The Red Hill Valley Project Final Impact Assessment Report, March 2003

Consultation Report

Hamilton

Lura CONSULTING

Red Hill Valley Project
Public Consultation Report

March, 2003

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Table of Contents

Letter of Transmittal

March 17, 2003

Mr. Chris Murray
Director, Red Hill Valley Project
City of Hamilton
Public Works Department
77 James Street North, Suite 320
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Dear Mr. Murray:

The accompanying report describes the Community Consultation program that was undertaken for the Red Hill Valley Project between the period 1997-1998. The program was interrupted for three years due to the federal court challenge. Once this was resolved, the consultation program resumed during the year 2002.

The consultation program was principally designed to:

1. Provide mechanisms for the public, interest groups and government agencies to review technical information, raise issues, and exchange ideas and information about minimizing the impacts of the Red Hill Valley Project on the community and the environment; and
2. Provide the City with this input such that it could be included and addressed in the Impact Assessment and Design Process.

The program was guided by the 1997 Declaration Order, and included the following activities:

- The formation of the Community Stakeholder Committee (CSC), which convened 10 meetings between 1997 and 1998;
- City-hosted Information Sessions and public meetings, including:
  - ⇒ Five Public Information Sessions;
  - ⇒ Three Neighbourhood Meetings;
  - ⇒ Three Information Briefing Sessions;
  - ⇒ A Visual Impact Assessment and Design Process Workshop;
  - ⇒ A Burlington Street/QEW Interchange Meeting;
  - ⇒ A King's Forest Golf Course Open House (2002);
  - ⇒ Numerous meetings with representatives from government agencies; and

- Communications and Information, including
  - ⇒ Newsletters distributed to neighbouring residents, including one prepared by the CSC;
  - ⇒ Advertising and news articles; and
  - ⇒ The Red Hill Valley Website created on the City of Hamilton's web page (2002).

The Community Stakeholders Committee worked diligently to provide input and advice to the City. It prepared a Terms of Reference, outlining operational procedures and its work plan; a community consultation and communications plan; and provided reviews of technical issues and input to mitigation options.

Both the CSC and members of the public reviewed numerous technical reports, and two draft summary documents. During the period of summer 1997 to spring 1998, Draft Summary Report Volume 1 (DSR Vol. 1) was reviewed, which outlined the background conditions in the study area. During summer and early fall 1998, Draft Summary Report Volume 2 (DSR Vol. 2) was reviewed, which outlined the proposed alignment of the roadway, the anticipated impacts and mitigation options, and a public consultation program for the final phase of the project – Detail Design and Construction.

The consultation program began again in October 2002, when the City released nine additional reports for review. A period of sixty days was allocated and correspondence and briefs were received from the general public and stakeholders.

There was a high level of stakeholder and public participation during the consultation process. Members of the public gave significantly of their personal time to ensure that their ideas and concerns were heard by the City. We have documented each concern and issue – whether it was raised at a public meeting, received via written submission or both. This report documents the issues raised, and identifies how the City and its consultants have addressed the issues – either in the final technical reports, or during the design and construction stage.

Our report is organized to first provide a background to the process, followed by a description of the City's public consultation activities and a summary of the key issues raised by participants. Each comment has been considered by the City and its consultants. These issues and responses have been documented in the "Issues and Responses" Matrix contained in section 5 of this report.

As the facilitator for the former Community Stakeholders Committee, I would like to express our thanks for the many hours of work and effort that were contributed by stakeholders and residents of the City of Hamilton.

Respectfully submitted,

Sally M. Leppard

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1.0 Background and Context

The Red Hill Valley Project includes the design and construction of the Red Hill Creek Expressway, one of the most controversial development projects in Hamilton's history. The new road is intended to link up with the Lincoln M. Alexander Expressway at the Mud street intersection, running northwards through the Red Hill Valley to connect up with the Queen Elizabeth Way. The route begins at the Niagara Escarpment, and follows the Red Hill Creek Valley – a mix of wooded natural area, populated on either side by residents. As the alignment moves northwards, the residential areas are joined by recreational areas and both light and heavy industry.

Planning and development of this roadway, and plans for its implementation, go back at least three decades. During the early 1980s, the Region of Hamilton-Wentworth conducted an environmental assessment that was subsequently approved in 1985. During the late 1980s and early 1990s, the Region decided to explore ways to minimize the impact of the road on the environment and community. In May 1996, the Regional Municipality of Hamilton-Wentworth (the Region) applied for an Exemption Order (now called a Declaration Order) under Section 5 of the Environmental Assessment Act. This would permit the Region to reduce environmental impacts by improving the alignment of the Expressway, and to construct an interchange connection to the Queen Elizabeth Way, while maintaining its construction schedule. In the request, the Region described an Impact Assessment and Design Process (IADP) that would explore and describe ways to reduce the impact of the Expressway on Red Hill Valley features, area wetlands and adjoining development. On March 5, 1997, Ontario's Minister of Environment and Energy approved the City's request, and issued a Declaration Order containing the terms and conditions to be followed during revisions.

The Impact Assessment and Design Process (IADP) outlined in the Region's Exemption Order included four technical phases:

- Description of the existing and future environment;
- Prediction of net environmental impacts;
- Evaluation of the proposed design changes in comparison to the approved expressway and selection of the Burlington Street and QEW interchange; and
- Detailed design, construction and post-construction commitments.

The Region and its consultant team made a commitment to involve government agencies, community groups and individual members of the public throughout the IADP. The Region developed a community consultation process with a goal to implement the IADP in a manner that encouraged the exchange of ideas and information, clarified positions and expectations and enabled participants and

the Region to work co-operatively to develop an Expressway design that would reduce impacts to the Red Hill Creek watershed.

The Region consulted with the public and its stakeholders about the most effective way to engage the community. As a result, a Community Stakeholders Committee was established, with public meetings, workshops and forums being held at key points in the process.

Between summer 1997 and fall 1998, the Region released a number of technical and summary reports for public review.

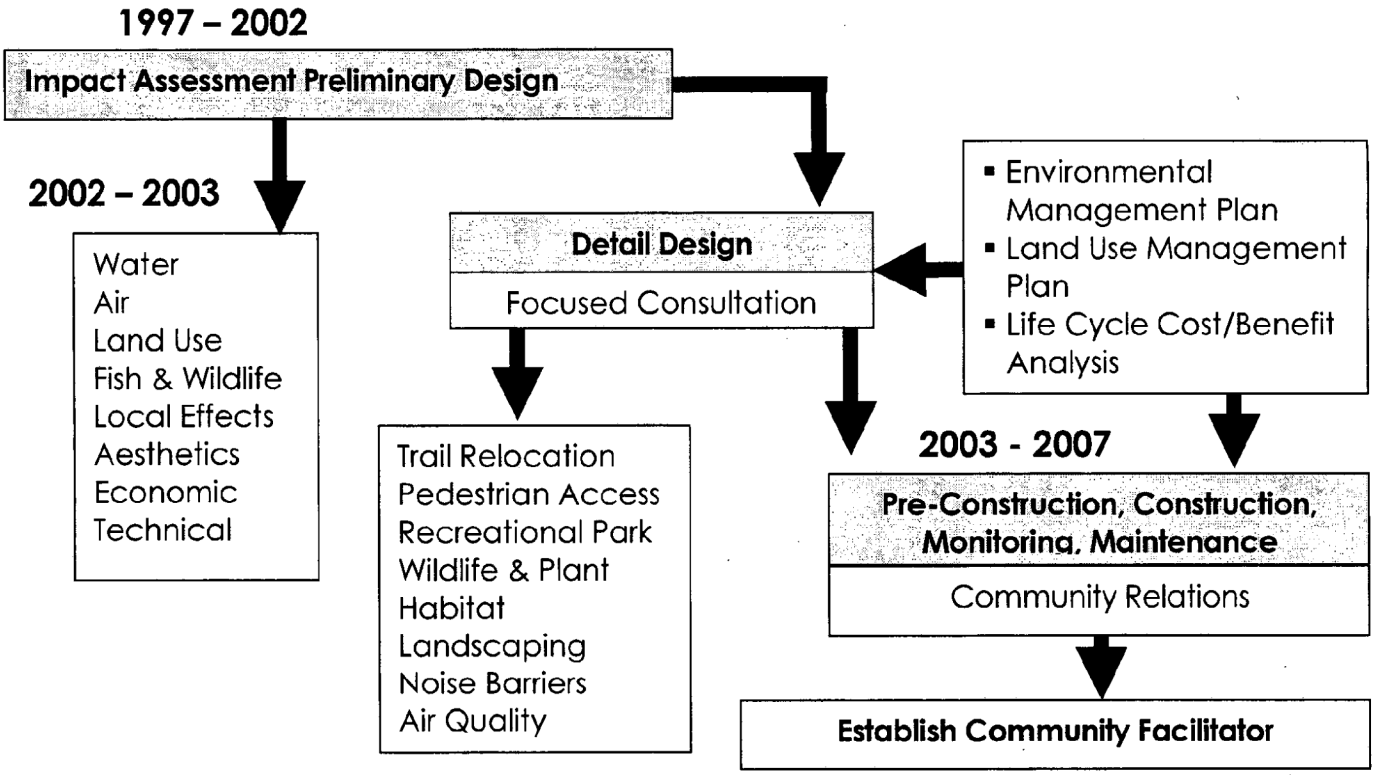
In May 1999, the federal government decided to subject the Region's Red Hill Valley Expressway Project to a Panel-wide Review under the Canadian Environmental Assessment Act (CEAA). In August, the Region filed a judicial review application to challenge that decision. The Region was successful, and as a result, the original decision that the CEAA was not applicable was upheld.

In light of these actions, the Region decided to suspend consultation between government and community stakeholders between 1998 and early 2002. During that time, the Region amalgamated and became the new City of Hamilton (the City). In spring of 2002, the City recommenced work on the roadway, completing the assessment of roadway impacts. Documentation of the impact assessment component of the IADP will be completed in spring (April) 2003.

Also during that time, the City undertook additional technical studies prompted by public input from the consultation activities and commitments made in the 1997 Declaration Order. In October of 2002, the City released nine new draft studies for public and agency review and comment. For a complete list of published reports, see Appendix I. In addition, the 13 original draft technical reports circulated in 1998 have been updated to reflect recent changes to the expressway design.

The diagram below presents the sequence of the project since the Declaration Order was approved in 1997:

PROJECT STEPS AND PHASES



The table below outlines significant events in the recent history of the project.

Year	Milestone
1986	Approval under the Environmental Assessment Act received from the Minister of the Environment and Energy.
1996	Region applies for Exemption Order – proposing that changes are made to the route, while maintaining the EA approval.
1997	Minister approves Exemption Order (later referred to as Declaration Order) for modifications to the route.
1997-1998	Community Stakeholders Committee and public consultation review technical studies commissioned by the Region in accordance with the Declaration Order. Draft Summary Reports 1 and 2 prepared for review. Summer 1998, Draft Impact Assessment documents prepared.
1999-2000	Unsuccessful Federal Court Challenge under CEAA, Region of Hamilton-Wentworth and local municipalities amalgamate into the New City of Hamilton.
2001-2002	City releases additional technical studies for public consultation and completes the Impact Assessment on the Red Hill Creek Expressway.

2.0 The City's Public Consultation Activities

2.1 The Community Stakeholders Committee (CSC)

On July 9, 1997, an information session was held in order to provide interested groups with information regarding the IADP, the expressway planning process, the work program and the design schedule. At the information session, interest group representatives were asked how they would like to be involved in these efforts. As a result of the input received, the Community Stakeholders Committee (CSC) was formed in the fall of 1997.

The Committee was comprised of members representing organizations with diverse views about the expressway. Membership reflected a balanced representation of those who were against the expressway, for the expressway, and neutral about the expressway, and a broad range of perspectives, including economic, environmental and community interests. It was clear in the terms of reference that for members opposed to the expressway, participation in the CSC was not to be construed in any way as a condoning of the project. For a full list of members, please consult Appendix II.

The CSC provided a forum for community stakeholders to come together to work on the Expressway project in a constructive manner. Specifically, the goal of the CSC was to provide a balanced, inclusive discussion and advisory forum for community members and stakeholders to pro-actively collaborate with, and provide timely advice and recommendations to, the Region. Their focus was on developing and reviewing mechanisms to minimize the impact of the Red Hill Creek Expressway on the environment and the community. The results of their work would be considered by the Region when determining the modifications to be made to the approved alignment.

The CSC was supported by representatives of the Region as well as the technical consultants. CSC meetings were facilitated by a neutral third-party, whose responsibilities were to ensure that the business of the committee was achieved in accordance with the Committee's direction.

Terms of Reference Sub-Committee

Community stakeholders formed a balanced sub-committee to work on its Terms of Reference. In January 1998, consensus was reached by the CSC on the Terms of Reference. It includes details on items such as purpose, structure, membership and procedures. Please see Appendix III for a copy of the CSC Terms of Reference.

Public Consultation Sub-Committee

An additional sub-committee was formed to provide CSC advice to the Region on effective ways to engage the public in the IADP process.

The CSC identified two different audiences of the Red Hill Valley Project: residents adjacent to the proposed Expressway, and the general community. The CSC felt that citizens who are either positively or negatively impacted by the expressway project should not only be informed and aware of the CSC's existence, but also have an opportunity to provide advice on issues such as:

- Connections (Melvin, Greenhill and the escarpment crossing);
- Air quality, natural environment, stormwater management, Burlington Street Interchange options;
- Minor expressway refinements; and
- Mitigation measures.

The CSC noted that efforts must be made to engage ethnic organizations in opportunities for participation and recommended that translation services be made available.

Several suggestions were put forward by the CSC to ensure that information about the Red Hill Creek Expressway IADP be available to the stakeholders and the general public, including:

- Posting information on the City's website;
- Distributing the CSC newsletter to the community;
- Preparing an advertisement and news release to inform the community about the formation of the CSC; and
- Using audio-visual media to inform community members about public meetings and information sessions in advance of the events taking place.

In addition, the CSC believed that those who were not comfortable with public speaking should have the chance to add their views and advice to the process. Furthermore, for people participating in meetings, there needed to be enough time for them to absorb the information and advise the City of their concerns at a later date. The CSC believed that communicating through existing networks such as the Riverdale Community Council, Centennial Ratepayers and Home and School associations would ensure that neighbourhoods could be involved.

Review of Technical Studies and Draft Summary Reports

Throughout its tenure, the CSC provided advice to the Region on the background conditions, projected impacts from the expressway and mitigation measures. This was undertaken through a review of Draft Summary Report Volume 1 (released in November 1997) and Draft Summary Report Volume 2 (released in July, 1998). For a complete set of CSC meeting records, please see Appendix IV.

Resignations and Disbanding of the CSC

In April 1998, several members of the CSC opposed to the Expressway resigned from the Committee due to irreconcilable differences over the need for the project. Remaining members of the CSC made numerous attempts to resolve the differences, and convened a sub-committee to address the concerns. Advice was provided to the Region to refer the matter of need to the City's Vision 2020 Committee. This request was declined, and efforts to encourage resigned members to re-consider were not successful. The CSC decided to attempt to recruit new members, and continued its work until September 1998. At this time, the CSC unanimously resolved that its work was complete and disbanded the Committee.

2.2 Public Consultation and Communications

The City provided several discrete public consultation events/opportunities. A total of over 1,100 members of the public attended these events, raising numerous concerns and providing the City with suggestions and advice. This section provides a brief overview of the public consultation that occurred throughout the IADP, beginning with the most recent activities.

Newsletter

In December of 2002, the City of Hamilton released the first newsletter for the Red Hill Valley Program on its website. Topics addressed included an overview of the project and information on natural channel design.

Completing the Impact Assessment Process – Consultation Activities 2002

In October 2002, the City released ten additional reports to supplement the technical work completed in 1998. These reports covered a number of issues and topics that had not previously been addressed. Topics included:

1. King's Forest Golf Course Impact Assessment Study
2. A Stream Network Inventory, Fluvial Geomorphologic Assessment and Preliminary Natural Channel Design of Red Hill Creek
3. Southern Flying Squirrel Study
4. Land Use Assessment
5. Business Impact Assessment of the Red Hill Creek Expressway/QEW Interchange
6. Snowdrifting Assessment
7. Niagara Escarpment Expressway Crossing Alternative Designs Report
8. Pre-Construction Ambient Air Quality Monitoring
9. Post-Construction Air Quality Monitoring for Lincoln Alexander Parkway
10. Fisheries Existing Conditions and Predicted Impact

Stakeholders and the general public were informed of the opportunity to review and comment on these reports through advertisements and letters. The 60-day review period occurred from October 11 to December 12, 2002.

Key issues raised by the public and agencies as a result of this review were similar to the ones stemming from the first two Draft Summary Reports: air and water quality, wildlife habitat protection and noise mitigation during and after construction. In particular, some of those reviewing the ten reports mentioned the flying squirrel population and the impact that a loss of habitat would have on their welfare. As well, questions on water quality monitoring and fish relocation plans were all raised during this 60-day review period.

King's Forest Golf Course Open House (November 2, 2002)

This drop-in style session was composed of representatives of the golf course, municipal staff and consultants involved in the Red Hill Valley Project on hand to answer questions. Issues raised included the fact that Creek stabilization work should be undertaken whether or not the expressway is built, noting that the overall costs are lower with the Expressway driving the work. Timing of construction was also a concern, with a view to minimizing disruption of the golfing season.

Red Hill Valley Program Website

In August 2002, a Red Hill Valley website was designed as part of the City of Hamilton's Internet home page. This website, www.hamilton.ca/rhvp, provides residents with information about the Red Hill Creek watershed and the many studies and projects that the City has underway in the watershed. The website is frequently updated and provides such content as project updates, final reports, newsletters and media releases.

