excerpt from the Board's Minutes:

> "The Lower Holland Landing was first brought to the Board's attention at its November 1997 meeting. The Board deferred its recommendation on the possible national historic significance of this site pending additional archaeological research, and the outcome of Parks Canada's discussions with the Georgina Island First Nation and the Ontario Heritage Foundation.
>
> Parks Canada reported on the results of its consultations and informed the Board that any land use issues related to this site are under the purview of the Province of Ontario. The Province is satisfied with the environmental impact assessment for the proposed construction of a highway bypass in proximity to the Holland Landing and believes that no further archaeological research is warranted at this time.
>
> In the absence of additional archaeological research, the Board concluded that it could not make an informed decision on the possible national historic significance of this site."

../2

I regret that our response could not have been more favourable. Thank you for bringing the Lower Holland Landing to the Board's attention. You will find enclosed, for your information and records, a copy of the research paper which was prepared on this subject. Given their interest in this matter, I have also forwarded copies of this letter to Mr. Tim Sharp, Review Coordinator, Environmental Assessment Branch, Ministry of the Environment; Mr. Rob Porte, Georgina Island Council; H. Hill, of the East Gwillimbury Historical Society; Mr. Paul Litt of the Ontario Heritage Foundation; and Mr. Gary Warrick, Regional Archaeologist for the Ministry of Transport.

With good wishes.

Yours sincerely,

Original Signed by
Original signé par
MICHEL AUDY

Michel Audy
Executive Secretary

Enclosure

c.c. B. Villeneuve, FUS, Central Ontario
c.c. G. Cloutier, Service Centre (Cornwall)
c.c. J. O'Brien, DG-East
c.c. R. Alway, HSMBC
c.c. J. Monet, HSMBC
c.c. C. Cameron, NHS
c.c. David Ladell
Canadian Heritage Landscapes
20866 Yonge Street
RR # 1
Newmarket, Ontario
L3Y 4V8
c.c. Paul Litt
Historian, Plaque Programs
Ontario Heritage Foundation
10 Adelaide Street East
Toronto, Ontario
M5C 1J3

c.c. Mr. Gary Warrick
Regional Archaeologist
Planning and Environmental Office
Central Region
3rd Floor, Atrium Tower
1201 Wilson Avenue
Downsview, Ontario
M3M 1J8

c.c. H. Hill
President
East Gwillimbury Historical Society
P.O. Box 381
Sharon, Ontario
L0G 1V0

c.c. Mr. Rob Porte
Cultural Portfolio
Georgina Island Council
Chippewas of Georgina Island
R.R. # 2
Sutton West, Ontario
L0E 1R0

c.c. Mr. Tim Sharp
Review Coordinator
Environmental Assessment Branch
Ministry of the Environment
250 Davisville Avenue
5th Floor
Toronto, Ontario
M4S 1H2

H:\LETTERS\NO-HOLL.WPD

Chippewas of Georgina Island
R.R. #2, SUTTON WEST, ONTARIO
L0E 1R0

Phone: (705) 437-1337
Fax: (705) 437-4597

July 8, 1998

To Whom It May Concern:

It has come to our attention that one of the proposed "Bradford by-pass" routes goes through a historically significant Aboriginal site on the Holland River. While we are not opposed to the connection of the 404 to the 400, it is a major concern to us that this site may be buried under a Freeway. This site was critical and instrumental to the formation of Canada and one of the contributing factors which brought our people to take up a permanent settlement on Lake Simcoe's south shore. These grounds have had only preliminary excavation but appear to have been used for over one thousand years. The value of this place cannot be underestimated.

It is not our intention to impede progress, however we do not want to see a significant piece of history such as this lost forever. Not only is the camp a home of our forefathers, but given the Nomadic nature of the times, and the length of time this site was used, there will undoubtedly be burial grounds in this area.

It is obvious that there are other routes, which can be used to connect these major highways, and we hope that another will be selected.

<Original signed by>

Rob Porte
Cultural Portfolio
Georgina Island Council

Chippewas of Georgina Island
R.R. #2, SUTTON WEST, ONTARIO
L0E 1R0

Phone: (705) 437-1337
Fax: (705) 437-4597

December 14, 1998

To Whom It may concern:

To further my letter of July 8/98, regarding the Bradford Bypass issue.

Georgina Island First Nation is opposed to any construction or development including road construction and archeological digs at the site known as Lower Holland Landing. We will continue to be opposed to anything that disturbs or destroys this ancient place. My reason not to call for a designation by Historical Sites Monuments Board is that these people may dig-up this site and open it up like a tourist attraction. This place must remain undisturbed. I assure you we will be opposed to this as long as it is considered an option.

<Original signed by>

Rob Porte
Chippewas of Georgina Island

P.S. Ravenshoe Road in Keswick would be cost effective and cross less marsh land.

Environment Canada | Environnement Canada

Environmental Policy, Planning & Assessment Division
Great Lakes & Corporate Affairs Office
Environment Canada, Ontario Region
P.O. Box 5050, 867 Lakeshore Rd.
Burlington, Ontario L7R 4A6

File No.: 8-93-30

16 December 1998

Tim Sharp
Review Coordinator
Environmental Assessment Branch
Ministry of Environment
250 Davisville Ave.
Toronto, Ontario M4S 1H2

Dear Mr. Sharp,

Re: Highway 400 -Future Highway 404 Extension Link Environmental Assessment Report
EA File No. TC-CE-02

Thank you for your letter of 15 October 1998 providing Environment Canada - Ontario Region's (DOE-OR's) Environmental Assessment Coordinating Committee (EACC) with an opportunity to participate in the review of the provincial Environmental Assessment Report for the above mentioned proposal.

Please be advised that DOE has not undertaken a detailed review of the EA reports at this time, thus we do not have any specific comments on these reports. We would, however, like to point out that the proponent must observe several regulatory authorities administered by DOE during the construction and operation of this project, namely: section 36(3) of the *Fisheries Act* (which prohibits the deposit of potentially deleterious substances into waters frequented by fish); and provisions under the *Migratory Birds Convention Act* (which prohibit the taking or killing of migratory birds and the destruction of their nests and eggs). We do note that the proposed highway corridor will cross several waterbodies, wetlands, woodlots and other wildlife habitats. Proposed construction and operation activities associated with this project which may potentially affect the issues identified above must therefore be addressed by the proponent.

We expect that components of this project may trigger federal environmental assessment requirements under the *Canadian Environmental Assessment Act* (CEAA) due to potential regulatory approvals of other federal departments. Preliminary discussions have been held amongst federal agencies as to the possible scope and level of that assessment, but we understand that further clarification will be required by those departments before the assessment can be triggered. Environment Canada does not expect to have any obligations as a Responsible Authority per section 5 of CEAA that would trigger an environmental assessment itself. However, DOE expects to participate in any federal environmental assessment which will be undertaken for this project in the future as triggered by other departments, in context of our role as an expert Federal Authority (per section 12(3) of CEAA). At that time we will address specific issues related to our mandate.

If you wish to discuss any of these comments further, do not hesitate to contact me at (905) 336-4953. We would also be willing to meet with relevant provincial and other federal agencies to discuss federal EA requirements for this project if desired.

Yours sincerely,
<Original signed by>

Rob Dobos
Secretariat, Environmental Assessment Coordinating Committee
Environment Canada -Ontario Region

cc: B. Bien, EACC
D. Ross, FHM/DFO
B. Aird, CTA
J. Woodward, CCG/DFO
P. Reynolds, MTO

Canada

Office des transports du Canada
Canadian Transportation Agency

NOV

Tim Sharp
Review Co-ordinator
Environmental Assessment Branch
Ministry of Environment 250 Davisville Avenue
Toronto, Ont
M4S 1H2

Dear Mr. Sharp

Re: Highway 400 - Future 404 Extension Link (Bradford Bypass)

This is in response to your letter of October 15, 1998 to Mr. Bill Aird of my staff regarding the above noted project.

As a result of the proclamation of the *Canada Transportation Act* (CTA) effective July 1, 1996, the National Transportation Agency has continued as the Canadian Transportation Agency (Agency). The CTA has replaced both the *Railway Act* and the *National Transportation Act, 1987.*

The following describes the general types of works and circumstances that require Agency involvement and thus would trigger an environmental assessment (EA) under the *Canadian Environmental Assessment Act* (CEAA). You may find this information useful in determining whether Agency would likely be involved in future projects.

- **Construction of Railway Lines:**

  Section 98 of the CTA provides that a railway company shall not construct a railway line without the approval of the Agency. The Agency may, on application of the railway company, grant the approval if it considers that the location of the railway is reasonable, taking into consideration the requirements for railway operations and services and the interests of localities that will be affected by the line. The trigger for an EA under CEAA is subsection 98(2) of the CTA that replaces 112(3), 115(1) & (3), 123(1) & (4) and 127(1) of the *Railway Act.*
  Note: Agency approval is not required for construction of a railway line within the right-of-way of an existing railway line or within 100 metres of the centre line of an existing railway for a distance of no more than 3 kilometres.

. . /2

- **Road and Utility Crossings**

  Under section 101(1) of the CTA, the parties may negotiate agreements or amendments to agreements relating to the construction, maintenance or apportionment of costs of a road or utility crossing. They may file such agreements with the Agency. When such agreements or amendments are filed with the Agency, they become orders of the Agency in accordance with subsection 101(2) of the CTA. In such cases, the Agency acts as a registrar and no Agency approvals are involved. Therefore, CEAA is not triggered and no EA is required.

  If a person is unsuccessful in negotiating an agreement or amendment, the Agency may, on application under section 101(3) of the CTA, authorize the construction of a suitable road crossing, utility crossing, or related work. The Agency may also specify who will maintain the crossing and determine the apportionment of the costs of constructing and maintaining the crossing. Here the trigger under CEAA would be either subsection 101(3) or (4) of the CTA that have replaced subsections 201(2), 202(1), 212(1), 215(1) and 326(1) of the *Railway Act*.

- **Private Crossings**

  If a railway company and the owner of the adjacent land do not agree on the construction of a crossing, the Agency, on application of the owner, may order the company to construct a suitable crossing that the Agency considers necessary for the owner's enjoyment of the land. The trigger under CEAA is subsection 103(1) of the CTA that has replaced section 216 of the *Railway Act*.

The descriptions above do not cover all Agency approvals for rail infrastructure projects. But, they do provide you with an overview of the types of approvals we now address. I hope that this information will be of assistance to you when making future project referrals.

I note from the project documentation, which your provided, that the proposed highway project will cross the Canadian National Railway (Newmarket subdivision). If the Ministry of Transportation of Ontario (MTO) and the railway reach an agreement for the grade separations, it can be filed with the Agency.

. . /3

In that case, we do not require an environmental assessment. If however an agreement is not reached, then MTO may apply to the Agency under ss. 101(3) of the CTA for authority to build the grade separation. In such a case, we require an environmental assessment prepared in accordance with CEAA.

We will require written confirmation of the agreement between the railway and MTO for the crossings before we can state that we will not be involved in this screening. In the past we have found that Ontario class environmental assessments do not contain sufficient detail for us to screen a project. For your information, I am enclosing a copy of the Agency's environmental assessment guide.

If you have any further questions regarding the Agency's environmental assessment process please contact Mr. Bill Aird, the Agency's Senior Environmental Officer at the address or the numbers listed below.

Yours Sincerely

<Original signed by>

for Ian C.W. Spear, Director
Rail Infrastructure Directorate
Rail & Marine Branch

Encl.

Bill Aird
Rail Infrastructure Directorate
Canadian Transportation Agency
Ottawa, Ont
K1A 0N9
phone: (819) 953-9924
fax: (819) 953-5564
E-mail: bill.aird@cta-otc.x400.gc.ca

Fisheries and Oceans
Bayfield Institute
867 Lakeshore Road
P.O. Box 5050
Burlington, Ontario
L7R 4A6

Pêches et Océans
Institut Bayfield
867, chemin Lakeshore
C.P. Box 5050
Burlington (Ontario)
L7R 4A6

Your file / Votre référence

Our file / Notre référence
525-1131
525-3535

October 3, 2000

Ontario Ministry of the Environment
Environmental Assessment and Approvals Branch
2 St. Clair Avenue West, Floor 12A
Toronto, Ontario M4V 1L5

Dear Ms Solange Desautels:

SUBJECT: **Highway 404 Extension and Highway 400-404 CEAA Environmental Assessment**

Thank you for meeting on September 7, 2000 to discuss the Highway 400-404 (Bradford Bypass) and Highway 404 extension projects.

As you are aware, Fisheries and Oceans Canada, Fish Habitat Management (DFO-FHM) is responsible for the administration of the habitat protection provisions of the *Fisheries Act*. The Fisheries Protocol Agreement (1993), which is supported by DFO-FHM and signed between the Ontario Ministry of Natural Resources (MNR) and Ontario Ministry of Transportation (MTO), clearly defines the roles and responsibilities of the signatory agencies in the review of MTO highway projects—MNR is responsible for the review of projects in terms of impacts to fish and fish habitat. As soon as it is determined that there is potential for harmful alteration, disruption or destruction of fish habitat it is MNR's responsibility to contact DFO-FHM to initiate the authorization process.

It is my understanding that MNR has been extensively involved in the routing studies associated with Highways 400-404 and 404 extension to date. As indicated in their October 4, 1999 letter, MNR is satisfied with the route chosen through the routing study. DFO is also satisfied the routing study to date is sensitive to fisheries resources. However, DFO-FHM may require and reserves the right to require adjustments be made in the conceptual level design and detailed design stages to protect fish and fish habitat on a site specific basis.

Canada

Should you have any questions or comments, please call me at (705) 750-4008.

<Original signed by>

Dan Thompson
Fish Habitat Biologist
Fish Habitat Management-Ontario Area

copy Ian Buchanan, MNR Aurora
Pat Reynolds, MTO
Louise Knox, CEA Agency
Maria Ooi, Health Canada
Rob Dobos, DOE
Rick McLean, DFO-CCG

Fisheries and Oceans
Pêches et Océans

Bayfield Institute
867 Lakeshore Road
P.O. Box 5050
Burlington, Ontario
L7R 4A6

Institut Bayfield
867, chemin Lakeshore
C.P. Box 5050
Burlington (Ontario)
L7R 4A6

Your file *Votre référence*
TR-CE-02
Our file *Notre référence*
525-3535

December 16, 1998.

Mr. Tim Sharp
Review Coordinator
Environmental Assessment Branch
Ministry of the Environment
250 Davisville Avenue
Toronto, Ontario
M4S 1H2

Attention: Mr. Sharp

RE: **Environmental Assessment for the Proposed Highway 404 Extension from Davis Drive (York Regional Rd. 31) Northerly to Highway 12**

Dear Mr. Sharp:

This will acknowledge that the department of Fisheries and Oceans –Fish Habitat Management (DFO-FHM)-Ontario Area has received the information forwarded by yourself to this office.

The Environmental Assessment suggests that the Ministry of Natural Resources (OMNR) has participated in the identification of broad fish habitat constraint areas when developing Highway 404 Extension route alternatives. While OMNR administers the sections of the *Fisheries Act* regarding habitat relative to provincial highway planning and highway development, only the federal Minister of Fisheries and Oceans, or Department of Fisheries and Oceans –Fish Habitat Management staff on behalf of the Minister, can authorize the harmful alteration, disruption or destruction of fisheries habitat.

From our initial review it appears that your project may result in a potential harmful alteration, disruption or destruction of fish habitat. This is prohibited unless authorized by the Minister of Fisheries and Oceans pursuant to Section 35(2) of the *Fisheries Act*. In keeping with the *Department of Fisheries and Oceans' Policy for the Management of Fish Habitat* (DFO 1986), Authorizations are issued on the condition that the proponent implements measures that compensate for the habitat harmfully altered, disrupted or destroyed, and follows the guiding principle of no net loss in the productive

capacity of fish habitat. Furthermore, authorizations are not issued in cases where adequate compensation is not possible or the loss of the given amount of habitat type is considered unacceptable. Information presented in the EA relative to identification of fish habitat appears on occasion to express views of the proponents' environmental consultant. The views of the consultant are not necessarily those of OMNR and/or DFO-FHM.

Additional sections of the *Fisheries Act* may apply. For example: Section 22(1) requires that sufficient flow of water at an obstruction must be provided for the safe and unimpeded descent of fish, and, Section 22(3) requires that a sufficient flow of water must be provided at all times below an obstruction for the safety of fish and the flooding of spawning grounds. The direct and indirect impacts to fish and fish habitat must be considered in determining whether a harmful alteration, disruption or destruction of fish habitat will occur. Design concepts for the highway that address seasonally inundated areas for fish on and off the highway right of way would be of importance in determining whether a harmful alteration, disruption or destruction of fisheries habitat will or will not occur at various locations along the length of the highway.

As detailed design of a highway influences decisions relating to impact issues of mitigation and compensation the amount of information presented is presently insufficient for DFO to provide conclusive comments at this time. DFO-FHM will decline from initial comments on specifics of the project until OMNR has had an opportunity to provide the necessary comments of the EA as presented, to DFO-FHM. Structural design has definite implications to the impacts on fish and fish habitat and a more detailed review by DFO-FHM would occur during any design phase of the highway provided it is predetermined that the provincial Environmental Assessment meets the process requirements of the *Canadian Environmental Assessment Act (CEAA)*. Decisions to authorize a harmful alteration, disruption or destruction of fish habitat under Section 35(2) of the *Fisheries Act* trigger *CEAA* .

The EA discusses the development of route planning alternatives using a large number of social and natural environmental and engineering factors at a broad level of detail over a broad area. Constraints are considered and some factors appear to be more restrictive than others. It is recognized that in determining route planning alternatives at the provincial level the study area for fish and fish habitat is generally broad, and may vary depending upon the complexities of the resource and the interpreted significance of sensitivity relative to the local fisheries resource. To date the Department of Fisheries and Oceans has not participated in the route selection through reviews of biological data supporting route alternative decisions. As areas of interest of various federal departments may be expressed in the review of the EA, a coordinated federal review to address the requirements of CEAA may be required. The Department of Fisheries and Oceans will provide more detailed comments on the proposed undertaking on receiving comments from OMNR and after consultation with all the affected

federal agencies.

Should you have any questions or comments, please contact me at (905) 336-6235 or FAX (905) 336-4819.

<Original signed by>

David J. Ross
Fish Habitat Biologist
Fisheries and Habitat Management-Ontario Area

cc. John Woodward, Department of Fisheries and Oceans-Canadian Coast Guard
Rob Dobos, Environment Canada
Bill Aird, Canadian Transport Agency
Sheryl Smith, Canadian Parks Service
Ian Buchanan, Ontario Ministry of Natural Resources (Aurora District)
Graham Findlay, Ontario Ministry of Natural resources (Midhurst District)

Fisheries and Oceans Canada
Pêches et Océans Canada

Coast Guard
Garde côtière

Central & Arctic Region
Région du Centre et de l'Arctique

201 N. Front Street, Suite 703
Sarnia, Ontario
N7T 8B1

Your file Votre référence

Our file Notre référence
8200-97-6418, 95-6021

September 13, 2000

Ontario Ministry of Environment
2 St Clair Avenue West, 14th Floor
Toronto, ON M4V 1L5

Attention: Solange Desautels

Dear Mrs. Desautels:

Re: Application for approval, Proposed 404 Extension and Bradford Bypass, Town of East Gwillimbury and Township of Georgina, County of York, Province of Ontario.

As per your request during our September 7, 2000 meeting at the CEA Agency office in Toronto, I have performed a thorough review of the above noted files. I offer the following as points of clarification on recommended navigational clearances, possible affected groups and the NWPA review and approval process. I believe some of this information was forwarded to you in February 1999.

Coast Guard followed up a meeting with DFO - Fish Habitat with a review of the file and preferred route, an on-site inspection via helicopter and a notice to MTO of requirement to apply under NWPA for 5 crossings. As noted in previous correspondence, the Pefferlaw Brook, Black River, Maskinonge River, Holland River West Branch and Holland River East Branch are all considered navigable and are all subject to NWPA approval. I will speak to each separately based on the Bradford "Recommended Plan" and the 404 Extension "Technically Preferred Route".

Pefferlaw Brook at Highway 48, Pefferlaw (44°19' 47"N x 79°13' 01"W) - As per correspondence from Cole Sherman and Associates dated June 27, 1997 the Ministry agrees to meet or exceed existing navigational clearances at the Highway 48 Pefferlaw bridge. These were measured at 15m horizontal x 3.6 - 4.6 m vertical above Normal Summer Water Levels. It is also required that this navigational channel be situated over the centre and deepest section of the river.

Black River at Catering Road Sutton (44°17' 29"N x 79°21' 30" W) - Pending further assessment of this site, the minimum recommended clearance of 6m horizontal x 2m vertical above Normal Summer Water Levels should be adequate. You will be made aware should further assessment determine the need for greater clearances.

Maskinonge River at Glenwood Ave, Keswick (44°13' 36"N x 79°25' 56" W) - Further assessment will be required to verify if the Maskinonge crossing(s) are navigable (Maskinonge and north tributary). If either or both are deemed navigable, they will likely be subject to the minimum clearance of 6m horizontal x 2m vertical above Normal Summer Water Levels.

Holland River East Branch at Queensville Sdrd, Holland Landing (44°08' 12"N x 79°30' 46" W) - Consultation with marina operators in 1995 determined that a minimum navigable clearance of 19.8m horizontal x 6.9m vertical above Normal Summer Water Levels was adequate. Coast Guard concurred with these clearances and advised several marina operators of this decision. At that time, the tallest vessel used in the area was 18' above water level. In light of the passage of time since the last consultation, further consultation with marina owners should be initiated to determine if the above reflects the current situation.

Holland River West Branch at 8th Con, Bradford (44°07' 58"N x 79°32' 46" W) - This site was included in the above mentioned 1995 consultation with a recommended minimum navigable clearance of 19.8m horizontal x 6.9m vertical above Normal Summer Water Levels. It too would be subject to current consultation.

As far as major stakeholders, I believe your file will show 6 marina operators in the Holland River area. My understanding is that all these marinas are still in operation however may or may not be under new management. There are several marina operators in Keswick and Pefferlaw who may be affected by the Maskinonge and Pefferlaw crossings. I believe the Maskinonge crossing is significantly upstream to reduce impact, however the Pefferlaw crossing may pose concern to operators in the area. I also suggest private dock owners on all 5 waterways be consulted/notified before designs are finalized.

Each of the 5 crossings will be reviewed under Section 5 (1) of the NWPA. This review process, as outlined in the application guide mailed to the Ministry August 3, 2000, will require at minimum:

- site inspection of the work site(s) by CCG-NWPA officers,
- deposition of final plans in the local lands registry office for 30 days,
- advertising deposition in 2 local newspapers as well as the Canada Gazette,
- addressing legitimate navigation concerns raised during the consultation/noticeprocess,
- completion of a Canadian Environmental Assessment (CEAA) screening,
- receiving formal approval and
- final inspection of the completed work by CCG-NWPA officers.

In addition to navigational clearances, one or more conditions may be placed on the approval and could include; limitations on when construction can commence, signage and methods required during the construction phase, conditions for temporary works, limitations on fish habitat compensation, etc.

I trust the foregoing will adequately address any questions you may have pertaining to formal approval for the above project under the NWPA. Should you have any further questions concerning the above, please contact the undersigned at (519) 383-1866.

Yours truly,

<Original signed by>

Barry Putt
A/NWP Inspections Officer
Navigable Waters Protection

BP/dmp

cc Ross, David - FHM
Reynolds, Patrick - Ontario MTO

Fisheries and Oceans Canada
Pêches et Océans Canada

Coast Guard
Garde côtière

Central & Arctic Region
Région du Centre et de l'Arctique

201 N. Front Street, Suite 703
Sarnia, Ontario
N7T 8B1

Your file Votre référence

Our file Notre référence
8200-95-6021

August 3, 2000

Ontario Ministry of Transportation
3RD Floor, Building 'D'
1201 Wilson Avenue
Downsview, ON M3M 1J8

Attention: Audrey Steele

Dear Sir:

Re: Application for approval under the Navigable Waters Protection Act, Proposed Brantford Bypass, Township of King, County of York, Province of Ontario.

In response to your letter to Ms. Suzanne Shea, received by this office on June 23, 2000, a thorough review was completed of the proposed route and waterway crossings for the Bradford Bypass. Discussions were also held with Mr. David Ross of the Department of Fisheries and Oceans concerning review process and the screening required under CEAA.

The review noted above determined that both the East and West Holland Rivers are deemed navigable and will require approval under the Navigable Waters Protection Act before work can commence. For your convenience, I have enclosed a copy of the NWPA Application Guide for your use in completing applications for both crossings once determined.

As Mr. Ross may have already advised you, the CEAA process cannot be initiated unless a trigger has been identified. For your information, formal approval under the NWPA is a trigger under CEAA.

As requested, the file will remain open until such time as we have received an application or have been advised that the project is cancelled or postponed indefinitely. Should you have any further questions concerning the above, please contact the undersigned at (519) 383-1866.

Yours truly,

<Original signed by>

Barry Putt
A/NWP Inspections Officer
Navigable Waters Protection

BP/dmp

cc Ross, David - FHM

Canada

FAX TRANSMISSION

COUNTY OF SIMCOE
Planning Department - Administration Centre
Midhurst, Ontario
Telephone - (705) 726-9300 - Extension 255
Fax: (705) 727-4276

To: Ms. Solange Desautels
Date: April 9, 1999
Fax #: 416 314-7271
Pages:
From: Manuela Kerr
Subject: Bradford Bypass

COMMENTS:

Dear Ms. Desautels:

As per discussions with Bev Dempster, please find attached the documents in question. My sincere apologies for the delay in getting this response to you. This was my initial attempt with Council directives and I presumed that Mr. Jonkman would contact the Ministry of Environment.

I sincerely hope that this has not caused a great deal of inconvenience. If you should have further questions or concerns, please do not hesitate to contact me.

Thank you!

Attachments

March 8, 1999

COPY

Honourable Tony Clement
Ministry of Transportation
3rd Floor
Ferguson Block
77 Wellesley Street West
Toronto, Ontario
M7A 1Z8

Dear Mr. Clement:

County Council at its meeting on February 18, 1999, adopted without amendment Report No. 99-015 of the Planning Services Committee, recommending that the environmental measures proposed to mitigate the impact of the proposed Bradford Bypass should be applied diligently in order to protect environmental features and functions.

A copy of the report is attached for your information. If your require further information, please do not hesitate to contact me.

Yours truly,

ORIGINAL SIGNED

Manuela Kerr
Secretary

Enclosure (1)

County of Simcoe

PLANNING SERVICES COMMITTEE
Report No. 99-015

For consideration by County Council
on February 18, 1999

RECOMMENDATIONS:

1. THAT the Ministry of Transportation be advised that the environmental measures proposed to mitigate the impact of the proposed Bradford Bypass should be applied diligently in order to protect environmental features and functions; and

2. THAT Council support the comments of the Town of Bradford West Gwillimbury as contained in the Town's letter of December 16, 1998.

BACKGROUND:

The undertaking for which approvals are being sought is a 16.2 km rural 4-lane controlled access freeway connecting Highway 400 in Bradford West Gwillimbury to the proposed extension of Highway 404 in East Gwillimbury (see Schedule 1). It is located north of, and parallel to, County Road 88 in Bradford West Gwillimbury.

The assessment examines criteria in five broad "environmental factors": transportation, natural environment, social environment, economic environment, and cultural environment. Each of those factors and sub categories is examined in terms of the particular issues, potential net environmental effect, and proposed mitigation measures (see Schedule 1).

The freeway link is proposed because of increasing commuter, recreational, and commercial traffic in an area where local and regional arterials are often operating at a very low level of service due to congestion, and where because of geographic factors the arterials do not provide through routes. Substantial residential and business growth is expected in settlements near the bypass. The freeway would provide much improved through traffic flow and would alleviate congestion on existing arterial roadways in the area.

The environmental issues include potential effects on wetlands and wildlife habitat including that of two "vulnerable" species. About 190 ha of high capability mineral

soils will be removed from potential agricultural use, as well as 154 ha from current agricultural use. The bypass would cross the southern tip of the Innisfil Till Plain 2 unit of the County's Greenlands Designation which has several functions and attributes important to the County Greenlands System (Schedule 2). A major mitigating strategy will be raising the roadway on stilts in the wetland and wildlife habitat areas along the Holland River.

The Town of Bradford West Gwillimbury has submitted comments related particularly to interchange location and design. Its objective is to achieve appropriate land use strategies in the settlement area of Bradford. The Town's comments are attached as Schedule 3. Staff believes the Town's proposals would result in a better linkage between the freeway and local land use.

MTO is seeking input from the public and agencies including the County regarding the Environmental Assessment.

FINANCIAL ANALYSIS:

There are no direct financial implications for the County from this report.

SCHEDULES:

The following schedules are attached hereto and form part of this report:

Schedule 1 - Bradford Bypass Environmental Assessment (Excerpts)
Schedule 2 - County Greenlands - Innisfil Till Plain 2
Schedule 3 - Report of the Town of Bradford West Gwillimbury

RESPECTFULLY SUBMITTED:

Chairman Tim McNabb, Vice-Chairman Robert Klug, Frank Jonkman, Patricia O'Driscoll, William Patterson and Warden Helen Coutts

RECEIVED

York Region

TRANSPORTATION AND WORKS DEPARTMENT
17250 YONGE STREET, BOX 147
NEWMARKET, ONTARIO
L3Y 6Z1

TEL: (905) 895-1200
(905) 773-1200
(905) 764-6345
(705) 437-3921

Visit us at our web site on the Internet: http://www.region.york.on.ca
FAX NO. (905) 836-1590

FACSIMILE TRANSMITTAL

Original to be Mailed: Yes ☐

No ☑

DATE: Feb. 9./99 **FAX NO:** 1-416-314-7271

TO: MOE **ATTENTION:** Mr ~~Weatherby~~

FROM: John Barnes **FILE NO.:**

SUBJECT: Bradford Bypass.

Council has not to date been too concerned with the bypass. They did receive a presentation + report on it in 1996. Since then they've been preoccupied with getting the 404 project advanced.

I hope some of what I've attached is helpful.

NUMBER OF PAGES SENT 12 **(INCLUDING THIS COVER SHEET)**

TRANSMITTED BY: JB

PLEASE ADVISE OF ANY PROBLEMS IN RECEIVING THIS TRANSMISSION

TRANSPORTATION PLANNING AND APPROVALS BRANCH

THE R IONAL MUNICIPALITY OF YOF

17 17

TRANSPORTATION AND WORKS COMMITTEE
Wednesday, October 16, 1996

The Transportation and Works Committee met at 9:41 a.m. in Committee Room 'A', 17250 Yonge Street, Newmarket, Ontario.

Present: Regional Councillor D. Wheeler, Chair
Mayors M. Black and J. Cole
Regional Councillors M. DiBiase (9:50 a.m.), and J. Frustaglio

Staff Present: Messrs. A. Wells, K. Schipper, J. Livey, P. May, B. Harrison, B. MacGregor, J. Culshaw, L. MacMillan, Ms. S. Cartwright, Ms. E. Wilson, and Ms. D. Sue

331. Confirmation of Minutes

Mayor J. Cole moved that the Minutes of the Regular Meeting of October 2, 1996 be confirmed and adopted in the form supplied to members, which was carried.

Presentations

332. Mr. Steve Jacobs, P. Eng., Senior Project Engineer, Planning Office, Central Region, Ministry of Transportation, together with Mr. Steve Schijns, P. Eng., McCormick Rankin, Consulting Engineers, gave a presentation on the Highway 400 - Highway 404 Extension Link (Bradford By-pass) Route Location and Environmental Assessment Study. An Information Package was circulated and submitted for the record. Mr. Schijns provided an overview of the data being presented at the final round of Public Consultation Sessions. He stated the analysis of all the alternative routes for each segment was carried out based on a defined set of 16 evaluation criteria within broad environmental factors. The Technically Preferred Route will be finalized following public review and comment, at which time it will be carried forward to the Approvals stage as the Recommended Plan.

The Committee received the foregoing presentation. *(Please see Minute No. 343.)*

333. Mr. Steve Jacobs, P. Eng., Senior Project Engineer, Planning Office, Central Region, Ministry of Transportation, together with Mr. Chris Rickets of Cole, Sherman, Consultants, gave a presentation on the Route Analysis and Evaluation of the Highway 404 Extension - Davis Drive to Highway 12. Mr. Rickets stated that to address the problem associated with the deficiency in the capacity of the transportation network in northern York and Durham Regions, as well as the opportunity to allow for the protection of the Ministry of Transportation's long-term strategic goals for the movement of people and goods through northern York and Durham Regions, the following is recommended:

(a) A corridor be designated to protect for property and right-of-way for an extension of Highway 404 from the present terminus at Davis Drive to the south junction of Highways 12 and 48 along the preferred alignment;

(b) The corridor will provide for a controlled access freeway between Davis Drive and Durham Regional Road 23 (including interchanges) and a transition section between Durham Road 23 and Highway 12.