2.3 Stakeholder and Public Consultation on Draft Summary Report Volume II – (Impact Assessment) June – September 1998

Public Information Centres on Predicted Impacts and Mitigation Options

A series of public information centres were held on June 15, 17 and 18, 1998 at Carmen's Banquet Centre and the Renaissance Banquet and Special Events Centre. The purpose of the public information centres was to inform the community about the recommended changes to the design of the expressway, the predicted impacts and mitigation options, and opportunities for community involvement in the detailed design phase.

In total, 623 people attended the 3 information centres and 169 comment sheets were returned to the Region. The public's areas of greatest concern were: impacts on air quality and potential health effects, impacts to wildlife and habitat, noise increases, potential relocation of parks and pedestrian access to the valley. In particular, members of the public were concerned about the traffic volume and traffic mix data that was used in the air quality and noise impact prediction models.

2.4 Stakeholder and Public Consultation on Background Conditions and Impact Predictions (January – April, 1998)

Information Briefing Sessions

A series of information briefing sessions were held on April 2, 7 and 9, 1998 at the Lakeland Community Centre. The first session pertained to creek realignment and stormwater management. The second session dealt with vegetation, wildlife and site contamination, while the last session focused on air quality and noise. Approximately 40 people in total attended the three information sessions, including several CSC members. The purpose of these assemblies was to provide people with background information so that they might better understand how predicted impacts are determined and reported. Videotapes of each session were produced and made available at the Hamilton Central Library, the Hamilton Sherwood Library, the Stoney Creek Library and at the Region's Special Projects Office.

Neighbourhood Meetings

A series of neighbourhood meetings hosted by the CSC were held on February 18,19, and 23, 1998. The meetings were held at Elizabeth Bagshaw Public School, Glendale Secondary School and Woodward Public School. On February 6, 1998, a Regional media release was issued to advertise the meetings, and advertisements were run in February 7, 11 and 14, 1998 issues of the Hamilton Spectator.

Advertisements were also run on February 11, 1998 in numerous local newspapers. The purpose of the neighbourhood meetings was to provide an opportunity for the public to obtain information on the Region's progress to date, the expressway design options being examined, the schedule of activities that would lead to the selection of a preferred expressway design and the CSC. In total, 206 members of the public attended the three meetings. The public raised a number of questions, concerns and issues regarding:

- Impacts to the natural environment;
- Impacts to private property;
- Noise and traffic;
- Health and safety;
- Use of the valley;
- Costs;
- Compensation;
- Need for the expressway; and
- Alternatives to the expressway.

Mall Display

A mall display was set up at Eastgate Square in Hamilton from February 12-15 1998. The display contained information about the expressway project, the IADP and the formation of the CSC. People visiting the mall display were encouraged to fill out a comment sheet and return it to the Region. Over the duration of the display, 19 comment sheets were returned with requests for more information and people asking to be put on the Region's mailing list.

CSC Newsletter

A CSC newsletter was published and distributed in February 1998 to over 20,000 residents and businesses located approximately 1 kilometre on either side of the proposed expressway limits. The newsletter outlined the need for public input; notified people of the formation, role and membership of the CSC; contained pro, con and neutral articles; informed readers about upcoming meetings; and included a comment sheet that could be filled in and returned to the Region.

Burlington Street/QEW Interchange Meeting

A meeting regarding options for the Burlington Street/QEW interchange was held on January 19, 1998 at the Lakeland Community Centre. The event was advertised in the Hamilton Spectator on January 10 and January 15. The purpose of the event was to provide an opportunity for members of the public to obtain information on the interchange options for Burlington Street and the QEW and to

provide input on community priorities. Ninety-five people attended the meeting. Questions and concerns raised by the public included:

- The possibility of truck accidents and subsequent contamination issues;
- The timing of construction;
- Potential impacts to wetlands, the Lakeland Community Centre, and Hutch's restaurant;
- Stormwater management issues; and
- Air and water quality along the beach.

Visual Impact Assessment Workshop

A Visual Impact Assessment Workshop was held on December 11, 1997 at the Lakeland Community Centre. The purpose of the workshop was to discuss how the potential visual impacts of the expressway would be assessed. Eighteen people attended the workshop, including members of the CSC and representatives from other interest groups. Participants at the workshop felt that consideration should be given to both short and long-term impacts, that mitigation options should be applied further down the valley, and that monitoring take place during and post construction. Questions were raised about how the computer modelling was done, and about the safety and feasibility of pedestrian and wildlife crossings.

2.5 Consultations on the IADP and Community Consultation Process – June, 1997

Public Information Centres on the Impact Assessment and Design Process

On June 23 and 25, 1997; public information sessions were hosted by the. The first was held at Hillsdale Public School, and the second at Janet Lee Public School. In total, 152 people attended the two information centres. A Regional media release dated June 11, 1997 was used to publicize the event in advance, and notification of the event was included in the Red Hill Creek Expressway Information Brief for June 1997. The purpose of the event was to invite the community to provide input into the Impact Assessment and Design Process and to inform the public about how they could be involved in the process. 115 comment sheets were completed and returned at the information centres. Generally, people expressed concern for current traffic situations, and concerns about potential impacts the expressway would have on the natural environment, noise levels, and water and air quality.

2.6 Government Input

Government agencies also had the opportunity to provide input to the City/Region throughout the Impact Assessment and Design Process. In particular, government agencies provided written advice and suggestions to the Region on the Draft Summary Report Volume 1: Impact Assessment and Design Process from December 1997 to February 1998 and on the Draft Summary Report Volume 2: Impact Assessment and Design Process from August 1998 to December 1998. Meetings with individual agencies were scheduled in late 2002 to obtain input on the additional reports, and to discuss and resolve specific issues pertaining to the overall project.

3.0 Overview of Key Issues

3.1 Overview of CSC Advice and Feedback

During its tenure, the CSC dealt with a number of issues and identified methods to resolve potential conflicts. These were:

- Consensus on the terms of reference and operating procedures;
- Methods to fully include the public in consultations – including the development of communications and consultation plans;
- Suggestions to the Region on socio-economic considerations;
- Advice to Council relating to consideration of the scope of the assessment – specifically cost, location and need for the expressway; and in particular
- Advice relating to the proposed alignment, clarification of impacts and proposed mitigation methods.

Most of the advice from the CSC relating to DSR Vol. 1 focused on environmental conditions – including water and natural resources, and how these conditions may be affected. Several changes were also suggested to improve the clarity and accuracy of the natural setting and human settlement maps.

The CSC convened a working session in September 1998 and provided substantive advice on the impact assessment information contained in DSR Vol. 2. Each of the criteria groups was reviewed and suggestions for mitigation measures were identified in all but the contaminated sites and groundwater category groups.

During the review of DSR Vol. 1, members of the CSC became divided over how to deal with the issues of need, cost and location of the expressway. This division was based on attempting to ensure that Regional Council responded to all public concerns raised during the neighbourhood meetings and subsequent issue table sessions, including the needs assessment and cost and location concerns. In an attempt to resolve this issue, the CSC recommended that Council consider referring these issues to the Vision 2020 Review Team. In response, the Region advised that Council did not feel that these issues needed to be re-examined (minutes April 16, 1998) and had received the report from the CSC containing public input. Council's decision was based on the fact that the Vision 2020 Review Team had already deliberated and reported on the issue of the Red Hill Creek Expressway (Vision 2020 Progress Team, Phase 1 Report: Preliminary Progress Assessment, April 22, 1998). Thus, the CSC's attempts to resolve the issue through these routes were unsuccessful.

While reviewing the DSR Vol. 2, several CSC members expressed their concern regarding air quality impacts, noise, traffic volume and traffic mix predictions, water quality issues, and the underlying assumptions of the air quality and noise models. Other CSC members felt that the positive impacts of the expressway should be elaborated, such as the establishment of a permanent hiking trail, and overall improvements in air and water quality.

3.2 Overview of Public Advice and Feedback

From the public input received on DSR Vols. 1 and 2, it is clear that the predominant concerns focused around need, cost and location of the expressway. With regard to predicted impacts, public concerns centred on air quality, noise, health and safety of people and wildlife. Natural environment concerns were also prevalent and included issues regarding creek realignment, loss of vegetation and wildlife habitat, fisheries, degradation of ecosystem functioning and water quality impacts. Several members of the public noted that the positive effects of the CSO pipe should be considered separately from the expressway project, as the two projects are really independent of each other. Feedback on the Draft Technical Reports reiterated many of the concerns arising from review of DSR Vols. 1 and 2.

3.3 Overview of Government Advice and Feedback

Comments on DSR Vols. 1 and 2 submitted by the reviewing government agencies indicated that impacts to Van Wagner's Marsh and Confederation Park, ecosystem functioning, air quality, water quality, fisheries, noise, and the recreational use of the valley were the most prevalent areas of concern. In addition, several government agencies identified issues regarding the feasibility of the creek realignment, the need for stormwater management, and uncertainty regarding traffic volume predictions and the assumed traffic mix. The comments on the Draft Technical Reports were centred around the impact on trails and the creek after the Expressway is built. From this stemmed concern over wildlife habitat and the occurrence of flooding.

3.4 Common Issues Identified by the Public, CSC and Government

There were many areas of concern identified that were raised by the public, the CSC and some government agencies. These were:

- The 7.5% heavy truck traffic volume prediction appears low considering the increasing reliance on trucks for "just-in-time" delivery and the number of trucks that are expected to be using the expressway as a short-cut between Buffalo and Windsor.
- More information is needed about the assumptions used in the air quality and noise models. For instance, how were gradient, roadway improvements, population growth, employment, urban development and stop and go traffic conditions considered?
- The hardening of valley and decreased permeability of the soil is likely to increase the occurrence of flooding in the valley.
- There is a lack of evidence to support the claim that air quality in the City will improve by 3 – 16%. There is a view that the assumptions provided to the model are inaccurate, thus the model's predictions are questionable.
- Windemere Basin should be dredged to prevent sedimentation, contamination and a subsequent decline in water quality of the Red Hill Creek and Hamilton Harbour.
- Noise impacts will significantly affect residents living adjacent to the expressway, will interfere with the enjoyment of trails and will reduce the quality of outdoor recreational areas in the valley (especially near Elizabeth Bagshaw Public School).

Concern was raised about noise and air quality impacts, specifically the impact on the health of people living in the area. Also questioned were the predicted truck traffic volumes and traffic mix assumptions, as the results of the noise, air quality and climatic models are dependent upon the traffic data used. Other areas of common concern identified by members of the public and the CSC were the need for stormwater management, concern about vegetation loss and impacts on wildlife and impacts on recreational uses of the valley.

Members of the public and some government agencies raised the following common concerns:

- The positive effects of the CSO project should be treated as separate from the expressway project.
- The Cantox health assessment and air quality models should have taken into account pollutants such as carbon monoxide, nitrogen oxide, sulphur dioxides, benzene, ozone, PAHs, metals, and VOCs.
- The feasibility of the creek realignment is questionable.

- The irreversible impacts to ecological functions of the Red Hill Creek Valley will likely mean that the present ecosystem will be replaced by an entirely new one.
- Concern about the destruction of fisheries habitat and impacts to the aquatic environment.

4.0 ISSUES AND RESPONSES MATRIX

4.1 Draft Summary Report Volume 1

Air Quality, Noise and Weather Conditions		
Source	**Question/Issue**	**Response**
CSC	There is a need for continuous monitoring of air quality in a relatively pristine area of the valley. This will provide valuable "before" and "after" information of impacts from expressway traffic. A station located just to the east of the proposed Expressway and south of the Glen-Castle Park may be appropriate.	The King Street interchange was chosen as a monitoring station, because this location was determined to be the "worst case air quality scenario" and experience the greatest predicted impact.
CSC	Study by Rowan Williams Davies and Irwin not referred to	Results from the 1989 study are no longer relevant because of new advances in air quality modeling, changes in project traffic volumes and expressway alignment refinements. The report is referred to in the latest RWDI Technical Report.
CSC	The Kipling air monitoring station has been shut down	Correction has been made.
CSC	No mention of CO2 and monoxides being tested as part of air quality monitoring	Carbon monoxide was continuously monitored in the King St survey; however, carbon dioxide is usually not measured on a local scale as it is greenhouse gas and its importance is based on a national scale. As well, there is no air quality standard to evaluate carbon dioxide since it is considered to have no health risks at the levels being considered.
CSC	Besides "field testing" is there a technical report on air quality in the Region's library?	Yes. Refer to RWDI's Air Quality Impact Assessment Report.
CSC	Does monitoring reflect land use, i.e. are we monitoring in the places people use the valley – for instance near ballparks, schools etc.? Where you are measuring ambient values (King Street) does not reflect human use of the area.	The King Street/Expressway interchange area was identified by RWDI in their 1989 report as a worst-case location. The Ministry of Environment has reviewed and approved the Region's monitoring approach. Changes in air quality will, however, be predicted by dispersion modeling to assess the impact throughout the study area in areas where people use the valley. In total, over 735 receptors (locations) have been incorporated in RWDI's model and will be reported on.
CSC	Unique valley features result in exhaust being pooled in the valley floor. There should be monitoring here.	The King Street/Expressway interchange area was identified by RWDI in their 1989 report as a worst-case location. The Ministry of Environment has reviewed and approved the Region's monitoring approach. Changes in air quality will, however, be predicted by dispersion modeling to assess the impact throughout the study area in areas where people use the valley. In total, over 735 receptors (locations) have been incorporated in RWDI's model and will be reported on.
CSC	If there is no baseline of air conditions near the baseball park how will we ever know if there has been an increase in pollution there?	After six months of post-construction monitoring at King Street, the monitoring station could be moved to other sites.
CSC	Why will there only be one air quality monitoring station?	The King Street/Expressway interchange area was identified by RWDI in their 1989 report as a worst-case location. The Ministry of Environment has reviewed and approved the Region's monitoring approach. Changes in air quality will, however, be predicted by dispersion modeling to assess the impact throughout the study area in areas where people use the valley. In total, over 735 receptors (locations) have been incorporated in RWDI's model and will be reported on.
CSC	Need to identify how traffic volumes will impact air quality near Bagshaw school – need a monitoring station near the school	After six months of post-construction monitoring at King Street, the monitoring station could be moved to other sites. The dispersion modeling uses traffic volumes and predicted results will be provided for Bagshaw School and others in the study area. Bagshaw school is one of the locations where air quality receptors are located and Cantox is undertaking a detailed analysis of the human health risk in this area.
CSC	Where will sound walls be physically placed? - On road or lip of valley?	To be determined during Detailed Design phase of the Impact Assessment Design Process. However, sound walls are generally placed within the highway Right-of-Way or on the boundary between public and private property. The decision to build sound walls will be based on technical, administrative and financial feasibility.
CSC	What technology exists regarding sound walls? What are the options?	Noise barriers include walls, earth berms, or a combination of both. Refer to the updated Noise Assessment Report (RWDI) Section 6.

CSC	Is there data available for different spots? Is there a baseline study?	Yes, see human settlement maps in the Air Quality Impact Assessment Report as well as the Noise Assessment Report (RWDI) for locations where existing noise levels were measured.
CSC	Page 41 states that there will be "site specific assessments once the expressway alignment has been set" does this not beg the question? Do we not need data first before the alignment is set?	Noise impact prediction modeling is based on a specified volume and mix of traffic traveling on a particular roadway alignment. One must know where the traffic is moving relative to sensitive receivers; therefore, the noise modeling and impact prediction is based on location of the road relative to the sensitive receptors of interest.
Gov	The noise policies of the Official Plan of Hamilton must be addressed.	The noise policies described in the City's Official Plan (section C.9) relate specifically to new residential and institutional development adjacent to the expressway. However, the City, where feasible will mitigate noise increases that are 5 dBA or greater and above 55 dBA as per the provincial standards (where it is technically, administratively and economically feasible). The adjacent community will be consulted in detailed design.
Gov	Tree planting in the Valley will help to replace the loss of the capacity to absorb pollutants. Plantings around the Expressway will absorb the pollutants generated by traffic and road dust.	There are no roadway dispersion models that consider the loss of trees on air quality. A qualitative discussion of the ability of vegetation to remove some of the pollutants of interest will be provided in the updated RWDI Air Quality Assessment report.
Gov	Under Key Legislation and Policy's final sentence, the AAQC is for PM10 (24 hour).	The suggestion has been added.
Public	Concerns about screening	These considerations are being investigated.
Public	Concern about air quality impacts near beach area	The air quality impacts to the beach area should not substantially change from current levels.
Public	What is the usefulness of the previous air quality link? How is new air modeling study different from the previous study?	The previous RWDI study was based on slightly different roadway design and alignment A new study is needed in light of these changes to models and types of contaminants that are of concern, as well as including updated traffic data for the City.
Public	Is the loss of the Kentley air monitoring station a problem regarding the data you need for the study?	Monitoring stations operated by the Ministry of Environment and the City's station at King St. and Mount Albion Rd. will provide sufficient background data.
Public	Does monitoring reflect land use, i.e. are we monitoring in the places people use the valley – for instance near ballparks, schools etc.? Where you are measuring ambient values (King Street) does not reflect human use of the area.	The King Street interchange was chosen as a monitoring station, because this location was predicted to experience the greatest air quality impact from the expressway.
Public	Unique valley features result in exhaust being pooled in the valley floor. There should be monitoring here.	After six months of post-construction monitoring at King Street, the monitoring station could be moved to other sites.
Public	If there is no baseline of air conditions near the baseball park how will we ever know if there has been an increase in pollution there?	Rosehill Bowl is in proximity to King Street Monitoring Station. Greenhill Diamonds would currently have very low baseline conditions. Again, post construction, monitoring station could be moved to another site.
Public	Why will there only be one air quality monitoring station?	After six months of post-construction monitoring at King Street, the monitoring station could be moved to other sites.
Public	A need exists for good air quality data	Modeling uses the Ministry's local meteorological data plus the Ministry of the Environment's concurrent ambient air quality data. Data collected by the MOE has been done so under the highest standards, using the most efficient equipment.
Public	Can modeling distinctions be made for truck vs. automobile emissions	Modeling reports emissions from all nine vehicle categories. However the overall impact is shown as an aggregate of all vehicle emissions. Refer to Section 4 of the updated Air Quality Assessment Report.
Public	Will nitro - PAHs be monitored?	The monitoring parameters were agreed to by the Ministry of the Environment and did not include nitro-PAH's. It is difficult to obtain an accurate reading for nitro-PAH's and they are not normally monitored.
Public	Do air quality models take into account different traffic speeds, and the effects of trucks gearing down?	Yes, the traffic speeds are considered in the modeling, it also considers changes in speed (idling, acceleration, deceleration)
Public	There is a 1989 study at City Hall which says if the Expressway is built, air pollution will exceed the dangerous limits.	Levels in excess of the MOE's ambient air quality criteria were predicted under a worse case scenario. The criteria itself represents a desirable limit and should not be construed as representing a dangerous threshold. The 1989 study has been updated. Refer to Air Quality Assessment Report

Public	Which scenario causes more pollution: trucks having to gear up and down on the proposed expressway, or trucks traveling in stop and go traffic?	Generally speaking, stop and go traffic causes more tailpipe emissions but the number of vehicles idling also needs to be accounted for.
Public	Will there be noise monitoring close to homes?	Noise monitoring has been carried out at several residences along the Expressway corridor.
Public	Concern about vibrations from trucks adding to the vibrations already created by the trains - is a vibration study being done?	No. We do not anticipate road traffic will cause vibration related impacts to adjacent structures based on current information.
Public	Concern about noise level increase	Refer to Noise Assessment Report for impacts areas where noise impacts are anticipated.
Public	Will there be compensation associated with increased noise levels?	Noise mitigation will be provided where it is technically, economically and administratively feasible. Noise mitigation will be addressed in consultation with the adjacent communities in Detailed Design.
Public	What plans are there to mitigate impacts on air quality?	Refer to Section 8 of the Air Quality Assessment Report.
Public	Red Hill Valley and the Dundas Valley are Hamilton's lungs. Will air quality models account for the loss of trees which will result from construction of the expressway?	There are no known roadway dispersion models that consider the loss of trees on air quality. Regional air shed models consider continental affects but not small-scale locations such as Red Hill Creek Valley. Some discussion of pollutant removal rates will be provided in the updated Air Quality Assessment Report.
Community and Human Impacts		
CSC	Need to identify at least areas of artifacts which may be impacted by the expressway	Archaeological sites are locations or places that are associated with past human activities and generally consist of deposits of artifacts that represent the debris of the people who occupied those particular locations. Archaeological site location mapping must remain confidential, as the release of such information to the public could result in the unauthorized looting (hence destruction) of some of these significant heritage resources, prior to detailed investigation being completed. The entire construction impact area of the Expressway within the valley has been surveyed by Archaeological Services Inc. Excavations have been started on all 8 sites. This work has resulted in the identification of 17 archaeological sites, ranging in date from circa 4500 B.C. to the late 19th – early 20th centuries A.D. Further excavations have been recommended for eight of these sites, since they exhibit potential to make meaningful contributions to our understanding of the history and prehistory of the area.
CSC	Why is there disparity between the number of archaeological sites identified in 1990 and the number of sites which is said to exist now?	Additional archaeological searches have resulted in the discovery of additional sites.
CSC	Not all historical sites have been identified	A thorough impact survey, both above and below ground has been done in the Valley, and evaluations have been completed on these surveys. There may be other historical sites in the region, but there are no additional sites that are affected by the Expressway.
CSC	A major archaeological study has not been referred to	A thorough impact survey, both above and below ground has been done in the Valley, and evaluations have been completed on these surveys. There may be other historical sites in the region, but there are no additional sites that are affected by the Expressway.
CSC	Why is there no visual assessment below the Escarpment?	Visual impact assessment is a requirement of the Niagara Escarpment Commission and therefore, the City's scope of work has been focused on escarpment plan area. In addition to the escarpment plan area the City has developed before and after views of other areas along the expressway, the golf course and at the QEW. These views are posted on the project website (www. hamilton.ca/rhvp)
CSC	Can a reduced assessment be done below the Escarpment?	The City is committed to carrying out the scope of work described in its Exemption Order document.
CSC	Will there be expropriation mitigation?	Where the owner of a property needed for the project is not willing to sell at market value, the City initiates expropriation and pays fair market value.
CSC	On map 2, page 9 the location and number of footbridges is incorrect, the depicted location of the concrete saddles and storm outfalls is also questionable.	These features have been confirmed and updated where necessary on the maps.
CSC	Red Hill Trail inaccurately depicted	The location of the trail has been reviewed with the City of Hamilton.
CSC	No delineation of the Bruce Trail	This has been corrected.

CSC	The discussion of public safety is limited to roads and bridges. What about the public safety of people using the trails, fishing in the creek, or walking near it in flood conditions?	The City has undertaken a health effects study.
CSC	What will the traffic patterns be moving from Highway 20 to the expressway?	Assuming that what is meant is how will traffic volumes be affected, they will decrease on hwy 20.
CSC	Will hiking trails flood with additional runoff?	The parts of the trail adjacent to the Creek and within the floodplain will flood frequently as a result of the creek design.
Gov	Impact on private development? Roads closed? Traffic Comments? (see pg. 60).	The report "Business Impact Assessment of the Red Hill Creek Expressway/QEW Interchange" outlines the impacts to the industrial area near the QEW. The IASR outlines these impacts and mitigation as well as the proposed reconnection of Nash Road and Brampton Street.
Gov	Show all road closures (Mud & Arbour). (see pg.8).	The Road closures will be shown more clearly.
Gov	Show map for archaeological sites. (see pg. 34).	The Province discourages the public disclosure of sites to protect sites from looting and vandalism. Where sites have been excavated and cleared by the Province they will be shown.
Gov	Under Key Legislation and Policy, include the Ontario Heritage Act. (see pg. 35).	The change has been made.
Gov	Impact on Red Hill Bowl? (see pg. 54).	There are no impacts to the Red Hill Bowl.
Gov	Is there a road closure at Nash and Brampton? If so, it should be indicated. Also, what terrestrial impacts will occur at Nash and Brampton?	The roads will be reconnected on the south side of the Expressway on land now owned by the City.
Public	Will artifacts be lost if the expressway is built?	No, they will be excavated and moved to an appropriate location.
Public	Concern about health impacts from exhaust fumes - research proves that up to an 8% decline in lung function in children living near an expressway, asthma suffers are more affected by truck emissions than car emissions.	Research does link particulate matter (i.e. microscopic dust) to respiratory impairment. A major contributor is vehicle traffic (cars & trucks). Information regarding vehicle related emissions and related health effect has been addressed in our Health Effects Report.
Public	Concerns that diesel emissions are cancer causing.	To our knowledge there is no evidence that supports this concern, however we encourage the reader to read the Health Effects Report.
Public	Will there be impact predictions on the number of additional mortalities which will result in the area because of PM10?	No. Impact prediction results will be compared to provincial Ambient Air Quality Criteria.
Public	How much money is available for compensation and mitigation? What percent of the project budget is this?	The cost for mitigation and compensation will be determined when the details of mitigation are developed in the Design stage. A rough estimate is identified in the Impact Assessment reports
Public	Concern that the cost of constructing the expressway will impact residents in the form of tax increases. The cheapest possible version of the north-south Red Hill Creek Expressway will cost at least $155 million just to build. The price may be more than $200 million. About half this amount will be paid by regional taxpayers, the rest by provincial taxpayers. The Regional share must be borrowed in 25 year loans.	You are correct. The cost to complete the Expressway from Mud St. to the QEW is projected at $139M. The QEW interchange will be fully funded by the Province. Of the $139M, approximately half will be funded by developers (through development charges) and taxpayers. The remainder will be paid for by the Province.
Public	Concern that there will be an increase in taxes to pay for expressway maintenance. All the maintenance costs will be borne by regional taxpayers. These amount to 2-3% of the original cost every year. That works out to between $3.1 and $6 million a year.	The City is currently undertaking a Life Cycle Cost/Benefit analysis that will address this concern.
Public	Costs of expropriation will be passed on to taxpayers	The City is currently undertaking a Life Cycle Cost/Benefit analysis that will address this concern.
Public	Delaying construction only adds to the costs that will have to be borne by the taxpayers.	At this point the City is proceeding to complete design and to begin construction as soon as possible.
Public	What about the impacts on people's connection with the creek, their memories of the area and their hopes that the creek can exist for future generations	The purpose of the proposed changes to the creek is to improve it as aquatic habitat and make it more stable. The trail redesign will include historical and cultural interpretation.
Public	Congestion at Mount Albion Street and likelihood of trucks using the proposed on ramp at this location will make it a dangerous place for children	Mount Albion Road will be closed at the bus turnaround near Glendale Golf Course, therefore there will not continue to be large volumes of traffic on the remaining road. There are no major destinations for trucks in this residential neighbourhood therefore it is not expected that there will be major truck traffic.
Public	Expressway is too close to Bagshaw school	A noise barrier will physically separate the road from the school so that the road will not be visible and the noise will be reduced. The City will consult with the school to determine if there is landscaping that can mitigate the noise

		barrier view.
Public	How will kids be able to cross at Glenvista? There is a proposed on ramp to the Expressway in that location.	The City traffic staff will work with the neighbourhood and the school to ensure that appropriate measures are in place to provide safe crossings for children. The final Landscape Management Plan will develop a streetscaping plan for this area
Public	Those people with asthma will have to re-locate. Will there be compensation?	Individuals who do not wish to live near the Expressway will have to make decisions about whether or not to stay or to re-locate. The Health Risk Assessment Report outlines the risks of working, living and recreation in the vicinity of the expressway.
Public	Concerns about the safety of children, pets, adults, and wildlife crossing the expressway	Pedestrian crossings will be provided at the foot of the Escarpment (i.e. under the viaduct). A separated pedestrian walkway will be included in the Greenhill and Barton Street interchanges. The Barton Street Interchange has been designed to slow down vehicles coming off the Expressway and allow for pedestrians to cross at lights. There will be a sidewalk on the Lawrence Road connection to Mount Albion Road. Culverts and bridges are being sized with wildlife mitigation in mind. The viaduct at the foot of the Escarpment will allow pedestrian and wildlife movement under the road. There are always risks of wildlife crossing highways. It is difficult to predict what this risk is.
Public	How is "city council going to look after my and my family's mental anguish and physical health if an expressway with its noise, pollutants and physically adverse presence is no more than 500 feet from my back door"?	If warranted, and feasible to construct, noise mitigation (barriers/walls) will be provided.
Public	Number of residences impacted within 100m of alignment	There are approximately 90 residences within 100m of the road.
Public	When would MTO have to acquire private property	It is not anticipated that MTO will require private property.
Public	Need to examine how many residents will be affected within a 100 metres of the expressway - how does this compare to the number of residents who would be affected if Highway 20 was widened?	Approximately 90 residences fall within 100m of the edge of expressway pavement. There is no proposal to widen Highway 20 at this time.
Public	Will there be expropriation mitigation?	If private property is needed and the property owner is unwilling to sell, the City would then initiate expropriation proceedings. A fair market price for the property is determined through the expropriations process.
Public	Will there be tax relief?	Council would have to address this question.
Public	Loss of recreational green space in the valley	To the extent possible, the Region will mitigate impacts to recreational fields and trails. A Recreation Master Plan is being developed for the Valley. However, there will be an overall loss of green space in the valley.
Public	There should be a study of the impacts the expressway will have on property values	This suggestion has been forwarded to Council.
Public	Concern with erosion and property damage, e.g. bank erosion leading to decreased property values	The intention is to stabilize the creek and prevent further erosion of the valley lands. The City will address any erosion that occurs as a result of the project.
Public	Taxes should be re-evaluated to reflect depreciated value and enjoyment loss associated with building the expressway	This hasn't been the experience on the Lincoln Alexander Parkway.
Public	How will vertical alignment be determined?	There are several factors that influence the height of the road above or below the ground including height of existing bridges, proximity to the creek, flooding potential and maximum grades.
Public	What will be the grade of the side slopes, how will abutments be dealt with?	Side slope grades and abutments are being minimized e.g. in the vicinity of the escarpment tablelands, to minimize impact on the surrounding landscape and habitats. Architects, landscape architects and ecologists are providing recommendations on how to treat slopes and abutments from an aesthetic and environmental perspective.
Public	Can the escarpment cut be minimized using plantings? Can it be made to look narrower?	The City is working with the Niagara Escarpment Commission, landscape architects, ecologists and others to ensure that the cut to the escarpment has minimal impact.
Public	Will there be tunnels to provide pedestrian access under the expressway? Will these tunnels be safe?	No tunnels are planned. However, there is a 220 meter viaduct at the base of the escarpment. A viaduct is like a bridge except there is no running water under it, only land. The purpose of the viaduct is to provide an area for wildlife and hikers to cross under the expressway.
Public	How much will it cost to remediate the contaminated sites at Nash and Brampton?	A site specific risk assessment will be done at these sites to determine the type of remediation that will be undertaken. This work will be done as per MOE's Guidelines for Use at Contaminated Sites. Costs will be determined based on the results of that work
Public	How much will it cost to expropriate the scrap yards and what will it cost to clean them up?	The expropriation costs to date are documented in the Business Impact Assessment Report.

Public	Why not spend the money to fix up the downtown instead of building an expressway?	Resources are being directed to improving the downtown through several programs to encourage private development.
Public	Why do we want to have an expressway which trucks will use and which goes through the middle of the city?	The objective is to take car & truck traffic traveling across the escarpment off local streets and have them use a road that is appropriately designed for this type of traffic.
Public	What traffic volumes, for Burlington Street are necessary for the 1982 interchange? What are the traffic volumes currently? How would the Perimeter Road affect these volumes?	Traffic volumes on Burlington Street from the Woodward Interchange to the QEW total approx. 63000 vehicles total. At this time the need for the Perimeter Road is being evaluated as the economy of the port area has changed significantly over the last 10 to 15 tears.
Public	The expressway will relieve congestion on highway 20 from Mud St. to the QEW and improve air quality, and reduce noise in this area.	It is anticipated that there will be some improvement in air quality and a reduction in noise as a result of reduced congestion.
Public	The need for the expressway has already been studied enough – get on with construction. I am completely fed up with the indecisiveness shown by our municipal and provincial governments.	Major roads typically take several years to plan, design and construct. The City is moving forward with Design and Construction.
Public	Are there PCBs in turning area of Alternative "C"?	PCBs have not been identified in this area however a site contamination consultant will confirm this in detailed design.
Public	Are there PCBs in pumping station? If so, they should be moved.	PCBs have not been identified in this area.
Public	Greenhill interchange is not really necessary because it's a residential area. Can it be removed?	Direct access to the Greenhill area was in the approved environmental assessment (1985). It is considered a necessary access point for this community as Mount Albion Road is being closed near the escarpment.
Public	What will the traffic patterns be moving from Highway 20 to the expressway	In the short term, some portion of the traffic that currently uses Highway 20 as well as other north-south routes will shift to the expressway. The exact percentage is difficult to predict.
Public	Concern about impacts of increased traffic flows	Traffic will decrease significantly on Mount Albion Road. Interchange areas will experience more traffic.
Public	Concerns over potential truck accidents and spills of hazardous materials close to residential areas	The chances of this occurring exist now. However, the stormwater management system will have some mitigating effects.
Public	Will spilt toxics be able to access the lake and the Marshes?	The chances of this occurring exist now. However, the stormwater management system will have some mitigating effects.
Public	Concerns that there will be infestations of varmints	The final Terrestrial Resources Report contains a discussion of this matter and the intended responses.
Public	Hamilton Air Quality Initiative indicates that air quality is a serious issue in the Region – there is premature mortality and many hospital admissions. What will happen to the level of pollutants when an urban expressway is built - will there be an increase in asthma and lung-related health problems?	The Hamilton Air Quality Initiative report indicates that over the short and medium term (10-15 years) there will be a net improvement in vehicle related air emissions due to the reduction in peak-hour traffic congestion brought about by the expressway. However, in the long run (20 years +) the problem may worsen again as congestion rates increase. This of course assumes new measures to reduce vehicle emissions are not introduced.
	Expressway Design	
CSC	DSR does not identify opportunities to fix current problems	The IASR will describe the actions the City is taking to fix current problems in the Valley (e.g. natural channel design for the creek; the CSO pipe for three combined sewer overflows, storm water management for Expressway and existing runoff). The Red Hill Creek Watershed Plan identifies several opportunities to fix current problems.
CSC	What is the budget and how is it allocated for the project?	$139 Million to complete the project from Mud St to the QEW (%50 City, %50 MTO). MTO is paying %100 of the QEW
CSC	Will construction of the Perimeter Road affect any of the design options?	It is not anticipated that any future road projects in the north end of Hamilton will affect the need to provide this crossing of the escarpment
CSC	Will there be tax relief?	The City is reviewing its charges bylaw.
CSC	How will equipment be moved during the construction phase – what impacts will there be on the landscape and access to the valley?	Construction access and equipment movement will be addressed in the Environmental Management Plan. In general, access to the site will be limited to as few points as possible.
CSC	Red Hill trail inaccurate	The final report will include a more accurate trail alignment. As well, the Landscape Management Plan will include a revised trail.
CSC	Pedestrian and bike trails not clearly delineated	The final report will include a more accurate trail alignment. As well, the Landscape Management Plan will include a revised trail.
CSC	Bruce Trail is not clearly delineated as a pedestrian trail	The final report will include a more accurate trail alignment. As well, the Landscape Management Plan will include a revised trail.