The Committee received the foregoing presentation. *(Please see Minute No. 343.)*

334. Miss Leslie Scott of McCormick Rankin, Consultants, gave a presentation on the Individual Environmental Assessment Study, Bayview Avenue, from Stouffville Road to Bloomington Road in the Town of Richmond Hill. Miss Scott gave an overview of the Study Stages, the next steps to follow and the presentation to Metropolitan Toronto and Region Conservation Authority and the final preparation and submission of the Environmental Report by December 31, 1996.

The Committee received the foregoing presentation. *(Please see Minute No. 344.)*

Communications

335. Metropolitan Clerk, The Municipality of Metropolitan Toronto, August 27, 1996, forwarding Clause No. 4 contained in Report No. 20 of the Financial Priorities Committee, entitled "Steeles Avenue East/CNR Uxbridge Grade Separation; and Modification to the Transportation Department's Revised 1996 Capital Works Program Program", adopted by the City's Council at its meeting held on August 14 and 15, 1996.

The Committee received the foregoing communication.

336. Jane Underhill, President, King City Preserve the Village, September 14, 1996, addressed to The Honourable Norman Sterling, Minister of Environment and Energy, expressing concerns on behalf of "Preserve the Village" regarding the continuous pressures from the members of the local Chamber of Commerce to hook up to the York/Durham Sewage Scheme to allow expension of their Community.

The Committee received the foregoing communication.

337. Julia Munro, M.P.P., Durham-York, September 24, 1996, supporting The Regional Municipality of York Council resolution concerning CN's rationalization of rail lines, and efforts to maintain rail service.

The Committee received the foregoing communication.

338. Harry J. Dahme, Gowling, Strathy & Henderson, Barristers & Solicitors, September 25, 1996, requesting a further six month deferral of repayment of fees for disposal of hauled sewage from Kristus Darzs Latvian Home, in light of the delay of the commencement date for construction of the necessary modifications to the wastewater system, and in light of the capital expenditures and the expenditures necessary for the purchase of additional land.

343. Environmental Assessment Studies
Highway No. 404 Extension
Bradford By-pass/Davis Drive to Hwy. No. 12

The Committee had before it a communication from the Commissioner of Transportation and Works, September 23, 1996, submitting for information a report concerning the Environmental Assessment (EA) Study for the northern extension of Highway No. 404 in three stages.

The Committee submitted for the information of Council the report of the Commissioner of Transportation and Works, and recommended that:

1. Regional Council supports the Environmental Assessment Study being undertaken by the Ministry of Transportation to date for the northern extension of Highway No. 404 and the Bradford By-pass, and the process the Ministry is undertaking;

2. Regional council requests the Minister of Environment and Energy to make an early decision as it relates to the Environmental Study for both projects;

3. Regional Council requests the Minister of Transportation to pursue the identification and purchase of the right of way for Highway No. 404 Extension and that Regional council respectfully advises the Minister that it is willing to cooperatively commence the early implementation of the Highway No. 404 Extension.

(Clause No. 1, Report No. 19)

344. Individual Environmental Assessment Study
Bayview Avenue - Richmond Hill

The Committee had before it a communication from the Commissioner of Transportation and Works, September 25, 1996, submitting for information a report updating Council on the IEA study of Bayview Avenue, from Stouffville Road to Bloomington Road, in the town of Richmond Hill.

The Committee submitted for the information of Council the report of the Commissioner of Transportation and Works.

(Clause No. 2, Report No. 19)

York Region

OFFICE OF THE REGIONAL CLERK
17250 YONGE STREET, BOX 147
NEWMARKET, ONTARIO
L3Y 6Z1

TEL: (905) 895-1231
(705) 437-1617
(905) 773-3004
(905) 731-0201
FAX: (905) 895-3031

REGIO...
TRA...

October 28, 1996

COPY

[redacted]

<Original signed by>

[redacted]

Sent to:

Clerk, Town of Newmarket
Clerk, Town of East Gwillimbury
Clerk, Town of Georgina
Minister of Transportation
Minister of Environment and Energy
M.P.P., York Mackenzie
M.P.P., Durham-York
M.P.P., York Centre
M.P.P., Markham

[redacted]

895-1231
437-1617
773-3004
731-0201
895-3031

<Original signed by>

<Original signed by>

Your attention is drawn to the following which was adopted, as amended, at the above-noted meeting:

Clause No. 1 of Report No. 19 of the Transportation and Works Committee;

The Transportation and Works Committee submits for the information of Regional Council the following report, September 23, 1996, from the Commissioner of Transportation and Works, and recommends that:

1. **Regional Council supports the Environmental Assessment Study being undertaken by the Ministry of Transportation to date for the northern extension of Highway No. 404 and the Bradford By-Pass, and the process the Ministry is undertaking.**

2. **Regional Council requests the Minister of Environment and Energy to make an early decision as it relates to the Environmental Study for both projects;**

   Regional Council requests the Minister of Transportation to pursue the identification and purchase of the right-of-way for Highway No. 404 Extension and that Regional Council respectfully advises the Minister that it is willing to cooperatively commence the early implementation of the Highway No. 404 Extension.

Recommendation

It is recommended that this report be received for information.

Regional Council at its meeting held on October 24, 1996, amended the foregoing Clause as follows:

Clause No. 1: ***With the addition of Recommendation No. 4 to read as follows:***

4. That Julia Munro, M.P.P., and Frank Klees, M.P.P., be requested to assist in establishing a meeting with Regional officials and the Minister of Environment and Energy and the Minister of Transportation to attempt to expedite the Environmental Assessment approval process.)

Office of the Regional Clerk
17250 Yonge Street, Box 147
Newmarket, Ontario
L3Y 6Z1

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REGION OF YORK
TRANS... WORKS
NOV - 8

COPY

October 28, 1996

Ms. Julia Munro
M.P.P., Durham-York
Unit 18 Falcher Boulevard
Ballantrae Plaza, P.O. Box 9, R.R. #3
Stouffville, Ontario, L4A 7X4

Dear Ms. Munro:

The Council of The Regional Municipality of York, at its meeting held on Thursday, October 24, 1996, adopted, as amended, the appended Clause No. 1 contained in Report No. 19 of the Regional Transportation and Works Committee, entitled "Environmental Assessment Studies, Highway No. 404 Extension, Bradford By-pass/Davis Drive to Highway No. 12".

Accordingly, Regional Council is requesting your assistance in establishing a meeting with [redacted]als and the Minister of Environment and Energy and the Minister of [redacted] to attempt to expedite the Environmental Assessment approval process.

<Original signed by>

[redacted]

c. Commissioner of Transportation and Works
E. King, Regional Chair

Sent to:
Clerk, Town of Newmarket
Clerk, Town of East Gwillimbury
Clerk, Town of Georgina
Minister of Transportation
Minister of Environment and Energy
M.P.P., York Mackenzie
M.P.P., Durham-York
M.P.P., York Centre
M.P.P., Markham

The Regional Municipality of York

REPORT NO. 19 OF THE REGIONAL TRANSPORTATION AND WORKS COMMITTEE

For Consideration by
The Council of The Regional Municipality of York
on October 24, 1996

1 ENVIRONMENTAL ASSESSMENT STUDIES HIGHWAY NO. 404 EXTENSION BRADFORD BY-PASS/DAVIS DRIVE TO HIGHWAY NO. 12

The Transportation and Works Committee submits for the information of Regional Council the following report, September 23, 1996, from the Commissioner of Transportation and Works, and recommends that:

1. **Regional Council supports the Environmental Assessment Study being undertaken by the Ministry of Transportation to date for the northern extension of Highway No. 404 and the Bradford By-Pass, and the process the Ministry is undertaking.**

2. **Regional Council requests the Minister of Environment and Energy to make an early decision as it relates to the Environmental Study for both projects;**

3. **Regional Council requests the Minister of Transportation to pursue the identification and purchase of the right-of-way for Highway No. 404 Extension and that Regional Council respectfully advises the Minister that it is willing to cooperatively commence the early implementation of the Highway No. 404 Extension.**

Recommendation

It is recommended that this report be received for information.

APPENDIX "A"
Report No. 19 of the Transportation and Works Committee

Background

The Ministry of Transportation began the Environmental Assessment (EA) Study for the northern extension of Highway 404 in the Spring of 1993. This study is examining routes and alignments for Highway 404 from its current terminus at Davis Drive (Y.R. 31) north and east to Highway 12 in Durham Region. Regional Council on March 9, 1995 adopted, without amendment, Clause 1 of Report No. 2 of the Regional Commissioner of Transportation which requested the Ministry of Transportation to separate out the Highway 404 extension into three stages.

The three stages recommended by Regional Council are Davis Drive to Green Lane/Herald Road, Green Lane/Herald Road to the Keswick area and from Keswick to Highway 12. The section from Davis Drive to Green Lane/Herald Road was subsequently incorporated into the York Region's Green Lane/Herald Road EA Study which was completed this summer. Attachment 1 shows the alternative routes evaluated for the Highway 404 Extension EA Study.

The Ministry of Transportation also initiated the Bradford Bypass EA Study in 1993. The Bradford Bypass is proposed to be an east-west freeway north of Queensville Sideroad and when constructed, will provide the much needed east-west high speed and high capacity connection between Highway 400 and Highway 404. Attachment 2 shows the alternative routes evaluated for the Bradford Bypass EA Study.

Both the Highway 404 Extension and the Bradford Bypass EA studies have now reached the point where the technically preferred alignment for each highway proposal has been selected and ready for public notification. The Ministry of Transportation will be publicizing the technically preferred alignments for both highway proposals prior to making presentations to the Council or Committees of various regional and local municipalities affected by both facilities. The presentation to the Transportation and Works Committee is scheduled for October 16, 1996.

It is noted that at a September 27, 1996, meeting held between Regional Councillors and the area Provincial Cabinet Ministers and Members of the Provincial Parliament, the implementation aspects of Highway 404 extension were discussed. It was agreed that regularly scheduled meetings will be held between representatives of the Region, the Town of Georgina and other affected municipalities and the Ministry of Transportation of Ontario to examine various alternative courses of action to initiate the implementation of this project.

(A copy of the attachments referred to in the foregoing has been forwarded to each Member of Council with the October 16, 1996 Transportation and Works Committee agenda and a copy thereof is also on file in the office of the Regional Clerk.

(Regional Council at its meeting on October 24, 1996, amended the foregoing Clause with the addition of Recommendation No. 4 to read as follows:

4. *That Julia Munro M.P.P. and Frank Klees M.P.P. be requested to assist in establishing a meeting with Regional officials and the Minister of Environment and Energy and the Minister of Transportation to attempt to expedite the Environmental Assessment approval process.)*

2 INDIVIDUAL ENVIRONMENTAL ASSESSMENT STUDY BAYVIEW AVENUE - RICHMOND HILL

The Transportation and Works Committee submits for the information of Council the following report, September 25, 1996, from the Commissioner of Transportation and Works:

Recommendation

It is recommended that this report be received for information.

Background

On October 28, 1993, Regional Council authorized the Region's consultants (McCormick Rankin & Associates Ltd.) to complete the preliminary design and Environmental Study Report (ESR) for the above captioned section of Bayview Avenue (Y.R. 34). This ESR was completed and filed into public record in October, 1994. Several 'bump-up' requests were received and on April 28, 1995, the Minister of Environment and Energy 'bumped up' this project to an Individual Environmental Assessment (IEA).

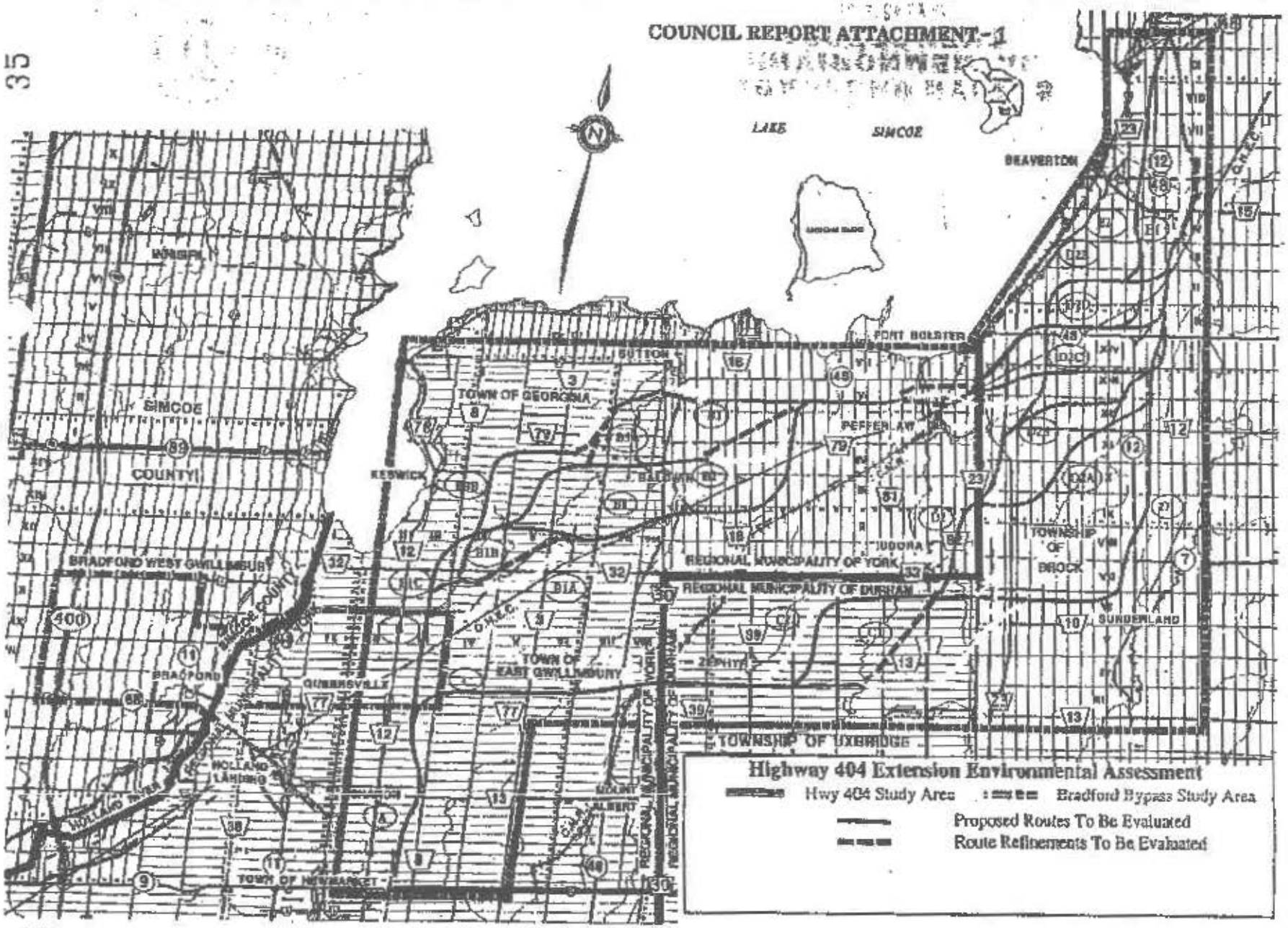
In order to complete the IEA, it was felt that a consulting firm should be engaged because of the controversial nature of this project and to provide an outside evaluation. Authorization was obtained from Regional Council to request proposals from three engineering consultants to prepare the IEA. Proposals were requested and subsequently evaluated with McCormick Rankin & Associates Ltd. being recommended as the preferred consultant to carry out the IEA.

By its adoption of Clause 3 of Report No. 3 of the Transportation and Works Committee on February 8, 1996, Regional Council authorized the Commissioner of Transportation and Works to engage consultants to carry out the IEA.

Shortly after the 'bump-up' was granted, staff and the consultants met with the 'bump-up' requesters to explain the proposed course of action for carrying out the IEA. Also, at the outset of the IEA study staff and the consultants met with interested government agencies to review the proposals contained in the IEA and to discuss the study approach, alternative alignments and potential mitigation measures.

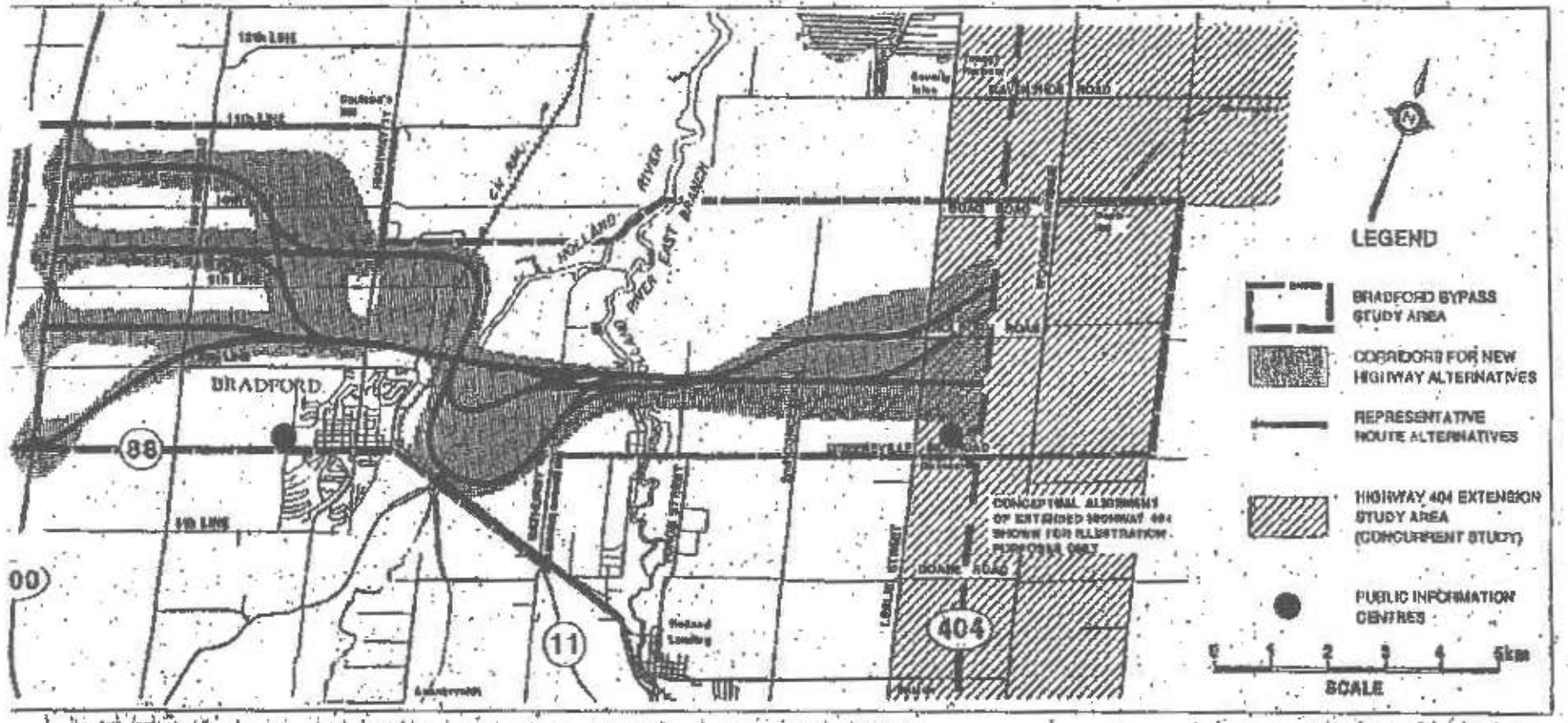
During the course of this study the consultants have carried out additional technical work, especially in the environmental area, and met with the Ministry of Natural Resources, Metro Toronto and Region Conservation Authority, Town of Richmond Hill and

COUNCIL REPORT ATTACHMENT-1



36

ALTERNATIVE CORRIDORS TO BE CONSIDERED FOR A NEW HIGHWAY



Ministry of Transportation
Ontario

BRADFORD BYPASS ENVIRONMENTAL ASSESSMENT STUDY

36

012/012

York Region

Public Health Department
22 Prospect Street,
Newmarket, Ontario
L3Y 3S9

Tel: (416) 895-4511 882-2081
722-9630 841-0077
Fax: (416) 895-3165

July 30, 1993

Ministry of Transportation
Planning and Design
Area 1, Central Region
4th Floor, Atrium Tower
1201 Wilson Avenue
Downsview, Ontario
M3M 1J8

Attention: Steve Jacobs, P.Eng
Senior Project Manager

Re: Environmental Assessment Studies for:
*Highway 404 Extension from Davis Drive to North Junction Highway 7/12
*Bradford bypass from Highway 400 to Highway 404 Extenaion

As per your request in correspondence dated 93/07/07 a review of the Environmental Assessment Proposals (EAP) have been completed. Evaluation criteria for groundwater, surface water protection and stormwater quality appear to satisfy the needs of the Public Health Department Water Quality Program.

Yours truly,

<Original signed by>

G.H. Bones, B.A.A.(EH), C.P.H.I.(C)
Supervisor, Public Health Inspection

GHB/jr
c.c. file

THE REGIONAL MUNICIPALITY OF YORK

Canadian Coast Guard / Garde côtière canadienne

Fax. 905-823-8503

P.O. Box 1000,
Prescott, Ontario.
K0E 1T0

Your file / Votre référence

Our file / Notre référence
8200-95-6021

April 7 1995

ENTERED EDP
on 12/4/96

McCormick Rankin,
2655 North Sheridan Way,
Mississauga, Ontario.
L5K 2P8

Attn: Mr. Steve Schijns, P. Eng.

Dear Mr. Steve Schijns:

Re: Proposed Bradford Bypass Bridge

Reference is made to your letter of December 21, 1994 and our subsequent conversations concerning the above.

After meeting with the large marina operators on the river and measuring the height of numerous customers vessels, I can advise that the proposed vertical clearance of 22.5' above water level 718.83' GSC (as per our letter of October 27, 1977 to Ministry of Transportation, Ontario) is still considered acceptable for this location. The horizontal clearance should be increased to a minimum of 65' from our earlier recommendations. This is due to the increased traffic and the increasing beam of the vessels.

Please keep my office informed of the design and environmental assessment as this project proceeds.

You will note that formal approval under the Navigable Waters Protection Act is required for this bridge.

If you have any questions, please call me at (613) 925-2865 ext. 255.

<Original signed by>

NWP Officer,
Canadian Coast Guard,
Prescott, Base.

cc. EMAP

Appendix C

Ministry of Transportation's Response to Public and Agency Comments

Ministry of Transportation
Ministère des Transports

Ontario

Planning & Environmental Office
Central Region
3rd Floor, Atrium Tower
1201 Wilson Avenue
Downsview, Ontario
M3M 1J8

Tel: (416) 235-5545
Fax: (416) 235-4940

August 17, 1999

Ms. Pam Hubbard
Manager
Environmental Assessment and Approvals Branch
Ministry of the Environment
5th Floor, 250 Davisville Avenue
Toronto, Ontario
M4S 1H2

Dear Ms. Hubbard:

Re: "Hwy 400 - Hwy 404 Extension Link", (Bradford Bypass), Environmental Assessment, MTO, December, 1997 - EA FILE NO.: TCCEO2

As requested the Ministry of Transportation (MTO) and its consultant, McCormick Rankin Corporation (MRC) have reviewed the submissions received by the Ministry of the Environment (MOE) during the public and agency review period that followed the MOE "Notice of Submission" for the above project.

As discussed with Ms. Solange Desautels the MOE Review Coordinator, MTO has provided its response in a table format, (attached). Each submission received was placed in one of four categories and given an individual number to assist in cross-referencing. The four groups and numbering codes are "Government Agencies", (GA); "Municipalities", (M); "Interest Groups", (IG); and "Public", (P).

If you require any clarification regarding the MTO response or any other assistance associated with the completion of the MOE Review or the Notice of the Completion of Review, please advise.

<Original signed by>

Frederick Leech
Manager
Planning and Environmental Office
MTO, Central Region

JUNE 22, 1999 MTO RESPONSES TO COMMENTS RECEIVED BY THE MOE DURING THE PUBLIC REVIEW OF THE HIGHWAY 400 - FUTURE HIGHWAY 404 EXTENSION LINK, (BRADFORD BYPASS), ENVIRONMENTAL ASSESSMENT

	Name & Address	Comments	MTO Response
GOVERNMENT AGENCIES			
GA1	Environment Canada Rob Dobos, Secretariat Great Lakes & Corporate Affairs Office Ontario Region P.O. Box 5050, 867 Lakeshore Road Burlington, Ontario L7R 4A6 (16/12/98 to MOE)	• The DOE state that they have " *not undertaken a detailed review of the EA reports at this time thus we do not have any specific comments on these reports*"	• Comment noted.
		• They indicate that "*the proponent must observe several regulatory authorities administered by DOE during the construction and operation of this project, namely: section 36(3) of the Fisheries Act and provisions under the Migratory Birds Convention Act which prohibit the taking or killing of migratory birds and the destruction of their nests and eggs*".	• At the outset of the design phase, MTO will meet with all agencies (federal, provincial, regional) to review current approval requirements (including CEAA necessary to finalize and implement design for the undertaking.
		• They request that "*proposed construction and operation activities associated with this project which may potentially affect the issues identified above must therefore be addressed by the proponent*"	• Section 5.3.5 of the EA recognizes the Canadian Environmental Assessment Act future requirements and indicates a "Screening" under CEAA will be prepared at the design stage.
		• They also indicate that they "*expect to participate in any federal environmental assessment which will be undertaken in the future as triggered by other departments in the context of our role as per section 12(3) of CEAA*".	
GA2	Fisheries and Oceans David J. Ross, Fish Habitat Biologist Bayfield Institute P.O. Box 5050, 867 Lakeshore Road, Burlington, Ontario L7R 4A6 (16/12/98 to MOE)	• The DFO state that, to date they have "*not participated in the route selection through reviews of biological data supporting route alternative decisions*". They report that up to this point in the study OMNR has had the authority to act as agent for the DFO by administering "*the sections of the Fisheries Act regarding habitat relative to provincial highway planning and highway development*" and have "*participated in the identification of broad fish habitat constraint areas when developing Highway 400 to Highway 404 Extension Link route alternatives*".	• MTO has met with and addressed the concerns of MNR related to this study. The response to the MNR comments is provided in this table, (response to GA 9).
		• They also indicate that "*from our initial review it appears that your project may result in a potential harmful, disruption or destruction of fisheries habitat. This is prohibited unless authorized by the Minister of Fisheries and Oceans pursuant to Section 35(2) of the Fisheries Act*".	• MTO commits to the guiding principle of "No Net Loss" in Section 35(2) of the Fisheries Act . In addition, as an early component of the detail design phase, MTO commits to the development of a "Detailed Fisheries Habitat Management Strategy" (in consultation with OMNR and DFO) that maintains, enhances or compensates (where necessary) fish habitat potentially impacted by the proposed facility.
		• "*As detailed design of a highway influences decisions relating to impact issues of mitigation and compensation the amount of information presented is presently insufficient for DFO to provide conclusive comments at this time*". "*The DFO will provide more detailed comments on the proposed undertaking on receiving comments from OMNR and following consultation with all the affected federal agencies*".	• At the outset of the design phase, MTO will contact regulatory agencies (federal, provincial, regional) to review current approval (including CEAA) necessary to finalize and implement design for the undertaking.

JUNE 22, 1999 MTO RESPONSES TO COMMENTS RECEIVED BY THE MOE DURING THE PUBLIC REVIEW OF THE HIGHWAY 400 - FUTURE HIGHWAY 404 EXTENSION LINK, (BRADFORD BYPASS), ENVIRONMENTAL ASSESSMENT

	Name & Address	Comments	MTO Response
GA3	Historic Sites and Monuments Board of Canada Michel Audy, Executive Secretary (no address shown) Ottawa, Ontario K1A 0M5 (4/12/98 to Canadian Heritage Landscape, cc'd to MOE)	• The Historic Sites and Monuments Board stated that "*in the absence of additional archaeological research, the Board concluded that it could not make an informed decision on the possible national historic significance of this(the Lower Holland Landing) site*".	• The project team was aware from the beginning of the study that a higher potential for archaeological resources is common along the water courses and glacial shorelines located within the study area. Background information was compiled and summarized in a report by MTO in 1994 which recommended that an archaeological assessment be completed at the preliminary design phase (Technical Report - Archaeological Background Study - Bradford Bypass, MTO 1994). • A stage 2 archaeological assessment was carried out at the East Holland River crossing after the public process input resulted in the identification of a potential archaeological site and a location for the preliminary preferred route had been selected from which the detailed assessment could be made. This assessment is included as part of the current submission (Archaeological Services 1997, Appendix J). • Based on the results of the archaeological assessment completed thus far, (MTO 1994, Archaeological Services 1997), it is the opinion of the project archaeological consultant that the site known as "Lower Landing" is approximately 1.5 miles away from the recommended alignment. Further, it has also been noted that the lands referenced in the current study as the "East Holland River Site" have been referred to on a historical map as "Old Indian Landing" and not "Lower Landing" (Archaeological Services correspondence Aug 7, 1997).
		• *"Parks Canada reported ...that any land use issues related to this site are under the purview of the Province of Ontario"*. The Parks Canada report to the Board indicated that "*The Province is satisfied with the environmental impact assessment for the proposed construction of a highway bypass in proximity to the Holland Landing and believes that no further archeological research is warranted at this time*".	• The Ministry of Citizenship, Culture and Recreation is satisfied with the archaeological assessment of the Holland River crossing and has confirmed that the archaeological site detected within the proposed right-of-way (East Holland River Site) does not appear to be of such significance that would warrant that the proposed alignment be altered from its current location (see GA7 - MCzCR comments Dec 1998). • MTO has committed to a Stage 3 Archaeological Assessment to define and characterize the significance and extent of the archaeological site referred to as the "East Holland River Site" and the potential impacts of the proposed facility. An appropriate mitigation strategy will be developed based on the results of the study.
GA4	Canadian Transportation Agency Ian C.W. Spear, Director Rail Infrastructure Directorate Rail & Marine Branch Ottawa, Ontario K1A 0N9 (rec'd 4/11/98 by MOE)	• The Canadian Transportation Agency stated that " if *the MTO and the railway (CNR) reach an agreement for the grade separations, it can be filed with the Agency. In that case, we do not require an environmental assessment. If however an agreement is not reached, then MTO may apply to the Agency ... for authority to build the grade separation*".	• Negotiations will take place with railways during design phase. See Sections 5.2.8 and 5.3.5 • MTO will respond to the possible change to rail corridor usage as appropriate once the decision is made known as indicated in Section 5.2.8 of EAR. Provision of a structure across CN tracks is contingent on there being a functioning rail line in place at the time.

JUNE 22, 1999 MTO RESPONSES TO COMMENTS RECEIVED BY THE MOE DURING THE PUBLIC REVIEW OF THE HIGHWAY 400 - FUTURE HIGHWAY 404 EXTENSION LINK, (BRADFORD BYPASS), ENVIRONMENTAL ASSESSMENT

	Name & Address	Comments	MTO Response
		• They furthermore state that they "*require written confirmation of agreement between the railway and MTO for the crossing before we can state that we will not be involved in this screening* (of the project)".	• MTO commits to providing agreement to CTA if required.
GA5	CN John F. MacTaggart, Public Works Engineer Engineering Services, Field Operations Suite 702, 277 Front Street W. Toronto, Ontario M5V 2X7 (16/11/98 to MOE)	• CN stated that they are "*currently under negotiations to sell a portion of our Newmarket Subdivision, north of Bradford*". If sale is unsuccessful, CN state that they "*will retire that portion of track in the Spring of 1999*".	• It is the project team's understanding that a sale of the rail corridor through proposed freeway corridor to City of Barrie has been reported. MTO will respond to the possible change to rail corridor usage as appropriate once the decision is made known as indicated in Section 5.2.8 of EAR. Provision of a structure across CN tracks is contingent on there being a functioning rail line in place at the time.
GA6	Ministry of Agriculture, Food and Rural Affairs Ray Valaitis, Rural Planner R.R. 3, 95 Dundas Street Brighton, Ontario K0K 1H0 (8/12/98 to MOE)	• The Ministry of Agriculture, Food and Rural Affairs stated that "*this Ministry is satisfied with the data, analysis and conclusion that have been outlined within this EA report*".	• No further action required.
GA7	Ministry of Citizenship, Culture and Recreation Malcolm Horne, Heritage Planner 77 Bloor Street W Toronto, Ontario M7A 2R9 (16/12/98 to MOE)	• The Ministry of Citizenship, Culture and Recreation stated that they "*are satisfied that the EA study took sufficient steps to consider impacts to cultural heritage features in the consideration of route alternatives*".	• No further action required.
		• The Ministry also state that they "*are further satisfied that the statements and commitments made in the EA report regarding the proposed assessment and mitigation process will satisfactorily address the conservation of cultural heritage features where those features are to be impacted by the construction of the highway*".	• No further action required.
		• They request that all activities associated with highway construction including those involving associated features such as stormwater management facilities, service stations, temporary construction easements, mitigation/compensation measures, access roads, staging and storage areas, and others "*should be assessed for their impacts to cultural heritage resources and where necessary those impacts should be mitigated*".	• A mitigation strategy will be developed as part of the design stage to address potential impacts to cultural heritage resources. Specifically, the visual impact of the proposed facility and the close proximity of a historically significant home (<100 m) at Simcoe County Road 4 will be explored through landscaping and other options as appropriate.
		• The Ministry "*expects to review and comment on future reports on assessment and mitigation of cultural heritage resources to be impacted by this project. Any impacts to cultural heritage resources and plans for their mitigation should be reviewed by staff of MCzCR and approved prior to mitigation*".	• The MCzCR will be consulted to review the mitigation strategy developed for cultural heritage resources prior to construction.
		• They stated that the Ministry "*has not been provided with evidence that demonstrates that there are archaeological sites of such significance that the proposed route should be altered*".	• No further action required.