CSC	The south section especially requires a clear delineation of cycling and pedestrian connections across the proposed expressway. Cyclists and pedestrians should be given greater access and safety to move around conveniently from one side of the valley to the other, as well as to cross from the Escarpment Trail to points south and east. These connections should be shown prominently and without confusion. How does one connect to the Caledonia Trail?	See above. This project does not address trail connections outside the study area/valley such as the Caledonia Trail. The Red Hill Creek Watershed Plan identified overall trail connections within the watershed.
CSC	Expressway is too close to Bagshaw school	Impacts to land uses are addressed in the Impact Assessment Summary Report and the Land Use report. .
CSC	Loss of recreational green space in the north end of the valley	The loss of green space in this area is addressed in the Impact Assessment Summary Report. There are no recreational fields impacted in this area but the passive use of the area is impacted.
CSC	Page 48 shows one cut, but on page 66 there is rationale provide for 2 cuts	The rationale on page 66 explains why the City is no longer proposing two cuts to the escarpment.
CSC	Map 2 shows a "Marsh Pocket" and suggests this is the only one in the upper valley. There are other wet areas on the west side of Glencastle Park, a significant permanent pond just west of Bagshaw and a very significant wetland just north of King.	Refer to the Terrestrial Report for detailed mapping of wet areas. The wetland just north of King Street was created when the King Street interchange was constructed in 1990.
CSC	The maps fail to show the full width of the proposed transportation corridor. By only showing the paved area, the actual area that will be cleared is under- represented	The road alignment in Chapter 3 includes cut and fill information. DSR volume 2 maps 2A and 2B also show an area of impact for the road and the floodplain area that will be cleared for the creek.
Gov	EROSION and Natural Channel Design: The already severe erosion in the Red Hill Valley may be made worse by the construction of the Expressway. How will this be dealt with during construction? Have the consultants drawn from the experiences of other areas which have attempted natural channel design? Does the stream remain where it is built? Has this natural channel been designated to fit with the geology, soils, physiography of the area?	The consultants have proposed a natural channel design that best addresses erosion and flooding. They have drawn from experiences elsewhere. The stream will be relocated for the most part to the west side of the Valley. The design reflects geology, soils, physiography of the area and the location of the road.
Gov	The Creek realignment must be designed and constructed on the highest principles in order to ensure a stable, naturalized channel will limit erosional and depositional impacts on the natural environment. An engineered hardened channel is to be avoided. The effects of the realignment on erosion/sedimentation problems must be evaluated.	Creek realignment work is being carried out by a fluvial geomorphologist. Impact assessment work will be reported on a site-specific and watershed scale.
Gov	Page 22. Streams. There are several meaningless statements at the end of this section- this is likely an editing error.	Statements that do not relate to existing conditions will be removed.
Gov	The report refers to "Minor Design Changes", the use of the term "minor" for relocating sections of the creek may not be appropriate.	This section of the report has been revised.
Gov	The section of Nash Road between Confederation drive and Van Wagner's Beach Road was redesigned with new municipal addresses as Van Wagner's Beach Road in 1994.	The correction has been made.
Gov	Page 49. Drawing 3A. The existing and proposed profiles are mislabeled. The changes are difficult to read due to type size and copy quality- will the viaduct extend from 22+800 to 25+300?	The diagrams have been clarified and corrected.
Gov	Page 52. Drawing 5/5A. Has the viaduct been considered for the section of road between 25+000 to 23+300? This would leave a large section of valley floor and creek unaffected by the road base preserving floodplain storage and terrestrial resources. How will the pedestrian access to the valley be achieved at Greenhill Ave. a sidewalk on the ramp?	The selected length for the viaduct is 220 meters and this will be shown on the drawing 3A. The section from 25+000 to 23+300 would not provide enough of a clearance and in most areas no clearance to warrant an elevated structure. The Greenhill Interchange includes a pedestrian walkway separated from the vehicular traffic on the bridge.
Gov	Page 58. Drawing 8/8A. How will pedestrian access across the valley be achieved at Melvin Ave. – pedestrian bridge?	Melvin Avenue will be closed and replaced with the Barton Street interchange. The vehicles coming off the expressway will be stopped at lights. A pedestrian walkway separated from vehicular traffic will be constructed on the new bridge on the south side. A proposal to build a separate pedestrian structure was not supported by the local community and hence Council directed staff to incorporate pedestrian walkways into the new bridge.
Gov	None of the following proposed alterations to the Burlington St. interchange are acceptable to HRCA staff:	The revised IASR clearly shows the options considered and the selected option as having minimal impact on HCA lands.
Gov	Management of the Expressway construction to minimize	An environmental management plan is being developed to ensure that

	environmental damage is imperative.	environmental mitigation and monitoring are implemented during construction.
Gov	In the Legend, use a different pattern for the cut and fill sections. (See pg. 47).	The patterns are already different.
Gov	Page 65, under Comparison, the note in the last paragraph should be changed to reflect the connection of the work at QEW/Burlington Street with QEW/RHCE by indicating that ". Modifications at Burlington Street are required to maintain traffic operations and safety when the QEW/RHCE interchange is open to traffic".	The change has been made.
Gov	Page 64. TRUMPET A- Burlington Street Interchange. It is unclear in the report as to why this interchange needs alterations. The ramp configuration shown in green at Centennial Parkway indicates all traffic movements from and to the Red Hill Expressway are possible and this configuration has a minimal impact on the park.	The need for improvements to the Burlington Street interchange was identified in the early 1980s. Options for the interchange were developed and evaluated given the new connection between the RHCE and the QEW, and Option C was selected. Option C is the preferred alternative because it provides the best overall balance of benefits.
Gov	"A" Loop- Illustrated in red, the road pattern would probably result in the closure of Hutch's and put Van Wagner's Beach Road almost onto the beach. Over %50 of the parking lot at that location would be lost and the park width severely reduced impacting the user's experience. The park would effectively be severed into 2 pieces isolating the Go-Kart site and displacing the Breezeway. Also sources of existing and future revenue generating operations would be lost to the HRCA as identified in the Master Plan.	This was not the selected option for the Burlington Street Interchange reconstruction for the reasons cited by the HCA.
Gov	"B" Loop - Illustrated in blue, the road pattern would result in the closure and demolition of Lakeland Pool and Community Centre and put Van Wagner's Beach Road almost onto the beach. While the pool's financial viability is once again in question, the Community Centre is currently viable and operated by the Optimist Club. About %20 of the parking lot would be lost and the park width severely reduced impacting the user's experience.	This was not the selected option for the Burlington Street Interchange reconstruction for the reasons cited by the HCA.
Gov	"East Collector"- Illustrated in green, this road pattern would involve relocation of Van Wagner's Road northward by about 15m. The QEW Toronto-bound off ramp to Burlington St, if constructed on fill, would impact a portion of Van Wagner's Marsh- a Provincially designate Class 1 Wetland. The impact on the park and marsh could be greatly reduced if the ramp was constructed as a viaduct on piers. The marsh function could remain and even be extended around the piers and Van Wagners Road could run closer to the ramp alignment. Failure to build the ramp as a viaduct would likely result in some parking losses and potential relocation of a parking lot entrance. Park user experience would be affected regardless as traffic volumes are moved closer to the beach.	The impact of this option would result in no loss to parking and minimal impact of the wetland. An elevated ramp would not be feasible in this area due to grades. The terrestrial report outlines mitigation in another part of van Wagner's Marsh to replace the wetland habitat lost in this location. The interchange will be closer to Van Wagner's Beach Road.
Gov	TRUMPET "B"- This configuration requires extensive fill in Van Wagner's Marsh. It will also likely impact Baranga's parking lot and depending upon elevation, the ramp running past Lang's Foods may severely impact the Confederation Park Main Office and Works Yard. The impacts to the wetland and park are unacceptable.	This was not the selected option for the Burlington Street Interchange reconstruction for the reasons cited by the HCA. Option C1 is the preferred interchange.
Gov	Page 80 Streams. It is noted that currently the road alignment would require 16 crossings of the creek, 550 meters of creek relocation and increase in structural cover of the creek from 340 m to 1170m. Design adjustments will be made in an effort to reduce these impacts. Will relocation of the creek to permit the road alignment impact significant terrestrial resources? The impacts considered should include construction access as even temporary access roads will require clearing and grubbing.	Impact prediction results will take into consideration creek realignment and construction activity.
Public	Transfocus said that if Highway 20 was widened by two lanes there would not be a need for the Red Hill Creek Expressway	Transfocus recommendation 21 states that the MTO would continue discussions with Hamilton-Wentworth on the design, location, and construction timing of a roadway connecting the East-West Freeway and the QEW using the Red Hill Creek Corridor.
Public	The population of Hamilton is actually declining. Is there really a need for the Expressway?	Yes. The Province in 1994 confirmed the need for additional traffic capacity as did the Region in 1996.

Public	The Expressway will just be a trucking route from Buffalo to Detroit, do we need this in our community?	Some truck traffic will likely use this route if measures to dissuade them are not put in place. This will likely be the case when the Skyway Bridge is closed in particular. Otherwise, the Expressway saves approximately 5 minutes, and is at a lower posted speed that the QEW and 403.
Public	The expressway is needed because of the congestion on Albion Road.	This is part of the reason that the Expressway is needed.
Public	The expressway project has been on the books since 1950. I would like to see the Expressway built now. Everything would be so much cleaner and better, including the creek.	The City is moving ahead with the design and construction of the project.
Public	We need to preserve the valley for future generations. The valley is one of the remaining unsullied natural areas of what's left of an ecosystem that is thousands of years old. We need to realize our interdependence with our environment. The valley is vital to our existence and deserves more consideration.	The Valley has seen many uses through the years and still being used for infrastructure such as the main trunk sewer that runs the length of the valley, the hydro line, the CSO tanks at Greenhill and the gas pipeline. Several other infrastructure projects cross the valley. It is typical of a green space in an urban area that is influenced by exotic plant species from nearby and domestic pets. Despite all of these influences it is designated an environmentally significant area for its habitats and its connection from the lake to the escarpment. All of these things have been taken into consideration in the assessment of impacts.
Public	What will be sacrificed to cover the costs of building the expressway - social programs, development of alternative transportation, the education system?	Council ultimately decides how tax revenue will be allocated. There are several opportunities for the public to contribute to the budget process including participating in the public forums on City budgets.
Public	The expressway will just encourage urban sprawl in upper Stoney Creek. Do we need this?	Development on the mountain in Stoney Creek has been designated in Official Plans for several years. A portion of that development has been on hold pending the completion of the Expressway.
Public	The expressway will take customers and desperately need funding from downtown Hamilton. The expressway is a subsidy for big box stores and suburban malls, and an assault on older commercial areas. There is no current need for the expressway.	The Expressway is needed to service planned development. The issues related to the downtown need to be resolved regardless of the development in other areas of the City.
Public	We just spent $2.1 million to clean up the valley, do we want an expressway to go through and destroy it after all this effort?	Works undertaken in the valley in recent years have been carried out knowing the expressway will be built.
Public	The expressway will alleviate congestion on Mount Albion road.	Mount Albion Road was originally intended to carry local traffic. Closure of this road just south of Glencastle Drive will help facilitate this objective.
Public	All options for the Burlington Street Interchange (A, B, C) are unacceptable. The team should take another look and stay off the shoreline.	The option selected for the interchange has been modified so that it does not impact on Leaside Park. Although two of the ramps at the Burlington Street interchange will be realigned towards the lake, it is not expected that there will be any impact to the Hutch's parking lot.
Public	Impossible to get from Woodward Avenue area to the beach without driving. There are no walkways or pedestrian ways, etc. provided. Such facilities should be included in the final planning.	The draft Landscape Master Plan includes a Trails Master Plan. Options for connections to the beach area have been included in the draft plan for public comment.
Public	Consider shifting the Burlington Street interchange westerly	A more westerly interchange was not considered viable because it would have had greater impacts on the pump house, the beach community, the Red Hill Creek, and Woodward Avenue.
Public	Of the three options presented (A, B and C), Alternative C is the only one that makes any remote sense. The Team should focus on improving Alternative C	Option C has been selected however it has been improved to minimize the impact to Leaside Park. Additional work will be done in detailed design to further mitigate impacts.
Public	There isn't enough distance to put 3 interchanges from Burlington St.- Highway 20.	The design for this area satisfies current MTO requirements.
Public	Do not interfere with shoreline. This plan is not viable as we have little enough beach in Hamilton. There will be less beach and no access except in a car.	No work is being proposed on the beach and shoreline of Lake Ontario
Public	Make the expressway 6 lanes.	The City has approval under the Environmental Assessment Act for 6 lanes and can construct to 6 lanes when traffic volumes warrant it. Traffic forecasts under the Trend scenario indicate that for at least the first 16 years 4 lanes will be adequate. Under the Vision 2020 scenario 4 lanes will be adequate for the foreseeable future.
Public	Is there some way the expressway could be built around the creek?	The current proposal for the creek minimizes the number of times that the road must cross the creek and keeps the creek mostly on the west side of the valley. It also uses a natural channel design with as little hard/concrete surface as necessary.

Public	Natural channelization of the creek sounds questionable. It takes 100 years for tree roots to develop.	A natural channel design approach to stabilizing has been taken to avoid using more traditional hard surface solutions which often fail and require higher long-term maintenance costs. Vegetation needed to stabilize creek banks will vary from grasses & shrubs to trees. The stabilizing effect vegetation must have will be monitored closely for the first few years when failure is most likely to occur.
Public	How will increased traffic flow be accommodated on King, Queenston and Barton streets.	The roadways mentioned have the capacity to carry expressway traffic.
Public	Why close an east-west route i.e. Mud Street which accesses Mohawk Road, Fennel Ave, Concession Street, and the Kennelworth access? Why close Mount Albion Road?	Mud Street has been realigned to connect to the "Linc" and therefore, access has not been lost. The closure of Mount Albion Road will impact the long distance traveler that currently uses this road but their needs will be met by the Expressway. Local users, such as area residents, will have far less traffic to contend with once the Expressway is opened.
Public	Have another look at the 1982 directional interchange.	This option is no longer appropriate given the impacts and costs.
Public	All options for the Burlington Street interchange are unacceptable	Option C has been selected with improvements.
Public	The 1992 option and 1994 option should be mixed together.	Option C has been selected with improvements.
Public	Highway 20 should be double decked. Eliminate the stop at King and 20. This would be your north-south express. Extend the east-west to Highway 20. Use land up above the escarpment not the land below the mountain.	Improvements to Hwy. 20 were examined in previous studies. They were not considered more acceptable than a north-south connection along Red Hill Valley.
Public	The valley floods, there couldn't be a worse place to put an Expressway.	A storm water management plan is being prepared to address this concern. The current proposal protects the road from all but extreme, rare floods
Public	What about putting in bus lanes to alleviate congestion on Mount Albion Road instead	Bus Lanes in and of themselves would not address the City's long term (year 2020) transportation needs. The application of HOV lanes will be investigated as part of the City Wide Transportation Plan.
Public	Take the road down the east side of Hang, Hayes, Armstrong, Oriole, MacLaren, and Admiral Place to hook up with Woodward between Melvin and Barton then veer north westerly through the vacant truck yards to Rennie, across Parkdale behind to west of Burland Cres. Go north through Brampton Street at the Parkdale and Harbourfront property then just up grade the existing Burlington Street ramp to the QEW	Alternatives to the current location have been assessed earlier. The Burlington interchange could not handle the additional volume of traffic. At this time the City is carrying out design and assessment of the approved location.
Public	Could hook the Fruitland Express up to Mud Street instead	Fruitland Road was considered in earlier studies but it is too far east to serve the east Hamilton mountain area.
Public	If the purpose of the Expressway is to get people to work, stop it at King Street or Queenston Streets. Don't make it a through road or trucks will use it.	This solution would not address the City's long-term transportation needs for movement of industrial and commercial vehicles accessing Burlington Street and other areas in the north end and along the QEW.
Public	Why does the expressway need to go on the mountain? Aren't the ups and downs going to cause the trucks to gear up and down therefore causing similar emissions to the stop and go traffic which already exists?	One of the main reasons for the Expressway is to provide another escarpment crossing to allow traffic from the mountain to access employment areas below the mountain.
Public	Build it in the air, raise it up higher so it is not so low in the valley	This would raise costs substantially with little or no benefit to the environment and would result in significant long term maintenance costs.
Public	Lincoln Alexander Parkway could be used instead of building the Expressway	The "Linc" is part of the overall Expressway project and on its own will not resolve the Region's lack of north and south transportation capacity.
Public	Has there been consideration of making the Expressway a toll road?	Yes, a study is currently underway. We expect results by the summer of 2003.
Public	Why not connect Mud Street to Paramount and let Ancaster traffic go to Highway 20	Highway 20 has insufficient capacity to deal with the City's long term (year 2020) north-south transportation needs.
Public	Where does the confidence come from that the expressway can be built in the valley – is the 1984-85 assessment the basis of this?	The Region received provincial approval to build the expressway in Red Hill Valley in 1985. Cabinet later endorsed the project in 1987. The road is clearly depicted in the Regional/City Official Plan.
Public	The proposed escarpment cut should be re-aligned east of the hydro tower to utilize the existing Albion Road cut. This would reduce the impact on escarpment geology, trees, and hiking trails. The required 75 metres of space for road allowance exists without compromising the Glendale Golf course.	This was considered but rejected by the Region because of other considerations such as cost and environmental impact. The Exemption Order, which guides our investigations, explains why we are investigating a westerly alignment. The Niagara Escarpment Commission has also indicated that the west side has the potential for less environmental impacts.
Public	How will equipment be moved during the construction phase - what impacts will there be on the landscape and access to the valley?	To the extent possible, construction activity will be kept within the expressway footprint. Construction access will be determined in the next stage (detailed design) and will be incorporated into an environmental management plan.