JUNE 22, 1999 MTO RESPONSES TO COMMENTS RECEIVED BY THE MOE DURING THE PUBLIC REVIEW OF THE HIGHWAY 400 - FUTURE HIGHWAY 404 EXTENSION LINK, (BRADFORD BYPASS), ENVIRONMENTAL ASSESSMENT

	Name & Address	Comments	MTO Response
		• In order to answer concerns from the public, they recommend that *"an archaeological assessment and any necessary mitigation of significant sites take place as early as possible at every stage of design and construction In order to allow for the maximum flexibility and sensitivity and consequently the best management of any significant sites"*.	• MTO has committed to a Stage 3 Archaeological Assessment in the early stages of the design phase. At the completion of that study, MC2CR will be consulted to discuss the appropriate mitigation and/or salvage strategy.
		• The Ministry indicated that " *our concerns regarding built heritage and cultural heritage landscapes have been satisfied by the commitments made in the EA report to the assessment and mitigation of resources to be impacted by the eventual construction of the highway*".	• No further action required.
GA8	Ministry of Municipal Affairs and Housing Provincial Planning Services Branch John Taylor, Area Planner 777 Bay Street, 14th Fl. Toronto, Ontario M5G 2E5 (16/12/98 to MOE)	• The Ministry of Municipal Affairs and Housing stated that the infrastructure proposed through the EA documents have been incorporated into the land use planning documents. (ie draft Official Plan for the Town of Bradford West Gwillimbury) in a fashion consistent with the Provincial Policy Statement. They have no concerns with the EA documents.	• No further action required.
GA9	Ministry of Natural Resources C. T. Tschirhart, Senior Planner 50 Bloomington Road West Aurora, Ontario. L4G 3G8 (15/1/99 to MOE)	• The Ministry indicated that they are "*concerned with the proposed routing over the East Branch of the Holland River and the alignment from that point westward to the proposed system of on-off ramps at Bathurst Street.*" • The Ministry is "*reiterating its position that the proposed alignment follow Concept C, or as a secondary position Concept B.*"	• In response to concerns identified by MNR, refinements to the preferred alignment were investigated. The originally preferred alignment was shifted north to reduce impacts on woodlands by 40% (Concept 'A'). Further reducing woodlot impacts utilizing Concepts 'B' and 'C' created significant safety and property concerns as outlined in Section 4.2.3.9.3a of the EAR. • As indicated in Section 5.4.2.4 to the EAR, MTO has committed to construct the facility as an elevated structure through the Holland Marsh Provincially Significant Wetland. In addition, mitigation measures during construction will include development of restoration plans for areas of wetland temporarily disturbed during construction, installation of equalization culverts, delineation of protected areas with sediment fences, construction timing constraints to respect the intent of the federal Migratory Bird Regulations (1994), salvage of wetland plant material for wetland re-establishment, minimization of dewatering within wetlands and retention of lands which are surplus to MTO for the purpose of mitigation by allowing reversion to wetland as indicated in Section 5.4.2.4 of the EAR.

JUNE 22, 1999 MTO RESPONSES TO COMMENTS RECEIVED BY THE MOE DURING THE PUBLIC REVIEW OF THE HIGHWAY 400 - FUTURE HIGHWAY 404 EXTENSION LINK, (BRADFORD BYPASS), ENVIRONMENTAL ASSESSMENT

	Name & Address	Comments	MTO Response
		• *"We are concerned that the final design did not take into account previous discussions and commitments from MTO regarding wetland habitat compensation (MNR/MTO meeting minutes October 14, 1993)."* Specifically, MNR contend that MTO has not adhered to *"acquisition of extra lands (e.g. the entire property rather than just that portion required for MTO ROW in order that such lands can be re naturalized to provide wetland habitat functions, and thereby offset some of the negative impacts of the highway crossing."*	• The EA includes in its mitigation measures commitments associated with: the "retention of lands which are surplus to transportation needs for the purpose of mitigation by allowing reversion to wetland", (Wetlands Table 5-6); and maximizing "forest regeneration opportunities on lands which are surplus to transportation needs as mitigation for fragmentation of significant vegetation and to provide linkage to alternative habitat", (Vegetation, Table 5-6). However, in the EA, Section 5.2.7 "Property Acquisition" the process to be followed is only broadly explained. MTO has discussed this concern with MNR and have provided the following clarification. Immediately east of the Holland River (West Branch) the proposed alignment displaces existing Hochreiter Road from Bathurst Street to the river. As a result it will be necessary for the Ministry to purchase portions of several agricultural fields. In addition, access to others may become impractical. Several of these fields adjacent to the river were originally developed by draining wetlands. As noted in the EA, for "the purpose of mitigation by allowing reversion to wetland", MTO reconfirms its agreement to acquire the residual portions of these properties that are surplus to MTO needs. However, it must be noted this can occur only where there is a willing seller and all matters associated with liabilities and responsibilities regarding the new ownership, (The Title), have been settled to the satisfaction of all parties, including, the Ministry of Natural Resources, the Ministry of Transportation and the Management Board Secretariat.
GA10	Ontario Provincial Police L. J. Hassberger, Barrie Detachment Commander 20 Rose Street Barrie, Ontario L4M 2T2 (13/11/98 to MOE)	• The Ontario Provincial Police state that their *"main concerns would center around traffic disruption on Highway 400 during construction, the configuration of the highway itself and signing during the construction phase"*.	• Section 5.3.4 of the EAR identifies a review process to be accommodated during the construction phase - to include OPP as a stakeholder.
		• The OPP state also that *"this highway will certainly be welcome as there is no alternative route to Highway 404 except by going through Newmarket or down to the 407"*.	• Point noted
		• They request consideration of the following suggestions: speed limit be maintained at 100 km/h or less, continuous overhead lighting, concrete barriers in middle of roadway, paved 3 m shoulder on both sides of travelled portion, on and off ramps have enough distance for slowing and accelerating to enter and exit highway safely, ramps be equipped with a gate which can be closed in emergency to stop traffic entering highway, proper traffic control devices, emergency (real time) overhead signs	• Requirements in this corridor are for a rural freeway, as stated in Section 5.2.2 of the EAR, which differs in features to an urban freeway. MTO Standards for rural freeways do not require continuous overhead lighting. Median barriers are only required when there is a narrow median width. The proposed median is however 30 m, (see Section 5.2.2 of the EAR), and this does not warrant a median barrier. Shoulders widths will be as shown in Exhibit 5-3 of the EAR. Sufficient length has been provided for all access and egress ramps according to current Provincial Standards. Traffic control devices are to be provided as warranted at the time of construction.
		• They request an opportunity to talk with project manager to look at design of construction area to ensure their understanding of the project.	• MTO commit to inviting the OPP to participate during the design stage.

JUNE 22, 1999 MTO RESPONSES TO COMMENTS RECEIVED BY THE MOE DURING THE PUBLIC REVIEW OF THE HIGHWAY 400 - FUTURE HIGHWAY 404 EXTENSION LINK, (BRADFORD BYPASS), ENVIRONMENTAL ASSESSMENT

	Name & Address	Comments	MTO Response
GA11	Ministry of the Environment Graham Whitelaw Land Use Policy Branch 195 St. Clair Avenue West Toronto, Ontario M4V 1P5 (20/4/99 to MOE)	• The Ministry of the Environment, Land Use Policy Branch stated that *"all major impacts to ground and surface water can be avoided if information gaps are addressed by implementing the outlined suggestions"*:	• MTO will address MOE concerns as noted below.
		• They encourage proponents *"to reference any relevant information related to ongoing or completed watershed/subwatershed plans for the study area in future consultations"*.	• All relevant information was reviewed as available during the course of the study. Any ongoing or completed watershed/subwatershed plans for the study area will continue to be incorporated as part of future consultations.
		• Further, they state that *"goals and objectives from these plans should be incorporated, where applicable,. into future planning, design and construction elements of the undertaking"*.	• Goals and objectives from the above plans will be considered for incorporation into future planning, design and construction elements of the undertaking.
		• They request that MTO clearly identify all wells that may potentially be (directly or indirectly) impacted	• Wells that may potentially be (directly or indirectly) impacted will be clearly identified early in design stage.
		• They request that MTO correct the location of municipal well shown on Figure 3.3 in Appendix G	• The correct location of the municipal well shown on Figure 3.3 of Appendix G has been noted.
		• They request that MTO provide *"basic geological cross-sections for the area along the proposed extension. to provide clear reference for stakeholders"*	• Basic geological cross-sections will be prepared from well records if required by stakeholders for a specific reason associated with the undertaking.
		• They note that *"impacts from road salting on shallow groundwater aquifers must be more thoroughly analyzed"* and request that MTO address *"impacts of road salting and storm run-off on the specialty crop agricultural areas"* and that *"potential qualitative effects should be considered during mitigation"*.	• As noted in Section 5.4.2 of the EAR, MTO will prepare detailed stormwater management and groundwater protection plans at the design stage which will address quantity and quality. (Refer also to response M2).
		• The Ministry request that MTO provide information on *"expected critical contaminants and concentrations in stormwater runoff"*.	
		• MOE requests that MTO provide a stronger commitment to *"ensure that stormwater runoff from the (river crossing) bridges is completely captured and treated before being discharged"*.	• As noted in Section 5.4.6.1 of the EAR, stormwater runoff will be discharged to stormwater management facilities prior to discharge to watercourses where this can be reasonably achieved and will not cause unacceptable environmental, highway design, safety or operational problems.
		• The Ministry is *"satisfied with the noise evaluation of alternatives"*.	
		MOE indicates that "...in addition to commitments contained in the formal EA Report, the following Conditions of Approval be applied indicating: "... That a detailed report dealing with noise and vibration shall be submitted to the Director of the Environmental Assessment and Approvals Branch of the Ministry of the Environment a minimum of 90 days prior to the construction of the Highway or any portion thereof...".	• The Ministry of Transportation does not agree with the requested Conditions of Approval that exceed the requirements of the MTO/MOE Noise Protocol. The Noise Protocol is a formal policy agreement between the Ministries. There has been nothing identified on this project that would warrant the application of extraordinary noise assessment requirements.

JUNE 22, 1999 MTO RESPONSES TO COMMENTS RECEIVED BY THE MOE DURING THE PUBLIC REVIEW OF THE HIGHWAY 400 - FUTURE HIGHWAY 404 EXTENSION LINK, (BRADFORD BYPASS), ENVIRONMENTAL ASSESSMENT

Name & Address	Comments	MTO Response
	"...That the Report shall be subject to approval by the Director and that it shall be prepared in accordance with the guidelines contained in the MOE/MTO Noise Protocol in effect at the time of the study...".	• The Ministry agrees that the noise assessment work at the design stage should follow the requirements of the Noise Protocol in effect at the time of design.
	"...That the Report shall address the noise/vibration impacts which will be generated during the construction of the facility as well as the control measures for all major construction activities including those due to possible pile driving/blasting operations. In addition, the Report shall re-assess the traffic noise impacts. As a minimum requirement, the re-assessment of these impacts as well as of the potential for their mitigation shall be performed at all sensitive locations which are expected to experience an increase in noise levels greater than 5 db. In addition to the summary of the traffic noise impacts, the Report shall contain a description of the proposed noise control measures and their acoustical effectiveness. Reasons (technical/economic) must be given if measures are not applied. Furthermore, a brief description shall be given of the possible increases in traffic noise levels which may occur along the various roadways leading to/from the proposed highway as well as the proposed mitigating measures and their anticipated acoustical effectiveness...."	• As noted in Section 5.4.3.2 of the EA, MTO will provide a Design & Construction Report to MOE which will document mitigation measures related to noise and vibration. MOE's request that MTO submit a detailed noise and vibration report to the Director of the Environmental Assessment and Approvals Branch , MOE, for review and approval no less than 90 days prior to construction is not compatible with the assessment process followed and the approvals being sought for this undertaking. In. Section 5.3 of the EA, there is a description of the Ministry's commitment to "Stakeholder Consultation During the Design Stage". This consultation process is intended to ensure that MOE concerns are addressed. The subsequent review of the Design and Construction Report(s) will provide the opportunity for confirmation of agreements reached during the design stage. Therefore, a minimum 30 day review and comment period should be sufficient. With regard to further "approvals", the purpose of this EA submission under the Environmental Assessment Act is address formal approval requirements and allow the project to proceed to implementation. The imposition of additional approvals at the design stage, that are not associated with legislated requirements, is considered unnecessary.
MUNICIPAL		
M1 Town of East Gwillimbury Denis Kelly, Clerk-Administrator Sharon, Ontario L0G 1V0 (½/99 to MOE)	• The Town of East Gwillimbury referenced the following resolutions:	
	• The Town of East Gwillimbury passed a resolution on November 3, 1997 "*that correspondence dated October 27, 1997 from FROGS and a letter dated November 3, 1997 from MTO with regard to the Bradford Bypass be received; and further that the Town advise the Ministry of Transportation that it objects to the technically preferred route for the Bradford Bypass because it disrupts established communities and is routed through a developed area, and request that other locations for the bypass are given serious consideration*".	• The MTO study encompassed an analysis area extending from Highway 407 in the south to Highway 89 / Ravenshoe Road in the north. As a result of the assessment, the Bradford Bypass corridor was selected over other corridors including the Highway 89 / Ravenshoe Road and the Green Lane / Highway 9 corridors, as described in Section 3.5.2 of the EAR • The overall alignment for the freeway was optimized by taking into consideration the need to provide a safe transportation facility while minimizing and / or mitigating natural and social environmental impacts (see Section 4.2 of the EAR). • The route avoids community features such as schools, churches, cemeteries, parks, arena and other public facilities. No severances are required and in comparison, other alternative routes would have additional community impacts.

JUNE 22, 1999 MTO RESPONSES TO COMMENTS RECEIVED BY THE MOE DURING THE PUBLIC REVIEW OF THE HIGHWAY 400 - FUTURE HIGHWAY 404 EXTENSION LINK, (BRADFORD BYPASS), ENVIRONMENTAL ASSESSMENT

	Name & Address	Comments	MTO Response
		• The Town also passed a resolution on January 19, 1998 *"that the Town of East Gwillimbury reiterate its concerns over the proposed route for the Bradford Bypass as expressed in a resolution passed on November 3, 1997"*.	
M2	Lake Simcoe Region Conservation Authority Tom Hogenbirk, P. Eng., Conservation Engineer 120 Bayview Parkway Newmarket, Ontario L3Y 4X1 (10/12/98 to MOE)	• Lake Simcoe Region Conservation Authority request that *"the "no net loss" principle should be applied to mitigate impacts on forested areas and wetlands. This may require that a portion of the highway budget be set aside for reforestation and establishment of new wetlands in order to compensate for the loss of natural features"*(within Maskinonge River watershed)	• The proposed facility, where possible, was routed to areas of existing openings, areas of previous disturbance, or along edges of vegetative units, per Section 5.4.2.3. • Where avoidance was not possible, mitigation measures were proposed for vegetation and wetlands as identified in Sections 5.4.2.3 and 5.4.2.4. During design the Conservation Authorities, other regulatory agencies and other stakeholders will be consulted regarding the development of specific mitigation measures. • In an undertaking of this magnitude, it is not possible to commit to "no net loss" of forested land and wetlands. Compensation and regeneration opportunities for woodlands and wetland habitat on MTO surplus lands will be considered where it is feasible as indicated in the response provided for OMNR (GA9).
		• They state that *"the Remedial Strategy requires that all new development in the Maskinonge River watershed (upstream of Glenwoods Drive) provide 80% nutrient removal rates in their stormwater treatment systems...(which) is better than Level 1 protection and should be applied to the design of the ...Bradford Bypass roadway within the Maskinonge River catchment. The remainder of the ...Bradford Bypass SWM system is to have Level 1 water quality treatment (or better), based on state of the art control measures"* including using infiltration techniques where feasible.	• The Maskinonge River watershed will be directly affected in the vicinity of the proposed interchange at the Highway 404 Extension. • As stated in Section 5.4.6.1 of the EA, " As is standard practice for a new roadway, a Stormwater Management Plan/Report will be prepared during the design phase in accordance with MTO guidelines and in consultation with MNR, LSRCA, MOE and DFO". Mitigation will be based on detailed evaluations using applicable guidelines, (MOE, MTO or others), available at the time of design. Mitigation will occur where it is both warranted and feasible based on the most appropriate stormwater management practices, (SWMPs), at the time. An 80% nutrient removal rate and Level 1 protection are acceptable objectives, however, a commitment cannot be made that these objectives will be warranted and feasible at all locations.
M3	Nottawasaga Valley Conservation Authority Charles F. Burgess, Planner 266 Mill Street, Highway 90 R.R. 1 Angus, Ontario L0M 1B0 (2/12/98 to MOE)	• The Nottawasaga Valley Conservation Authority stated that *"the NVCA will require plans that relate to the following through the detailed design stage: flood plain management, storm water management, fish habitat protection, erosion and sediment control"*. • They would like to work closely with MOE, MNR and LSRCA through the design phase.	• NVCA will be contacted to co-ordinate the biological and engineering aspects of the design at the design phase.
M4	Township of King Kevin D. Young, Director of Public Works 3565 King Road King City, Ontario L7B 1A1 (4/12/98 to McCormick Rankin)	• The Township of King raised a question as to drainage from Marsh farmlands adjacent to Hochreiter Road. • They pointed out a correction to report regarding Bathurst Street north of Queensville Sideroad being a boundary road and not a Regional road.	• Drainage issues will be finalized during the design stage as stated in Section 5.4.6.1 of the EAR. Refer also to the response provided to the Lake Simcoe Region Conservation Authority comments (M²). • Correction is noted.

JUNE 22, 1999 MTO RESPONSES TO COMMENTS RECEIVED BY THE MOE DURING THE PUBLIC REVIEW OF THE HIGHWAY 400 - FUTURE HIGHWAY 404 EXTENSION LINK, (BRADFORD BYPASS), ENVIRONMENTAL ASSESSMENT

	Name & Address	Comments	MTO Response
		• They queried means of access between farmlands along Hochreiter Road to be separated by freeway.	• As indicated on Exhibit 5- 2 of the EA a "Realigned Hochreiter Road" is proposed. An underpass of the Bradford Bypass at the Holland River to access properties on the south side of the Bypass is also indicated as a possibility on that exhibit. At the design stage the need for this underpass will be reviewed with respect to the request of MNR.
		• They stated that "*Bathurst Street and Queensvillle Sideroad are not capable of handling traffic generated from an interchange on Bathurst Street at Hochreiter Road and future improvements to said roads would be required*".	• Responsibility for future municipal road improvements remain with the Township however MTO are responsible for improvements to the portion of road within their R.O.W.
		• Township Council indicated that "*perhaps this bypass would alleviate the traffic congestion along Highway 9*".	• Section 5.4.1 reflects that operational improvements are expected to municipal road network.
M5	Corporation of the Town of Bradford, West Gwillimbury Frank Jonkman, Mayor P.O. Box 160 Bradford, Ontario L3Z 2A8 (16/12/98 to MOE)	• The Town of Bradford stated that "*the conclusion reached after consultation with our affected citizens is that the location of the Technically Preferred Route for this new facility is satisfactory*".	• Support noted.
		• The Town requests a commitment by MTO that the 'Cloverleaf' at County Road 4 "*be constructed in such a way that service roads can be integrated with the ramps and use the same signalized intersections*", to provide needed access for future urban land use east and west of County Road 4 and avoid increased industrial and commercial traffic flow through residential street.	• Request is noted. The MTO cannot commit to the ramp configuration suggested for new interchanges due to operational problems which may be encountered. Further consideration of access will be provided in subsequent design work.
		• They request that the proposed flyover on Sideroad 10 be a minor 'cloverleaf' to provide industrial traffic access without need to go through residential areas.	• Request is noted, however, the interchange is not warranted based on current plans as described in Section 4.2.3.8 of the EAR. Additional ramps would be subject to a separate study.
		• They questioned whether negotiations on the above can be during EA review process otherwise "*Council will opt for a mediation process after Notice of Completion of Review is published in an attempt to avoid requesting a hearing*".	
INTEREST GROUPS			
IG1	Chippewas of Georgina Island Rob Porte, Cultural Portfolio Georgian Island Council R.R. 2. Sutton West, Ontario L0E 1R0 (14/12/98 to MOE)	• Georgina Island First Nation stated that it is "*opposed to any construction or development including road construction and archeological digs at the site known as Lower Holland Landing due to disturbance and destruction of this ancient place. We will continue to be opposed to anything that disturbs or destroys this ancient place. This place must remain undisturbed*".	• Refer to response provided for the "Historic Sites and Monuments Board of Canada" comments (GA3).

JUNE 22, 1999 MTO RESPONSES TO COMMENTS RECEIVED BY THE MOE DURING THE PUBLIC REVIEW OF THE HIGHWAY 400 - FUTURE HIGHWAY 404 EXTENSION LINK, (BRADFORD BYPASS), ENVIRONMENTAL ASSESSMENT

	Name & Address	Comments	MTO Response
		• They suggest that Ravenshoe Road in Keswick would be cost effective and cross less marsh land. • letter of 8/7/98 raised same concerns.	• The use of Ravenshoe Road as an alternative was considered during the study and was determined not to be a reasonable option as identified in Section 3.5.2 of the EAR.
IG2	East Gwillimbury Watch Jean Martin 7 Algonquin Forest Drive Newmarket, Ontario L3Y 4V8 (rec'd 7/12/98 by MOE)	• East Gwillimbury Watch is *"concerned about necessity for building this road"*.	• Section 3.1.2.2 of the EAR identifies a vehicle demand which will warrant a freeway facility.
		• Questions whether developers *"are the ones pushing for the road"*.	• In carrying out the Bradford Bypass EA study the MTO, in consultation with the municipalities in the area, considered the total needs and alternatives prior to identifying the preferred Provincial facility. The EA document provides an understanding of total traffic demands in the area (see Section 3.1.2.2)
		• They state that *"there are many more appropriate places to place east-west links"*.	• The MTO study encompassed an analysis area extending from Highway 407 in the south to Highway 89 / Ravenshoe Road in the north. As a result of the assessment, the Bradford Bypass corridor was selected over other corridors including the Highway 89 / Ravenshoe Road and the Green Lane / Highway 9 corridors, as described in Section 3.5.2 of the EAR.
		• They state that *"everything seems to be proved by computer modelling, based on doubtful input on future growth"*.	• Approved Official Plans for York Region, Simcoe County, Town of Bradford-West Gwillimbury and Town of East Gwillimbury reflect substantial development over the coming decade. Freeway will respond to travel demands and EAR acknowledges broader development issues as described in Section 5.4.6.3 of the EAR.
		• They stated that they *"would like to see a much more thorough need assessment and a more detailed assessment of the whole project"*.	
		• They stated that *"the Lower Landing has historical significance and should be ruled out as a place to construct a highway"*.	• Refer to response provided for the "Historic Sites and Monuments Board of Canada" comments (GA3).
		• They suggest that *"wetlands need protection. ... To deliberately put a road in such a location is evidence of poor planning"*.	• From the outset, one of guiding principles of route alternative generation and evaluation was the sensitivity of the Holland Marsh PSW. MTO has, through consultation with MNR, developed alternatives to minimize impacts to the PSW and have committed to constructing the facility as an elevated pier structure within its boundaries to maintain the physical and biological features and functions.

JUNE 22, 1999 MTO RESPONSES TO COMMENTS RECEIVED BY THE MOE DURING THE PUBLIC REVIEW OF THE HIGHWAY 400 - FUTURE HIGHWAY 404 EXTENSION LINK, (BRADFORD BYPASS), ENVIRONMENTAL ASSESSMENT

	Name & Address	Comments	MTO Response
IG3	Environmentalists Plan Transportation Joan Doiron, Chair 43 English Ivyway Willowdale, Ontario M2H 3M3 (14/12/98 to MOE and MTO)	• The Environmentalists Plan Transportation stated that the EA *"fails to account for long term region-wide impact of the expressway"* (ie opening up large area to suburban development). *"An area far larger than the narrow corridor studied would be adversely affected"*. • They suggest that *"the study restricts its focus on the impact of the construction of the road"* and *"avoids discussion of environmental impact of such (future) development"*. • They suggest that any new transportation infrastructure in York Region should further the aim of the Official Plan to concentrate growth in the southern part of the region. *"No new roads should be built in this area while new development can be concentrated elsewhere... in areas where new development will have a less detrimental environmental impact and where it can lead to decreased dependence on the automobile"*.	• Approved Official Plans for York Region, Simcoe County, Town of Bradford-West Gwillimbury and Town of East Gwillimbury reflect substantial development over the coming decade. Freeway will respond to travel demands and EAR acknowledges broader development issues as described in Section 5.4.6.3 of the EAR.
IG4	Canadian Heritage Landscapes David and Carol Ladell 20866 Yonge Street RR 1, Newmarket, Ontario L3Y 4V8 (13/11/98 to MOE and MC2CR Ministers, also 12/11/98 to many incl. above Ministers)	• Canadian Heritage Landscapes members Mr. & Mrs. Ladell stated that *"the MTO has decided to build a super highway over an irreplaceable cultural heritage landscape site at Lower Holland Landing"*. • They report that *"this highway puts Canada in violation of 1970 and 1972 United Nations International Conventions to control the destruction of cultural heritage throughout the world"*. • They suggest that the Ontario Heritage Foundation is a decoy... and is not looking after our heritage. • They indicate that their residence is at The Lower Landing or Soldier Bay, which includes *"extensive multi-component sites established sometime before A.D. 800 that continued to witness use through to the 19th century"*. • They suggested that they are *"prepared to give, through deed, lease or right of way whatever property is needed to fully preserve this entire heritage site"*. • They report that they *"intend to stop or cause rerouting of this east-west highway that would destroy the "sense of place" or cultural heritage landscape of The Lower Landing, but also act as a dam between Lake Simcoe and The Holland Marsh"*. • They *"know of no effort by any Ontario Government Official to be up front and honest with citizens... about the destruction and cover up of this heritage site"*. • They suggest that the *"citizens of Ontario have been deceived by MTO and a major Canadian Heritage Site will be destroyed if they proceed"*.	• Refer to response provided for the "Historic Sites and Monuments Board of Canada" comments (GA3). • Information was not withheld from the public through the public consultation process. Information was summarized on panels for general review at Public Information Centres. In addition, specialist staff were on hand to address questions related to specific elements of concern. This is a standard approach to public consultation.

JUNE 22, 1999 MTO RESPONSES TO COMMENTS RECEIVED BY THE MOE DURING THE PUBLIC REVIEW OF THE HIGHWAY 400 - FUTURE HIGHWAY 404 EXTENSION LINK, (BRADFORD BYPASS), ENVIRONMENTAL ASSESSMENT

	Name & Address	Comments	MTO Response
IG5	Canadian Heritage Landscapes Willard Petersen 80 West Drive Brampton, Ontario L6T 3T6 (12/12/98 to MOE)	• Canadian Heritage Landscapes member Mr. Petersen stated that "*MTO has either overlooked, ignored or suppressed knowledge of the existence of this landscape by proposing a route that would destroy it*". • They suggest that *"MTO had knowledge of this historical site throughout the EA process"*. • They suggest that *"MTO suppressed this knowledge from the public until it submitted its EA proposal to MOE in October 1998"*. • They suggest that the "MTO Project Team Members and its leader Steve Jacobs deceived the public by withholding this information". • They note that *"in the past few years it has come to their attention that the United Nations Convention of 1972, to which Canada is signatory, is not being taken seriously by the Ontario government whom the citizens of Ontario have the right to expect would uphold it"*.	• Refer to response provided for the "Historic Sites and Monuments Board of Canada" comments (GA3).
IG6	Transport 2000 Ontario Rail Ways To The Future Committee Ross Snetsinger, Chair 247 Silverbirch Avenue Toronto, Ontario M4C 3L6 (16/12/98 to MOE)	• Rail Ways to the Future Committee member Mr. Snetsinger stated that "*a couple of million could preserve the rail line to Barrie*". • He states that "*recent financial analysis of the Parkdale to Washago portion of the CN Newmarket Subdivision indicated that a provincial investment of $33 million would reap an annual return of $6 million*".	• Comments are noted. • Rail is not a competitive mode in terms of travel time and convenience for passenger travel and freight as stated in Section 3.3.4 of the EAR. • City of Barrie is pursuing GO Rail service in this corridor.
IG7	York Region Federation of Agriculture (no address shown) Virginia McLaughlin, President (14/12/98 to MOE)	• The York Region Federation of Agriculture stated that it is opposed to the current proposal as it "*does not address the (transportation) needs of farmers in the northern parts of the Region as well as Durham Region and the Regions to the east and west*" - to provide rapid and convenient access to markets and suppliers. • They support Ravenshoe Road route since it would provide a "*virtually continuous link from Ottawa to Goderich via Highway 7 and Highway 89*" and also "*builds on existing infrastructure rather than opening up large blocks of green space*".	• In carrying out the Bradford Bypass EA study the MTO, in consultation with the municipalities in the area, considered the total needs and alternatives prior to identifying the preferred Provincial facility. The EA document provides an understanding of total traffic demands in the area (see Section 3.1.2.2) • The MTO study encompassed an analysis area extending from Highway 407 in the south to Highway 89 / Ravenshoe Road in the north. As a result of the assessment, the Bradford Bypass corridor was selected over other corridors including the Highway 89 / Ravenshoe Road and the Green Lane / Highway 9 corridors, as described in Section 3.5.2 of the EAR. • While it is within the MTO mandate to provide for the safe, efficient movement of people and goods between regions and between urban areas, this study concentrated on problems which focussed on growth in congestion between Highway 400 and Highway 404 Extension. Significant urban growth is expected in this area warranting additional road capacity. Furthermore, long distance north-south traffic must split to travel around Lake Simcoe, therefore creating a demand for east-west road capacity between these freeways. The demand for a direct linkage between Ottawa and Goderich was not anticipated to become a significant factor in the analysis of alternative routes.

JUNE 22, 1999 MTO RESPONSES TO COMMENTS RECEIVED BY THE MOE DURING THE PUBLIC REVIEW OF THE HIGHWAY 400 - FUTURE HIGHWAY 404 EXTENSION LINK, (BRADFORD BYPASS), ENVIRONMENTAL ASSESSMENT

	Name & Address	Comments	MTO Response
PUBLIC			
P1	Jerry and Leslie Beatty 20958 Yonge Street R.R. 1 Newmarket, Ontario L3Y 4V8 (11/12/98 to MOE)	• Mr. & Mrs. Beatty stated that prior to purchasing property (in September 1997), they were informed that the Bradford Bypass would cross at Holborn Road however the bypass is proposed at their southern property line. • They suggest that the highway will result in noise and garbage in the yard and devaluation of property. • They indicate that MTO staff has suggested that no houses will be affected by the construction.	• No property is required by MTO from the Beatty's on the basis of design to date. At no point in the planning and consultation process was a crossing at Holborn Road identified by MTO as a preferred alternative • Noise assessment at the design stage is described in Section 5.4.3.2 of the EA
P2	Elder, Merle Assance Beedie, Beausoleil First Nations Band Member 23 Maplehurst Crescent Barrie, Ontario L4M 4X1 (no date to MOE & MTO)	• Elder Beedie stated that "*I protest, object with my whole being to the indignity of your plan for the graves and remains of my family who may be buried on the site*". • "*I protest and reproach you for planning to violate the earth and natural beauty of this area*". • "*I find fault and censor all aspects of this project*". • "*I will look forward to a response to this letter as a confirmation that it has been read .*"	• Refer to response provided for the "Historic Sites and Monuments Board of Canada" comments (GA3). • This project was carried out under the full requirements of the Ontario Environmental Assessment Act and all other applicable legislation and policy with full public input throughout. • MOE Review will contain response.
P3	Mark Cannata, Heather Cannata and Family 36 Morgans Road, R.R. 1 Newmarket, Ontario L3Y 4V8 (13/12/98 to MOE & MTO)	• The Cannata family stated that they "*have difficulty accepting "planning for the past" as our province pushes backward with a mid-twentieth century highway system that is built to accommodate yesterday's and today's personal choice of transportation*". • They question whether "*more environmental encroachment and harm with a future east/west transportation corridor*" is necessary. The area is a flood zone, a natural wildlife habitat, an historical archeological area and farm land.	• Need for the facility is clearly documented in Section 3.0 of the EAR. Specifically Section 3.3 discusses Alternatives to the Undertaking. • The overall alignment for the freeway was optimized by taking into consideration the need to provide a safe transportation facility while minimizing and / or mitigating natural and social environmental impacts (see Section 4.1.2)
P4	Nancy Clubine-Lisk R.R. 2 Bradford, Ontario L3Z 2A5 (15/12/98 to MOE & MTO)	• Ms. Clubine-Lisk stated that she is concerned with environmental issue of building a highway on a flood plain and marsh.	• Bridge piers or fill will be placed such that the surface of the road will be constructed above the Regulatory Flood elevation and sufficient conveyance will be provided under the bridge structures to avoid upstream flood impacts. A hydraulic analysis was completed to determine the impact of the recommended alignment on upstream flood risk. Based on the analysis, it was concluded that it will be feasible to construct the facility such that the increase in the Regulatory flood elevations upstream of the river crossings will not exceed 0.10 metres. This conforms with the requirements of the Lake Simcoe Region Conservation Authority. A more detailed hydraulic analysis will be required in conjunction with the design of the river crossings.

JUNE 22, 1999 MTO RESPONSES TO COMMENTS RECEIVED BY THE MOE DURING THE PUBLIC REVIEW OF THE HIGHWAY 400 - FUTURE HIGHWAY 404 EXTENSION LINK, (BRADFORD BYPASS), ENVIRONMENTAL ASSESSMENT

	Name & Address	Comments	MTO Response
		• She has concerns about potential loss of Class 'A' agricultural lands.	• Agricultural impacts have been minimized by avoiding major severances, locating the alignment along mid-concession or along existing lot lines as indicated in Section 5.4.4.1 of the EAR.
		• She has concerns regarding impact to water and private wells and compensation	• Wells will be protected through preparation of stormwater management and groundwater protection plans at the design stage which address both quantity and quality as indicated in Section 5.4.2.6 of the EAR.
		• She has concerns about soil erosion and noise problems.	• Soil erosion and sedimentation will be minimized during and subsequent to construction through design strategies and contract specifications as described in section 5.4.6.2. A noise mitigation strategy will be developed according to the MTO / MOE noise protocol as described in Section 5.4.3.2 of the EAR.
P5	W. Clare Eves 20893 Woodbine Avenue, R.R. 1 Queensville, Ontario L0G 1R0 (14/12/98 to MOE)	• Ms. Eves stated that the proposed route "*places the road on some of the most environmentally sensitive land in the area*". Prefers original MTO route within Ravenshoe Corridor in. which roads are partly built.	• The MTO study encompassed an analysis area extending from Highway 407 in the south to Highway 89 / Ravenshoe Road in the north. As a result of the assessment, the Bradford Bypass corridor was selected over other corridors including the Highway 89 / Ravenshoe Road and the Green Lane / Highway 9 corridors, as described in Section 3.5.2 of the EAR.
		• She suggested that the proposed route would disrupt significant Native burying grounds and former aboriginal settlements.	• Refer to response provided for the "Historic Sites and Monuments Board of Canada" comments (GA3).
P6	Mike and Pat Fenton 2 Sunrise Street Holland Landing, Ontario L9N 1H4 (10/12/98 to MOE)	• Mr. & Mrs. Fenton stated that they "*acknowledge the need for the Bradford Bypass*".	• Acceptance noted.
		• They noted concerns regarding wildlife. "*The highway should be as wildlife-friendly as possible*". Suggest "*reflective stripes to warn animals... and fencing / curbs to prevent turtles and frogs... crossing*". Suggest low speed limit, lots of curves and warning signage. Request marsh areas and bird and mammal nesting areas be avoided.	• The overall alignment for the freeway was optimized by taking into consideration the need to provide a safe transportation facility while minimizing and / or mitigating natural and social environmental impacts (see Section 4.2 of the EAR). The MTO intends to address terrestrial passage for small mammals within wildlife corridors, monitor wildlife movement patterns and potential areas of conflict. To minimize road kills they will provide a wide grassed open median, fencing of the right of way, provision of good visibility for drivers and the consideration of cautionary wildlife crossing signage will be investigated, as stated in Exhibit 5-6 of the EAR.
P7	C. William D. Foster 20989 Yonge Street, R.R. 1 Newmarket, Ontario L3Y 4V8 (11/12/98 to MOE & MTO& CEAA)	• Mr. Foster stated that he and his wife had objections to the bypass.	• Objections are noted.
		• He suggested that the "*highway will expose our family to significant levels of harmful air pollution*".	• Based on information available from other Ministry projects, there is no reason to expect significant local effects on air quality.
		• He suggested that the "*highway will cause contamination of well water*" (approx. 25 m from ROW).	• Wells will be protected through preparation of stormwater management and groundwater protection plans at the design stage which address both quantity and quality as indicated in Section 5.4.2.6 of the EAR.

JUNE 22, 1999 MTO RESPONSES TO COMMENTS RECEIVED BY THE MOE DURING THE PUBLIC REVIEW OF THE HIGHWAY 400 - FUTURE HIGHWAY 404 EXTENSION LINK, (BRADFORD BYPASS), ENVIRONMENTAL ASSESSMENT

	Name & Address	Comments	MTO Response
		• He suggested that the "*highway will cause a great deal of mental stress as a consequence of high levels of ambient noise*".	• A noise mitigation strategy will be developed according to the MTO / MOE noise protocol as described in Section 5.4.3.2 of the EAR.
P8	Douglas S. Fox R.R. 2 Bradford, Ontario L3Z 2A5 (1/12/98 to MOE & MTO)	• Mr. Fox stated that he had concerns that: proximity of highway right of way to house (approx. 16 m) "*presents a noise and exhaust pollution level that will be detrimental to family health*".	• Based on information available from other Ministry projects, there is no reason to expect significant local effects on air quality. • A noise mitigation strategy will be developed according to the MTO / MOE noise protocol as described in Section 5.4.3.2 of the EAR.
		• He suggests that the 6 m deep highway cut next to well will "*endanger water source by pollution or lack of water*".	• Wells will be protected through preparation of stormwater management and groundwater protection plans at the design stage which address both quantity and quality as indicated in Section 5.4.2.6 of the EAR.
		• He expects that the value of property has been greatly reduced by highway.	• Point noted.
		• He requests Ministry buy 9.5 acre property and house under hardship policy.	• Property acquisition is normally initiated two to three years in advance of the Ministry's scheduled construction period. In instances where construction has not yet been scheduled, owners whose property will be required for the project may initiate the advance purchase of their property on a willing buyer/seller basis. For more information owners should contact the Central Region Property Section, (416) 235-4953.
P9	Mrs. Geddes P.O. Box 310 Queensville, Ontario L0G 1R0 (30/10/98 to MOE)	• Mrs. Geddes stated that she does not want view from residence destroyed.	• Effects and commitment to mitigation as per Section 5.4 of the EAR. Landscaping will be further considered in consultation with property owners during subsequent design.
		• She suggests Holborn Road instead of farmland.	• The overall alignment for the freeway was optimized by taking into consideration the need to provide a safe transportation facility while minimizing and / or mitigating natural and social environmental impacts (see Section 4.2 of the EAR).
P10	Christine and Matthew Granger 20624 Yonge Street, R.R. 1 Newmarket, Ontario L3Y 4V8 (6/12/98 to MOE)	• Mr. & Mrs. Granger stated that they were dismayed that MTO are persisting in building Bypass.	
		• They suggested that the highway "*will eliminate hundreds of acres of prime farmland currently supporting crops and cattle*".	• As indicated in Section 5.4.2.8 of the EAR, the proposed Link will remove 190.37 ha of high capability mineral soils from potential agricultural use, however there are no areas where lower capability soil provided a reasonable alternative route. The impacts to agriculture were reduced by minimizing land parcel severances, maintaining access to properties and continued viability of farming operations and farm community activities. OMAFRA is satisfied with the data, analysis and conclusion that has been outline in the EA report.

JUNE 22, 1999 MTO RESPONSES TO COMMENTS RECEIVED BY THE MOE DURING THE PUBLIC REVIEW OF THE HIGHWAY 400 - FUTURE HIGHWAY 404 EXTENSION LINK, (BRADFORD BYPASS), ENVIRONMENTAL ASSESSMENT

	Name & Address	Comments	MTO Response
		• They suggest that the highway will "*disrupt Class '1' wetlands and destroy species that are unique to this area*".	• The potential impact to wetland resources was addressed throughout the EAR. It was a major consideration in selection of the preferred alignment. In the view of the project team, it was not possible to avoid some wetland impacts within the study area. The approach adopted was to minimize wetland impacts by minimizing length of wetland crossing, crossing wetland areas already disturbed by past land uses and by committing to place the facility on a raised structure in wetland areas. The feasibility of allowing areas now in a disturbed state to regenerate to wetlands will also be considered. (Refer also to response GA9).
		• They suggest that "*the highway roadbed will be built over a floodplain creating a dam that will be dangerous if this area is flooded again*".	• Bridge piers or fill will be placed such that the surface of the road will be constructed above the Regulatory Flood elevation and sufficient conveyance will be provided under the bridge structures to avoid upstream flood impacts. A hydraulic analysis was completed to determine the impact of the recommended alignment on upstream flood risk. Based on the analysis, it was concluded that it will be feasible to construct the facility such that the increase in the Regulatory flood elevations upstream of the river crossings will not exceed 0.10 metres. This conforms with the requirements of the Lake Simcoe Region Conservation Authority. A more detailed hydraulic analysis will be required in conjunction with the design of the river crossings.
		• They suggest upgrades to Green Lane/Bathurst St/Hwy 9 eliminates need for 400-404 link.	• The MTO study encompassed an analysis area extending from Highway 407 in the south to Highway 89 / Ravenshoe Road in the north. As a result of the assessment, the Bradford Bypass corridor was selected over other corridors including the Highway 89 / Ravenshoe Road and the Green Lane / Highway 9 corridors. However as the study progressed, and in response to public input, the MTO responded by carrying out a specific review of the Green Lane / Highway 9 corridor as an alternative to the Bradford Bypass corridor (the results are documented in Appendix B to the EAR). This review confirmed the Bradford Bypass corridor as being preferred for a freeway corridor with a 4 lane arterial corridor in the Green Lane / Highway 9 corridor.
P11	Helen Hansen 242 Burnett Avenue Willowdale, Ontario M2N 1V8 (15/12/98 to MOE)	• Ms. Hansen stated that "*non car modes of transportation are not considered and only cars are considered capable of accommodating the diversity of origins and destinations of the projected traffic*". "*Road travel by private car... is not sustainable for it depends on fossil fuels*". "*Public transit is more energy efficient*".	• Need for the facility is clearly documented in Section 3.0 of the EAR. Specifically Section 3.3 discusses Alternatives to the Undertaking. • Some environmental issues have not been addressed since they are beyond the scope of the EAR and this Review, and must therefore be addressed in another forum (ie global warming, urban sprawl, greenhouse effects).
		• She suggests that the proposed road will stimulate urban growth in the opposite end of York Region from where the Region's OP considers development desirable, causing destruction of prime farmland	• Approved Official Plans for York Region, Simcoe County, Town of Bradford-West Gwillimbury and Town of East Gwillimbury reflect substantial development over the coming decade. Freeway will respond to travel demands and EAR acknowledges broader development issues as described in Section 5.4.6.3 of the EAR.

JUNE 22, 1999 MTO RESPONSES TO COMMENTS RECEIVED BY THE MOE DURING THE PUBLIC REVIEW OF THE HIGHWAY 400 - FUTURE HIGHWAY 404 EXTENSION LINK, (BRADFORD BYPASS), ENVIRONMENTAL ASSESSMENT

	Name & Address	Comments	MTO Response
		• She suggests that increased urban sprawl has detrimental effects on water supply and runoff in Lake Simcoe watershed.	• Municipal water supply will not be adversely affected by the proposed highway. Highway runoff will be addressed through quality and quantity stormwater management facilities as indicated in Section 5.4.6.1. of the EAR
P12	Dennis and Helen Harrison R.R. 2 Bradford, Ontario L3Z 2A5 (16/12/98 to MOE & MTO)	• Mr. & Mrs. Harrison stated that they are concerned with the highway consuming part of farm and adjacent farm lands.	
		• They indicated that the highway location is in contradiction to Bradford-West Gwillimbury Official Plan stating preservation and enhancement of agricultural resource are principles.	• The Town of Bradford stated that "*the conclusion reached after consultation with our affected citizens is that the location of the Technically Preferred Route for this new facility is satisfactory*" (see Comment M5).
		• They suggest that the freeway will affect farm operation and lifestyle.	• Impacts to agricultural operations were considered in the generation, analysis and evaluation of alternatives. The potential impacts of the technically preferred route and proposed mitigation measures are indicated in Section 5.4.4.1 of the EA. The Ministry is required to compensate a property owner according to the provisions of the Expropriations Act. Compensation is generally based on the market value of the property or the loss in market value in the case of a partial acquisition. If the Ministry buys only a portion of a property, the effect of the acquisition on the rest of the property will be taken into consideration. In addition, there is provision for payment of other reasonable expenses actually incurred, upon final settlement.
		• They understand that access to two adjacent (leased) farms is eliminated. Request access tunnel. Side Road 10 operations will otherwise be impacted by farm equipment.	• MTO does not compensate farmers who rent lands that become more difficult to access because of the undertaking. It is recognized that this impact can occur and that the farmer may be forced to rent other lands to continue the operation, however, given that construction is not currently scheduled, there should be sufficient time for tenant farmers to adjust their renting patterns.
		• They are concerned with possible noise from highway, forest damage, impact to wildlife. They expect impacts to natural watercourses and pike spawning area.	• Mitigation measures which will be adopted to minimize environmental impacts have been documented in Section 5.4.2 and 5.4.3 of the EAR. Specific details of the mitigation to be provided locally will be determined during subsequent design.
		• They wish reply to letter	• MOE Review will contain response.
P13	Mr. & Mrs. R. J. Lanthier R.R. 2 Bradford, Ontario L3Z 2A5 (16/12/98 to MTO)	• Mr. & Mrs. Lanthier stated that Tenant farmer's direct access will be cut off by highway. Requests access tunnel for farming.	• Comments are associated to those of adjacent landowners of P12. See response for P12.
		• They are concerned that destruction of prime agricultural land for transportation contradicts Bradford-West Gwillimbury Official Plan regarding protection of Class I farmland.	• The Town of Bradford stated that "*the conclusion reached after consultation with our affected citizens is that the location of the Technically Preferred Route for this new facility is satisfactory*"

JUNE 22, 1999 MTO RESPONSES TO COMMENTS RECEIVED BY THE MOE DURING THE PUBLIC REVIEW OF THE HIGHWAY 400 - FUTURE HIGHWAY 404 EXTENSION LINK, (BRADFORD BYPASS), ENVIRONMENTAL ASSESSMENT

	Name & Address	Comments	MTO Response
		• They suggested that there will be an impact to natural waterway leading to Holland Landing, consequent impacts to wildlife and increased possibility of flooding are concerns.	• MTO has committed to span the provincially significant wetland associated with the Holland River, thereby preserving current functions with regards to wildlife movement. • Bridge piers or fill will be place such that the surface of the road will be constructed above the Regulatory Flood elevation and sufficient conveyance will be provided under the bridge structures to avoid upstream flood impacts. A hydraulic analysis was completed to determine the impact of the recommended alignment on upstream flood risk. Based on the analysis, it was concluded that it will be feasible to construct the facility such that the increase in the Regulatory flood elevations upstream of the river crossings will not exceed 0.10 metres. This conforms with the requirements of the Lake Simcoe Region Conservation Authority. A more detailed hydraulic analysis will be required in conjunction with the design of the river crossings.
P14	Laura LaPosta 20981 Bathurst Street Holland Landing, Ontario (16/12/98 to MTO)	• Ms. LaPosta stated that she "*strongly objects to tactics taken by MTO to move the alignment further north at Bathurst Street, thus affecting property*".	• A technically preferred route was presented for review and comment to municipalities, other government agencies and to the public at information centres in November 1996. To address comments received an alignment modification was developed to avoid a significant woodlot area. This alignment was carried forward and included in the Environmental Assessment submission to MOE (evaluation provided on page 123 of the EA). At the time of submission affected property owners received by direct mail a Notice of the Submission. It is not known whether or not all property owners reviewed the EAR.
		• She indicated that proposal goes through property. She was assured by-pass would not affect property when given building permit as it would be placed south. "*Should never have been given a building permit during the study period*" nor been told it would not affect property.	• Assurance was not provided by MTO. Building permit was not provided by MTO. With respect to the specific alignment in the vicinity of Bathurst Street the route reflects the need to minimize the impact on woodlots to the south while trying to minimize impacts to a marina on the north and at the same time providing access to agricultural lands to the west of Bathurst Street (see Section 4.2.3.9 of the EAR).
P15	John Loveless R.R. 2 Bradford, Ontario L3Z 2A5 (5/12/98 to MTO)	• Mr. Loveless suggested that the Link should cross at one of the road allowances (11th, 12th, 13th, 14th) of Bradford West Gwillimbury to avoid dividing prime farm land.	• Agricultural impacts have been minimized by avoiding major severances, locating the alignment along mid-concession or along existing lot lines as indicated in Section 5.4.4.1 of the EAR.
P16	Phil and Ruth Major 20772 Yonge Street, R.R. 1 Newmarket, Ontario (7/12/98 to ??)	• Mr. & Mrs. Major stated that they don't want highway running through backyard.	

JUNE 22, 1999 MTO RESPONSES TO COMMENTS RECEIVED BY THE MOE DURING THE PUBLIC REVIEW OF THE HIGHWAY 400 - FUTURE HIGHWAY 404 EXTENSION LINK, (BRADFORD BYPASS), ENVIRONMENTAL ASSESSMENT

	Name & Address	Comments	MTO Response
		• They suggest joining Ninth Line with Holburn Road.	• The MTO study encompassed an analysis area extending from Highway 407 in the south to Highway 89 / Ravenshoe Road in the north. As a result of the assessment, the Bradford Bypass corridor was selected over other corridors including the Highway 89 / Ravenshoe Road and the Green Lane / Highway 9 corridors, as described in Section 3.5.2 of the EAR. • Roadway infrastructure improvements were considered for several corridors including Holborn Road and Ninth Line as described in Section 3.3.3 of the EAR. Those types of improvements were not expected to address out-of-way travel issues and were not expected to provide suitable traffic operations at major crossing roads where traffic signals are used.
P17	Gord Oeleloo S.H. Lot 22, King Township	• Mr. Oeleloo suggested that improved highways badly needed • He suggests that MTO is unlikely to find artifacts	• Support noted.
P18	Pickseed Canada c/o Brutto Land Management Consulting Mary McElroy for Claudio P. Brutto, Principal Project Mgr. 80 West Beaver Creek Road, Unit 2 Richmond Hill, Ontario L4B 1H3 (7/12/98 to McCormick Rankin)	• Ms. McElroy notes that "*proposed highway route through ...property represents a "fine tuning" of route planning to avoid impacting a heritage farm building on Leslie Street and to remove impacts on residential properties on 2nd Concession and Leslie Street*". • They have questions concerning proposed route including:	
		• What is possibility of route changing due to consultation?	• MTO can not predict outcome of review and therefore can not comment on possibility of route relocations that may result from review.
		• What is next step of EA process after Dec. 16?	• MOE will address in their Review document.
		• What are opportunities for additional comment or recourse for past and future endeavours?	
		• What is timing for property acquisition?(impact on leasing commitments)	• Property acquisition is normally initiated two to three years prior to construction. Construction timing is not known at this time.
		• Not in a position currently to object or support the initiative.	
		• Requests to be advised of appeals, response to questions and to set up meeting to discuss matter.	• The project team will be available for meetings that MOE request to address comments received on the EA.

JUNE 22, 1999 MTO RESPONSES TO COMMENTS RECEIVED BY THE MOE DURING THE PUBLIC REVIEW OF THE HIGHWAY 400 - FUTURE HIGHWAY 404 EXTENSION LINK, (BRADFORD BYPASS), ENVIRONMENTAL ASSESSMENT

	Name & Address	Comments	MTO Response
P19	Kay Pilling 93 River Road River Drive Park, Ontario L9N 1A4 (14/12/98 to MTO)	• Ms. Pilling stated that she is opposed to highway since other corridor exists (i.e. Green Lane/Bathurst Street/ Hwy 9).	• The MTO study encompassed an analysis area extending from Highway 407 in the south to Highway 89 / Ravenshoe Road in the north. As a result of the assessment, the Bradford Bypass corridor was selected over other corridors including the Highway 89 / Ravenshoe Road and the Green Lane / Highway 9 corridors. However as the study progressed, and in response to public input, the MTO responded by carrying out a specific review of the Green Lane / Highway 9 corridor as an alternative to the Bradford Bypass corridor the results are documented in Appendix B to the EAR). This review confirmed the Bradford Bypass corridor as being preferred for a freeway corridor with a 4 lane arterial corridor in the Green Lane / Highway 9 corridor.
		• She has concerns with flooding due to building on flood plain.	• Bridge piers or fill will be placed such that the surface of the road will be constructed above the Regulatory Flood elevation and sufficient conveyance will be provided under the bridge structures to avoid upstream flood impacts. A hydraulic analysis was completed to determine the impact of the recommended alignment on upstream flood risk. Based on the analysis, it was concluded that it will be feasible to construct the facility such that the increase in the Regulatory flood elevations upstream of the river crossings will be not exceed 0.10 metres. This conforms with the requirements of the Lake Simcoe Region Conservation Authority. A more detailed hydraulic analysis will be required in conjunction with the design of the river crossings.
		• She is concerned with noise from and expense of bridge at Albert's Marina.	• A noise mitigation strategy will be developed according to MTO / MOE noise protocol as described in Section 5.4.3.2 of the EAR.
P20	W.C. Priest 242 Sand Road Holland Landing, Ontario (13/12/98 to MTO)	• Mr. Priest stated that he is opposed to highway location due to reduced property value of River Drive Park and destruction of golf course and marina which are great assets to the area.	• Golf course and marina are expected to be maintained as viable businesses during and following freeway construction as indicated in Exhibit 5-6 (Economic Environment) of the EAR which states that "...the functional and economic viability of both enterprises will remain" and furthermore that "consultation will be necessary during the detailed design phase to minimise impacts to each business".
		• He suggested use of Green Lane route.	• The MTO carried out a specific review of the Green Lane / Highway 9 corridor as an alternative to the Bradford Bypass corridor. The results are documented in Appendix B to the EAR. This review confirmed the Bradford Bypass corridor as being preferred for a freeway corridor with a 4 lane arterial corridor in the Green Lane / Highway 9 corridor. • With respect to the specific alignment in the vicinity of Bathurst Street the route reflects the need to minimize the impact on woodlots to the south while trying to minimize impacts to a marina on the north and at the same time providing access to agricultural lands to the west of Bathurst Street (see Section 4.2.3.9).

JUNE 22, 1999 MTO RESPONSES TO COMMENTS RECEIVED BY THE MOE DURING THE PUBLIC REVIEW OF THE HIGHWAY 400 - FUTURE HIGHWAY 404 EXTENSION LINK, (BRADFORD BYPASS), ENVIRONMENTAL ASSESSMENT

	Name & Address	Comments	MTO Response
P21	J. Scrimshaw 3436 Rubens Court Burlington, Ontario L7N 3K8 (26/10/98 to MOE)	• Mr. Scrimshaw stated that he supports bypass and would like to see work expedited with the 404 extension.	• No further action required.
P22	Silver Lakes Golf & Country Club Charles Penstone, President & General Manager 21114 Yonge Street, R.R. 1 Newmarket, Ontario L3Y 4V8 (26/11/98 & 7/4/99 to MOE)	• Mr. Penstone stated that he is "*not at all confident and comfortable that MTO has conducted sufficient due diligence based on lack of public meetings and the absence of information*".	
		• He suggested that the "proposed raised highway would literally obliterate the Lower Landing archeological site".	• Refer to response provided for the "Historic Sites and Monuments Board of Canada" comments (GA3).
		• He indicated that the route of the proposed elevated highway would run along the southern boundary cutting dramatically into sections of the golf course. The business is an asset to the local community as an employer, tax base and consumer of local goods and services, provides service to local public	• The specific alignment in the vicinity of Bathurst Street reflects the need to minimize the impact on woodlots to the south while trying to minimize impacts to a marina and golf course to the north and at the same time providing access to agricultural lands to the west of Bathurst Street. Earlier discussions with the owner suggested that mitigation is possible. Appendix E of the EAR includes Minutes of Meeting which indicate that Mr. Penstone believed that there is space on his property to re-orient some holes if a partial taking is required. Section 5.4.4.2 of the EAR commits MTO to consult further with the golf course owner regarding reconfiguring affected facilities during subsequent design.
		• He questions whether the Government fails under the same rules and regulations as the golf course had to. Experts have told him that salt and pollutants spilling from this elevated roadway would severely impact vegetation and wildlife for more than 120 m in each direction. Sensitive silver birch and premium grasses could not survive in the highway environment. Diverse and plentiful wildlife population would be negatively impacted.	• The Government is proceeding under the Environmental Assessment Act for project approval, in addition to adherence to other provincial and federal legislation, whereas the golf course would have been approved under the Planning Act in adherence with local Official Plans. • MTO intend to follow specialist advice regarding mitigation measures that can be developed as part of the design stage to minimize the potential impacts imposed by salt spray or salt laden runoff as a result of the proposed elevated roadway in proximity to the golf course and its associated vegetation.
		• He suggests using Green Lane or Queensville Sideroad as they are more viable routes.	• The overall alignment for the freeway was optimized by taking into consideration the need to provide a safe transportation facility while minimizing and / or mitigating natural and social environmental impacts (see Section 4.2.3). • With respect to the specific alignment in the vicinity of Bathurst Street the route reflects the need to minimize the impact on woodlots to the south while trying to minimize impacts to a marina on the north and at the same time providing access to agricultural lands to the west of Bathurst Street (see Section. 4.2.3.9).
		• He requests continued opportunity to be involved before final decisions made.	• Request noted.

JUNE 22, 1999 MTO RESPONSES TO COMMENTS RECEIVED BY THE MOE DURING THE PUBLIC REVIEW OF THE HIGHWAY 400 - FUTURE HIGHWAY 404 EXTENSION LINK, (BRADFORD BYPASS), ENVIRONMENTAL ASSESSMENT

	Name & Address	Comments	MTO Response
		• He reports in April 1999 that *"My Greens Superintendent who leased a portion of the land to my south, was informed by his landlord that the MTO might proceed with the land purchase. However there was no formal notification given ..."*	• Property acquisition is normally initiated two to three years in advance of the Ministry's scheduled construction period. In instances where construction has not yet been scheduled, owners may initiate the advance purchase of their property. The property purchase activities of individual owners are treated as confidential matters. The communication of activities to a lessee are determined by the negotiated terms and conditions of the agreement of purchase and sale.
P23	Gerald W. Steward, P. Eng. 5 Cromwell Court Bramalea, Ontario L6T 1Z7 (19/10/98 to MOE)	• Mr. Steward supports bypass and requests some literature.	• Support noted. • MTO to provide material.
P24	832695 Ontario Inc. % Walker, Nott, Dragicevic Assoc. Ltd., Peter R. Walker, Senior Principal 172 St. George Street Toronto, Ontario M5R 2M7 (15/12/98 to MOE & MTO)	• Mr. Walker stated that he had concerns that route crosses Lots 12 &13 in Concession 8 and severs subject lands into two parcels, which will unnecessarily compromise current plans to develop lifestyle community. He indicated that route will occupy 11.7 ha (14%) and unuseable parcel will occupy 4.9 ha (6%).	• Development is not yet approved and lands are currently zoned Agricultural.
		• He indicated that the northernmost parcel will have no access to public roads	• As indicated in the EAR, alternative access is provided on the project where warranted. Exhibit 5-2 displays the relationship of the proposed alignment to the properties in Concession 8. Although an objective was to be mid-concession to avoid severances there are locations where this was not always possible due to other sensitivities and constraints. The Ministry is required to compensate property owners according to the provisions of the Expropriations Act. If the Ministry buys only a portion of a property, the effect of the acquisition on the rest of the property is taken into consideration. This may include acquisition of isolated portions of the property for which access can not be provided.
		• He requests that route be shifted north to the mid concession line requiring only slight realignment to portions between Simcoe County Road 4 and Lots 12 &13.	• The overall alignment for the freeway was optimized by taking into consideration the need to provide a safe transportation facility while minimizing and / or mitigating natural and social environmental impacts (see Section 4.2.3).
		• He agrees with full interchange at Simcoe County Road 4, grade seperation only at 10 Sideroad and no interchange at Middleton Road.	• Support noted.
		• He has serious concerns about noise mitigation for planned residential development on subject lands.	• A noise mitigation strategy will be developed according to MTO / MOE noise protocol as described in Section 5.4.3.2 of EAR.
		• He requested that the angle of grading not visually impact residents of properties to south and those planned on subject lands.	• Further discussions into the design of the freeway will be sought at a later design phase to achieve a balance of visual enhancements locally, as discussed in Section 5.3.1 of the EAR.

JUNE 22, 1999 MTO RESPONSES TO COMMENTS RECEIVED BY THE MOE DURING THE PUBLIC REVIEW OF THE HIGHWAY 400 - FUTURE HIGHWAY 404 EXTENSION LINK, (BRADFORD BYPASS), ENVIRONMENTAL ASSESSMENT

	Name & Address	Comments	MTO Response
P25	Willow Productions Sam Reid P. O. Box 1696 Station Main Holland Landing, Ontario L9N 1P2 (13/12/98 to MOE & MTO)	• Mr. Reid stated that the proposed highway link "*will have devastating effect on the extremely sensitive wetland area*". A four lane freeway would eventually destroy wildlife completely.	• The potential impact to wetland resources was addressed throughout the EAR. It was a major consideration in selection of the preferred alignment. In the view of the project team, it was not possible to avoid some wetland impacts within the study area. The approach adopted was to minimize wetland impacts by minimizing length of wetland crossing, crossing wetland areas already disturbed by past land uses and by committing to place the facility on a raised structure in wetland areas. The feasibility of allowing areas now in a disturbed state to regenerate to wetlands will also be considered. (Refer also to response GA9).
		• He suggests expansion of local routes already planned and approved should be sufficient to address present traffic congestion.	• Section 3.1.2.2 of the EAR identifies a vehicle demand which will warrant a freeway facility. • Need for the facility is clearly documented in Section 3.0 of the EAR. Specifically Section 3.3 discusses Alternatives to the Undertaking.
P26	Irene Winter 4 Orkney Crescent Etobicoke, Ontario M9A 2T5 (no date to MTO)	• Ms. Winter stated that she is opposed to highway link as it will damage and extensively pollute fish pond near Holland River.	• The specific nature of the small residential pond was not investigated as part of the fisheries habitat assessment in the EAR. The recommended alignment will affect the current form of the man-made feature, however, in consultation with the landowner a modification/relocation strategy will be developed as part of the design phase.
		• She suggests that extensive wetlands on property will be destroyed.	• In consultation with the Ontario Ministry of Natural Resources (OMNR), minor shifts in the alignment between the branches of the Holland River were evaluated to minimize impacts to many natural, cultural, and socio-economic features including: Provincially Significant Wetlands, large contiguous woodland blocks, speciality crop farms, a marina, and, two major river crossings. The majority of the large woodland blocks south of the marina are not considered part of the larger wetland complex (MNR Wetland Mapping, Exhibit 6, Appendix 4) and the wetland areas have undergone various levels of previous disturbance. However, the extent and significance of the large woodlands/disturbed wetland community in this area is recognized as "Natural Heritage Feature 11" in Appendix G of the EAR which also illustrates the expected extent of the edge type impacts within the disturbed wetland areas. Due to the north-south orientation of the wetland feature, some impacts from an east-west roadway were unavoidable. It was agreed during early consultations with OMNR that when a crossing of the provincially significant wetland was required, the crossing location should be directed to the more disturbed zones of the wetland complex.