Public	Concern over closure of Mount Albion Road	Mount Albion Road was originally intended to carry local traffic only. Closure of this road just south of Glencastle Drive will help facilitate this objective.
Public	How are Stoney Creek residents going to be able to get to King's Forest?	Access to Kings Forest will be possible via the walking trail (Old Mount Albion Road south of Glencastle Drive) and under the viaduct at the foot of the escarpment; via the Mud Street parking lot west of Mount Albion Road, the Greenhill Interchange or the trailhead behind the Rosedale Arena.
	Fish, Wildlife and Terrestrial Resources	
CSC	Loss of groundwater and effects on terrestrial resources/habitat particularly at Glen Castle Park/behind Greenhill	Glen Castle Park will become a landscaped berm.
CSC	Gap in systematic or quantified information on how people value the natural resources of the valley	The scope of this impact assessment is to determine the impacts of changes in the design that have been proposed to reduce environmental impacts
CSC	Vegetation/tree cover missing on map	Detailed vegetation cover mapping is in the Terrestrial technical report and the draft Landscape Management Plan. The final mapping for this section will be based on an aerial photo mosaic which will show where the vegetation is more clearly.
CSC	On page 43 none of the numbers are legible	The features on maps have been made more legible
CSC	Map 3 shows only a small portion of the forest and tree covered areas that actually exist. For example the sides of the valley are forested and there is a floodplain forest in the area immediately south of Queenston. Indeed it is continuous along the entire stretch of the valley between King and Queenston.	This map only shows the proposed design changes not the environmental features. The maps have been made clearer in the Impact Assessment Summary Report.
CSC	The maps should also identify significant wildlife areas including primary butterfly and bird habitat, remaining herpetile habitat, and significant mammal habitat.	Features that have the potential to be impacted by the road have been mapped on a summary map in the Impact Assessment Summary Report. Detailed terrestrial features are included in the Terrestrial Report.
CSC	The Carolinian forest stand on map 3, page 10 is located further north along the east-west section of the creek.	The updated map in the Impact Assessment Summary Report more accurately indicates this area.
CSC	The footbridge location on map 4, page 11 is incorrect. What is meant by "spill" on this map?	Since this comment, the Rennie Street remediation project has removed this footbridge. The draft Landscape Management Plan identifies where pedestrian bridges are proposed.
CSC	On map 2 a small area is identified as "mature escarpment forest", but this is shown some distance from the escarpment and no vegetation is indicated on the escarpment. This is clearly wrong because the escarpment east and west of Mount Albion is fully forested.	These maps have been updated in the Impact Assessment Summary Report and the vegetation is shown more clearly as it relates to features like the escarpment. The Terrestrial Report should be referred to for detailed vegetation mapping.
CSC	Pine forest not shown on map.	These maps have been updated in the Impact Assessment Summary Report and the vegetation is shown more clearly as it relates to features like the escarpment. The Terrestrial Report should be referred to for detailed vegetation mapping.
CSC	The maps should also identify significant wildlife areas including primary butterfly and bird habitat, remaining herpetile habitat, and significant mammal habitat.	These maps have been updated in the Impact Assessment Summary Report and the vegetation is shown more clearly as it relates to features like the escarpment. The Terrestrial Report should be referred to for detailed vegetation mapping.
CSC	On map 2, page 9 the marsh pocket is more extensive than depicted, it actually stretches to the northeast.	These features have been confirmed and updated where necessary on the maps
CSC	On map 2, page 9 the mature forest area exists along the north-south embankment, as well as along the escarpment slopes, but this is not shown	These features have been confirmed and updated where necessary on the maps
CSC	Maps do not show forest/tree cover or vegetation cover in general	These features have been confirmed and updated where necessary on the maps
CSC	Map four misses significant plant communities. The biological inventory of Red Hill Valley (BIRHV) provides detailed vegetation mapping, so the information is available.	These features have been confirmed and updated where necessary on the maps
CSC	The use of symbols to designate fish habitat and terrestrial communities is misleading. The whole creek provides fish habitat. Normal approaches to these types of designations might be to indicate warm or cold water sections (including potentials) of the creek. The same problem arises with the use of symbols for contaminated areas. These should be delineated for them to make any sense to an observer.	The maps in the Impact Assessment Summary report more clearly show these features

CSC	The "primary habitat corridor" markings are grossly wrong in many places along the valley. The corridor is shown much wider than the valley such that it includes residential areas. This creates the false impression that the corridor will remain if an expressway is constructed. This impression is furthered by the failure to include clear delineation of the floor, steep slopes, and tablelands of the valley. The use of floodplain limits is not a satisfactory replacement. This is very significant for wildlife habitat and corridor functions as well as flood prone areas, etc.	The summary report is meant to show the significant features of the valley that need to considered in the impact assessment. The valley as a corridor for wildlife can be shown in this way to convey that message. Detailed mapping of the terrestrial features are found in the Terrestrial report. This mapping has been updated to show features more clearly.
CSC	No identification of Carolinian tree species, or cottonwoods in the floodplain	Draft Summary Report Vol. 1 is supported by a number of technical background reports that provide the detail that is referred to here. Refer to the Terrestrial report for this detail.
CSC	Is the Fisheries Act being violated?	No. Sub-section 35(2) of the Fisheries Act prohibits the harmful alteration, disruption or destruction of fish and fish habitat. Generally, alterations are considered harmful when they reduce the ability of a habitat to produce fish. In cases where such impacts are expected, a proponent can request authorization for the proposed activity from the Department of Fisheries and Oceans. Authorization is generally contingent upon the proponent (the Region) mitigating the impact, or taking steps to create comparable habitat, or enhance existing habitats, so that there is "no net loss" of fish productive capacity. The City is following the appropriate course of action for obtaining this authorization.
CSC	Need to identify options to keep wildlife off the road (especially turtles in the spring), and to increase the size of wetlands.	Mitigation is proposed to compensate for the wetland habitat that will be lost at the Burlington interchange and along the QEW. For example, Wetland creation/enhancement in Van Wagner's Marsh and in the Red Hill Marsh. The detailed mitigation will be laid out in the Detailed Design Report.
CSC	Not all options that are protective of the wetland are mentioned e.g. underpass under QEW	The selected road options in the QEW area have minimal impact on the wetlands and those impacts can be mitigated.
CSC	How can the Region get approval to build a road through a Class 1 wetland?	Provincial policy statement with regards to Provincial significant Wetlands, permits infrastructure subject to environmental assessment.
CSC	Bullet five on page 14 is misleading. The regeneration since the 1950's is accurate for the area north of Greenhill. South of that area, the valley has been parkland since 1929.	This statement will be corrected.
CSC	In bullet seven page 14 no attempt is made to quantify the "positive" and "negative" effects of existing infrastructure on terrestrial resources. The benefits and detriments need to be clearly quantified.	It would be very difficult and not entirely correct to quantify existing effects based on the lack of data. This would require a comparative pre-infrastructure assessment with a previous state or condition, for which no data is available.
CSC	p14 second paragraph, what resources are rare?	Rare species in the creek valley are documented in the Draft Terrestrial Resources Technical Report.
CSC	A description of tree species and the range of trunk diameters is needed for areas likely to be impacted	The estimate of trees to be removed have been carried out based on the protocol from the Terrestrial Report, which includes tree diameters.
CSC	The first bullet on page 14 is incorrect, there are significant natural areas on the tablelands of the upper valley. The BIRVH described this area as highly significant for butterflies and birds. It was the location of the nesting sites of rare species. It also includes what the maps describe as the only marsh pockets remaining in the upper valley. With the exception of the golf courses and sport fields, nearly all of King's Forest Park (especially Lower) are natural areas.	The tablelands, and Kings Forest Park are considered part of the Valley.
CSC	Should identify significant wildlife areas, including primary butterfly and bird habitat, remaining herpetile habitat, and mammal habitat	Maps have been improved to better illustrate natural wildlife details. Refer to the Terrestrial Report.
CSC	The second bullet on page 14 (or an accompanying map) needs to be more precise in identifying where significant habitats are located (not in a way that would allow collectors to disturb them, but much more clearly than the information given here)	Maps have been improved to better illustrate natural wildlife details. Refer to the Terrestrial Report.
CSC	Bullet three on page 14 needs to be re-written to state that the valley corridor is "the only, or the most complete" rather than just "one of the few"	The statement highlights the unique value of this corridor, but it is not the only connection between the Lake and the Escarpment, there are others which are less disturbed. (E.g.: Jordan Valley and Bronte Creek Valley)
CSC	Bullet six on page 14 is too general to have any meaning. The impacts listed should be made more precise. Industrial impacts, for example are limited to certain areas.	The statement points out that development has and will continue to impact the local ecosystem.

CSC	Construction of roads causes severe damage to the landscape which extends well beyond the "fill" and "cut" regimes on both sides of the roadway. In areas which have fragile natural environments, the boundaries of construction out-reach need to be identified.	An indirect construction impact zone has been identified in the Terrestrial Resources Technical Report (TRTR) which encompasses construction impacts. The Environmental Management Plan will outline how impacts will be reduced during construction.
CSC	How valuable are the terrestrial resources of Red Hill Valley in comparison to other areas in North America?	The Red Hill Valley is one of several connections between the Niagara Escarpment and Lake Ontario and is considered to be more disturbed than other areas such as the Bronte Creek Valley or Jordan Valley.
CSC	To mitigate alteration of the North-South wildlife corridor could a continuous wildlife link be established on the west side?	Most of the creek channel will be relocated to the west side of the Expressway, thereby creating a more continuous wildlife corridor.
CSC	How will road envelope (cutting and filling) affect forests and water flows?	Refer to Surface and Storm Water Quality Technical Report.
CSC	It would be useful to include impacts on the valley from recreational uses (pesticide uses, loss of habitat, etc.). A quantification of the various uses in the valley would also be helpful.	The ongoing maintenance of activities that are not related to Red Hill Valley project work have not been addressed in this Impact Assessment Report.
CSC	Will viaduct be large enough to allow wildlife to travel through?	Yes, it will be 220m long and approximately 7.5m high depending on the ground cover.
CSC	Concern about affects on Van Wagner's marsh	Refer to the Terrestrial Resources Technical Report (TRTR)
CSC	Terrestrial resources will be impacted if the creek is realigned	Refer to the Terrestrial Resources Technical Report (TRTR)
CSC	Will there be compensation for loss of terrestrial habitat?	Refer to the Terrestrial Resources Technical Report (TRTR)
CSC	The number of species found in Van Wagner's pond should also be provided to be consistent with other parts.	Van Wagner's consists of a marsh connected to the creek (9 species have been captured) and a pond that is not connected (4 captured here). The Summary Report has been revised to show this.
CSC	On page 16 the number of fish species reported for Windermere Basin to the CNR tracks is likely much lower than actual. The BIRHV for example only sampled in the upper half of this area while the Portt (1992) study did not sample here at all.	In the draft Technical Report we state, in reference to the lower reaches of the creek, "Undoubtedly several additional fish species are present in low numbers, or on a seasonal basis, in the portions of Red Hill Creek which are not isolated by barriers." This point has been added to the above comment under the second bullet as well. Also, in August, September and October, 1997, the lower Red Hill Creek and Van Wagner's ponds were extensively sampled. To reflect these collections, we will add to the "Key Sources of Information" section on page 17 the following two recent documents: Portt, C., G.A. Coker, and J. Lane. 1997. Red Hill Creek watershed study. Fisheries phase 1: background inventory. Prepared for the Regional Municipality of Hamilton-Wentworth by C. Portt and Associates, December 12, 1997. 35p. "Fisheries Existing Conditions and Predicted Impact Report" C.Portt and Associates.
CSC	The section on the area from the CNR tracks to Queenston Road should mention the extensive spawning of Chinook salmon and rainbow trout and the capture of several Chinook smolts in this area.	This sentence is added to the end of number 3 on page 16 and reads - "Chinook salmon and rainbow trout from Hamilton Harbour and Lake Ontario spawn in this section, however, these are probably stock fish, and there is no conclusive evidence that successful reproduction has occurred." As we have discussed in our detailed reports, we do not believe the Chinook "smolts" captured so far are from the observed spawning runs in Red Hill Creek.
CSC	The section on Queenston to the Niagara Escarpment mentions white sucker spawning but not rainbow trout; the description of the effects of the concrete channel at Queenston Road is grossly understated. The channel has eliminated 220 metres of fish habitat and is known to block all large species of fish from proceeding upstream under normal flow conditions. There is also no mention of the concrete channelization immediately north and south of King Street. There are also concrete saddles in the stream in many locations, these should be identified.	The first two sentences will remain the same, however the third and fourth sentence will be replaced and will read – "It provides habitat for seven species of creek resident fish, as well as spawning habitat for white sucker from Lake Ontario and Hamilton Harbour, at least as far upstream as King Street. Rainbow trout spawning has also been reported but no young trout have been captured. A concrete saddle upstream of King Street is known to block the upstream migration of white sucker, and probably most or all other species. The Queenston Road concrete channel and weir also blocks the upstream passage of some species depending upon flow conditions."
CSC	First bullet on page 17 is mysterious. Where have barriers to migration occurred? What species have been affected? Is the author referring to the escarpment, the Queenston channel, the concrete saddles in Davies creek?	We were generally referring to the potential local reduction in species that may result from habitat fragmentation, and the inability of fish to recolonize from downstream. Also, the barriers prevent species such as suckers from migrating as far upstream as they probably would if the barriers were not there. The bullet will be changed to read – "Barriers to fish migration have restricted the utilization of some portions of Red Hill Creek by migratory fishes and, by fragmenting habitat, may contribute to local reductions in the number of fish species present."

CSC	Third bullet on page 17 is wrong, there are three rare species found in the creek.	We will change this bullet to read - "None of the fish species found are considered to be vulnerable, threatened or endangered in Canada. One species is considered regionally rare and two species are considered regionally uncommon."
CSC	There does not appear to be a scientific justification for the arbitrary division of the creek into four parts.	The reasoning for the divisions are explained in the first bullet. The only division that may be somewhat "fuzzy" from a habitat perspective is at Queenston Road, however, it is explained that the divisions also take into account barriers or partial barriers to fish movement, which is mainly why Queenston Road was chosen.
CSC	Last bullet on page 16 should specifically mention the "cumulative effects" that have degraded the stream, especially since these are continuing to accumulate.	The following sentence has been added. " There are several factors that cumulatively affect fish species in the Red Hill Creek."
CSC	Second bullet page 17 states that "pollution from urban runoff and sewage discharge has likely impacted species diversity". Is it not possible to be more precise than this?	There is insufficient data to be able to be more precise.
CSC	Why is there no mention of plans to reconstruct 4 km. of the creek, and the impacts this may have on fish?	This section deals with existing conditions. Re-alignment of the creek and the impacts on fisheries are addressed in "Fisheries Existing Conditions and Predicted Impact Report". C.Portt and Assoc.
CSC	There is no mention of the historical fishery in Red Hill Creek or the discussion about the potential for coldwater fish habitat in parts of the watershed. The presence of salmonoid species suggests this potential exists, it needs to be addressed.	We have reviewed historical references dealing with the demise of Atlantic salmon in Lake Ontario, and none mention spawning runs in Red Hill Creek. The current salmonids that spawn in Red Hill Creek are likely stocked fish from Lake Ontario and Hamilton Harbour. There is no convincing evidence that these fish spawn successfully in Red Hill Creek and water temperatures recorded in the section of Red Hill Creek below the escarpment suggest that the temperature is too high during summer for salmonids to exist here. Generally, we believe that Red Hill Creek is currently unsuitable for coldwater fishes, and likely never supported a coldwater fish population, with the possible exception of the reaches above the Niagara Escarpment where there is significant groundwater discharge.
CSC	A total number of fish species for the creek should be provided (24 recorded in 1995-97).	We will add a bullet at the beginning (immediately after "What is Known" on page 16. It will read – "Twenty four species of fish have been recorded from the Red Hill Creek watershed in recent years."
CSC	Text mentions possible impacts from the expressway. Will these be quantified?	Impacts from the Expressway are documented in the "Fisheries Existing Conditions and Predicted Impact Report." C.Portt and Assoc.
CSC	On page 16 the second bullet in part 1 should be clarified: the inaccessibility of the marsh to fish is due to heavy siltation of the area from high sediment flows. The expressway will obviously make this worse.	The long-term sediment loading will be dramatically reduced as a consequence of the natural channel design. Portions of the Red Hill Creek adjacent to the Rennie Street and Brampton Street Landfills, will be realigned and may result in improved accessibility to the Marsh. Water levels in the marsh however will continue to be influenced by the level of Lake Ontario & Hamilton Harbour.
CSC	There should be mention of historical pike spawning in this area as well as recent evidence that it is continuing despite habitat degradation.	The Red Hill Creek provides spawning habitat for fish that live in Hamilton Harbour and Lake Ontario, and that Red Hill Creek is an important component of those larger ecosystems (4th bullet, page 17). More detail is provided in the Fisheries Existing Conditions and Predicted Impact Report (C.Portt & Ass).
Gov	In order to achieve the "no Net Loss of productive capacity of fish habitat" (principle of the Policy for the Management of Fish Habitat), no such authorizations are issued unless the habitat losses are compensated. No authorizations are issued where the compensation is unacceptable to achieve no net loss.	The City has submitted an application for authorization of loss as determined through consultation with DFO.