JUNE 22, 1999 MTO RESPONSES TO COMMENTS RECEIVED BY THE MOE DURING THE PUBLIC REVIEW OF THE HIGHWAY 400 - FUTURE HIGHWAY 404 EXTENSION LINK, (BRADFORD BYPASS), ENVIRONMENTAL ASSESSMENT

	Name & Address	Comments	MTO Response
P27	Scott Williamson Box J-35, RR#2 Sutton West, Ontario L0E 1R0 (8/12/98 to MOE)	• Mr. Williamson stated that he is concerned that proposed freeway construction will severely impact a significant historical site in Lot 118, East Gwillimbury. • He suggests that proper archeological investigation of the Lower Landing area could reveal a valuable storehouse of information about the history of Canada.	• Refer to response provided for the "Historic Sites and Monuments Board of Canada" comments (GA3).
P28	Janet Russell 18694 Leslie Street RR#5 Newmarket, Ontario. L3Y 7V1 (3/11/98 to MOE and MTO)	• Ms. Russell stated that "*"The Lower Landing" area is both environmentally and historically important and irreplaceable*". Surely it can be preserved while still allowing for the perceived need to connect the two major highways.	• Refer to response provided for the "Historic Sites and Monuments Board of Canada" comments (GA3).
INTEREST GROUP			
IG1	F.R.O.G.S. Paul Jafine, Director C.W.D. Foster, Director 20989 Yonge Street Newmarket, Ontario L3Y 4V8 (10/12/98 to MOE & MTO & Env. Can.)	The introduction to the F.R.O.G.S. submission states that: "*We believe MTO's EA Study process and final EAR do not satisfy the requirements of the Act or your Ministry's Guidelines due to the proponent's failure to:* *- assess all reasonable alternatives at an appropriate (early) stage of the decision process* *- consult effectively with affected stakeholders* *- accurately document the decision-making process* *- properly prove the need and justification for this proposed undertaking*". **The FROGS comments have been structured into the above four areas of concern.** **Assessing Alternatives:** • "*...in our view, MTO failed to properly assess all reasonable alternatives as required by the Act by:* *- restricting the available alternatives to those solely within MTO's mandate* *- refusing to expand the study area to include the Green Lane / Highway 9 corridor* *- considering the Green Lane corridor as a freeway only after significant, potentially irreversible decisions had been made*".	• The MTO properly assessed all reasonable alternatives as part of the Bradford Bypass study. This is described extensively in Chapters 3 & 4 of the EA report. • The MTO can only seek approval for projects that fall under its mandate. However it was not possible for MTO to consider a solution to the transportation problem in isolation from the issues facing all other municipal jurisdictions in the area (Simcoe, York, Bradford West Gwillimbury, East Gwillimbury).

JUNE 22, 1999 MTO RESPONSES TO COMMENTS RECEIVED BY THE MOE DURING THE PUBLIC REVIEW OF THE HIGHWAY 400 - FUTURE HIGHWAY 404 EXTENSION LINK, (BRADFORD BYPASS), ENVIRONMENTAL ASSESSMENT		
Name & Address	**Comments**	**MTO Response**
		• In carrying out the Bradford Bypass EA study the MTO, in consultation with the municipalities in the area, considered the total needs and alternatives prior to identifying the preferred Provincial facility. It is of note that Provincial freeways will be used in some circumstances for local trips and local roads will be used by long distance trips to complete their journeys. The EA document provides an understanding of total traffic demands in the area (see Section 3.1.2.2). It also addresses what additional / alternative solutions are being considered by other jurisdictions (see Section 3.1.2.2). The MTO study encompassed an analysis area extending from Highway 407 in the south to Highway 89 / Ravenshoe Road in the north. As a result of the assessment, the Bradford Bypass corridor was selected over other corridors including the Highway 89 / Ravenshoe Road and the Green Lane / Highway 9 corridors. • As the study progressed, and in response to public input, the MTO responded by carrying out a specific review of the Green Lane / Highway 9 corridor as an alternative to the Bradford Bypass corridor the results are documented in Appendix B to the EAR). This review confirmed the Bradford Bypass corridor as being preferred for a freeway corridor with a 4 lane arterial corridor in the Green Lane / Highway 9 corridor. The 4 laning of the Green Lane / Highway 9 corridor was in fact the subject of an EA study by York Region which concluded with the recommendation to build a 4 lane arterial. This recommendation was then subjected to a bump-up request by FROGS to consider the Green Lane / Highway 9 corridor as an alternative to the Bradford Bypass - to be the only major corridor in the northern part of the Region. This bump-up request was denied by the Minister of the Environment.
	Consultation with affected stakeholders: • *"...it appears to us that MTO utilized consultation almost exclusively for the purpose of ensuring, wherever possible, that the EAR would stand up to all identified criticism".*	• The MTO developed and carried out a consultation process which meets with the requirements of the EA Act and furthermore received endorsement of that process from stakeholders and the public at the outset during the first Public Information Centre in June 1993 (see Appendix C of the EAR).

JUNE 22, 1999 MTO RESPONSES TO COMMENTS RECEIVED BY THE MOE DURING THE PUBLIC REVIEW OF THE HIGHWAY 400 - FUTURE HIGHWAY 404 EXTENSION LINK, (BRADFORD BYPASS), ENVIRONMENTAL ASSESSMENT

Name & Address	Comments	MTO Response
	• *"We are disappointed to note that many of the responses provided to MTO have not found their way into the final EAR. We are also concerned that the summary of the comments contained in the final EAR may cause the reader to incorrectly assume that this project has more stakeholder support than it really does".*	• All comments which were provided either in writing or verbally from government agencies, interest groups and the general public have been duly considered, responded to through correspondence, modifications to the design, clarifications and any means of proactively addressing the issues (see Section 2.2 of EAR). The original input is on file, however, for reasons of providing an EAR of manageable size, individual comment sheets are not included. Also, names and addresses have been withheld as indicated on comment sheets for confidentiality reasons. The summaries of input received represent the public reaction in a condensed format.
	• *"Other concerns of our association are with respect to information that was either not provided or alternatively withheld from the public at these PIC's. Information of this nature includes noise, flooding, salt damage, effect on private wells and the importance of Lot 118 to Canada's and our First Nation's heritage".*	• Information was not withheld from the public at the PIC's. Information was summarized on panels for general review. In addition, specialist staff were on hand to address questions related to specific elements of concern such as those noted in the comment. This is a standard approach to public consultation.
	• *"We would ask that these additional stakeholder comments be added to the Official File for this EAR"* (ie 61 FROGS cards, letter from Mr. Penstone)	• As stated in Appendix C of the EAR, Chapter 5, pg. 6, all FROGS comments have been duly recorded. Mr. Penstone's letter is also on record.
	Accurately document the decision-making process: • *"As we see it, MTO has failed to put forward a properly documented convincing case to support its decision to pursue a new freeway in the Bradford Bypass corridor. We believe the above noted series (see pgs 28 - 42 of their submission) of decisions have little if any correlation to the decision points reported by MTO in Exhibit 2-1 of the EAR. Further, we have seen no study documentation whatsoever to support MTO's proposal to stage this project by starting off with a two lane, at grade roadway".*	• The Bradford Bypass corridor has been selected based on significant and exhaustive consideration of all potential opportunities, as described in Section 3.5 of the EAR. • Within that consideration was a comparative analysis of the Newmarket corridor, the Highway 9 / Green Lane corridor and the Bradford corridor, as described in Appendix B of the EAR. Support for the Bradford Bypass corridor was compiled from several levels of consideration -(i) the original Highway 89 Extension EA's (1979 and 1984), (ii) the Highway 404 / 89 Overview, (all of which identified a need for a new roadway corridor), (iii) the current study which featured the development of corridor alternatives for a new roadway (which resulted in a comparison of 5 corridors), (iv) the comparison of the highest ranked three corridors (as noted above) and (v) confirmation in the Green Lane ESR for the need in that corridor for only a four lane arterial

JUNE 22, 1999 MTO RESPONSES TO COMMENTS RECEIVED BY THE MOE DURING THE PUBLIC REVIEW OF THE HIGHWAY 400 - FUTURE HIGHWAY 404 EXTENSION LINK, (BRADFORD BYPASS), ENVIRONMENTAL ASSESSMENT

Name & Address	Comments	MTO Response
	Property prove the Need and Justification: • *"...in our view, MTO is (by making the policy decision that this road must be a controlled access freeway) no longer justified in seeking to solve local traffic congestion problems with this freeway. Accordingly, the only justifiable purpose of this freeway is to connect Highway 400 to Highway 404 to serve inter regional and inter urban travellers. This connection can effectively serve these needs if it is located anywhere between the Ravenshoe Road corridor to the north and Stouffville Sideroad to the south".*	• Section 3.1.2.2 of the EAR identifies a vehicle demand which will warrant a freeway facility. A freeway is also expected to provide improvements to fuel efficiency, reduced fuel emissions, improved road safety, and stronger economic links to supply and market for agriculture. • An opportunity exists to implement the project in stages as stated in Section 5.3.2. Any decision regarding implementation timing, sequence or staging will be subject to future internal MTO analysis and does not affect the scope or rationale for seeking approval for the full project under the EA Act. • The Ministry of Transportation has, as one of its mandates, to provide for the safe, efficient movement of people and goods between regions and between urban areas. Since the mid - 1970's and escalating in recent years, MTO have been urged to address the unresolved transportation problems in the area south of Lake Simcoe (see Section 3.1.2.1 of the EAR). • There have been several travel demand studies carried out over the same 20 + year period and it was again thoroughly examined in the EA study (see Section 3.1.2.2 of the EAR). The results of that analysis reaffirmed that without the Bradford Bypass the east-west summer demand east of Highway 400 would exceed capacity by 2021 and that the average daily traffic would reach capacity a few years later. This shortfall is expected to be alleviated by several municipal road and existing highway upgrades as well as a controlled-access freeway which complements the Province's "cellular" highway framework, as described in Section 3.1.2.5 of the EAR. • The Recommended route not only provides for trips between Highway 400 and Highway 404 but also provides intermediate access points at 3 major crossing roads to accommodate local travel needs.

Ontario

Ministry of Transportation | Ministère des Transports

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Mr. Eric Hodgins
Town Planner
Town of Bradford West Gwillimbury
P.O. Box 160
Bradford, Ontario
L3Z 2A8

Date: March 7, 2000

Dear Mr. Hodgins:

Re: Proposed "Hwy 400 - Hwy 404 Extension Link", (Bradford Bypass) - Simcoe Road 4 Interchange

Thank you for your letter of February 2, 2000 forwarding a reconfiguration of the above interchange proposed by the Town's Planning Consultant, "J. Ross Raymond & Associates", (attached).

It appears that this is the same reconfiguration requested by the Town of Bradford West Gwillimbury in Mayor Frank Jonkman's December 16, 1998 letter to the Ministry of the Environment, (in response to an MOE 60-day public review).

Mayor Jonkman's letter to MOE requests that:

- The "Cloverleaf" at County Road 4, "*be constructed in such a way that service roads can be integrated with the ramps and use the same signalized intersections*", to provide needed access for future urban land use east and west of County Road 4 and avoid increased industrial and commercial traffic flow through residential street.

  (It should be noted that the interchange at County Road 4 is not a "Cloverleaf" configuration. "Cloverleaf" designs are normally avoided. Other configurations such as the Parclo A-4 being proposed will provide better operational qualities and characteristics, at lower property and construction costs.)

As requested in your letter, the Ministry's planning consultant, "McCormick Rankin Corporation" and ministry staff reviewed the suggested change. It is the position of the project team that the proposed reconfiguration cannot be supported. It is not a question of the details of its design. It is the basic configuration itself. The Bradford Bypass has been planned to provide a high standard of operational quality and safety to its users. Reduction of safety standards on a newly planned freeway in an area where existing development or land features do not control or constrain design cannot be justified.

To clearly identify and explain the problems associated with the reconfiguration of the interchange proposed by your consultant I have attached technical assessment memorandums provided by the Ministry's Central Region Traffic Management Office and the Ministry's consultant, "McCormick Rankin".

Your letter also indicates that the design your consultant has suggested is "*.... virtually identical to the Victoria Avenue (Niagara Road 24) - Queen Elizabeth Way interchange which was recently reconstructed by your Ministry....*".

The attached memo from Mr. Neil Ahmed of McCormick Rankin identifies several technical inaccuracies with this observation that should be noted. However, simply stated, the history of the QEW and the rationale for the design of the Victoria Avenue interchange do not present a precedent that justifies a similar design on the Bradford Bypass, (or any other new freeway). It is in fact probably more appropriate to conclude from the attached history of the QEW at Victoria Avenue that to not protect for a Parclo A-4 interchange at Simcoe Road 4, from the outset, would be poor planning.

A separate issue involving this interchange was brought to the Ministry's attention in October of 1999. Property owners and their consultants in the vicinity of the proposed Bradford Bypass/Simcoe Road 4 interchange contacted Ministry staff to question the feasibility of a new direct access to Simcoe Road 4 between the 8th Line and the Bypass. They were advised at that time that the Bradford Bypass study did not identify the need for any new direct access at this location and based on the recommended plan an access at this location for an additional signalised intersection would conflict with the construction and operation of the interchange. However, the Ministry's project team had not been advised that the Town's July 1998 draft Official Plan had been revised in June of 1999 to include a new service road parallel to and south of the proposed Bradford Bypass.

As a result of these private sector inquiries, the Ministry has since had several discussions with both you and the Town's planning consultant Mr. Ross Raymond. During these recent discussions several other modifications to the interchange were suggested to MTO. These included:

1. a northerly realignment of the Bypass;
2. a direct connection of the proposed arterial road to the interchange off ramp, (from the west to N/S Simcoe Road 4 ramp); and,
3. a right in - right out access to the west side of Simcoe Road 4;

The rationale for the recommended alignment, rather than further north, is provided in the MTO Bradford Bypass Environmental Assessment Submission currently being reviewed by Ministry of the Environment under the formal requirements of the EA Act.

With regard to the second suggestion the attached memorandum from the Ministry's Traffic Management Office provides in detail technical reasons why this direct connection to a freeway ramp is unsafe and unacceptable.

The acceptability of a right in - right out arterial road access is uncertain. A traffic impact assessment would be required, for review by the Ministry, to determine if there are potential unacceptable adverse effects on the operation and safety of the road network. Please be advised that the section of Simcoe Road 4 south of the interchange and north of the 8th Line, where a right in - right out access might be considered, is a County of Simcoe road. Therefore, prior to any further discussions of this option with MTO, the Town must consult with the County of Simcoe and obtain their formal position regarding this suggestion.

There was a finding during the Ministry's review of these requests for interchange modifications that the Town should be aware off. In both the July 1998 version and the June 1999 version of the draft OP the Bradford Bypass is incorrectly aligned on "Schedule F-2 TRANSPORTION", (it is too far north of the 8th Line). In addition, the configuration of the interchange is incorrectly represented, (ramps are either of the wrong configuration or missing), the median appears to be shown as 100 m wide rather than 15-22 m and the basic minimum right-of-way requirements for the facility are not shown. In August 1997, the Ministry's consultant forwarded to the Town's consultant, "Raymond, Walton, Hunter", 1:10,000 role plans as well as the CADD drawings of the Recommended Plan for the Bradford Bypass. These plans are still accurate and should be referred to.

In conclusion, the Town's December 16, 1998 letter to the MOE states that:

- "*...the conclusion reached after consultation with our affected citizens is that the location of the Technically Preferred Route for this new facility is satisfactory....*", and

- The letter asks MOE if negotiations on the Town's requests can occur during the EA review process otherwise; "*Council will opt for a mediation process after Notice of Completion of Review is published in an attempt to avoid requesting a hearing*".

MOE is presently preparing its "Review" of the Bradford Bypass EA submission. Their Review document will include the comments received during the initial review period and the MTO response to each. MOE will then publish a "Notice of Completion of Review" which will initiate a second public review period.

In light of our recent discussions and in response to the information provided by the Ministry to the Town in this letter, your update of Town's position regarding the Ministry's Recommended Plan for the Bradford Bypass will be greatly appreciated. Please recognize that changes, such as those presently being requested by the Town, if pursued, would be subject to their own environmental assessment and public/agency consultation requirements. Therefore, if it is possible to bring all or any of the Town's outstanding comments or concerns to conclusion, the Ministry of the Environment should be advised.

Thank you in advance for your time taken to assist us in addressing and hopefully resolving these outstanding matters. Should you require any further information at this time, please call.

Sincerely,

<Original signed by>

Patrick Reynolds
Planning & Environmental Office
MTO, Central Region

Attachments: History of QEW/Victoria Ave. Interchange;
MRC Memorandum Feb.10, 2000;
Traffic Management Office Memorandum, Feb. 22, 2000;
Town of Bradford West Gwillimbury Letter, Feb. 2, 2000.

Cc:	Mayor Frank Jonkman	- Town of Bradford West Gwillimbury
	William H. Brown	- Simcoe County Engineer
	S. Desautels	- Ministry of the Environment
	J. Ross Raymond	- J. Ross Raymond Planning Consultant
	Neil Ahmed	- McCormick Rankin Corporation
	F. Leech	- MTO
	R. Kampus	- MTO
	A. Steele	- MTO

Attachment - March 7, 2000 letter to Mr. Eric Hodgins, Town Planner, Bradford West Gwillimbury

THE QEW/VICTORIA AVE INTERCHANGE

The following is provided in response to the Town of Bradford West Gwillimbury's observation, in support of its request for a reconfiguration of the proposed Bradford Bypass/Simcoe Road 4 interchange, that: "*...The design is virtually identical to the Victoria Avenue (Niagara Road 24) - Queen Elizabeth Way interchange...*".

The Queen Elizabeth Way has a unique history, which sets it apart from other similar freeway facilities in Ontario. The QEW as we know it today can be traced back to two major transportation initiatives in the early part of the 20th century. A 1916 Toronto-Hamilton Highway Commission recommendation led to the 1931 construction of a section, referred to as The Middle Road, from Hwy 27 in Etobicoke to Hwy 10 in Port Credit as a labour relief program during the depression.

In 1934, following a change of government, the original concept was changed to a four lane divided highway to improve safety. In the early 1930's a similar project was being planned for the Hamilton to United States corridor. Shortly after 1934 a decision was made to link the Middle Road and the New Niagara Highways together to form a single high-speed facility between Toronto and New York State. This change, combined with the cross section revision, established the conceptual design of the QEW. The section of the "New Niagara Highway" from Hamilton to St. Catherines was completed in 1939. (The Middle Road and New Niagara Highway was renamed the Queen Elizabeth Way in early 1939 in anticipation of the Royal Visit. The remaining sections of the QEW were completed in stages due to wartime restrictions related to the Second World War.)

Like other contemporary highways of the time, the QEW was, for the most part, constructed along existing concession roads. As a result this section of QEW did not initially have access restrictions, although permits were required. While the QEW was regarded as a model superhighway in the 1940's, the dramatic increase in traffic following the Second World War, coupled with an escalating accident rate necessitated a review of access controls for the highway. This lead to the decision to fully control access to QEW. New interchanges and service roads were required to provide access to and from the adjacent properties.

In 1966 the Victoria Avenue interchange was under construction. At the same time a Functional Planning Report was being prepared that recommended replacing the existing design with a Parclo A-4 configuration, (the same configuration proposed by the Ministry at the Bradford Bypass/Simcoe Road 4 interchange). This design was in fact protected for through corridor control/land management until the early 1980's.

In 1992 a QEW preliminary design study reconfirmed that a Parclo A-4 interchange at this location is the configuration that would provide the best operational characteristics of the alternatives under consideration. However, it was also determined that recent development in the vicinity of the Victoria Avenue interchange, following the relaxation of corridor controls by the Ministry in the early 1980's, had created difficulties with respect to the original concept of a Parclo A-4 interchange. Replacement of the existing interchange with a Parclo A-4 interchange would now have significant property impacts that would adversely affect operating farms and existing commercial establishments. As a result, the modification of the existing configuration that includes new buttonhook ramps in the southeast quadrant was selected instead.

In conclusion, 34 years ago planners of the Victoria Avenue/QEW interchange recognized that the Parclo A-4 interchange configuration was required at this location, however, the opportunity was not protected for. Planners of the Bradford Bypass have determined that a Parclo A-4 interchange configuration is required at the Bradford Bypass/Simcoe Road 4 interchange. This configuration will be protected for as part of the Recommended Plan for the Bradford Bypass which has been submitted to the Ministry of the Environment for formal review and approval under the requirements of the Environmental Assessment Act.

Town of Bradford West Gwillimbury

P.O. Box 160, Bradford, Ontario L3Z 2A8

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February 2, 2000

FAXED (416-235-4940; 2 pages)
AND MAILED

Ministry of Transportation
Central Region Planning & Environmental Office
1201 Wilson Avenue
Atrium Tower, 3rd Floor
Downsview, ON M3M 1J8

Attn: Mr. Patrick Reynolds
Transportation Planning &
Environmental Assessment Coordinator

Dear Mr. Reynolds:

Re: Bradford Bypass - County Road 4 Interchange
Town of Bradford West Gwillimbury

Further to our telephone conversation on January 27, 2000, I enclose a proposed redesign for the Bradford Bypass - County Road 4 interchange. The sketch shows an alternative location for the eastbound on and off ramps at County Road 4. It also provides for the service road concept that is identified in the draft Official Plan.

The design is virtually identical to the Victoria Avenue (Niagara Road 24) - Queen Elizabeth Way interchange which was recently reconstructed by your Ministry.

Would you please review the proposal and forward your comments to the Planning Department. Should you or your consultants have any questions, please do not hesitate to call. If you would like to speak directly with the Town's Planning Consultant, Ross Raymond, he can be reached in Gravenhurst at (705) 687-4274.

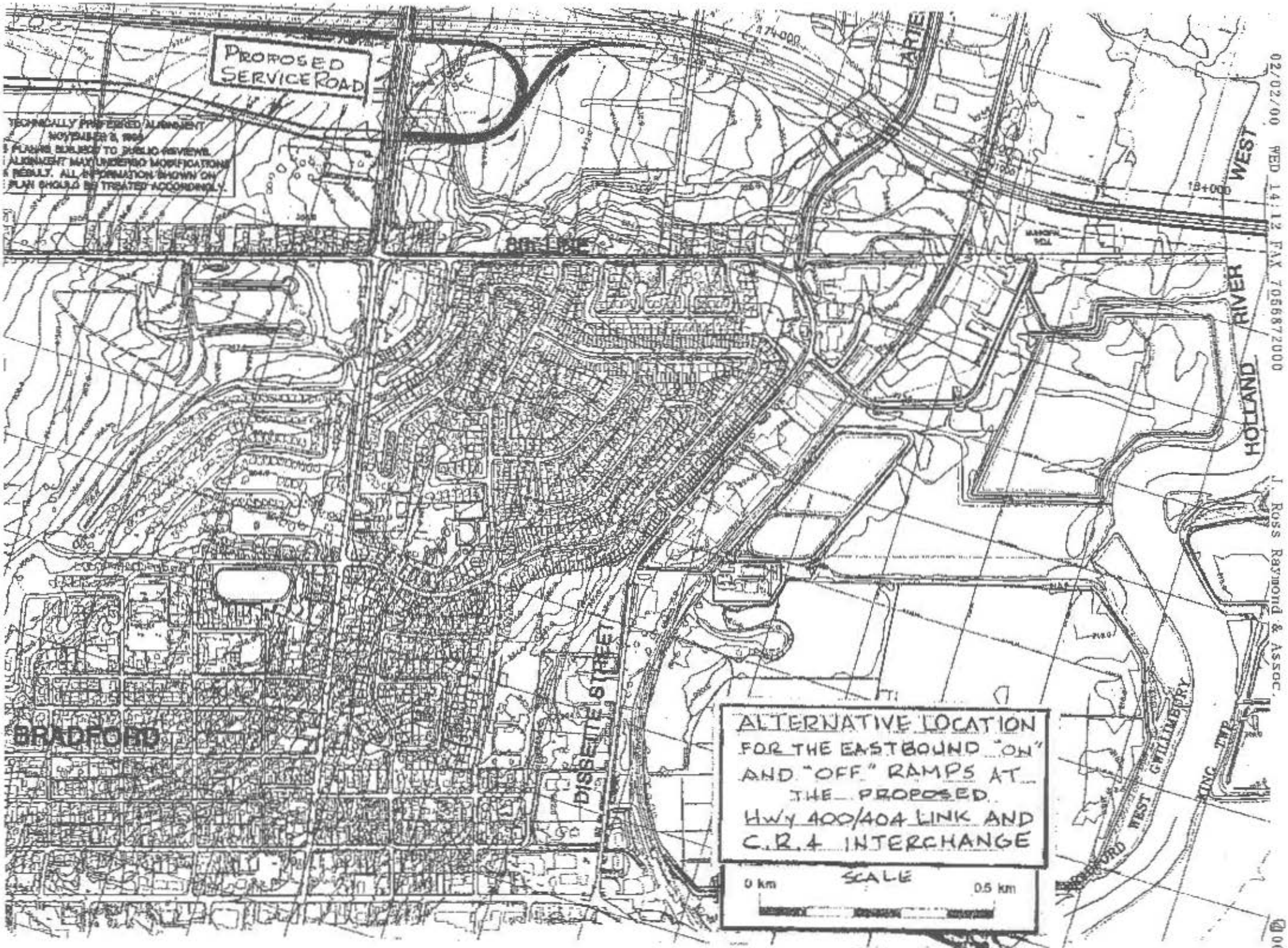
Yours very truly,
<Original signed by>

Eric H. Hodgins, M.C.I.P., R.P.P.
Town Planner

EHH/mm

Encl.

cc: J. Ross Raymond, J. Ross Raymond Planning Consultant (Faxed • 705-687-2000)
William H. Brown, Simcoe County Engineer (Faxed • 705-726-3991)



MEMO

TO: Pat Reynolds, MTO

FROM: Neil Ahmed, P. Eng., **McCormick Rankin Corporation**

DATE: February 10, 2000

COPIES:

OUR FILE: W.O. 2341-200

SUBJECT: Bradford Bypass EA – Simcoe Road 4

2341-200 - 800 -I:\Work Order Files\2341-Bradford Bypass EA\2341.700\2341.703 Property Issues\info memo feb 9.doc

In response to your request to review the "proposed redesign for the Bradford Bypass – County Road 4 interchange" as provided recently by the Town of Bradford West Gwillimbury, we have examined the sketch provided and have the following comments.

QEW Interchange Used for Comparison

The Town's inference that the sketched configuration is "virtually identical" to the recently reconstructed interchange of QEW and Victoria Avenue (Regional Road 24 in the Region of Niagara) is not truly correct. McCormick Rankin prepared the ESR for Casablanca Boulevard to Victoria Avenue for TREC and so have some knowledge of the interchange.

That interchange in Niagara (image of the configuration is attached), was until recently, a diamond configuration for the eastbound direction. It also featured integration with a service road alongside the QEW that had a grade separated crossing at Victoria Avenue. The new interchange included the realignment of the service road and ramps that no longer connect to Victoria Avenue but rather, connect to the service road. This configuration is very similar to the configuration of the westbound ramps.

The ramps at the interchange have been located on the east side of the crossing road most likely to minimize property impacts. This aspect considered, ramps were located on the opposite side of Victoria Avenue where there were less constraints. Since a service road already existed, the typical Parclo A or B would not fit into the constrained lands available and a significantly different configuration was required. The configuration used for the westbound ramps was likely taken to be acceptable in this situation.

It is important to note that this interchange does not serve a major urban node nor will operational capacity likely be a concern.

Bradford Bypass Interchange

The interchange configuration at Simcoe Road 4 for the eastbound ramps as provided by the Town features a Parclo 'B' exit ramp with an approximate radius of 100m. While the radius of the ramp is adequate, this is not a desirable configuration given that the approach to the circular ramp would be along a 3% down grade. In these cases deceleration is more difficult on a slippery road surface and aggressive driving can lead to loss of vehicle control.

Whereas the ramps of the Niagara interchange intersected with a service road accessing two directions, this ramp arrangement would feed directly to and from Simcoe Road 4 and the adjoining service road to the west. This access arrangement is in part since there is no proposal to extend the service road easterly from Simcoe Road 4. The intersection of the ramps and service road at Simcoe Road 4 would likely require installation of traffic signals. The spacing of traffic signals for the interchange and those at 8th Line would be approximately 250m. TAC standards which apply to arterials, indicate that an arterial road with an interchange terminal requires a minimum spacing of 200m to a collector and 400m to an arterial roadway from the ramp terminal intersection. Given that 8th Line operates locally as an arterial, the spacing of 250m is substantially inadequate.

This arrangement would also lack in operational capacity as compared to the recommended configuration. With the MTO configuration, the heavy S-E move is accommodated with a direct ramp. The move is replaced in the Town scheme with at best, a channelized right turn with a yield condition. Similarly, the N-E loop ramp that provided easy access to the freeway would be replaced by a signalised left turn with the Town scheme. This is again a reduction in service levels over what is recommended.

In addition to the above, the Town's scheme shifts much of the property requirement to the east side property, thereby transferring impacts from those already identified in the EAR. It is understood that the east side property is to be retained as open lands / conservation area in the draft OP and so this proposal may conflict with this intent.

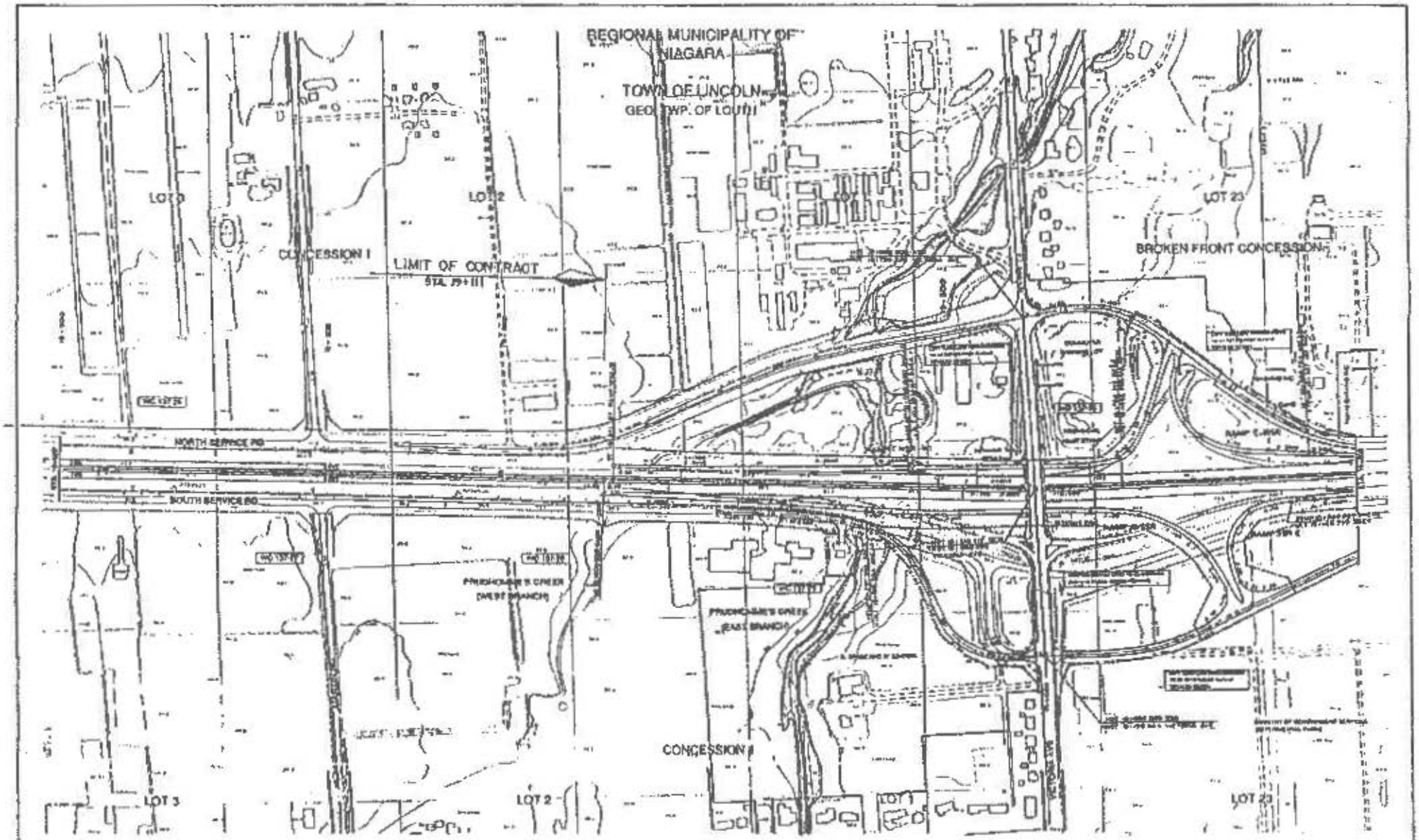
DISCUSSION

The Town has indicated that as a result of introducing a unique type of interchange in Niagara recently, MTO should be willing to also introduce a similar interchange along the Bradford Bypass.

The interchange capacity becomes one overriding factor in comparing the two. In the context of the Niagara interchange, there is no major node of development nearby and so long as sufficient access is provided there and the environs are protected, the interchange will be adequate. Capacity is not an issue. This is not the case for the Bradford Bypass at Simcoe Road 4. In that location, the intended interchange is the only one between Highway 400 and Highway 404 Extension. It directly serves Bradford and the growing rural communities in Bradford West Gwillimbury. In this case, operational capacity is critical and must be protected. It has been shown through technical comparisons and experience that the recommended Parclo 'A4' is best for this situation.

The other overriding factor is that of intersection spacing. There is not enough space between the Town's interchange terminal along Simcoe Road 4 and the intersection at 8th Line. This is a problem that would result in operational and road safety implications.

In summary, the proposal presented by the Town of Bradford West Gwillimbury is not appropriate to the location along Simcoe Road 4 and cannot be compared with the QEW interchange at Victoria Street in Niagara since the context of that interchange selection was very different to that of the Bradford Bypass.



SCALE
40m 0 80m
METRES

LEGEND
○ LOCATION OF ANALYSED NOISE RECEIVER
#108 LOCATION NUMBER OF ANALYSED NOISE RECEIVER

QUEEN ELIZABETH WAY
CASABLANCA BOULEVARD TO VICTORIA AVENUE
GWP 340-88-00

EXHIBIT
C-11

MEMORANDUM

To: Pat Reynolds
Highway Planning and Environmental Office
3rd Floor, Building 'D'

Date: February 22, 2000

From: Central Region - East
Traffic Management Office
6th Floor, Building 'D', 235-5595

Re: W.P. 377-90-00 Hwy. 400 – Hwy. 404 Extension Link 'Bradford Bypass'
Town of Bradford Proposal Redesign of County Road 4 Interchange

I have reviewed the Town of Bradford's redesign proposals for the Bradford Bypass and County Road 4 (formerly Yonge Street) interchange. The following analysis of each of the two proposals was based on the impacts to traffic operations and traffic safety. Recommendations as to the acceptability of the proposals are included.

Proposal One:

Proposal One replaces the Ministry's preferred Parclo A-4 interchange design with a modified Parclo B design, in order to afford access to and from a newly proposed Service Road that intersects County Road 4 from the west. The Town's submission proposes that the redesigned w-n/s and n/s-e ramps join to form the east leg, and the proposed Service Road forms the west leg of a cross intersection south of the Bradford Bypass, at County Road 4.

The redesign has at least six major negative effects that the Ministry's design does not have;

1. Reduces intersection capacity by removing direct access to the Bypass. Introduces a left turn for the n-e move, and a stop or yield condition for the s-e move. The 2011 peak hour turning volume for the n-e move is projected to be 530 vehicles for the a.m. peak. Signals would be required. A cursory intersection and signal timing analysis was conducted using Canadian Capacity Guide software, and projected volume assumptions that are thought to be conservative. The intersection, under the proposed design, would need a minimum of fully protected southbound dual left turn lanes, at least 375m in length to accommodate this move.

Even with no pedestrians included in the timing, and 70% of the green time allocated to the n/s phase, there is an 85% chance of discharge overload for the n-e left turn during the a.m. peak. The overall intersection operates with a degree of saturation of 1.7, which is not acceptable when a degree of saturation of 1.0 is considered to be at capacity. In terms of scope, it is likely that County Road 4 need to be widened to accommodate five southbound lanes (2L, 2T,R) and four northbound lanes (L,2T,R), plus widening to accommodate median islands and to afford appropriate turning radii for representative trucks.

2. Signalization of County Road 4 and the Bypass ramp terminal in its current location only allows a distance of 250 meters to the intersection of County Road 4 and the 8th Line. A distance of 400 meters between intersections is required (TAC). Should the County Road 4 and Bypass intersection break down under the assumed signalized conditions, queuing through to the intersection of 8th Line is possible, and is an operational and safety concern;

3. The throat and curve of the east oriented ramp is shared by n-e and s-e traffic, introducing conflict points previously avoided. Increases potential for sideswipe collisions between north to east and south to east vehicles merging at the throat of the ramp. Introduces potential for turning movement collisions under the altered (assuming signalized) design that direct access ramps would avoid.

4. The w-n/s ramp appears to have no separation from the n/s-e ramp. As proposed, the increased potential for head-on collisions exists and is exacerbated by centrifugal forces acting upon w-n/s exiting vehicles, returning a high probability of these vehicles being directed into the path of n-e and s-e vehicles sharing this ramp. Should a physical barrier be introduced to separate the moves, a roadside hazard is introduced. Neither of these conditions exists under the Ministry's proposed design alternative. The proposed is significantly less safe, and has higher associated collision (societal) costs.

5. The Parclo B exit ramp has an exit curve radii of approximately 100m, and although the proposed radius exceeds the minimum standards of 80m for the type, the radius is still less than the Ministry's proposed design. Further the Parclo B type exit ramp has a loop configuration, which does not afford as gradual deceleration opportunity as do Parclo 'A' ramps. The sudden introduction of a curve in such a design often surprises drivers and typically these types of exit ramps have higher rates of collisions, and;

6. The proposed exit ramp is on a 3% downgrade. Exit ramps on downgrades are not condusive to gradual slowing of a vehicle, as the vehicle exiting from high freeway operating speeds will continues to be propelled by the vehicles' momentum, requiring more reliance on mechanical braking systems rather than a natural slowing on an upgrade, such as the Ministry's design provides for. In addition, these forces are exacerbated in poor weather and road surface conditions.

In addition to the negative safety and operational impacts the redesign has, the overall appropriateness of this design is questioned for other reasons. The modified Parclo B redesign, where the ramps are shifted to the east side of the interchange, is a design one might expect to see when constrained by substantial controls such as natural dividing features like watercourses, or when limited by major property or environmental constraints. The Construction of the Bradford Bypass, at this particular location, is not subject to such constraints and in fact, the redesign encroaches on an area previously identified in the EA to be retained as open land/conservation area.

As identified in the Planning Study, a Parclo A-4 interchange was selected at County Road 4, as it is "a major arterial road serving the county and is an integral part of the Bradford road network. Traffic demand will be high given the growth expectations for the Bradford community, both residential and commercial/ industrial".

The Parclo A-4 interchange is one having high capacity, capable of transitioning high speed freeway traffic to arterials at a natural rate, eliminates weaving and overall has few conflict points due to its direct design. The Bradford Bypass, is able to be designed to 140km/h design speeds, and thus the geometrics of the ramps, and in particular the ramp loop radii, meet and exceed Ministry design standards for four-lane, divided rural freeways.

The Traffic Management Office finds Proposal One unacceptable. The modified Parclo B design returns reduced capacity, ramp geometrics, and overall is less safe and efficient than the Ministry's Parclo A-4 preferred design alternative.

Proposal Two:

Proposal Two retains a Parclo A-4 interchange design, but introduces a 'T' intersection of a newly proposed Service Road on the west side of the w-n/s ramp. The throat of the w-n/s ramp is widened to allow east and west movements from the intersection of the ramp with County Road 4, westerly down the ramp to the point of the 'T' intersection with the Service Road.

The introduction of a 'T' intersection onto a high volume, high speed exit ramp violates driver expectation, and is detrimental to the safe and efficient operation of this w-n/s ramp.

Presumably the ramp traffic would have the ROW, and the Service Road traffic would be controlled by a "Stop" regulation while exiting, and left turns from the proposed bi-directional ramp (to the point of the 'T' intersection), are from a yield condition. This introduces increased probability of the following collision types not associated with the Ministry's design:

1) Rear end collisions with thru (e-n/s) ramp traffic and right turning service road traffic;

2) Angle collision potential of left turning vehicles onto Service Road from proposed bi-directional throat with thru ramp traffic;

3) Potential for vehicles to become confused at the service road, turning left and entering the w/n-s ramp travelling the wrong way. Increased head-on collision on the ramp, or worse, by permitting bi-directional from the throat of the ramp to the Service Road, increases probability for a vehicle to continue down the ramp the wrong way and onto the Bypass. Head-on collisions have greater probability of occurring due to higher volumes on the Bypass and would have high severity implications due to increased speeds, and;

4) Increased potential for loss of control collisions for thru ramp traffic, attempting to avoid any of the above conditions.

The proposed redesign is associated with increased collision potential, of a more varied and severe a nature, and having higher associated collision (societal costs) by introducing conflicts not found in the Ministry's proposed design. This proposal is detrimental to traffic safety operations. The Traffic Management Office finds Proposal Two unsafe and unacceptable.

The Ministry has adopted many of the design and safety recommendations put forth by the Highway 407 Safety Review Committee. Accordingly, our position is reflected in one excerpt from that review.

"A well-designed road will provide the intended level of service, at an acceptable cost, with an acceptable level of safety. It will also reflect local values and policy, which will vary from location to location. If it has been designed with care and sound judgement, it will place appropriate importance on safety, cost, service, environmental values and appearance"(pp 18)

The Ministry of Transportation has the opportunity to carry forward a good design, that meets or exceeds standards, thus providing a level of safety and efficiency that best serves the majority of users. Therefore, accepting anything other than this, namely accepting either one of the Town's proposals is contrary to good professional practise and fails to meet these obligations to our clients, the travelling public.

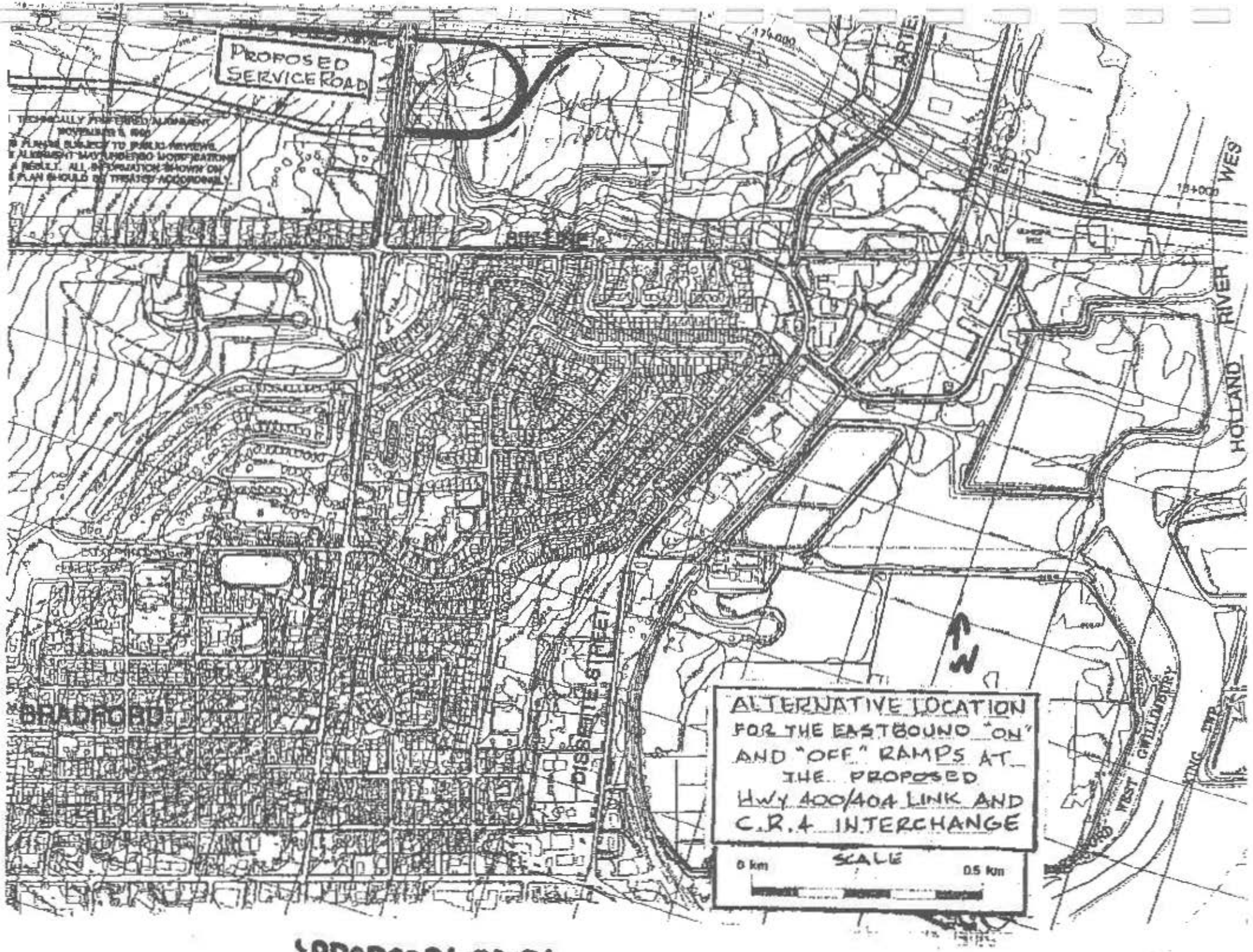
The Traffic Management Office cannot support either of the redesign proposals, based on the information provided.

<Original signed by>

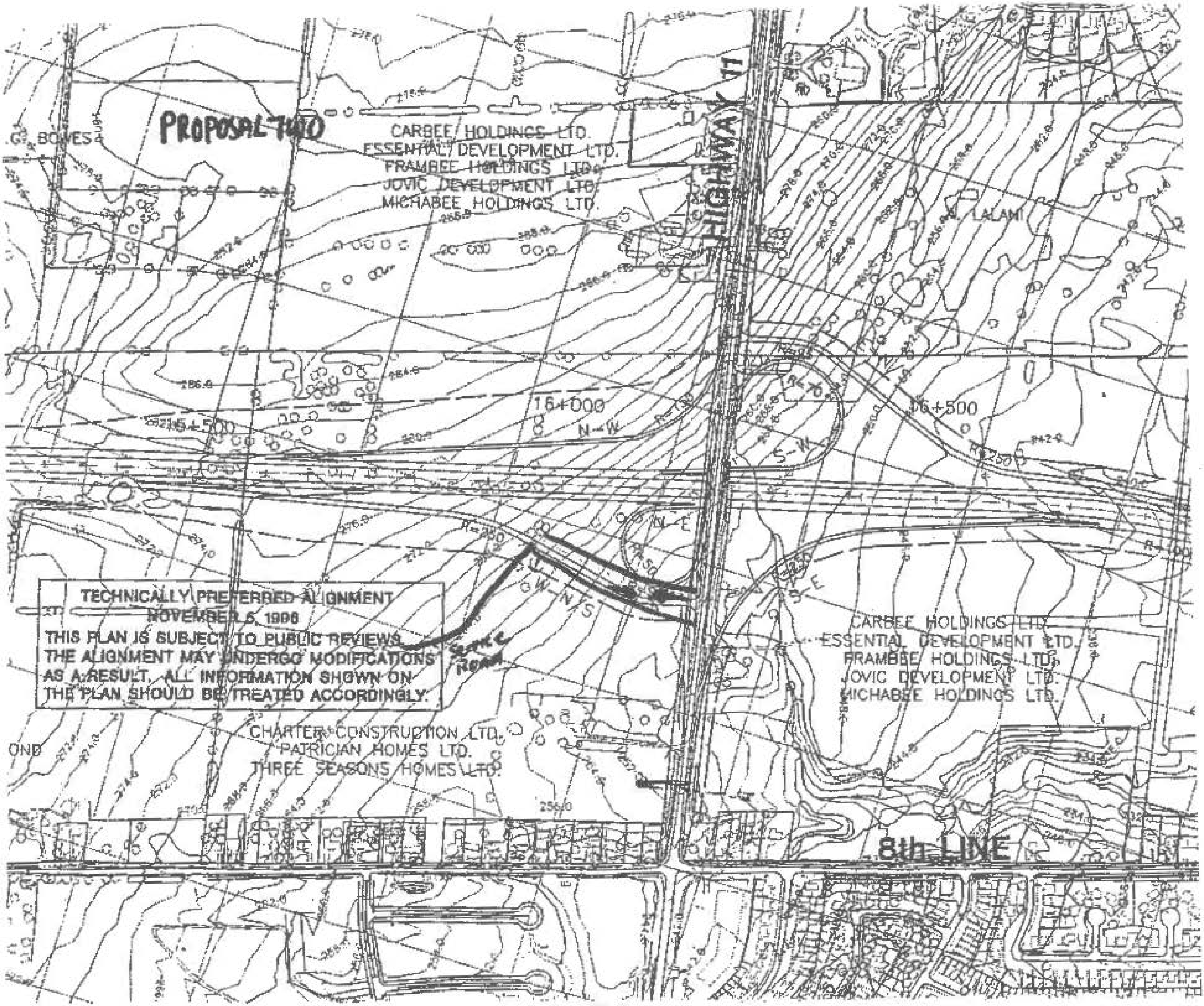
Rachel Kampus
Senior Project Manager

c.c L. Smith
H. McClintock

Attachments (2)



'PROPOSED ONLY'


PROPOSAL TWO
CARBEE HOLDINGS LTD.
ESSENTIAL DEVELOPMENT LTD.
FRAMBEE HOLDINGS LTD.
JOVIC DEVELOPMENT LTD.
MICHABEE HOLDINGS LTD.
HIGHWAY 11
BOWES
LALANI
16+000
16+500
15+500
N-W
S-W
N-E
S-E
W-N/S
Service Road
TECHNICALLY PREFERRED ALIGNMENT
NOVEMBER 6, 1996
THIS PLAN IS SUBJECT TO PUBLIC REVIEWS.
THE ALIGNMENT MAY UNDERGO MODIFICATIONS
AS A RESULT. ALL INFORMATION SHOWN ON
THE PLAN SHOULD BE TREATED ACCORDINGLY.
CARBEE HOLDINGS LTD.
ESSENTIAL DEVELOPMENT LTD.
FRAMBEE HOLDINGS LTD.
JOVIC DEVELOPMENT LTD.
MICHABEE HOLDINGS LTD.
CHARTER CONSTRUCTION LTD.
PATRICIAN HOMES LTD.
THREE SEASONS HOMES LTD.
8th LINE

Appendix D

Ministry of Transportation's Noise Assessment and Air Quality Impact Assessment

Ministry of Transportation

Ministère des Transports

Ontario

Planning & Environmental Office
Central Region
3rd Floor, Atrium Tower
1201 Wilson Avenue
Downsview, Ontario
M3M 1J8

Tel: (416) 235-5485
Fax: (416) 235-4940

Ms. Solange Desautels
Ministry of the Environment
Environmental Assessment & Approvals Branch
2 St. Clair Avenue West, Floor 12 A
Toronto, Ontario
M4V 1L5

February 14, 2001

Dear Ms. Desautels:

Re: **MTO ENVIRONMENTAL ASSESSMENT SUBMISSIONS, DECEMBER 1997, EA FILE NO. TCCEO2: "Hwy 400 - Hwy 400 Extension Link" - (Bradford Bypass) and "Hwy 404 Extension", Davis Drive (York Regional Road 31) to Hwy 12.**

As requested the Ministry has reviewed the comments that you received from the following agencies regarding the above environmental assessments

- Fisheries and Oceans Canada, September 13, 2000 and October 13, 2000 regarding navigable waters;
- Fisheries and Oceans Canada, October 3, 2000 regarding fisheries;
- Health Canada, December 18, 2000 regarding noise assessment;
- Health Canada, December, 1, 2000 regarding air quality assessment;
- Ontario Ministry of the Environment, November 9, 2000 regarding air quality assessment.

Navigable water:	The identified design stage requirements are acknowledged.
Fisheries:	The identified design stage requirements are acknowledged.
Air Quality:	Individual responses, prepared by Dr. Toros Topaloglu, MTO Environmental Systems Specialist, to the Health Canada and the MOE air quality comments are attached, (attachments dated January 8, 2001).
Noise Assessment:	A response, prepared by Mr. Chris Blaney, MTO Senior Environmental Planner - Acoustics, to the Health Canada noise assessment comments is attached, (memo dated February 7, 2001).

Please advise if you require any further clarification or assistance to complete your review of the Environmental Assessments for these two projects.

<Original signed by>

Fred Leech
Manager, Planning & Environmental Office
Central Region, MTO

ONTARIO
TRANSPORTATION

Memorandum

To: Mr. Pat Reynolds
Transportation/Environmental Coordinator

From: Mr. Chris T. Blaney

Date: February 7, 2001

Subject: Health Canada Noise Comments for Highway 404 and Bradford Bypass E.A.'s

Following are my comments on the questions raised by Health Canada in their letter of December 18th, 2000, to Ms Solange Desautels from the Ministry of the Environment.

Use of L_{Aeq24H}

The Ministry of Transportation uses an average 24-hour sound level for freeways to estimate impacts because we find that the traffic data is most accurate for that time period.

Typically, on freeways, such as Highway 404, there is a slight reduction in traffic volumes at night when compared to the average daily volumes. This would result in approximately a one decibel increase in the 18 hour day time sound levels and a five decibel reduction in the 8 hour night time levels. The difficulty in doing this correction is that often the percentage of heavy trucks is significantly higher at night reducing the day/night difference to less than 3 decibels. Given the difficulty in accurately predicting highly detailed future hourly road traffic volumes, including the hourly percentages of commercial vehicles, the Ministry prefers to use an average daily sound level for the assessment of future highway noise impacts. The Ontario Ministry of the Environment supports this approach.

Evaluation of Outdoor Noise for Environmental Assessments

In Ontario, legal requirements for noise protection are outlined very broadly in the provisions of both the "*Environmental Protection Act*" and the "*Environmental Assessment Act*". However, the requirements outlined in both of these pieces of legislation are not detailed enough to provide specific direction. Because of this, Ontario government policy was developed to further define the legislation as it applies to different situations.

A Guideline[1] was created to guide the development of residences adjacent to freeways. It recognizes that a developer has the ability to setback and site buildings in a way to minimize noise impacts. In addition, buildings can be constructed to lessen indoor noise levels and noise barriers can be constructed to reduce noise level for both outdoor and indoor areas. During the development of the Guideline it was recognized that a developer has no control over the generation of noise from highways. Ministry of Transportation (and Communications) and Ministry of the Environment developed a Noise Protocol[2] to control the generation of noise from the construction and operation of highways. The Ministry has the ability to minimize noise impacts through location of the highway, use of "quiet" pavement types, traffic control, and construction of noise barriers. During the development of the Protocol, it was recognized that the Ministry has limited control over adjacent development and the design of new homes.

The Ministry is not required under any Provincial Policy or Legislation to assess indoor noise and therefore only assess the noise levels at the ground floor level for outdoor recreational areas for residences.

Following discussions with Mr. Steven Keith from Health Canada it was agreed to provide estimates of indoor sound levels by subtracting 10 decibels from the outdoor sound level tables in the E.A.'s to estimate the indoor sound levels at night.

Attenuation by Rows of Trees

The Ministry of Transportation currently uses a correction factor, where the average height of the trees extends at least 5 metres above the line-of-sight between the receiver and the source, an attenuation of 5 dBA is provided by each 30 metres depth of trees. The maximum attenuation assumed for dense woods is 10 dBA. This is the recommended correction in the FHWA Model[3] that was in place in 1997 when the EA's where prepared.

The current information from ISO 1996[4] has a correction factor considerably less that that. They suggest that the adjustment should be as follows:

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1 "Guideline on noise and new residential development adjacent to freeways", Ministry of Housing, April 1979.

2 "A Protocol for Dealing with Noise Concerns During the Preparation, Review and Evaluation of Provincial Highways Environmental Assessments". February 1986

3 Barry, T.M., and Reagan, J.A., "FHWA Highway Noise Prediction Model, Report No. FHWA-RD-77-108", U.S. Federal Highway Administration, Office of Research, Washington, D.C., December 1978.

4 "Acoustics – Attenuation of Sound During Propagation Outdoors – Part 2", *International Organization for Standardization*, ISO/DIS 9612-2:1996. Geneva, Switzerland: International Organization for Standardization, 1996.

Distance	Correction in dB
< 10 m	0.00
10 to 20 m	1.00
20 to 200 m	.05 dB per m
Maximum	10.00 dB

The Ministry will use a new adjustment factor to account for the extra attenuation caused by vegetation when we do the detailed noise study associated with the detail design phase of the projects. Since the level of design information that is available at this time is very preliminary, there would not be a great improvement in the accuracy of the noise predictions to readjust the sound level calculations that have been done to date. The new predicted sound levels will be available as part of the public consultation process at the future design phase.

Pavement Type

Table 1 outlines the difference between the three types of pavements that are used by the ministry.

Table 1
Sound Level Differences in dBA at 100 km/h
25% Medium Trucks/75% Heavy Trucks

					Difference Between OFC and:	
% Comm.	Average	OFC	PCC	DGAC	PCC	DGAC
30%	0.0	-1.8	1.2	-0.6	3.0	1.2
25%	0.0	-1.8	1.3	-0.6	3.1	1.2
20%	0.0	-1.8	1.4	-0.6	3.3	1.2
15%	0.0	-1.9	1.5	-0.6	3.4	1.3
10%	0.0	-1.9	1.7	-0.6	3.7	1.3
5%	0.0	-2.0	2.0	-0.6	4.0	1.4
0%	0.0	-2.2	2.4	-0.7	4.6	1.6

Explanation of Section Headings	
Average	Average of all three types of pavements
OFC	Open Graded Asphaltic Concrete
PCC	Portland Cement Concrete
DGAC	Dense Graded Asphaltic Concrete

The Ministry has not made a decision as to what pavement is being used. The MTO used the average type of pavement in both E.A.'s. Both types of asphalt pavement are quieter than the one used in the noise evaluation. If MTO uses PCC pavement it will be approximately 2 dBA louder than is reported in the E.A.'s. The decision as to what pavement will be used will be made during the detail design phase of these projects

and will be available as part of the public consultation process at the future design phase.

Accuracy of Noise Prediction Models

The highway noise prediction model used is the FHWA Model and the STAMINA 2.0 highway noise prediction model. This is the model jointly approved by the Ministry of Transportation and the Ministry of the Environment (MOE).
Included in the modelling were:

- the posted speeds for the roadways in the area used in the noise analysis,
- the pavement surface used for construction of the highway (average pavement),
- the elevations, contours and location of all of the NSA's near the right-of-way,
- highway grade,
- intervening rows of homes and barriers,
- type of ground cover, soft ground (Alpha 0.66 or 5 dBA per distance doubling),
- percentage of commercial traffic, and
- distance from the roadway.

The model is accurate within plus or minus 1.5 dBA, provided the input as listed above that is used in the program is accurate. Atmospheric affects are not accounted for in the model. The accuracy of the model decreases with distance. I would say that the model is only accurate within this range to a distance of approximately 200 metres.

4a Appendix 3

In Appendix 3 of the Bradford Bypass E.A. the number used is a receiver location (83). There is often more than one house per location. The 83 receiver locations represent a total of 214 homes when summarized in Exhibit 5.5 of the E.A.. The receiver locations are shown on the plans that are attached to the E.A.'s.

Discontinuity of Truck Source Height

The Stamson[5] noise prediction model that was used in the calculations for the sound levels for the Highway 404 EA used a correction factor to adjust the source height of heavy trucks. The assumption in the model is that if there are any heavy trucks in the traffic flow that the source height is adjusted to 0.5 m. Depending upon the percentage commercial, it is adjusted up to a maximum height of 2.44 m if the percentage commercial is greater than or equal to 30 percent.

5 Schroter, V. and Chiu, C., "ORNAMENT, Ontario Road Noise Analysis Method for Environment and Transportation", Technical Document, Noise Assessment and Systems Support Unit, Ontario Ministry of the Environment, October 1989.

I believe that this is a relatively conservative approach to have the source height where there are any trucks to start at 0.5 m above pavement.

If you require any additional information please call me.

Yours truly,

<Original signed by>

Chris T. Blaney
Senior Environmental Planner - Acoustics

Tel.: 416-235-5561 Fax: 416-235-4940
E-Mail: Chris.Blaney@MTO.GOV.ON.CA

CTB/ctb

ENVIRONMENTAL NOISE IMPACT ASSESSMENT - HWY 404 EXTENSION EA
Davis Drive (York Regional Rd. 31) to Hwy 12.

As requested by Health Canada Noise Data Tables in the EA have been modified to provide an estimate of indoor noise levels by subtracting 10 dBA from estimated outdoor levels at receivers, (January, 2001).

Outdoor levels/Receptor No.s from the Highway 404 Extension EA, Appendix 2, "Noise Impact Report", Appendix "F", "Sound Level Results for the Preferred Route".

Table 2.F

Receptor No.	No. Of Residences	Outdoor Ambient Leq, dBA	Future Outdoor Leq, dBA	Future Leq Minus Ambient Leq, dBA	Indoor Ambient Leq, dBA	Future Indoor Leq, dBA	Future Leq Minus Ambient (Indoors) Leq, dBA
1R1	2	48.1	58.1	10	38.1	48.1	10
1R2	1	44.7	57.0	12	34.7	47.0	12
1R3	1	46.7	57.7	11	36.7	47.7	11
1R4	6+	45.0	45.8	1	35.0	35.8	1
1R5	1	62.8	64.9	2	52.8	54.9	2
1R6	1	64.1	67.3	3	54.1	57.3	3
1R7	6	48.8	54.7	6	38.8	44.7	6
1R8	1	45.0	62.9	18	35.0	52.9	18
1R9	4	56.9	61.6	5	46.9	51.6	5
1R10	2	51.5	64.5	13	41.5	54.5	13
1R11	1	55.5	59.0	4	45.5	49.0	4
1R12	3	49.0	61.3	12	39.0	51.3	12
1R13	3	54.5	56.2	2	44.5	46.2	2
1R14	1	60.3	60.9	1	50.3	50.9	1
1R15	1	52.4	62.2	10	42.4	52.2	10
1R16	2	62.4	64.2	2	52.4	54.2	2
1R17	1	59.3	64.5	5	49.3	54.5	5
1R18	2	45.0	59.5	15	35.0	49.5	15
1R19	1	46.3	66.9	21	36.3	56.9	21

ENVIRONMENTAL NOISE IMPACT ASSESSMENT - HWY 404 EXTENSION EA
Davis Drive (York Regional Rd. 31) to Hwy 12.

As requested by Health Canada Noise Data Tables in the EA have been modified to provide an estimate of indoor noise levels by subtracting 10 dBA from estimated outdoor levels at receivers, (January, 2001).

Outdoor levels/Receptor No.s from the Highway 404 Extension EA, Appendix 2, "Noise Impact Report", Appendix "F", "Sound Level Results for the Preferred Route",

Table 4.F

Receptor No.	No. Of Residences	Outdoor Ambient Leq, dBA	Future Outdoor Leq, dBA	Future Leq Minus Ambient Leq, dBA	Indoor Ambient Leq, dBA	Future Indoor Leq, dBA	Future Leq Minus Ambient (Indoors) Leq, dBA
2R1	5	57.0	63.5	7	47.0	53.5	7
2R2	1	45.0	58.5	14	35.0	48.5	14
2R3	1	45.0	59.9	15	35.0	49.9	15
2R4	1	49.0	59.1	10	39.0	49.1	10
2R5	2	64.4	64.5	0	54.4	54.6	0
2R6	1	59.0	65.8	7	49.0	55.8	7
2R7	Displaced	45.0	66.4	21	35.0	56.4	21
2R8	1	45.0	60.8	16	35.0	50.8	16
2R9	1	47.0	63.0	16	37.0	53.0	16
2R10	1	45.0	58.5	14	35.0	48.5	14
2R11	4	45.0	50.0	5	35.0	40.0	5
2R12	2	50.3	53.7	3	40.3	43.7	3
2R13	12	46.9	65.5	19	36.9	55.5	19
2R14	1	51.6	60.7	9	41.6	50.7	9
2R15	3	45.8	57.3	12	35.8	47.3	12
2R16	Disolaced	47.8	60.7	13	37.8	50.7	13
2R17	2	45.0	63.4	18	35.0	53.4	18
2R18	2	52.4	55.2	3	42.4	45.2	3

Note: 2R13 respresents The Pollock Estate subdivision

ENVIRONMENTAL NOISE IMPACT ASSESSMENT - HWY 404 EXTENSION EA
Davis Drive (York Regional Rd. 31) to Hwy 12.

As requested by Health Canada Noise Data Tables in the EA have been modified to provide an estimate of indoor noise levels by subtracting 10 dBA from estimated outdoor levels at receivers, (January, 2001).