Gov	Some years ago, the MTO presented a draft interchange proposal for the Red Hill Creek Expressway and Burlington Street. That proposal also had similar impacts on the marsh and Confederation Park and the Full Authority objected to its implementation. Given the alternatives presented, the same objections will likely be raised by the Full Authority particularly as the Burlington Street interchange alterations have been lumped into the exemption order. In the new year, a staff report regarding this matter will be presented to out Water Management & Environmental Impact Advisory Board and subsequently to our February Full Authority Meeting.	The impact assessment and design process approved in the Exemption Order was jointly designed by the staff of Hamilton-Wentworth, MOE and MTO to address the transportation impacts of the proposed Red Hill Creek Expressway connection to the QEW. It is for this reason that the Exemption Order submission identifies the following: 1) "works required to address safe and effective traffic operation of the QEW" (pg. 30); 2) "modifications to the QEW corridor within the east/west study limits" (pg.40); and 3) study limits that include both the QEW/Burlington Street and the QEW/Highway 20 interchanges (figure 8). The impact assessment and design process has determined that the transportation impacts of the Red Hill Creek Expressway connection to the QEW will extend to the QEW/Burlington St. interchange and affect the QEW mainline between Burlington St. and Highway 20. This will necessitate modifications to the Burlington St. interchange and approved QEW mainline widening to ensure that the required level of safety and service are maintained on the QEW. The selected option affects a small area in Van Wagners Marsh and does not affect Red Marsh. This is significantly different from the option that was proposed several years earlier. That option affected the Red Hill Creek, marshes and both Rennie Street and Brampton Street landfill sites.
Gov	Page 15. Key Legislation and Policy Section should include the mention of 2 additional items. The Fisheries Act can be interpreted to include necessary terrestrial habitat adjacent to the creek. The Fill and Construction Regulation of the HRCA also includes activities on land which may cause the pollution of water.	Guidance on interpretation of the Federal Fisheries Act is being sought by the Department of Fisheries and Oceans. The HRCA Fill and Construction Regulation has been listed in the Surface Water section of DSR Vol.1.
Gov	The nature and extent of the impacts to fish and fish habitat resulting from implementing the Expressway may be better defined. Decisions related to the aquatic habitats potentially impacted by the selected option must be done in the context of other initiatives within the Hamilton Harbour RAP area.	This report deals only with existing conditions. The final IASR updates the DSR vol. 2 (Impacts and mitigation) based on a review of a recent fisheries report by DFO.
Gov	Clarify and address questions related to the Fisheries Act authorization process. Clarify what components are being undertaken by the Ministry of Transportation of Ontario.	This is addressed in the July 2002 submission to DFO.
Gov	Page 4, under the Phase 3 heading in the table, first line, reference is made to "area natural" is this intended to be "natural areas"?	Yes, the correction has been made in the text.
Gov	Page 12. Map 5, the fish identified in the vicinity of Confederation Park should be shown inside a body of water or stream, the visual effect of this is to have fish on land.	A photomosic base map is used in the final Impact Assessment Summary Report with more effective overlays to show the natural features including fish.
Gov	Page 15, key legislation and policy, bullet six regarding Provincial Wetland Policy, this policy does not apply to infrastructure under the EA Act, perhaps this should be deleted.	The Provincial Wetland Policy exempts infrastructure projects that have Environmental Assessment approval from preparing and submitting an Environmental Impact Statement for Provincially Significant Wetlands that could be impacted. Nevertheless, the principles of the policy that require consideration of alternatives and mitigation are being applied on this project.
Gov	Page 17, Key Legislation and policy, third bullet point, is it necessary to state the objective of creating a net gain of fish habitat, vs. emphasizing "no net loss".	Overall, the federal objective is to create a net gain. However, their policy stipulates "No Net Loss" of fish habitat.
Gov	Page 22, the last three bullet points do not appear to "fit" into the What is known" section.	The three bullets have been removed.
Gov	Page 15, first bullet item is incorrect- the provisions for issuing permits under the Migratory Birds Convention Act which are included under the Canadian Environmental Assessment Act Law List Regulation do not apply to this project, therefore Environment Canada would not be triggering CEAA on this basis.	The first bullet has been removed.
Gov	Second bullet item should be revised- Migratory Birds Convention Act- must be complied with if migratory bird nesting activity (i.e.: nests, eggs, fledglings) are adversely impacted during the nesting or breeding season.	The second bullet has been revised.
Gov	Page 12, Map 5 Indicates fish habitat in the centre of confederation park as being within the Red Hill marsh/Van Wagners Ponds. This is apparently an error while connected by a drainage channel the ponds within Confederation Park are isolated from the marsh by road crossings and weirs.	Revised mapping in the final Impact Assessment Summary Report better portrays areas where fish are found.
Gov	Make the Natural Environment conditions subsections.	The maps have been made clearer

Gov	What are the black dots – trees? (see pg. 45).	Yes. This map has been revised to use an aerial photo mosaic.
Gov	Page 14, Terrestrial Resources. There is an apparent contradiction when, after listing resources and various environmentally sensitive designations the report goes on to say: " Past land uses, surrounding urbanization, and infrastructure in the valley ... have degraded habitats and reduced the ability of the corridor to maintain its biological diversity and ecosystem function." Based on the available inventory data, it would appear that the valley has maintained considerable diversity and function despite past and present abuses.	Despite extensive past disturbances, the Valley still retains high diversity function in specific areas. Rare and vulnerable species do exist in environments that have been impacted by development.
Gov	Have the possible impacts of the Expressway construction to migrating birds been considered? How will these impacts be mitigated?	The Terrestrial Resources Technical Report (TRTR) considers the impacts in migration.
Gov	It appears that the existing habitat in the Valley will be largely replace with a completely new ecosystem as a result of construction.	The Terrestrial Resources Technical Report (TRTR) outlined changes that will occur to micro-climates, hydrology, noise and the overall ecosystem.
Public	Is there money budgeted for restoration?	The budget for the expressway includes landscaping and restoration associated with the Expressway and creek work and the study area in the Valley.
Public	How will fisheries, especially salmon, be impacted?	Impacts to fish and fish habitat will be announced this spring.
Public	Concern about affects on Van Wagner's marsh	Refer to the Terrestrial Resources Technical Report (TRTR)
Public	Plants and trees which will be destroyed can not be replaced in the same form, it takes years for trees to grow	This is recognized. There will be an extensive tree replanting program implemented.
Public	Concern about destruction of vegetation and wildlife in a pristine area	The Terrestrial Resources Technical Report acknowledges the current state of the valley and what will be lost. It proposes rehabilitation as well as restoration within the watershed.
Public	Concern over loss of 47000 trees to build the expressway	This is recognized. There will be an extensive tree replanting program implemented.
Public	Are there studies of the effects of roads on terrestrial and other resources? Are there tests to determine damage to area around the road?	Refer to the fact sheets on the impacts of roads, within the Terrestrial Resources Technical Report (TRTR)
General Concerns		
CSC	What do the last three bullet points on page 22 mean? Are they just reminders to the authors of other points they wanted to talk about?	These bullets have been removed as they are already stated in previous bullet points above them.
Gov	The map and table depicting our monitoring station needs revisions. Station 29105B has been terminated 1996, and 29087H terminated in 1995. Station 29561 has been running for a year and had over a year of data previously as well.	The maps have been updated to display the most current information.
Gov	Key Legislation and Policy in Section 2.3 (Lakes and Rivers Improvement Act and Ontario Water Resources Act) were cited in reverse.	The correction has been made.
Ground & Surface Water Quantity and Quality		
CSC	Has there been any seasonal monitoring of groundwater?	Yes
CSC	Why are there "limited opportunities to address pollutant loading at source"? What is limiting these opportunities? Why not apply the law?	In many areas where there are combined sewers there is not enough space to build. That is why there are CSO facilities being proposed. Any new infrastructure will be separated.
CSC	There should be discussion of flooding impacts on non-human species, especially mammals, reptiles and amphibians.	This has been taken in account - See Terrestrial Report
CSC	The Fisheries Act must be included in the key legislation. That act covers the release of deleterious substances which are clearly part of the groundwater. It also deals with fish habitat, and maintenance and improvement of baseflow to streams from groundwater is major determinant of health of	It has been included and the points mentioned have been taken into consideration

	fish habitat, including temperature of the stream.	
CSC	On page 18 the sentence "local erosion is evident at storm and combined sewer outfalls" is curious. What does this imply? Is the erosion occurring because of the outfalls? Erosion is mentioned a couple of times in this section, but there is no mention about sediment loadings which are having a huge impact on the creek and the harbour. Despite the fact that the great majority of flows entering Windermere Basin along the creek are actually coming from the Sewage Treatment plant, about two-thirds of suspended solids are coming from the creek itself.	A sediment budget analysis has been undertaken between the Green Hill CSO and the CNR railway. Presently, 1,300,000 kg/year of sediment is delivered to Windermere Basin of which approximately 85% is derived in the above mentioned reach. Employing the natural channel design rehabilitation approach, sediment loading to the creek and hence delivered to Windermere Basin is expected to be reduced between 9 and 19 fold.
CSC	What is the expected frequency and severity of streams flooding?	Under the West Alignment proposal, documented in the Draft Summary Report, the stream and its floodplain are proposed to be altered, in order to ensure long-term stability. Stability criterion relate to frequency of bankfull flow, velocity and sediment transport. In order to achieve this stability, it will be necessary to reduce the capacity of the existing channel and allow it to overtop its banks and flow in the floodplain more frequently (thereby reducing energy). The frequency of overtopping the banks will vary along the length of the Red Hill Creek, as it is typically a function of the stream gradient and the stream form. As a general rule of thumb, the expected frequency of overtopping would typically range between one and six times per year, and that the extent of this overtopping (depending on the nature of the event causing the flooding) may range from just overtopping the banks to tens of metres of floodplain on either side.
CSC	No information on the effect of lake levels on groundwater or wetland recharge and discharge	From monitoring wells installed to access the potential groundwater linkage from the Lake through the beach deposits to the wetland, there does not appear to be a strong connection. Refer to Section 4.2 of Hydrologic Inventory and Impact Assessment Report (Blackport & Associates).
CSC	No identification of areas of groundwater disturbance	Both groundwater recharge and discharge have been referred to in Figure 3 of the Hydrologic Inventory and Impact Assessment Report (Blackport & Associates)
CSC	Groundwater recharge areas not adequately defined.	Both groundwater recharge and discharge have been referred to in Figure 3 of the Hydrologic Inventory and Impact Assessment Report (Blackport & Associates)
CSC	The contention that most stream flow comes from groundwater is problematic. If this is the case why is the stream so contaminated? What is contaminating the groundwater? There is a site in Mt. Albion Conservation area where a strong flow comes out of the ground that is clearly heavily overloaded with nutrients and other pollutants. Where is it coming from?	Page 20 of DSR Vol. 1 explains that under low flow conditions most pollutants are within acceptable ranges. It is essentially under storm conditions when water quality suffers impairment.
CSC	The last bullet on page 13 provides almost no information. Has this bedrock source been investigated? The way it is written here sounds like a guess.	The minor area of bedrock outcrop occurs at the top of Mt. Albion Road. The area of bedrock outcrop is approximately 2 hectares. If it were assumed that all the recharge (350 mm/year) was cut off and that all that recharge discharged to Montgomery Creek than there would be a reduction in discharge by 0.2 l/s. Based on topography, only a portion of the bedrock outcrop would transmit groundwater to Montgomery Creek. In addition, the groundwater recharge can be emulated through appropriate stormwater management.
CSC	The presentation incorrectly downplays the role of the valley area in supplying water to the creek. The calculations were apparently done at baseflows during a dry period and this approach is misleading because it fails to take account of the contribution of overland flows and percolation to the streams from surrounding forested areas. In the spring and fall, and in the periods after a rainfall this contribution is very important to every stream in the natural area.	The spotflow measurements were collected during periods of baseflow (i.e. groundwater discharge) to the stream when there was no component of overland flow. This was done to consider the direct long-term groundwater discharge to the stream which is the actual reflection of recharge to the water table including percolation from existing forested areas through the groundwater flow system to the stream.
CSC	The first and second bullets on page 13 seem to contradict themselves. One says "generally very little" and then it goes on to state an "exception". This is very confusing and potentially misleading.	The statement was made to indicate that based on hydrogeologic setting the permeable sands and gravels in the valley offer the "potential" groundwater pathway to Red Hill Creek. This assessment was based on the existing surficial geology maps. Subsequent work has shown that these permeable sands and gravels are not intercepted by the creek.

CSC	Will an increase in hard surfaces have a negative impact on flows?	Increasing the area of reduced permeability can lead to reductions in recharge and hence, baseflow in areas where significant recharge exits that is directly connected to an area of groundwater discharge. There are no significant connections between potential sensitive recharge areas (Figure 3) and local streams (Red Hill Creek). Refer to Hydrologic Inventory and Impact Assessment Report (Blackport & Associates). Through stormwater management and the promotion of infiltration, the impacts can be reduced and potentially, the recharge can be enhanced.
CSC	In the fourth bullet on page 13 there are comments that "groundwater baseflow to the creek may be enhanced", how is this going to take place? The previous sentence in the bullet is also confusing when it talks about "if the existing recharge is maintained" - what does this "if" mean? Does it refer to the expressway? Is it an expected impact, a known impact, a guess, what?	The existing recharge referred to smaller subcatchment areas in the sands and gravels, and minor bedrock outcrop, where local groundwater flow systems were assessed to potentially exist. The above discussion comments on the significance or sensitivity of these groundwater flow systems. Baseflow may potentially be enhanced by increasing recharge through stormwater management in subcatchments which are hydraulically connected to the creek, either naturally or engineered. (Blackport)
CSC	The floodplain lines are discontinuous north of Barton Street on the east side. Is this an error? If not it should be explained in the text.	The flood mapping in this area has been updated to reflect the work that has occurred at Rennie Street.
CSC	Need to identify options to move the creek away from the Ottawa Street dump and the Brampton Street dump.	A remediation project has been completed on the Upper Ottawa Street Landfill site. A project to remediate Rennie Street and Brampton Street is underway and nearing completion.
CSC	This section does not address the recommendations of the Hamilton Harbour RAP, and does not even list it under policy and legislation. The RAP objectives will be very heavily impacted by loss of the valley to an expressway. No attention has been paid to the fact that over $800 million has been spent on the cleanup of the harbour and its watershed, and this project will reverse many of the gains won with that expenditure. Are the consultants who put this together aware of this?	The Hamilton Harbour RAP objectives have been addressed in the surface water/storm water technical report and the impact assessment summary report will be updated to reflect it.
CSC	Need to identify current impacts of bypass of Woodward to the Sewage Treatment Plant (Sierra Club estimates 5 billion litres/year raw sewage)	The Combined Sewer Overflow program is addressing the combined sewers and how to reduce their discharge to the City's creeks and the harbour. In the Red Hill Valley, a second CSO tank is under construction at the Greenhill location. In addition, a new CSO pipe will collect combined sewer from three discharges to the Red Hill Creek. The pipe will be constructed as part of the Red Hill Valley Project. Furthermore, a new preliminary treatment facility designed to screen all bypasses has been constructed at the Woodward plant and pilot testing of high-rate primary treatment of bypassed flow will be conducted throughout 2003.
CSC	Third bullet in column 2 on page 22 should be rephrased it currently suggests that additional development in the watershed will not affect erosion. This is not true. The more development that takes place, the higher the rates of erosion.	Current approaches to storm water management which promote infiltration and management of quantity and quality before discharging to a stream may not result in further erosion.
CSC	There should be specific reference to cumulative effects	Cumulative effects are assessed in several ways. The watershed plan provided an overall context for assessing expressway impacts and designing mitigation. This is a cumulative effects approach as it considers not only the effects of the road but the effects caused by other actions/development in the watershed in addition to the road. The storm water management approach is based on a cumulative assessment of storm water in the watershed, for example.
CSC	Is there more information available on the Greenhill holding tank	Contact the Public Works Department. Since these comments were made, the City carried out a Class Environmental Assessment for an additional CSO tank in this area. It is currently under construction.
CSC	The focus on remediation seems to centre on the CSOs. It is important to address this source of contamination, but the high bacterial and metal levels present in the baseflow show that CSOs are not responsible for all of the pollution problems in Red Hill Creek. In addition, recent studies have shown that many of the supposedly separated storm sewers entering Red Hill Creek are contaminated with human waste.	Refer to Section 5.2 of IADP Surface Water and Stormwater Quality Technical Report, July 1998, Philips Planning and Engineering.

CSC	Will sewers for businesses flow into the creek?	While it is not clear whether or not the question relates to sanitary sewers or storm sewers, all existing development storm runoff and sanitary effluent will be managed exactly as currently is, as per the current plans of the City, with the exception of the management of combined sewer overflows in the CSO trunk system, which has been proposed to reduce combined sewer overflows to the creek to Provincial standards. Insofar as newly developing areas, all of these are proposed to be on separate sewer systems (i.e. sanitary will flow to the sewage treatment plant, storm will flow to its respective creek outlet).
CSC	QEW need to identify options to move the creek away from the Ottawa Street dump and the Brampton Street dump	If required, this will be explored during the impact/prediction stage of the IADP.
CSC	Is it possible to retrofit the Greenhill water reservoir now?	The new Greenhill CSO is under construction.
CSC	A CSO facility pipe has not been decided, at least three individuals and organizations have formally requested a "bump-up" of the class assessment of this project	The new Greenhill CSO is under construction
CSC	Bullet 1 on page 20 has 5 parts. Part 1: how are high bacterial counts connected to low flow situations if these flows are mostly coming from groundwater? Part 2: it should be noted that high PAH levels have been shown to be from vehicles via runoff (McCarry). The sources of all pollutants should be detailed so mitigation measures can be identified. Part 3: is wrong. See sediment sampling results of Wenghofer, Duncan, and Struger (1995-96). Part 4: the phrase "tend to reflect" is used to obscure real variations in benthic surveys. Why are some areas better than others? Why for example are mayfly larvae found in some parts of the creek? Part 5: why is metal in brackets, what chemicals are being referred to?	The source of high bacteria levels during low flow (I.e. Non-storm) is currently under investigation.
CSC	Why is the source of high coliforms unknown? Is the source illegal dumping of sewage into watercourses?	The source of high bacteria levels during low flow (I.e. Non-storm) is currently under investigation.
CSC	The first bullet on page 21 about landfills is incomplete because it does not address the impacts of flooding and erosion on contaminated sites	Class EA addresses the impacts of flooding and erosion on contaminated sites.
CSC	Will compounds in stormwater collection ponds impact on wildlife?	Current research on this point is inconclusive. One noteworthy document "Wildlife and Contaminants in Constructed Wetlands and Stormwater Management Ponds: Current State of Knowledge and Protocols for Monitoring Contaminant Levels and Effects on Wildlife", Wren, Bishop, Stewart, Barrett, Canadian Wildlife Service, 1997, states that "there is very little information available on the uptake of contaminants by wildlife in constructed wetlands, but elevated levels of metals in fish tissue have been documented". It goes on to say that the levels, although elevated over background, are below those shown in other studies to cause a detrimental effect on exposed fish This report also notes that, based on exceedances of water and sediment quality criteria within some stormwater ponds, invertebrates and fish (within facilities) are "likely to be effected". There is an increasing number of constructed wetlands in Ontario, but monitoring of contaminants within the constructed wetlands and wildlife is not routine. One is faced with the conundrum that if you create habitat within stormwater management ponds and wetlands, which attracts wildlife, you may be exposing them to risk, or, do you allow contaminants to discharge into the Red Hill Creek and Hamilton Harbour with no treatment affecting a larger segment of the ecosystem, albeit at perhaps a lower level of exposure. The Region is currently undertaking an aggressive monitoring plan of its constructed wetland which treats highway runoff in the Dartnall Road interchange. This information is proposed to be used to guide and direct future designs of similar facilities for the North-South Expressway.
CSC	Especially behind Glen Castle Park there are seepage areas which may be important for terrestrial habitat. These need investigation.	This will be taken into consideration.
CSC	Will the Provincial policy on collection of runoff be followed?	Yes.
CSC	The second and third bullets on page 18 should identify the influences on water quality and flooding as cumulative and continuing to increase.	Changes have been made to DSR Vol 1 to note that water quality is cumulative and will continue to increase. This had been added into the text.

CSC	The third bullet on page 19 "lack of natural stormwater storage" raises the question of whether this function has been lost, where it was lost, and what opportunities exist for natural storage areas to be recovered or added?	Urbanization reduces the natural storage available. Where wetlands or lowland areas were located prior to urbanization is not known. Refer to the Surface Water and Stormwater Quality Technical Report, July 1998, Philips Planning and Engineering. As well as RHC Watershed Plan and supporting technical documentation.
CSC	Text states that frequent flooding is good for some things and bad for others. This is confusing. What are the positives and negatives?	Species which thrive in flood plains require that floodwater access these areas with some regularity hence flooding would be beneficial. Similarly flooding in flood plain areas reduce stream velocities and erosion potential hence a positive effect. Negative impacts relate primarily to issues of public safety and human uses of the flood plain during times of flooding.
CSC	The last bullet in the first column of page 19 sets out a "must" standard, presumably based on law or liability, for stormwater management. This standard is unnecessarily anthropogenic and should recognize the negative impacts of flooding on non-human species.	This standard is taken from Riparian and Common Law and statute laws which do not reference non-humans.
CSC	The text describes the unusual state of the creek. The reasons for this should be clarified. Specifically this condition results from cumulative effects arising from paving and building over most of the watershed.	Refer to Stream description in Impact Assessment Summary Report which explains why the Creek is unstable.
CSC	The discussion of frequency of flooding may also be misleading. The scouring of the creek by stormwater flows has resulted in a much larger and deeper channel than existed historically. In this situation what constitutes flooding? If this merely refers to overflowing of the banks, it is clearly understated. The section speaks of "increased frequency" it should detail the historical change which seems closely related to development in the watershed.	Under the West Alignment proposal, documented in the Draft Summary Report, the stream and its floodplain are proposed to be altered, in order to ensure long-term stability. Stability criterion relate to frequency of bankfull flow, velocity and sediment transport. In order to achieve this stability, it will be necessary to reduce the capacity of the existing channel and allow it to overtop its banks and flow in the floodplain more frequently (thereby reducing energy). The frequency of overtopping the banks will vary along length of the Red Hill Creek, as it is typically a function of the stream gradient and the stream form. As a general rule of thumb, the expected frequency of overtopping would typically range between one and six times per year, and that the extent of this overtopping (depending on the nature of the event causing the flooding) may range from just overtopping the banks to tens of metres of floodplain on either side.
CSC	The text talks about flooding of the "entire valley". Does this include the King's Forest Golf Course, for example, or the recreational facilities at Greenhill and Red Hill bowls? It would be helpful if there was some discussion of the 100 year storm measurement and its relevance in a period of global climate change.	It would take a storm the size of Hurricane Hazel to flood the Red Hill Bowl and Greenhill. Predicted occurrence is 500-10,000 years. The available and most current meteorological models to predict and estimate flows and flood levels were used. Global warming beyond the scope of this assessment scientific community is divided on meteorological affects of Global Warming.
CSC	Are there regional standards for stormwater flooding? Is it based on 1994 data?	Flood standards are typically based on Provincial criteria supported by province-wide flood experiences and statistical data. Prediction of flood levels as part of this project have been based on application of these provincial standards in accordance with a highly detailed technical analysis and computer modeling.
CSC	There is a need for precise numerical information. For example, it should be noted that stormflows in the creek regularly exceed baseflows by 100 times. A recent 50 year storm event generated flows that were about 300 times the normal baseflow. Incredibly, flows in the creek usually drop back to baseflow in 48 hours. These floods are made by humans, by their destruction of the natural features of the watershed. These floods rip the stream and valley apart, to the extent of banks moving more than a metre in a single evening. This is a result of the cumulative effects of development in the watershed.	The Stream Inventory Report provides details on how and why the banks of the Creek are moving, and what can be done to reduce this movement.
CSC	How will construction affect floodplains? - need for studies	Typically, the introduction of roadway infrastructure into a floodplain will reduce flood storage and alter the overall mechanics of flow. In order to address Provincial regulations as they relate to flood levels and storage, it has been necessary to undertake detailed studies of stream and valley hydraulics with and without the Expressway in place. Refer to Section 6.1 of the Impact Assessment Design Process.
CSC	The impacts of stormwater on contaminated sites is not addressed. Upper Ottawa landfill has been undermined by the creek and is threatening to collapse. The Brampton and Rennie landfills are also being eroded by stormwater flows in the creek, and the same is true for the contaminated lands on the east side of the creek near Brampton Street. This is an extremely serious situation with the potential of major effects on human health. Why is it not included?	This project does not affect the Upper Ottawa Landfill site. However the City has completed a project to manage the leachate discharge and impacts to the creek. The Brampton st, and Rennie St. Landfills have been addressed in separate Class EA Projects.

CSC	The last bullet on page 20 mentions "development" increasing pollutant loadings. This term needs to be more precise. The source of additional PAHs for example is vehicles on roads. Similarly, "development" of housing is not going to increase metals, but the vehicles associated with it will.	Refer to Section 5.2 of IADP Surface Water and Stormwater Quality Technical Report, July 1998, Philips Planning and Engineering.
CSC	It should be noted that erosion stems from storm sewers and re-directing of the creek.	Erosion and processes associated, is explained in the Surface Water and Stormwater Quality Technical Report, July 1998, Philips Planning and Engineering.
CSC	Concerns about effects on water quality along beach area	There are no beaches within the Red Hill Creek Valley
CSC	The list of legislation should include those which cover contamination of waterways	Primary legislation is discussed and itemized in Section 3.1 and 3.2 of the IADP- Surface Water and Stormwater Quality Technical Report, (July, 1998, Philips Planning and Engineering).
CSC	How does Red Hill water quality compare with other urban streams? This information would allow for a better understanding of the present condition of the stream.	Stormwater Quality in the Red Hill Creek was found to be typical of an urban system with water quality "better than expected for an urban system" under low flow conditions, and exhibiting increased contaminant loadings (degraded water quality) under storm conditions (ref. Wenghofer et al, 1997)
CSC	Need to identify options to take runoff from the road away from the wetland	Standard design procedures for new roadways and expansion of existing road systems require that runoff be treated prior to discharge to natural wetlands. Treatment implies managing both the quantity and quality of runoff. Options include diverting flow away from the wetland and/or pre-treating it in stormwater management facilities. In areas such as VanWagners and Red Hill Marsh, where expansion/redevelopment of the road system is required, treatment of runoff prior to its discharge to the natural wetland would be required, and diversion of runoff from the wetland would be considered as an option.
Gov	The old septic system of the Albion Falls Neighbourhood may be contributing to the contaminants in this area.	The City's Public Works department is initiating a water quality program for Red Hill Valley.
Gov	There is a need to develop a detailed storm water management policy within the Region.	The City intends to develop a stormwater master plan.
Gov	Page 67, Section 4.3, the Summary of Watershed Issues and Options is given although the Expressway Related Actions are not provided perhaps implying that all the issues will be dealt with under the Expressway.	This section was written before the Watershed Plan was completed. It will be updated based on the compendium of actions associated with the final Watershed Plan.
Gov	Page 56. Drawing 7/7A. It is difficult to imagine how a naturalized channel can be constructed to replace the existing concrete channel given the interchange footprint.	The creek is moved out of the concrete channel to the west where it flows through a natural substrate as it passes under the bridge. See the Impact Assessment Summary Report and the Preliminary Design Report for the Creek realignment to see the proposal for this area.
Gov	2nd bullet – should not be under Targets because it is a short-term goal. (See pg. 70).	This section has been updated to reflect the results of the Watershed Planning process.
Gov	Under "Condition: Water Quality" there are certain comments that could be restated in light of the ongoing efforts of the water quality program: Reference to the Woodward Ave sewage treatment plant being a source of pollutants is misleading.	Need to amend the comments for water quality by: (1) deleting the sentence "The source of high coliforms under low flow is currently unknown." ; and (2) adding a new separate bullet stating "It has been determined that the existing urban storm drainage system discharging into the Red Hill Creek is a source of high coliforms under low flow conditions. Further investigation is required to determine whether the source of contamination is from public infrastructure or private dwellings." Add: to Primary Source of information the following: Hydromantis, Inc. Consulting Engineers, "Final Report - Red Hill Creek Assessment", August 2002.
Gov	There is work being done with RAP, BARC and BAIT on water quality in the Harbour, therefore we would not want to jeopardize these projects and in that sense want to ensure that your lists (of what is known) are expressed in light of other activities.	No response necessary as the comment is no longer relevant.
Gov	A copy of the State of the Watershed Report (October 1997) has been requested.	A copy has been provided
Gov	The items identified as possible actions from the Watershed Plan (Chapter 4.3) are broad. It has not been stated that these are possible solutions and if the government has committed to them. Which options can be implemented as part of the Expressway?	Since this comment the Watershed Plan has been completed and a compendium of actions were developed by stakeholders with the ability to take action. The Impact Assessment Summary Report will be updated to reflect the compendium.

Gov	Clearly define the role of the Watershed Plan vs. the role of this study. How do they fit? How are they different? (e.g. What you can do to implement the Watershed recommendations you will do now; the rest will be implemented outside this study). (see pg.5)	This will be clarified in the impact Assessment Summary Report.
Gov	Section 4.3, Summary of Watershed Issues and Options – how does this impact this study? You must state the recommendations of the Watershed Plan. (pg. 67).	This section has been updated to reflect the results of the Watershed Planning process.
Gov	There is a need to develop a detailed storm water management policy within the Region.	The City intends to develop a stormwater master plan.
Gov	Creeks are really nothing more than open storm sewers when it rains. The rapid rates of flows are then expected during storm events, so I'm not sure that this would quality as a public safety concern.	The roadway work will involve redesign of the creek making it shallower and more stable
Gov	Page 18. Surface Water. The definition of the 100 year flood is incorrect. It s correctly defined as a flood which has a 1% probability of occurring or being exceeded in any given year.	The clarification has been added.
Gov	Page 20. Water Quality. The report states that "the source of high coliforms under low flow is currently unknown." Data exists which indicates that storm sewer outfalls are flowing during dry weather and contributing high coliform readings. This at least suggests that illegal or improper connections to storm sewers are a contributing source.	The source of high coliform counts under low flow conditions will not be known until investigations are carried out. There could be several reasons for these high counts. This work has been identified as an action item under the Watershed Plan.
Gov	Have you done some modeling that shows that the entire Valley will be flooded under a 100-year storm event or is this statement meant figuratively?	Yes, hydraulic modeling has been completed.
Gov	The storm water management strategies must be developed to an acceptable standard. Are these required at the moment in order to protect infrastructure and private property, or will they be required as a result of the construction of the Expressway and related storm sewers?	Storm Water Management is required to meet Provincial, Federal and Municipal standards.
Public	Detention ponds for stormwater management would end up toxic and could create more wildlife problems than they would solve.	A monitoring and operations plan (with budget) has been proposed.
Public	Concerns about increase in creek instability if expressway is built	In fact, just the opposite will occur after the expressway is built. A natural channel design approach is being developed to stabilize the creek on the west side of the expressway.
Public	Concern that creating meanders in the creek will not work near the Bay because a delta will try to form instead	The City is not proposing to alter the creek near the bay north of Brampton Street as part of this project. However, the Rennie and Brampton leachate control project includes realignment of the creek into the Red Hill Marsh. They have received approval from the Department of Fisheries and Oceans to do this work.
Public	Concern about re-alignment of the creek option	A natural channel design approach to stabilizing the creek has been taken to avoid using more traditional hard solutions which often fail and require higher long-term maintenance costs. The proposal to realign the creek is being reviewed by experts at the Department of Fisheries and Oceans. Approval from that agency is required before construction can begin.
Public	What is the extent of experience with natural channelization as proposed for erosion prevention of the Creek	The Region has hired an expert in natural channelization to work with other experts in the fields of terrestrial ecology, storm water management and fisheries. Over the past ten years this field has gained experience in all types of stream environments. This is a large naturalization project and will require approval from the Department of Fisheries and Oceans and review by other experts in this field.
Public	Concern that spills from trucks will enter waterways and wetlands	The potential for this impact exists now with the existing road network. Opportunities to address this concern can be incorporated as part of expressway construction.
Public	All data is pre-global warming, there is likely to be a lot more uncertainty, e.g. rainfall events in the future. You cannot rely on the past to predict the future.	Point taken. Nevertheless, the nature of all environmental assessment work requires the proponent to predict future states. In some areas of science, the modeling is often very accurate (e.g., noise prediction – the actual levels are usually within a few percentage points of the predicted). Stormwater modeling, as alluded to here, attempts to understand and design for the consequences of a storm event that occurs once in a hundred years. This remains a justifiable standard of care.