Outdoor levels/Receptor No.s from the Highway 404 Extension EA, Appendix 2, "Noise Impact Report", Appendix "F", "Sound Level Results for the Preferred Route".

Table 6.F

Receptor No.	No. Of Residences	Outdoor Ambient Leq, dBA	Future Outdoor Leq, dBA	Future Leq Minus Ambient Leq, dBA	Indoor Ambient Leq, dBA	Future Indoor Leq, dBA	Future Leq Minus Ambient (Indoors) Leq, dBA
3R1	1	45.0	58.4	13	35.0	48.4	13
3R2	1	48.5	59.5	11	38.5	49.5	11
3R3	1	51.8	61.7	10	41.8	51.7	10
3R4	6	45.0	50.2	5	35.0	40.2	5
3R5	6	47.0	54.6	8	37.0	44.6	8
3R6	34	45.0	60.1	15	35.0	50.1	15
3R7	1	45.0	62.0	17	35.0	52.0	17
3R8	Displaced	47.1	68.2	21	37.1	58.2	21
3R9	1	47.1	64.9	18	37.1	54.9	18
3R10	6	52.9	56.9	4	42.9	46.9	4
3R11	2	45.0	54.2	9	35.0	44.2	9
3R12	Displaced	62.3	63.6	1	52.3	53.6	1
3R13	2	62.6	63.2	1	52.6	53.2	1
3R14	2	56.4	61.8	5	46.4	51.8	5
3R15	2	48.0	58.4	10	38.0	48.4	10
3R16	1	50.5	55.1	5	40.5	45.1	5
3R17	1	58.8	59.4	1	48.8	49.4	1
3R18	1	63.4	62.1	-1	53.4	52.1	-1
3R19	1	45.0	55.3	10	35.0	45.3	10
3R20	2	45.0	55.1	10	35.0	45.1	10

3R6 - Elm Grove Trailer Park (1st two rows and residences along Catering Road)

ENVIRONMENTAL NOISE IMPACT ASSESSMENT - HWY 404 EXTENSION EA
Davis Drive (York Regional Rd. 31) to Hwy 12.

As requested by Health Canada Noise Data Tables in the EA have been modified to provide an estimate of indoor noise levels by subtracting 10 dBA from estimated outdoor levels at receivers, (January, 2001).

Outdoor levels/Receptor No.s from the Highway 404 Extension EA, Appendix 2, "Noise Impact Report", Appendix "F", "Sound Level Results for the Preferred Route",

Table 8.F

Receptor No.	No. Of Residences	Outdoor Ambient Leq, dBA	Future Outdoor Leq, dBA	Future Leq Minus Ambient Leq, dBA	Indoor Ambient Leq, dBA	Future Indoor Leq, dBA	Future Leq Minus Ambient (Indoors) Leq, dBA
4R1	3	45.0	54.5	10	35.0	44.5	10
4R2	2	45.0	56.0	11	35.0	46.0	11
4R3	1	45.0	59.9	15	35.0	49.9	15
4R4	8	62.4	61.0	-1	52.4	51.0	-1
4R5	1	54.2	53.8	0	44.2	43.8	0
4R6	1	61.8	61.9	0	51.8	51.9	0
4R7	Displaced	58.9	65.7	7	48.9	55.7	7
4R8	24	58.8	64.8	6	48.8	54.8	6
4R9	1	63.9	70.1	6	53.9	60.1	6
4R10	1	61.8	67.8	6	51.8	57.8	6
4R11	1	54.8	60.6	6	44.8	50.6	6
4R12	1	60.0	65.8	6	50.0	55.8	6
4R13	1	49.8	55.2	5	39.8	45.2	5
4R14	1	51.8	58.3	7	41.8	48.3	7
4R15	1	56.0	62.2	6	46.0	52.2	6
4R16	1	62.1	62.4	0	52.1	52.4	0
4R17	2	45.1	50.3	5	35.1	40.3	5
4R18	Displaced	58.7	62.3	4	48.7	52.3	4

4R8 - Summer Breeze Trailer Park; one half of total sites.

ENVIRONMENTAL NOISE IMPACT ASSESSMENT - HWY 404 EXTENSION EA
Davis Drive (York Regional Rd. 31) to Hwy 12.

As requested by Health Canada Noise Data Tables in the EA have been modified to provide an estimate of indoor noise levels by subtracting 10 dBA from estimated outdoor levels at receivers, (January, 2001).

Outdoor levels/Receptor No.s from the Highway 404 Extension EA, Appendix 2, "Noise Impact Report", Appendix "F", "Sound Level Results for the Preferred Route",

Table 10.F

Receptor No.	No. Of Residences	Outdoor Ambient Leq, dBA	Future Outdoor Leq, dBA	Future Leq Minus Ambient Leq, dBA	Indoor Ambient Leq, dBA	Future Indoor Leq, dBA	Future Leq Minus Ambient (Indoors) Leq, dBA
5R1	3	57.9	62.7	5	47.9	52.7	5
5R2	2	55.3	60.1	5	45.3	50.1	5
5R3	3	52.1	56.0	4	42.1	46.0	4
5R4	8	53.3	57.3	4	43.3	47.3	4
5R5	8	59.4	64.8	5	49.4	54.8	5
5R6	13	53.3	60.7	7	43.3	50.7	7
5R7	15	50.3	57.3	7	40.3	47.3	7
5R8	72	45.0	50.0	5	35.0	40.0	5
5R9	6	46.1	50.7	5	36.1	40.7	5
5R10	10	45.0	46.3	1	35.0	36.3	1
5R11	20	45.7	53.4	8	35.7	43.4	8
5R12	25	45.0	48.6	4	35.0	38.6	4

As requested by Health Canada this is a modified version of Exhibit 5-5 from the Bradford Bypass EA Report. 10 dBA was subtracted from outdoor levels to estimate indoor levels. Jan. 2001

NSA LOCALE	NUMBER OF HOUSES WITHIN 600m INCREASED INDOOR NOISE LEVELS PROPOSED ALIGNMENT				
Leq24hr	WITHOUT LINK	INCREASE WITH LINK IN PLACE			WITH LINK
		0-5dBA	5-10dBA	>10dBA	
HIGHWAY 400					
<35 dBA	6	5	1	0	0
35-40 dBA	2	2	0	0	1
40-45 dBA	0	0	0	0	7
45-50 dBA	2	2	0	0	0
>50 dBA	0	0	0	0	2
Subtotal by Locale	10	9	1	0	10
10 SIDEROAD					
<35 dBA	27	17	8	2	0
35-40 dBA	5	5	0	0	17
40-45 dBA	4	4	0	0	17
45-50 dBA	3	3	0	0	4
>50 dBA	8	8	0	0	9
Subtotal by Locale	47	37	8	2	47
COUNTY ROAD 4 (HWY.11)					
<35 dBA	26	11	15	0	1
35-40 dBA	9	9	0	0	10
40-45 dBA	0	0	0	0	24
45-50 dBA	8	8	0	0	8
>50 dBA	5	5	0	0	5
Subtotal by Locale	48	33	15	0	48
HOLLAND RIVER (west branch)					
<35 dBA	42	39	0	3	0
35-40 dBA	0	0	0	0	39
40-45 dBA	0	0	0	0	0
45-50 dBA	0	0	0	0	3
>50 dBA	0	0	0	0	0
Subtotal by Locale	42	39	0	3	42
HOLLAND RIVER (east branch)					
<35 dBA	33	24	4	5	5
35-40 dBA	0	0	0	0	19
40-45 dBA	0	0	0	0	4
45-50 dBA	0	0	0	0	4
>50 dBA	0	0	0	0	1
Subtotal by Locale	33	24	4	5	33
EAST of YONGE STREET					
<35 dBA	12	4	3	5	0
35-40 dBA	0	0	0	0	4
40-45 dBA	0	0	0	0	3
45-50 dBA	0	0	0	0	5
>50 dBA	0	0	0	0	0
Subtotal by Locale	12	4	3	5	12
EAST of 2nd CONCESSION ROAD					
<35 dBA	0	0	0	0	0
35-40 dBA	2	0	2	0	0
40-45 dBA	5	5	0	1	4
45-50 dBA	4	4	0	0	7
>50 dBA	11	10	0	0	11
Subtotal by Locale	22	19	2	1	22
TOTAL NUMBER OF NSAs	214	165	33	16	214

Response to the Ministry of the Environment Comments on "Air Quality Impact Predictions for the Bradford Bypass and Highway 404 Extension" (November 9 Memorandum from Mike Ceric to Eric Loi)

January 8, 2001

1. Introduction

This paper is intended to address Ministry of the Environment's comments on the following two air quality impact assessment reports prepared by the Provincial and Environmental Planning Office of the Ministry of Transportation:

- Air Quality Impact Predictions for the Bradford Bypass; and
- Air Quality Impact Predictions for Highway 404 Extension.

Responses to individual comments follow the General Response, which is intended to clarify MTO's approach to air quality impact assessment for the two proposed projects under consideration.

2. General Response

The approach adopted in the MTO assessment is a worst-case scenario analysis. The worst-case conditions represent the "limits" of the Gaussian Plume Dispersion models commonly used in predicting the air quality impacts of highways (in this case, the California State Department of Transportation model - CALINE-4). This approach is well established in the U.S. and carries the following understanding: "If the worst-case conditions do not generate a violation of the air quality criteria for pollutants directly associated with highway traffic, then, for all practical purposes, compliance with the criteria has been demonstrated."

In those instances where the worst-case scenario analysis reveals the possibility of non-compliance, transportation agencies may undertake a detailed site-specific dispersion modelling study. Such a study would be based on "most likely" future traffic/meteorological conditions rather than worst-case conditions.

Dispersion modelling is central to predicting air quality impacts, but dispersion modelling can be inaccurate. MTO has tried to reduce the potential for inaccuracies by drawing upon the extensive set of air quality, traffic and meteorological measurements made in its 1994 Highway 404 study. The concentration measurements that provide the best correlation between pollutant concentrations and traffic volume are those for carbon monoxide and oxides of nitrogen. These two pollutants are much more directly associated with highway traffic than secondary or partly secondary pollutants such as ozone and particulate matter.

The methodology and generalized results of the 1994 Highway 404 study are relevant to the current assessments; however, they are not directly applicable. For one, the traffic volumes involved in the 1994 study are much higher than those anticipated on the Bradford Bypass and Highway 404 Extension. Furthermore, since 1994, vehicle emission rates have improved considerably due to stricter emission standards, higher diesel fuel quality, and the introduction of the provincial DriveClean program. Hence, MTO expects the air quality impacts of the two projects under consideration here to be much smaller and therefore not in need of the same level of effort and scrutiny that was invested in the 1994 study.

3. Responses to Individual Comments

Response to General Comment 1:

The two reports are very similar, since both address the potential air quality impacts of a four-lane highway under the same worst-case condition. The principal distinction between them is the difference in background ambient pollutant concentrations. These were obtained from the nearest MOE monitoring sites available for each proposed highway[1].

Differences in the length and shape (alignment) of the two highways are immaterial in a worst-case scenario analysis so long as the worst-case conditions selected encompass the characteristics of both proposed highways. This criterion was met in our analysis.

Specifically, the worst-case scenario assumes the wind direction to run almost parallel to the highway (5 degrees off the highway axis), at any point along the highway, over a one-hour period. This assumption helps obviate the need to account for the precise shape of the highway, especially with the proposed highways which run essentially along a straight line through flat terrain.

Highway length affects concentrations, but only for wind directions parallel or almost parallel to the highway - not for wind directions oblique or perpendicular to the highway. Furthermore, this effect is, self-limiting; namely, the incremental increase of pollutant concentration per km of highway decreases with each additional km and approaches a limiting value for a highway link of approximately 10 km length. This observation is based on our modelling experience and the results of the sensitivity analyses documented in the CALINE-3 and CALINE-4 manuals.

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[1] Due to the absence of reliable long-term estimates, current rather than future ambient background concentrations were used. The adoption of Canada Wide Standards is expected to help reduce ambient pollutant concentrations over the next 10 years and, thus, render the MTO estimates conservative.

The 1994 Highway 404 study, on which our current predictions are based, considered the full stretch of the highway from below Sheppard Avenue to Steeles Avenue. Hence, the current assessments are based on data derived from a long stretch of highway with concentrations that approach limiting values under the worst possible wind direction. It is highly unlikely that this wind direction can be sustained over a one-hour period[2]. Hence, the MTO assessments deal with highway length in a worst-case sense.

Response to General Comment 2:

The MTO assessment did not attempt to predict particulate matter (PM) concentration impacts for the vicinity of the proposed highways. This decision has a number of reasons. First, the 1994 Highway 404 study measurement results do not reveal an unambiguous relation between highway traffic volume and ambient PM concentrations. Second, a large fraction of the PM in the troposphere is secondary pollution and is of a regional nature (see Seinfeld and Pandis, "Atmospheric Chemistry and Physics", page 99 (1998)). Third, according to MOE estimates, transportation is responsible for only 11% of the PM across Ontario. Forth, there is considerable uncertainty about the magnitude of future vehicle PM emission rates. If current USEPA efforts succeed, diesel and gasoline powered road vehicle emissions may drop by as much as 90% over the next ten years.

In spite of the difficulties to discern a specific highway's impact on local PM levels and to make 10-year projections, we decided to try MOE's suggestion and apply the USEPA Part-5 model. The results are as follows.

With default parameters, the Part-5 model predicts the year 2000 fleet-average total PM-2.5[3] emission rate as 0.061 g/mile. The year 2010 rate would be more pertinent for our purpose here; however, Part-5 cannot make any provision for potential regulatory changes over such a long period of time. It is safe to assume though that emission rates will be at least 50% lower in 2010. Hence, we assume that the 2010 fleet will emit approximately 0.03 g/mile. This assumption is in part based on the observation that the fleet-average emission rate for 2000 is 50% lower than that for 1990 (Part-5 predictions).

With the 2010 estimate[4], one can readily predict the upper limit of the PM-2.5 concentration change expected in the vicinity of the proposed highways by

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[2] The sensitivity of pollutant concentrations to highway length decreases with increasing variability of wind direction. And, at the very low wind speed assumed in MTO's worst-case scenario analysis (1 m/s or 3.6 km/h), wind direction is hardly ever constant over a one-hour period.

[3] PM-2.5 designates the fraction of the particulate matter with a nominal diameter of less than 2.5 micron. Canada Wide Standards call for a 24-hour PM-2.5 criterion of 30 microgram/m^3 by 2010.

[4] The fleet-average emission rate estimate applies to the entire fleet of gasoline and diesel powered road vehicles. Gasoline powered vehicles generally emit much smaller quantities of particulate matter than diesel powered vehicles.

assuming that PM-2.5 is dispersed in the same manner as CO and is not subject to any wet or dry deposition. This approach yields a concentration change of 3.1 microgram/m^3 at 100 m due to highway traffic.

The 3.1 microgram/m^3 estimate represents the worst-case scenario concentration impact over a one-hour period. The provincial PM ambient air quality criteria are based however on 24-hour exposure levels. The conversion from 1-hour to 24-hour estimates can be based on 1994 Highway 404 study results. Specifically, during this study, PM-10 levels were measured both continuously by employing a TEOM and discretely by standard 24-hour sampling and analysis. The ratio of the maximum hourly PM-10 and the average PM-10 readings (average of all 24-hour readings) was 1/3[5]. Using this ratio, one may estimate the expected 24-hour impact to be approximately 1 microgram/m^3 which is a small impact relative to the background ambient PM concentrations observed in Ontario. For instance, MOE's 1998 monitoring results indicate maximum 24-hour concentration levels ranging from 41.1 to 67.3 microgram/m^3, as measured at twelve PM-2.5 monitoring sites across the province.

The above derivation, which may be described as semi-qualitative, suggests that the expected impact of the proposed highways on local PM-2.5 levels is small relative to current background concentration levels and would be difficult to discern. Hence, MTO's original decision not to include the prediction of PM impacts, especially of relatively low-capacity highways, was reasonable.

Response to General Comment 3:

The calculated concentrations represent one-hour averages under the worst-case conditions. Longer-term averages have lower values. For instance, eight-hour worst-case concentrations are expected to be approximately 50% lower than one-hour worst-case concentrations (see Cooper, C.D. et. al., "Identifying Worst-case Persistence Factors for CO Modelling Near Intersections in Orlando, Florida", JAWMA, 42, 1461-65 (1992)).

The choice of one-hour averaging is based on several reasons. First, transportation agencies such as MTO are trying to establish a relation between traffic volumes and ambient concentrations. This relation becomes weaker as averaging times increase. Second, most of the current air quality criteria specify one-hour limits. Third, worst-case conditions are highly unlikely to persist over more than one hour, and MTO's assessment is based on a worst-case scenario analysis.

Long-term exposure to toxic substances such as benzene is admittedly an important subject. However, currently there are no provincial ambient air quality criteria for such substances.

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[6] This ratio is derived from PM-10 rather than PM-2.5 data. Empirical evidence with gaseous pollutants (persistence factor results) suggests that this ratio is "reasonable".

The issue of 24-hour exposure to PM is addressed in our response to General Comment 2.

Response to General Comment 4:

As noted in the MOE memorandum, Table 5 of the MTO report summarizes some of the measurement results of the 1994 Highway 404 study. The purpose of this Table is to merely inform the reader of what was actually observed during 1994 next to a typical highway. Given the uniqueness and comprehensiveness of the 1994 MTO study, this information is deemed to be worthwhile; although, strictly speaking, it represents the consequences of larger traffic volumes than anticipated on the planned 4-lane highways.

Response to Comments in the Conclusion

These comments centre on PM emissions. This subject was addressed above under our response to General Comment 2.

Toros Topaloglu, Ph.D., P.Eng.

Response to Health Canada Comments on "Air Quality Impact Predictions for the Bradford Bypass and Highway 404 Extension"

January 8, 2001

Introduction

Health Canada points concerning the nature of MTO's two air quality impact assessments,

- Air Quality Impact Predictions for the Bradford Bypass and
- Air Quality Impact Predictions for Highway 404 Extension.

are addressed individually in the following paragraphs.

Response to First General Comment

The MTO assessments make no claim to have addressed transportation's role in air quality across Ontario. Their primary goal is to address the needs and concerns of those who would be most directly impacted by the proposed highways, namely individuals who are or may be residing in the immediate vicinity of proposed highways. They will be subject to higher levels of primary pollutant concentrations than those living further away. Hence, if the assessment suggests that even the immediate vicinity of the proposed highway would be in compliance with the appropriate air quality criteria under a credible worst-case scenario, then one can conclude that the expected impacts are "acceptable".

The regional air quality impacts of road traffic, along with those of other sources of pollution, are reflected in the ambient background pollutant concentrations for the region. Therefore, the MTO study accounts for the prevailing regional air quality by adding the background concentration levels of primary pollutants to the corresponding calculated concentration impacts of the proposed highways. These background concentration levels are based on the ambient air pollutant concentration levels measured at MOE monitoring stations closest to the study site. The decision on "acceptable" air quality is based on the magnitudes of these sums. Hence, for primary pollutants, such as carbon monoxide and oxides of nitrogen, the contributions of all sources, not just the proposed highways, are accounted for.

In the case of secondary pollutants, such as ozone and to a lesser extent particulate matter (since it has a primary and a secondary component), the MTO analysis has not accounted for the impact of the highway (or highway segment) under consideration. Here, we have argued, as Health Canada has noted, that the contribution of a highway segment is small relative to other sources and this

contribution is insignificant for those living in the immediate vicinity of the highway. Over 50% of the ozone in Ontario are traceable to sources in the U.S.A. and only 11% of all particulate matter in the troposphere are traceable to transportation. For further discussion on potential particulate matter impacts please see the Attachment.

In conclusion, the Health Canada point about cumulative and long-term effects is acknowledged and ambient background levels have been included in the MTO assessment. However, it is not practicable for MTO air quality impact assessments for specific highway projects to address the broader long-term regional air quality issues of the Province of Ontario.

Response to Second General Comment

As noted by Health Canada, MTO project specific Environmental Assessments must base their technical assessments of findings on current official ambient air quality criteria, not on the extensive but often contradictory literature on potential health risks of air pollutants. It is acknowledged that there is an ongoing emergence of new information. However, it should be the responsibility of federal and provincial regulatory agencies, not MTO, to monitor and assess this information and, if warranted, to change the appropriate criteria.

Response to First Specific Comment

Table 1 in MTO's report provides MOE estimates of transportation's contribution to air pollution in Ontario. This information does not apply to a specific location in Ontario and is not used in any of our predictions. It is merely to inform the reader of the role of transportation in air pollution across Ontario.

Response to Second Specific Comment

To our best knowledge, the 30 microgram/m^3 figure is the 2010 PM-2.5 criterion not a current criterion. The attached note on potential PM-2.5 impacts has been prepared to address the noted switch from PM-10 to PM-2.5 criteria.

With regard to differences between the MTO table and "background concentrations supplied previously by the Ministry of the Environment", the differences in the background concentration levels are explicable. The figures in Table 4 are typical figures for the whole province while those in Table 11 are site-specific figures which have been used in calculating expected pollutant concentrations in the immediate vicinity of the proposed highways.

Toros Topaloglu, Ph.D., P.Eng.

Attachment

A Short Note on Potential PM-2.5 Impacts

The local PM-2.5 impacts of the proposed highways may be estimated, at least semi-qualitatively, by using predictions of the USEPA Part-5 model.

With default parameters, the Part-5 model predicts the year 2000 fleet-average total PM-2.5[1] emission rate as 0.061 g/mile. The year 2010 rate would be more pertinent for our purpose here; however, Part-5 cannot make any provision for potential regulatory changes over such a long period of time. It is safe to assume though that emission rates will be at least 50% lower in 2010. Hence, we assume that the 2010 fleet will emit approximately 0.03 g/mile. This assumption is in part based on the observation that the fleet-average emission rate for 2000 is 50% lower than that for 1990 (Part-5 predictions).

With the 2010 estimate[2], one can readily predict the upper limit of the PM-2.5 concentration change expected in the vicinity of the proposed highways by assuming that PM-2.5 is dispersed in the same manner as CO and is not subject to any wet or dry deposition. This approach yields a concentration change of 3.1 microgram/m^3 at 100 m due to highway traffic.

The 3.1 microgram/m^3 estimate represents the worst-case scenario concentration impact over a one-hour period. The provincial PM ambient air quality criteria are based however on 24-hour exposure levels. The conversion from 1-hour to 24-hour estimates can be based on 1994 Highway 404 study results. Specifically, during this study, PM-10 levels were measured both continuously by employing a TEOM and discretely by standard 24-hour sampling and analysis. The ratio of the maximum hourly PM-10 and the average PM-10 readings (average of all 24-hour readings) was 1/3[3]. Using this ratio, one may estimate the expected 24-hour impact to be approximately 1 microgram/m^3 which is a small impact relative to the background ambient PM concentrations observed in Ontario. For instance, MOE's 1998 monitoring results indicate maximum 24-hour concentration levels ranging from 41.1 to 67.3 microgram/m^3, as measured at twelve PM-2.5 monitoring sites across the province.

The above derivation suggests that the expected impact of the proposed highways on local PM-2.5 levels is small relative to current background concentration levels and would be difficult to discern.

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[1] PM-2.5 designates the fraction of the particulate matter with a nominal diameter of less than 2.5 micron. Canada Wide Standards call for a 24-hour PM-2.5 criterion of 30 microgram/m^3 by 2010.

[2] The fleet-average emission rate estimate applies to the entire fleet of gasoline and diesel powered road vehicles. Gasoline powered vehicles generally emit much smaller quantities of particulate matter than diesel powered vehicles.

[3] This ratio is derived from PM-10 rather than PM-2.5 data. Empirical evidence with gaseous pollutants (persistence factor results) suggests that it is a "reasonable" number to use.

Ministry of Transportation

Ministère des Transports

Ontario

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Ms. Solange Desautels
Ministry of the Environment
Environmental Assessment & Approvals Branch
2 St. Clair Avenue West, Floor 12A
Toronto, Ontario
M4V 1L5

October 31, 2000

Dear Ms. Desautels:

Re: **MTO ENVIRONMENTAL ASSESSMENT SUBMISSIONS, DECEMBER 1997,**
EA FILE TCCEO2:
The "Hwy 400 - Hwy 400 Extension Link" - (Bradford Bypass), Environmental Assessment, and,
The "Hwy 404 Extension Environmental Assessment", Davis Drive to Hwy 12

In response to inquiries from the Ministry of the Environment and Health Canada the Ministry of Transportation has prepared the attached additional air quality assessment information in regard to the above two Environmental Assessment submissions, (2 reports, 8 plans, 3 page site reference list).

By courier, copies of this letter have forwarded the attached information for review and comment to:

- Mr. Eric Loi, Ontario Ministry of the Environment;
- Ms. Maria Ooi, Health Canada; and,
- Mr. Rob Dobos, Environment Canada

As the anticipated federal "Responsible Authority" under CEAA, although CEAA has not been triggered, Dan Thompson of DFO has been set a set as well.

It is our understanding that Mr. Loi, Mr. Dobos and Ms. Ooi are aware that their comments are to be sent directly to your attention and that all comments are requested by mid-November of this year to allow you to complete your review this fall.

If you require any additional information or assistance please call.

Yours truly,

<Original signed by>

Patrick Reynolds
Transportation Planning &
Environmental Assessment Co-ordinator
Planning & Environmental Office
Central Region, MTO

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Highway 4004 Extension

All dimensions shown are measured in metres from the nears edge of pavement to the centre of building

Identification Number	Distance (in Metres)	Building Type
1R1	150	Residents
1R2	60	Residents
1R3	225	Residents
1R6	140	Residents
1R7	190	Residents
1R8	70	Residents
1R9	230	Residents
1R10	165	Residents
1R11	470	Residents
1R12	175	Residents
1R14	80	Residents
1R15	130	Residents
1R17	140	Residents
1R19	50	Residents
2R1	210	Residents
2R2	290	Residents
2R3	260	Residents
2R4	315	Residents
2R5	270	Residents
2R6	120	Residents
2R7	50	Residents
2R8	160	Residents
2R9	100	Residents
2R10	440	Residents
2R15	250	Residents
2R16	80	Residents
2R17	105	Residents

404ext airreclocationtable.doc

3R1	215	Residents
3R2	125	Residents
3R3	215	Residents
3R4	400	Residents
3R5	150	Residents
3R6	160	Residents
3R8	45	Residents
3R11	225	Residents
3R12	210	Residents
3R15	340	Residents
3R16	315	Residents
3R17	230	Residents
3R18	370	Residents
3R19	225	Residents
3R20	230	Residents
4R1	260	Residents
4R2	180	Residents
4R3	105	Residents
5R1	55	Residents
5R1A	65	Residents
5R6	170	Residents
5R7	230	Residents
4R4	350	Residents
4R5	330	Residents
4R6	110	Residents
4R7	57	Residents
4R8	60	Residents
4R9	25	Residents
4R10	35	Residents
4R11	165	Residents
4R12	45	Residents
4R13	275	Residents
4R14	150	Residents
4R15	85	Residents
4R16	90	Residents
4R17	470	Residents
4R18	120	Residents
Note:		Recreation complex Mt Albert Road west of 404 at Sharon
Note:		Public School south of 404 on Regional Road 21

Highway 400 to Highway 404 Extension (Bradford By-pass)

All dimensions shown are measured in metres from the nears edge of pavement to the centre of building

Identification Number	Distance (in Metres)	Building Type
1	250	residents
2	590	residents
3	345	residents
4	430	residents
5	560	residents
9	180	residents
10	50	residents
12	520	residents
13	380	residents
15	335	residents
17	480	residents
26	400	residents
29	200	residents
32	105	residents
33	180	residents
41	470	residents
42	95	residents
43	430	residents
51	320	residents
52	145	residents
56	70	residents
57	70	residents
59	80	residents
61	375	residents
63	290	residents
65	180	residents
66	165	residents
67	205	residents
75	50	residents
77	75	residents
78	145	residents
83	385	residents
79	330	residents
80	250	residents

Air Quality Impact Predictions for the Bradford Bypass

Report

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Air Quality Impact Predictions for the Bradford Bypass

1. Introduction

The Ministry of Transportation of Ontario (MTO) is planning to link Highways 404 and 400. This highway connection is to be built to the north of Bradford, in an essentially rural area. The preliminary design calls for a four-lane highway - two lanes in each direction- with a 25 metre median.

This report was prepared by MTO's Provincial and Environmental Planning Office for the Planning and Environmental Office of the Central Region to help assess the air quality implications of the proposed undertaking. It includes a brief review of the background information used in the assessment (Section 2), followed by the methodology (Sections 3), analysis and results (Section 4), and conclusions (Section 5) of the study.

2. Background

Transportation, and road transportation in particular, is a significant contributor to air pollution. It is, however, not the only contributor. Industrial, commercial, residential, agricultural and other activities contribute also to air pollution. Hence, it is not easy to discern, with a high degree of accuracy, the local air quality impact of a specific highway in the presence of all other contributing sources of pollution. This task is further complicated by the variability of meteorological and traffic conditions, which have a strong influence on local air quality.

The primary pollutants from road vehicles (automobiles, trucks, etc) are carbon monoxide (CO), oxides of nitrogen (NO_x), and volatile organic compounds (VOC). NO_x has two principal constituents, NO and NO_2. Vehicles emit mainly NO, which oxidize in the atmosphere relatively quickly to NO_2. These two compounds are collectively designated NO_x. VOC has a large number of constituents, most of which are not particularly toxic. The principal exceptions are benzene, 1,3-butadiene, formaldehyde and acetaldehyde. The concentrations of these four specific pollutants in the immediate vicinity of well-travelled roads can be related to emissions from vehicles.

A second group of transportation related pollutants are not direct vehicle emissions. The principal members of this group are ozone (O_3) and particulate matter (PM). Ozone is one of the products of complex photochemical reactions in which NO_x and VOC play key roles. These reactions occur over large regions and take considerable time for completion. Hence, local ambient concentrations of ozone are not directly related to emission rates of NO_x and VOC of specific sources, such as road traffic. Similarly, but to a lesser extent, particulate matter is a regional pollutant. It emanates from a large number of sources, including road vehicles, and is also formed in secondary reactions in the atmosphere from gaseous pollutants such as NO_x and SO_x (oxides of sulphur).

Particulate matter smaller than 10 micron in diameter (PM_{10})[1] is of greater concern, since it can travel further in the pulmonary system and cause more harm.

Road transportation's share of these pollutants varies widely with location and time. Table 1 below provides average values for the province of Ontario over the full year of 1997. Ozone is not included in this table, since it is not a primary pollutant and cannot be readily associated with specific emission sources.

Table 1: Road Transportation's Share in Pollutant Emissions (1997)

Pollutant	Road Transportation Share (%)
Carbon Monoxide (CO)	50
Oxides of Nitrogen (NO_x)	38
Volatile Organic Compounds (VOC)	21
Particulate Matter (PM_{10})	11

Source: Ministry of the Environment of Ontario (MOE)

Pollutants can affect human health and the environment adversely. The federal government regulates their emissions from road vehicles. This practice dates back to 1966, when the state of California first started to set limits on emission rates for automobiles and light trucks, in grams of pollutant emitted per mile (g/mile) on a prescribed urban driving cycle. Recent emission standards, listed in Table 2, represent a better than 90% reduction of emissions since the pre-control era.

Table 2: Progress of New Automobile Emission Standards

Period	Emission Levels/Standards (g/mile)		
	CO	NO_x	VOC
Typical pre-control levels	77	4-6	10
1981-1995	3.4	1.0	0.41
1995-2001 (Tier I)	3.4	0.4	0.25
2001 – 2006 (NLEV)	3.4	0.2	0.075
2007 + (Tier II)		0.07	

Note: Table 2 contains some simplifications to allow a more compact presentation. For instance, NLEV and Tier II standards are not adopted, yet, in Canada. However, there is little doubt that they will be adopted soon in some form, since harmonization of US and Canadian standards is a commercial necessity. In the US, Tier II standards will be phased in over 2004 to 2007 and will allow averaging, banking and trading in emission credits to encourage early reduction of sulphur in gasoline.

The emission standards under consideration for 2001 and 2007 in Canada (already adopted in the US) demonstrate the emphasis on reducing the precursors of ozone, NO_x and VOC, from gasoline powered light-duty vehicles. More recently, emissions of PM have become the centre of attention. Diesel powered vehicles are major contributors of PM and NO_x. Hence, US regulatory efforts have focused on reducing PM and NO_x emissions from heavy-duty diesel engines and vehicles (trucks and

[1] Inhalable particulate matter

buses)[2]. Most recent and future heavy-duty diesel engine emission standards are provided in Table 3[3].

Table 3: Progress of Heavy-Duty Diesel Engine Emission Standards[4]

Period	Emissions (grams of pollutant / horsepower-hour)			
	CO	NO_x	VOC	PM
1990	15.5	6.0	1.3	0.60
1991-93	15.5	5.0	1.3	0.25
1994-97	15.5	5.0	1.3	0.10
1998-2003	15.5	4.0	1.3	0.10
2004-2007	15.5	2.3	0.2	0.10
2007 +(proposed)	15.5	0.20	0.14	0.01

Notes: 1/ The emission units express amount of pollutant emitted per unit amount of work done.
2/ VOC corresponds to hydrocarbons (HC) for 1990-2003 and non-methane hydrocarbons for 2004+.

It is important to note that the US EPA proposed standards for the period commencing in 2007 would see emissions of NO_x, VOC and PM drop to 10% of their levels in 2004. This will mean a quantum reduction in heavy-duty truck emissions.

Despite the unprecedented technical progress of the last three decades, it has become evident that vehicle emission standards alone cannot ensure good air quality. While new vehicles are cleaner, their numbers and use have increased steadily taking back most benefits of technical progress. Furthermore, in-use vehicles emit significantly more than suggested by new vehicle emission standards, in part due to real-life driving conditions and deterioration of emission control equipment with usage.

Until recently, meeting emission standards has been almost the sole responsibility of vehicle and engine manufacturers. This is now changing. Under stricter emission standards, vehicle manufacturers have been calling for "cleaner" fuels to help them reduce emissions. Fuel composition, for instance the sulphur, benzene, and aromatic content of gasoline, influence emission rates of PM, NO_x, benzene and other toxic volatile and semi-volatile organic compounds. Furthermore, fuel composition affects the manufacturers' ability to employ better emission control technologies.

The vehicle manufacturers' calls have already succeeded in bringing fuel quality under regulation. For instance, the sulphur content of diesel fuel and gasoline is being reduced dramatically. This development alone is expected to produce major air quality benefits.

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[2] Currently, gasoline powered automobiles and light trucks are not subject to PM emission standards, but diesel powered ones are.

[3] Heavy-duty vehicle emissions are regulated via engine emission standards rather than vehicle emission standards.

[4] Strictly speaking these are US standards; however, they apply equally to Canada under various Memoranda of Understandings. This regulatory framework is a practical outcome of the fact that practically all heavy-duty highway vehicle engines used in Canada are imported from the U.S.A.

In conclusion, vehicle and fuel emission standards strongly affect air quality, particularly in the vicinity of heavily travelled roads, but they are not adequate to protect public health and the environment. Hence, senior governments have adopted ambient air quality criteria (AAQC). Ontario's short-term exposure criteria for transportation related pollutants are most pertinent for the worst-case scenario analysis of this study. The most relevant current criteria and those expected to be in effect in 2010 (future criteria) are listed in Table 4.

Table 4: Ontario Ambient Air Quality Criteria (AAQC)

Pollutant	Current AAQC	Future AAQC	Background Conc.
CO	30 ppm (1 hour)		0.27 ppm
NO_2	0.2 ppm (1 hour)		0.014 ppm
Ozone	0.080 ppm (1 hour)	0.065 ppm (8 hour)	0.025 ppm
PM_{10}	50 micro-g/m^3 (24 hour)	30 micro-g/m^3 (24 hour)	22 micro-g/m^3
Benzene	N/A		1-7 micro-g/m^3
1,3-Butadiene	N/A		0.1-1.5 micro-g/m^3
Formaldehyde	65 micro-g/m^3		2-4 micro-g/m^3
Acetaldehyde	N/A		2-3 micro-g/m^3

Source: Ministry of the Environment of Ontario and the U.S. Environmental Protection Agency
Notes: ppm stands for parts per million by volume and micro-g/m^3 for microgram per cubic metre. N/A stands for not applicable

Over the last decade, greenhouse gas (GHG) emissions of transportation and other anthropogenic sources have also become a matter of concern, since they may affect the global climate. The principal anthropogenic greenhouse gases are carbon dioxide, nitrous oxide and methane. These compounds have no known deleterious effects on human health at ambient concentration levels and are not considered pollutants. Therefore, they are normally not taken into account in air quality impact assessments. They constitute a global environmental problem; their impacts are not localized and may extend across the globe. Hence, efforts to limit GHG emissions have to be addressed through international agreements, such as the Kyoto Protocol, and need to encompass broader transportation planning issues.

3. Methodology

The methodology employed in this study draws upon MTO's first-hand experience with highway air quality impact assessment and the numerous contributions made by other agencies and individuals to this complex subject.

The potential long-term air quality impacts of a highway are assessed in terms of expected changes in the concentration of road traffic related pollutants in the vicinity of the highway. These concentration changes will, in turn, depend on projected changes in traffic volume and associated factors. Hence, air quality impact assessment is necessarily based on predictions. The following paragraphs summarize the scientific knowledge and methods used in these predictions.

There is strong and well-documented empirical evidence that the concentrations of CO and NO_x in the immediate vicinity of a highway are proportional to their rates of emission on the highway[5]. So, everything else being equal, doubling emission rates will result in doubling of ambient concentrations at a given site. CO in particular, being stable and not prone to deposition, is an excellent "marker" of road traffic and is most often used in modelling highway air quality impacts. NO_x, taken as the aggregate of all oxides of nitrogen, is also an excellent marker even though the concentrations of its constituents change over time and distance.

VOC, on the other hand, consisting of over 100 chemicals - some highly reactive, many emitted by numerous other sources - are much more difficult to treat in the same manner. Ozone and particulate matter are secondary pollutants whose concentrations do not directly depend on highway traffic. Thus, CO and NO_x concentration changes are the most direct consequences of traffic and lend themselves to systematic prediction. The concentrations of VOC have to be inferred from CO and NO_x emissions while those of O_3 and PM cannot be related to emissions from a specific highway.

The ambient concentration of a pollutant, such as CO, is however not only a function of its emission rate but a large number of other variables as well[6]. Hence, knowledge of emission rates (a major task in itself) is not sufficient to predict corresponding ambient concentrations. The influence of other variables has to be taken also into account. Most of these are meteorological variables such as wind speed, direction and variability (atmospheric stability), and mixing height. But, they also include distance from the highway, the topography of the site, and the presence and size of objects on the ground (surface roughness).

For a given emission rate, ambient concentrations drop with increased distance from the highway, increased wind speed and variability and greater mixing height. As far as wind direction is concerned, the maximum concentrations prevail with the wind blowing at an angle of 5 degrees off the highway axis (almost parallel to the highway). Wind in this direction causes an accumulation of pollutants, giving rise to higher ambient concentrations.

Above observations suggest that air quality is a strong function of environmental factors, traffic conditions, and distance from the highway. Since it would be very time consuming to model all possible conditions, the practical approach adopted in air quality impact assessment is one of predicting the consequences of the worst-case scenario only. This scenario entails the coincidence of the worst credible traffic and meteorological conditions. It is understood that if all provincial ambient air quality criteria are met under the worst-case scenario with a sizeable margin of "safety", air quality will be significantly better than required by provincial guidelines under ordinary conditions.

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[5] Horowitz, J.L. Air Quality Analysis for Urban Transportation Planning. Cambridge, Massachusetts: The MIT Press. 1982.

[6] Pasquill, F. and Smith, F. B. Atmospheric Diffusion. West Sussex, England: Ellis Harwood Ltd. 1983.

The worst credible set of conditions for the site in question is selected as follows:

- Peak hour traffic volumes and associated emission rates
- No benefit derived from NLEV, Tier II, and gasoline reformulation standards[7]
- Two scenarios for heavy-duty diesel vehicle share of total traffic volume: 10% and 15% heavy-duty diesel vehicles
- Lowest credible wind speed of 1 metre per second
- Wind direction at 5 degrees to the principal axis of the highway
- High degree of atmospheric stability (stability class F)
- A nominal mixing height of 1000 m
- A nominal surface roughness of 1.75 m
- Ambient ozone concentration of 50 ppb (this rather high level of ozone ensures that NO is promptly converted to NO_2)

Distance of the receptor from the highway is not set; instead, predictions are made for distances of 20, 40, 100, and 200 metres from the edge of the highway. These distances should span the relative location of current and future residents along the highway. As indicated in Section 4 of the report, concentrations of highway related pollutants decline rapidly with distance from the highway.

All above conditions specifying the worst-case scenario are unambiguous, simple specifications, except for emission rates. Emission rates cannot be specified. They are complex functions of traffic volume, driving conditions, composition of the vehicle fleet, and environmental factors. Traditionally, predictions of the US EPA vehicle emissions model, Mobile 5[8], are used to fulfil this need. This is, however, not entirely satisfactory, since the model is based on emission rates measured under laboratory conditions and over a specific test cycle not representative of highway driving. Furthermore, it does not account for the emissions contributed by heavy-duty vehicles (heavy trucks and buses). Hence, the current study uses emission rates based on actual measurements made in MTO's Highway 404 air quality impact study.

Since emission rates are such an important determinant of air quality, the next section of the report is devoted to a brief description of MTO's 1994 Highway 404 Study and its principal conclusions.

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[7] This assumption is inordinately pessimistic, since future standards will undoubtedly result in lower emission rates than adopted here by 2011 and before.

[8] There is a "Canadianized" version of this model, Mobile 5C, which MTO has used for predicting future vehicle fleet composition. It accounts for the unique composition of Ontario's as well as GTA's light-duty vehicle fleet.

3.1 Input from MTO's 1994 Highway 404 Study (Highway 401 to 407)

In 1994, MTO conducted an extensive air quality impact assessment of the planned Highway 404 expansion between Highways 401 and 407[9]. In this study, traffic flows, meteorological conditions, and the ambient concentrations of 88 air contaminants were measured simultaneously over a 4-month period at three monitoring stations adjacent to the highway (one on each side of the highway at 30-50 m from the edge of the highway, the third at 330 m). The study was conducted in consultation with the Ministry of the Environment, who also provided quality assurance and quality control of measurements and reviewed the study report.

These measurements helped assess, in great detail, the prevailing air quality in the immediate vicinity of Highway 404 in 1994, and by extension the expected air quality in the vicinity of any heavily travelled 8-lane highway (peak hourly volume of 14,800). Some of these results are provided in Table 5.

Table 5: Highway 404 Study Measurement Results

Pollutant	Average Level	Maximum Level
CO, ppm	0.64	3.0
NO_2, ppm	0.025	0.143
VOC, ppm	2.20	5.8
O_3, ppm	0.0228	0.0885
PM_{10}, micro-g/m^3	29.7	78.3
Benzene, micro-g/m^3	3.95	9.61
1,3-Butadiene, micro-g/m^3	1.38	10.42
Formaldehyde, micro-g/m^3	2.21	3.60
Acetaldehyde, micro-g/m^3	1.88	3.80

It is worth noting that the measurements did not exceed the AAQC (see Table 3), except those for ozone and particulate matter. These two, particularly ozone, are regional pollutants, whose concentrations exceed AAQC in most parts of the province, on a number of days in a given year. Hence, the highway cannot be held responsible for their high concentrations.

In addition to providing a direct assessment of the prevailing air quality in 1994, the measurements, along with dispersion modelling, helped develop and verify the air quality prediction methodology. An important element of this methodology was the derivation of emission rates. This was achieved by comparing measured and calculated contributions of the highway to the ambient CO and NO_x concentrations. Measured contributions were based on differences of pollutant concentrations upwind and downwind of the highway. Calculated contributions were based on extensive modelling with the dispersion model of the California State Department of Transportation

[9] Ministry of Transportation of Ontario. Air Quality Impact Assessment of Highway 404 Widening. 1998.

(CALINE4)[10]. The model inputs included measured traffic volumes on Highway 404 proper as well as on all ramps and major roads in the vicinity. This extensive effort provided confirmation of the methodology employed and produced more accurate emission rates, representative of the traffic conditions and the total vehicle fleet on Ontario's major highways. On average, approximately 8% of the vehicle fleet at this site consisted of heavy-duty trucks and buses. These vehicles are powered mainly by diesel engines and typically have higher NO_x and PM emission rates than light-duty vehicles. Their CO and VOC emission rates, on the other hand, are generally lower than those of light-duty vehicles.

Strictly speaking, the emission rates deduced in the 1994 Highway 404 Study apply to the 1994 environment on Highway 404. However, they can be extrapolated to 2010, using the MOBILE 5C as a tool to predict changes (i.e., ratios and not absolute values) of emission rates in response to fleet turnover and regulatory developments. Unfortunately, MOBILE 5C[11] does not account for recent changes in emission standards, which will have a profound effect on the air quality impact of highway vehicles by 2010. One of these changes is too important to neglect; namely, the heavy-duty diesel engine emission standards for 2004.

These heavy-duty engine standards listed in Table 3 are not immediately convertible to vehicle emission rates. Truck and bus emission rates are deduced more directly by testing complete vehicles on chassis dynamometers[12]. The results of such testing with new buses and trucks, along with extrapolation of these results to 2010 are provided in Table 6. The extrapolation accounts for the already adopted 2004 engine emission standards, but not for proposed emission and fuel quality standards which are likely to come into force by 2007. The principal benefits of the 2004 standards are reflected in the NO_x and PM emissions.

Table 6: Heavy-Duty Diesel Truck and Bus Emission Rates

Period	Vehicle Emission Rates (gram/mile)			
	CO	NOx	VOC	PM_{10}
2000	8.2	18.4	0.1	0.3
2010	8.2	9.2	0.1	0.1

The combination of measured (for 1994) and extrapolated (for 2000 and 2011) emission rates are provided in Table 7. The emission rates in this table apply to the "average" vehicle, accounting for the full spectrum of vehicles on the highway. Multiplication of these rates with traffic volume, number of all vehicles crossing the highway over a unit

[10] California State Department of Transportation. CALINE4 – A Dispersion Model for Predicting Air Pollutant Concentrations. 1984.

[11] The consequences of new vehicle emission and fuel quality standards are built into the next generation of this model, namely MOBILE 6. Unfortunately, MOBILE 6 is still being developed and is not available for use.

[12] The test data used in this report is produced by the Transportation Emission Testing Laboratories of West Virginia Laboratories and is documented in a February 15, 2000 report.

of time provide total emissions generated by the highway traffic per unit time and distance. The Table includes percentage of heavy-duty diesel trucks and buses as a variable. The 8% truck/bus (mostly truck) share corresponds to the observed percentage of these vehicles during the 1994 Highway 404 study. Central Region requested air quality estimates to include also 10% and 15% truck shares, to ensure assessment of worst-case scenarios. The principal consequence of higher heavy-duty vehicle shares, as far as this report is concerned, is higher NO_x and PM emissions per "average" vehicle. Table 7 does not include PM emission rates, since PM emissions cannot be readily associated with road traffic.

Table 7: Vehicle Emission Rates Based on Hwy 404 Study Results
(Grams of Pollutant Emitted per Mile Travelled by the "Average" Highway Vehicle)

Period	Percent Truck/Bus (%)	CO (g/mile)	NO_x (g/mile)	VOC (g/mile)
1994	8	15.7	4.2	2.2
2000	8	10.7	3.3	1.7
2010	8	8.9	2.7	1.5
2000	10	10.6	3.6	1.7
2010	10	8.9	2.8	1.5
2000	15	10.5	4.4	1.7
2010	15	8.8	3.2	1.5

As anticipated the principal consequence of higher truck traffic share is higher NO_x emission rates.

The VOC emission rates in Table 7 may not be as accurate as the CO and NO_x rates, since they are based on Mobile 5C predictions only. As noted in Section 2, the VOC measurements conducted during the Highway 404 study did not correlate well with highway traffic and could not be used to improve upon MOBILE 5C predictions. Nevertheless, these emission rates are deemed to be sufficiently accurate to allow for a robust worst-case analysis. The validity of this assertion can be judged by comparing the emission rates in Table 7 with the emission standards listed in Table 1.

The emission rates of the more toxic components of VOC[13] are even more difficult to derive. Commonly, these rates are deduced from total VOC emission rates and detailed chemical analysis on the exhaust of typical in-use vehicles. The information used here is obtained from the US EPA and is listed below in Table 8. It should be noted that this information represents conservative estimates, since it is based on emissions from vehicles running on regular gasoline (not the clean gasoline now mandated in the US and in Canada).

[13] Among the constituents of VOC, only formaldehyde is currently subject to an ambient air quality criterion.

Table 8: Percentage of Air Toxics in Gasoline Vehicle Exhaust (2000)

Pollutant	Percentage of the VOC
Benzene	2.0 %
1,3-Butadiene	0.5 %
Formaldehyde	1 %
Acetaldehyde	0.5 %

Note: The benzene fraction of VOC was reduced from 3.6% to 2.0 % to account for the reduction of the average benzene content of gasoline from approximately 1.6% in 1994 to 0.8% in the second half of 1999, as reported by Environment Canada.

In the near future and certainly by 2010, these percentages are expected to be significantly lower than suggested above.

3.2 Summary of the Methodology

Before providing results, it may be advisable to recap the methodology outlined above and to note a few of its pros and cons.

The expected concentration of the principal pollutants associated with highway traffic can be calculated for the worst credible scenario applicable to the site. Two parameters weigh heavily in this process: predicted peak hour traffic volume and flux[14] of pollutants from the highway. The calculation exploits the empirically established simple result that the ambient air concentrations of traffic related pollutants, in the immediate vicinity of the highway, depend linearly on their respective fluxes. The flux of each pollutant, in turn, is affected by the volume, composition and flow conditions of traffic and is proportional to the emission rate of that pollutant by the "average" vehicle on the highway.

This study draws upon the measurement results of MTO's extensive Air Quality Impact Assessment for Highway 404 to deduce real-world emission rates that apply more closely to the highway driving conditions in Ontario. However, Highway 404 results had to be extended to encompass up-to-date and future vehicles and higher heavy-duty vehicle shares in the traffic stream.

The advantages of the methodology adopted here are that it is more accurate (since it minimizes the number of assumptions and employs as much empirical evidence as possible), simpler, and more transparent than dispersion modelling only. Its principal disadvantage is that it produces worst-case predictions that are indeed worse than what would be experienced under most conditions. This disadvantage may be overcome by appreciating the fact that the worst-case scenario represents a very rare event.

[14] The flux of a pollutant expresses the grams of pollutant emitted per unit time and per unit distance of highway by all vehicles operating over that time and distance.

4. Analysis and Results - Bradford Bypass

The results of this study are a strong function of traffic volume predictions. In worst-case analysis, the traffic volume of interest is the peak hour traffic volume; i.e., the number of vehicles traversing the highway during the one hour of the day when traffic volumes are at their peak. The worst-case peak-hour traffic volume used in this study are 5000 vehicles per hour for 2000 and 7200 vehicles per hour in 2010. The traffic volume for year 2000 is hypothetical, it serves as a baseline figure and as a means to demonstrate the influence of traffic volume on key pollutant concentrations. The year 2010 traffic volume of 7200 vehicles per hour corresponds to 1800 vehicles per hour per lane – the design volume for a highway operating at 120 km/hour. This number probably overestimates the expected 2010 traffic volume on the Bypass.

The next step in the analysis is the estimation of worst-case pollutant concentration increases due to the presence of the highway. More precisely, the object is to predict the expected increases in the concentrations of key pollutants as one moves from a condition of no pollution to a situation of a four-lane highway operating under the worst credible traffic and meteorological conditions at the site. The estimates are calculated by scaling the worst-case scenario predictions for the 1994 Highway 404 Study according to the relation below:

Impact of Bypass in 2000/2010[15] = Impact as of 1994 Study x TR2 / TR1 x ER2 / ER1,

where TR2 = Peak-hour traffic volume for Bradford Bypass in 2000/2010
TR1 = Peak-hour traffic volume for 1994 Hwy 404 Study
ER2 = 2000/2010 Emission rates
ER1 = 1994 Emission rates

This approach, namely scaling the 1994 Hwy 404 Study predictions with respect to traffic volume and emission rates rather than independent prediction of impacts, helps integrate the extensive measurement and modelling results of the Study in a consistent manner. Such measurements and modelling would be prohibitively expensive to repeat.

The CO, NO_x and VOC concentration impacts, derived by applying the above outlined method, are presented in Tables 9 and 10, for 10% and 15% heavy-duty diesel vehicle shares, respectively.

[15] More precisely, "Impact of the Planned Four-Lane Highway 404 Section between Bloomington and Aurora Roads".

Table 9: CO, NO_x and VOC Concentration Impacts (10% Heavy-Duty Vehicle Share)

Pollutant	Period	Concentration (ppm for CO / NO_2 and $\mu g/m^3$ for others)			
		20 m from Hwy	40 m from Hwy	100 m from Hwy	200 m from Hwy
CO	2000	1.84	1.05	0.69	0.52
	2010	2.12	1.21	0.80	0.61
NO_2	2000	0.055	0.039	0.030	0.027
	2010	0.058	0.042	0.032	0.029
Benzene	2000	6.7	3.8	2.5	1.9
	2010	8.2	4.7	3.1	2.3
1,3-Butadiene	2000	1.7	1.0	0.6	0.5
	2010	2.1	1.2	0.8	0.6
Form-aldehyde	2000	3.3	1.9	1.3	1.0
	2010	4.1	2.3	1.5	1.2
Acet-aldehyde	2000	1.7	1.0	0.6	0.5
	2010	2.1	1.2	0.8	0.6

Table 10: CO, NO_x and VOC Concentration Impacts (15% Heavy-Duty Vehicle Share)

Pollutant	Period	Concentration (ppm for CO / NO_2 and $\mu g/m^3$ for others)			
		20 m from Hwy	40 m from Hwy	100 m from Hwy	200 m from Hwy
CO	2000	1.82	1.04	0.69	0.52
	2010	2.10	1.20	0.79	0.60
NO_2	2000	0.067	0.048	0.037	0.033
	2010	0.067	0.048	0.037	0.033
Benzene	2000	6.7	3.8	2.5	1.9
	2010	8.2	4.7	3.1	2.3
1,3-Butadiene	2000	1.7	1.0	0.6	0.5
	2010	2.1	1.2	0.8	0.6
Form-aldehyde	2000	3.3	1.9	1.3	1.0
	2010	4.1	2.3	1.5	1.2
Acet-aldehyde	2000	1.7	1.0	0.6	0.5
	2010	2.1	1.2	0.8	0.6

The results quantify the expected contribution of the highway to local air quality, at distances of 20 metres to 200 metres from the edge of the highway. These results suggest a few important observations. Clearly, the highway's influence on air quality drops strongly with distance. This drop is steeper for CO than for NO_2, since NO_2 requires some time to be produced from NO. At a distance of 200 m from the highway, the expected influence of the highway on CO concentration is approximately one-quarter of that at 20 m. For NO_2, the drop is 50%. The share of heavy-duty vehicles in the traffic stream will have a significant impact on NO_2 concentrations but not on the concentrations of other pollutants. Over the period of 2000 to 2010, two competing

effects will affect air quality: increasing traffic volume and declining emission rates for individual vehicles. The net effect of these two effects seems to cancel out for NO2, in the specific scenario of 15% heavy-duty vehicle share in the traffic stream.

In order to estimate future air quality, the current ambient concentrations (background concentrations) of the pertinent pollutants need to be added to the predicted concentration impacts in Tables 9 and 10. These background concentrations are available for NO_2 and benzene from MOE's Stouffville monitoring station, not too far from the study site, and for CO from MOE's North York station. These background concentrations are listed in Table 11. Unfortunately, the Stouffville station does not monitor CO. The North York readings of CO, recorded at Finch and Yonge, are expected to overstate the background concentration at the study site, which is a rural area. No directly relevant background readings are available for 1,3-butadiene, formaldehyde and acetaldehyde; however, it is reasonable to assume these to be near zero in a substantially rural setting at some distance from industrial and commercial emission sources.

Table 11: Background Concentrations

Pollutant	Background Concentration
CO	1.0 ppm
NO_2	0.012 ppm
Benzene	1.0 micro-g/m^3

These background concentration levels are added to the expected concentration impacts of the proposed 4-lane highway (listed in Tables 9 and 10) to arrive at predicted worst-case ambient concentration levels, which are presented in Tables 12 and 13, for 10% and 15% heavy-duty vehicle traffic volume shares.

Table 12: Worst-Case Ambient Concentrations of CO, NO_2 and VOC (10% Heavy-Duty Vehicle Share)

Pollutant	Period	Concentration (ppm for CO / NO_2 and micro-g/m^3 for others)			
		20 m from Hwy	40 m from Hwy	100 m from Hwy	200 m from Hwy
CO	2000	2.84	2.04	1.69	1.52
	2010	3.12	2.21	1.80	1.61
NO_2	2000	0.067	0.051	0.042	0.039
	2010	0.070	0.054	0.044	0.041
Benzene	2000	7.7	4.8	3.5	2.9
	2010	9.2	5.7	4.1	3.3
1,3-Butadiene	2000	1.7	1.0	0.6	0.5
	2010	2.1	1.2	0.8	0.6
Form-aldehyde	2000	3.3	1.9	1.3	1.0
	2010	4.1	2.3	1.5	1.2
Acet-aldehyde	2000	1.7	1.0	0.6	0.5
	2011	2.1	1.2	0.8	0.6

Table 13: Worst-Case Ambient Concentrations of CO, NO_2 and VOC (15% Heavy-Duty Vehicle Share)

Pollutant	Period	Concentration (ppm for CO / NO_2 and micro-g/m^3 for others)			
		20 m from Hwy	40 m from Hwy	100 m from Hwy	200 m from Hwy
CO	2000	2.82	2.04	1.69	1.52
	2010	3.10	2.20	1.79	1.60
NO_2	2000	0.079	0.060	0.049	0.045
	2010	0.079	0.060	0.049	0.045
Benzene	2000	7.7	4.8	3.5	2.9
	2010	9.2	5.7	4.1	3.3
1,3-Butadiene	2000	1.7	1.0	0.6	0.5
	2010	2.1	1.2	0.8	0.6
Form-aldehyde	2000	3.3	1.9	1.3	1.0
	2010	4.1	2.3	1.5	1.2
Acet-aldehyde	2000	1.7	1.0	0.6	0.5
	2010	2.1	1.2	0.8	0.6

Comparison of predicted local ambient pollutant concentrations with the ambient air quality criteria in Table 3, suggests that the impact of the highway will not bring the ambient air quality in violation with the provincial criteria under worst-case conditions and very close to the highway. In fact, as far as pollutants directly contributed by the highway is concerned, there is a very large safety margin. This point is illustrated further in Figures 1 -3 below. Figure 1 and 2 present CO and NO_2 concentration profiles for the 10% heavy-duty vehicle share scenario. Figure 3 presents the NO_2 concentration profile for the 15% heavy-duty vehicle scenario. The CO profile for this case is essentially identical to that of the 10% heavy-duty vehicle scenario.

Figure 1: Worst-Case CO Concentrations
(10% Heavy-Duty Vehicle Share)

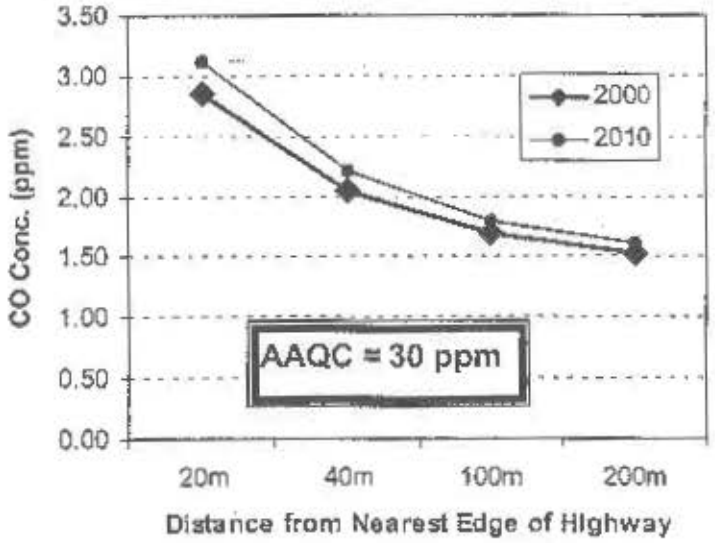


Figure 2: Worst-Case NO_2 Concentration
(10% Heavy-Duty Vehicle Share)

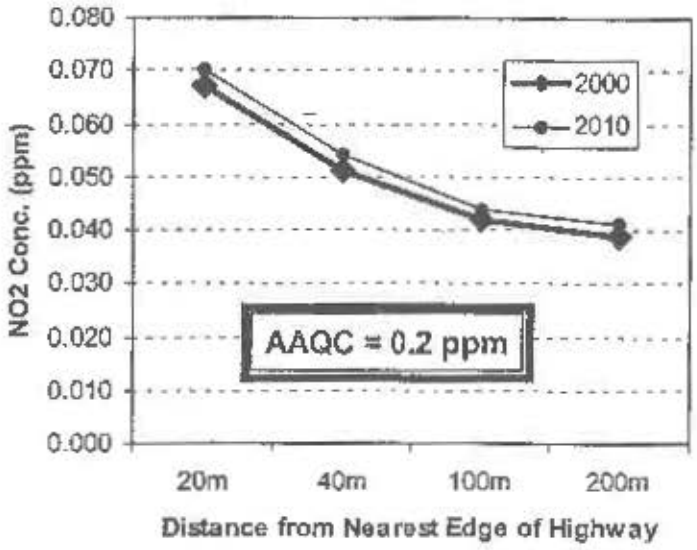
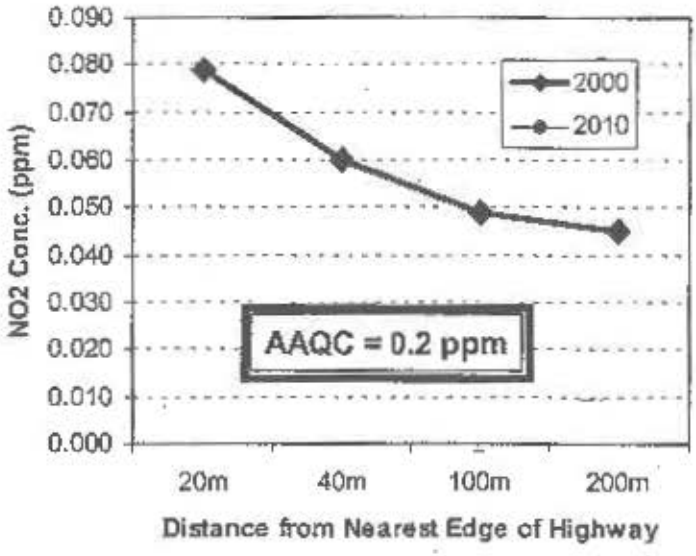


Figure 3: Worst-Case NO2 Concentrations
(15% Heavy-Duty Vehicle Share)



Note: The NO_2 concentration profiles for 2000 and 2010 are identical, since the effects of traffic volume increase and emission rate decline cancel each other.

The concentrations of ozone and particulate matter are not directly related to the presence of the highway. In fact, NO emissions of highway vehicles scavenge ozone according in the reaction,

$$NO+O_3 \rightarrow NO_2,$$

causing a reduction of ambient ozone concentrations in the immediate vicinity of the highway. Higher ozone concentrations across the province are, however, of concern. The provincial anti-smog plan (ASP) is aimed at addressing this concern.

Residents of the area are currently subject to prevailing background concentration levels in Southern Ontario. These are 0.025 ppm for ozone, 11 micro-g/m^3 for $PM_{2.5}$ and 22.1 micro-g/m^3 for PM_{10}. The proposed Bradford Bypass is not expected to add significantly to these background concentration levels.

5. Conclusions

The potential air quality impacts of the proposed Bradford Bypass were predicted for two credible worst-case scenarios over the 2000 - 2010 timeframe. These scenarios assume the coincidence of peak traffic volumes with poor meteorological conditions (low wind speeds in a direction almost parallel to the highway and high atmospheric stability). Furthermore, they do not assume any benefit due to stricter federal light-duty vehicle emission and gasoline quality standards planned for the 2000 - 2010 timeframe. The only distinction between the two scenarios is the share of heavy-duty vehicles in the traffic stream, namely 10% and 15%.

Air quality predictions are based on MTO's extensive measurement and modelling results for Highway 404 in Toronto along with site-specific considerations in the proposed corridor for the highway.

The results clearly indicate that, even under the worst-case scenario and highly conservative assumptions, the concentrations of pollutants directly related to the planned Bradford Bypass will not exceed provincial ambient air quality criteria. In fact, they will remain much below these criteria. The effect of the Bypass on the concentration of regional pollutants (specifically ozone and particulate matter) is deemed to be insignificant relative to the collective contribution of US and Canadian emission sources.

The low levels of pollutant concentrations expected under the worst-case scenarios make it unnecessary to predict air quality impacts under other conditions and at specific geographic locations along the highway. Any such predictions would produce even lower concentrations and would not contribute further insights.