Public	On the Thursday prior to Thanksgiving one year ago, the Valley flooded as a result of Hurricane Opal. What information is available on this event? Would the expressway be destroyed by another such event? How would damage be mitigated?	The expressway would not be destroyed by this event. Stormwater management measures will be put in place to prevent flooding of the Expressway to less than once every 100 years on average. In addition, the expressway has been designed to withstand the flooding for one Hurricane Hazel type flood (much worse than Opal).
Public	Concern over combined sewer outfall (CSO) pipe - what diameter pipe will run along the expressway?	Approximately 2m.
Public	Will there be a study to determine if contaminants are flowing off the roadway and into the valley?	Refer to stormwater management Report (Philips)
	Impact Assessment Design Process	
Public	Section of Red Hill Creek Expressway north of Brampton has never been subjected to an EA	Item "F" of the Minister of Environment Declaration Order (March 5/97) which approved the Region's Exemption Order Request clarifies this point. It specifically concludes that a connection to the QEW was approved in the Joint Board decision in 1985. The specific design and location is being assessed as part of the impact assessment work that the City is currently doing.
Public	Burlington Street Interchange should not be included in the Exemption Order.	The timing of construction for the Burlington St. Interchange (IC) is linked to the Red Hill Creek Expressway, but the long term needs for improvements were anticipated and documented in MTO's 1982 Environmental Assessment for the QEW in this area. Changes to the exit and on ramps between the Burlington St. IC and the Red Hill Creek Expressway interchange will facilitate traffic movement between the closely spaced interchanges. It therefore makes sense to carry out this assessment, design and construction work as part of the overall project.
Public	The need to rebuild the Burlington Street Interchange is totally driven by the Red Hill Creek Expressway and nothing else	Changes to the exit and on ramps between the Burlington St. IC and the Red Hill Creek Expressway interchange will facilitate traffic movement between the closely spaced interchanges. It therefore makes sense to carry out this design and construction work as part of the overall project. However, the long term needs for improvements to the Burlington St. IC were anticipated and documented in MTO's 1982 Environmental Assessment for the QEW in this area.
Public	Concerns about the timing of the process. Will all impacts be predicted before tendering for construction takes place?	Yes, the Impact Assessment Report will be completed before construction takes place.
Public	The Red Hill Creek Expressway and Burlington Street should be addressed together, however this component should be subject to an individual EA	Changes to the Burlington Street interchange are covered in the Region's Exemption Order. Alternative interchange options have been assessed and changes have been made to the preferred interchange design based on public comments.
Public	How was an exemption from an EA obtained?	The City requested that the design changes that are being proposed to reduce environmental impacts be subject to an impact assessment process instead of making the whole project (from hwy 403 to QEW) go through another environmental assessment. This focuses the assessment on the design changes as the planning for the entire project has already been completed and most of the Mountain section of the road has been completed. The Minister of the Environment processes amendments to environmental assessments as Declaration Orders. Declaration Orders are approved by Cabinet and the Lieutenant Governor.
Public	What will happen if the impacts predicted are above acceptable levels? Are the data and results of the studies going to be manipulated so the Expressway can be built?	Efforts will be made to reduce predicted impacts to regulatory levels. However, the approval under the Environmental Assessment Act means that overall the project is not considered to have significant environmental impacts. While there may be negative impacts in some areas there will be positive impacts in others.
Public	Why has the public never been consulted about the need for the expressway? Why has there never been a referendum?	Opportunities to comment on the need for the expressway have been formally available since the 1980's. In particular, the public participated in the development of the original environmental assessment in the early 1980s and were represented at a public hearing for the project held by the Joint Board prior to the Board making a decision on the project in 1985. Referendums are held at the discretion of Council. Through the years various Councils have not felt that there is a need for a referendum.
Public	Why are public meetings not advertised better? Flyers are not reaching all the people who will be affected by the expressway. Is information trying to be kept from the public? There should be more radio advertisement. · What can be done to prevent the expressway from being built?	Advertisements have been placed in the Spectator and local newspapers, media briefings have been forwarded to local radio/cable service providers and over 21,000 newsletters have been distributed by Canada Post letter carriers to area residents within a broad area surrounded by the study area prior to public open houses/meetings.
Public	Slow down the IADP until all options have been considered and the public have been thoroughly consulted	The Region is committed to the process spelled out in the Exemption Order request that was approved by the Minister of Environment in March 1997.

Public	I was involved in the expropriation of land bordering the creek between King Street and Queenston Road and I was assured that the land would never be used for anything but parkland. Now I am being told that the Expressway project has been under consideration since the 1950's. Obviously someone is not telling the truth. How many other untruths are being told?	It is difficult to comment on this statement without knowing more details. However, the location of this road has been public knowledge for several decades.
Public	Stoney Creek was given money to improve Centennial Parkway at the top and bottom. Allegedly, there have been secret deals with Ratepayers' Group and councilors for 20 years to avoid repairing the Parkway so that there would be a false need for the Expressway	Repairing the Parkway does not solve the Region's long-term transportation need for more north-south capacity.
Public	Impact predictions will be done in March/April, yet permits are going to be applied for and tendering will begin before all of the air quality data on the impact predictions is ready to review. The Expressway will be built on the mountain before all the impacts are known.	Construction will not begin until the impact assessment reports are completed.
Public	CSC should be re-investigating the need for the Expressway	As documented in the CSC Terms of Reference which was written and approved by CSC members, the focus of CSC deliberations is on expressway design, impact prediction and mitigation.
Public	It seems like decisions have already been made and they smell of dirty politics and big business, and we the little guy will be paying for it.	The City has had approval for this road since 1985 under the Environmental Assessment Act and has completed most of the section on the mountain. The City has requested public input in all stages. The City decided in 1996 to request approval for a process that would reduce environmental impacts further. The current work is focused on this impact prediction, mitigation and monitoring process.
Land Uses		
CSC	Are there studies on impacts to Emergency vehicle response times?	Changes to the approved design were reviewed with emergency agencies to ensure response times remain adequate.
CSC	Maps should show the Niagara Escarpment areas broken down into their categories (escarpment natural, escarpment protected, etc.).	The Land Use Report shows the extent of the Niagara Escarpment Commission plan areas.
CSC	Maps should also show the boundaries and extent of areas designated in the Regional Official Plan as Environmentally Significant Areas. The accompanying text should state the objectives and directives of the Official Plan for these areas.	The Land Use Report shows the extent of the Environmentally Significant Areas and explains its objectives.
CSC	Why are some anthropogenic features shown on the "natural environment" maps but not others? For example closed landfills, gabion baskets, and pedestrian bridges are shown, but formal trails are not.	The updated maps in the Impact Assessment Summary Report will show only natural features on the natural environment map and the features mentioned in the comments will be added to the Human Settlement map.
CSC	Where will sound walls be placed?	This will be determined when the details of mitigation are developed in the Design stage.
CSC	Gap in information on current traffic flow specifically for Woodward Ave. and for the area in general	An updated Traffic Analysis has been prepared by iTrans and is available on the City's Red Hill Valley Project website.
CSC	How was placement of the pedestrian bridge at Greenhill decided?	The Greenhill Avenue Interchange design includes a bridge with a pedestrian walkway and bicycle lane separated from vehicular traffic that connects to the Valley. This was discussed with the Landscape Restoration Advisory Group and included in the proposed design in Draft Summary Report volume 2. The details will be finalized in the design stage.
CSC	Mud Creek parking lot is a key starting point for trail users - this should be noted	This parking lot will be indicated on the Human Settlement map that shows current land uses and will also be included on the Landscape Management Plan
CSC	Niagara Escarpment zones are not shown on the maps	The Land Use Report shows the extent of the Niagara Escarpment Commission plan areas.
CSC	How will hiking trails be kept accessible during the construction phase?	Access to hiking trails during construction will be addressed in the Environmental Management Plan that will be completed following the Design stage.
CSC	How can cyclists be prevented from accessing hiking trails?	It is very difficult to restrict cyclists from using hiking trails.
CSC	How will cyclists and pedestrians be able to get from one portion of the valley to another?	The trail system is being redesigned. The public will have an opportunity to review the draft design in the draft Landscape Management Plan which will be released at the same time as the Final Impact Assessment Reports
CSC	Two contaminated sites (Nash and Brampton) are identified in the text but not on the map.	The two contaminated sites referenced are Nash Auto Parts and Shiela's Autobody.
CSC	How will viaduct crossing be separated so that wildlife and	See above.

	recreational trails can both pass through?	
Gov	2nd bullet (change) – Land in private ownership is also used for residential purposes. (see pg. 31).	This has been added to the description.
Gov	Under Key Legislation and Policy, the 2nd bullet should consider Regional & City Official Plans and Site Plan requirements. (see pg. 41).	The addition has been made.
Gov	Is there considerable infrastructure that is regularly affected by major flooding, such as the QEW, or is this a rare occurrence?	The QEW currently experiences some flooding in this area. Major flooding such as that caused by Hurricane Hazel is very infrequent.
Gov	What about Arbour Road pedestrian connection? (see pg. 66).	This has not been included in the design for the expressway as the viaduct at the foot of the escarpment provides the same function in addition to allowing wildlife crossing under the road. However the City has not precluded a pedestrian crossing on the mountain in the future.
Public	Leachate and mitigation	The City is currently involved in a $23 million dollar project to minimize leachate and erosion at the two landfill sites (Brampton & Rennie Street). A leachate management project been implemented at Upper Ottawa Street Landfill.
Public	The City of Hamilton needs to rejuvenate old areas before developing pristine natural ones, create more parks in old developed areas and continue cleaning up existing ones within the city, designate more conservation areas to ensure a sustainable balance between urban areas and the revitalizing qualities of green space for future generations, and realize that the most important future commodities will be the city's green space. We need to consider the environment with which we co-exist.	The City has several programs and partnerships that support environmental goals and principles including a Brownfield program to develop abandoned sites in the older parts of the City, and partnerships with Green Venture for the growing of native trees. This project is supporting restoration and rehabilitation projects in the Valley, the watershed and the City.
Public	Why are we destroying a valley, other cities, such as Toronto, are trying to restore their valleys?	The city has chosen to undertake extensive work beyond what it is required to carry out to minimize environmental impacts and to stabilize and naturalize the creek so that it is a better quality environment. The City has geographical limitations due to the escarpment so that any road expansion across the escarpment poses similar environmental impacts.
Public	The expressway will give access to all parts of Hamilton's industry and encourage growth on the mountain.	The intent is to provide access to industrial areas and to service planned, approved and developed areas on the mountain.
Public	Who will remediate contaminated sites? When? How much money will it cost?	The City will address contaminated sites as per provincial legislation and guidelines. This will be done before or in conjunction with construction. (Costs to be included in contaminated sites report)
Public	Will the landfill sites at Brampton and Rennie be cleaned up?	The City is currently involved in a $23 million dollar project to minimize leachate and erosion at these two sites. In addition, as part of this project, excavation will remove approximately 70,000 cubic meters of waste from the Rennie Street Landfill.
Public	Where will the Route for the Bruce Trail be?	It will be routed under the viaduct at the foot of the escarpment.
Public	Extend the proposed hiking trail up the valley to the hiking trail adjacent to the Linc.	The Red Hill Creek Watershed Plan proposed several trail links from the valley to other areas. Over time these links could be made by the City but is not proposed as part of this project.
Public	I am sure that the trails can be incorporated and even improved with the construction of the expressway.	The trails through the valley are being impacted by creek relocation and road location. A trails master plan is being proposed under the draft Landscape Management Plan. Public input is being sought on this draft.
Public	If the Lakeland Community Centre needs to be moved, when will it be moved, and will the Ministry pay for a new Community Centre?	There is no proposal to move Lakeland Community Centre
Public	How will slumping during the construction phase be controlled in old dump sites, especially in the Upper Ottawa landfill	Excavation will be designed to avoid any erosion in to the creek, through an approved plan by the Ministry of Natural Resources & Hamilton Region Conservation Authority. No construction is required adjacent to the Upper Ottawa Landfill Site. A retaining wall will be constructed at the edge of the Rennie Street Landfill Site.
Public	What impact will remediation of contaminated sites have on the environment?	The net impacts of remediation to the environment are positive. During the construction period there may be short term impacts such as dust, odour etc. However precautions are being taken to minimize construction impacts which will be documented in the Environmental Management Plan.
Public	What impacts will result if the expressway passes through contaminated sites, and old toxic dumps?	Refer to the Contaminated Sites Impact Assessment Report. (Dillon)

4.2 Draft Summary Report Volume 2

Air Quality, Noise and Weather Conditions		
Source	**Question/Issue**	**Response**
CSC	What monitoring will take place, and what will be done with the data – future mitigation?	The final Impact Assessment Summary Report outlines the monitoring that will be carried out based on the recommendations in the technical reports. Some of the monitoring will be required to meet regulatory agency requirements and the City will work closely with those agencies to ensure that there is follow-up as a result of monitoring agreements.
CSC	Negative air quality impacts in the valley will be offset by a much greater positive air quality impact in the whole Region.	Locally there will be higher levels of pollutants but overall pollutant burdens as a result of transportation are expected to be reduced. Refer to the air emissions report and the air quality modeling report.
CSC	Replant more than 2000 trees.	The Terrestrial Impact Assessment indicates where trees can be planted to offset the trees that will be lost for the construction of the road and the creek. The draft Landscape Management Plan also shows where the planting will take place.
CSC	Mitigation is needed if the objectives of the project are to be achieved.	The technical reports recommend mitigation that is feasible and reasonable for a project like this. The Impact Assessment Summary Report summarizes the impacts, mitigation and monitoring.
CSC	A sensitivity analysis is needed because an increase in truck traffic volumes will impact noise levels.	Predicted traffic volumes would have to double to create a noticeable increase in noise (i.e. an increase greater than 3deciBels is noticeable).
CSC	Will blasting impact house foundations?	The City will implement a process to ensure that no houses are affected by blasting. This will include inspection of homes within a certain distance of blasting prior to blasting. The protocol for this process will be developed in the next stage (Detailed Design) and will be incorporated into an environmental management plan (EMP) during construction. The EMP is a guide for all construction staff to use.
CSC	Has a study of current noise levels been conducted on: Upper James, Upper Wentworth, Upper Ottawa, Upper Wellington, Wellington, Main, King, Cannon, Mount Albion, Barton, and Kenilworth streets, or Centennial Parkway where residents are currently living much closer to traffic than any home on the proposed Expressway?	Local roads with stop signs will experience noise from a different type of traffic (stop and start) than the Expressway which will be free flowing. Noise has been measured adjacent to the Lincoln Alexander Parkway and has been shown to be below predicted levels.
CSC	Mitigation should be generous. Sound walls should be built even if they decrease the noise impacts only slightly, or just block residents' view of the Expressway.	Noise mitigation will be examined in detail in the design stage. Some areas are very easy to mitigate noise while in others areas it may not be possible. The Impact Assessment Summary Report indicates where it is possible, not possible and may be possible to provide mitigation. Residents will be consulted on the detailed mitigation plan.
CSC	Residents along the East-West section of the Expressway should be consulted for their suggestions on the placement of noise walls and mitigation options for the North-South section.	The East-West section of the Expressway is geographically quite different from the Valley therefore there may not be relevant comparisons in experience. The East-West area is relatively flat, the adjacent developments included longer lots with easements for the purpose of building noise barriers and there were conditions on the subdivision agreements that the builders were to include triple glazing and air conditioning as a way to reduce noise impacts.
CSC	There is no mention of summer temperatures under "indicators".	Summer temperatures have been incorporated into the air quality monitoring and are more closely associated with increases in regional ozone impacts than the impacts associated with CO, NOx, and particulate matter. In fact, the emission rates of CO and NOx are generally higher in winter when vehicles spend a greater amount of time in the less efficient cold engine operation conditions.
CSC	Is a 300-400% level of conservativeness (safety margin) normal?	The current model uses updated US EPA and MOE accepted assumptions and default values. Current level of conservation is not expected to be as high as 300%-400%.
CSC	The 404 is not an appropriate model on which to base Expressway truck mix predictions.	The Highway 404 ambient air quality monitoring study was not used to predict truck mix, but was used as an indicator of the conservativeness of the model output. It was used since it is a heavy volume roadway and showed that even with a greater volume of traffic, the measured pollutant levels nearby are much lower than what is being predicted for the Red Hill Creek Expressway.
CSC	Concern that the 15% commercial vehicle and 7.5% heavy truck traffic estimates, which were used in the air quality model, are too low.	ITrans has provided an updated truck traffic estimate report with the most current data. Refer to Air Quality Impact Assessment Report (RWDI), Appendix D.

CSC	A sensitivity analysis is needed because an increase in truck traffic volumes will impact air quality	Both Vision 20/20 and current Trend scenarios for future traffic have been evaluated and the higher traffic projections (Trend) have been modeled as it has the greatest potential for impacts.
CSC	Did the air quality model take into account turbulence - trucks stir up a great deal of dust.	Turbulence is accounted for in the model. The U.S. EPA emission prediction model PART5, was used to determine the particulate emission rate from the roadway surface. This model takes into account the weight and number of wheels along with the silt loading for the roadway to determine the emission rates. The dispersion model CAL3QHCR, which was used to predict downwind levels of vehicular exhausts, uses a roadway width adjustment to account for the increased zone of turbulence associated with moving traffic on the traveled portion of the roadway.
CSC	Have any noise studies been conducted along the 401 and QEW which could be reviewed for comparative purposes?	MTO assessed the noise levels at the location of the QEW intersection with the RHCE and it was found that noise levels will be primarily due to traffic on the QEW, and the increase will not be perceptible.
CSC	How can people access information on the underlying assumptions of the models, especially the air and noise models? For instance, was turbulence, the geographic shape of the valley, meteorological information, the removal of vegetation etc. taken into account in the air quality model? More information on the studies needs to be made available.	All of the assumptions and methodology applied in the modeling are described in detail in the RWDI Reports.
CSC	Concern that air quality models are based on truck traffic estimates which are too low.	ITrans has provided an updated truck traffic estimate report with the most current data. Refer to Air Quality Impact Assessment Report (RWDI), Appendix D.
CSC	In the 1989 assessment, it was assumed that 9% of the vehicles using the Expressway would be comprised of truck traffic. Why is a 7.5% estimate for truck traffic now being used in the air quality models?	ITrans has provided an updated truck traffic estimate report with the most current data. Refer to Air Quality Impact Assessment Report (RWDI), Appendix D.
CSC	Concern that the models do not take into account the loss of 40,000 to 47,000 trees	There are no roadway dispersion models that consider the loss of trees on air quality. A qualitative discussion of the ability of vegetation to remove some of the pollutants of interest will be provided in the updated RWDI Air Quality Assessment report.
CSC	What kind of noise will result from construction activities, for example clearing and blasting?	Construction related noise will be addressed in the detailed design stage of the project and documented in the Environmental Management Plan.
CSC	Document does not clearly indicate how much of a noise increase is going to occur. People are told that there will be a 20dba increase in noise, but they don't understand that this is the equivalent of 100 lawn mowers, as opposed to one, operating 200 meters from you	Refer to Section 5 of the Noise Impact Assessment Report (RWDI).
CSC	What mitigation can be done to prevent maximum TSP concentrations from exceeding the MOE interim AAQC of 120 ug/m^3 at 125 out of 150 receptor sites at least 13% of the time?	Various mitigation measures such as road sweeping or flushing with water have been shown to reduce the impacts of emissions of particulate matter from roads. It should be noted that the effectiveness of any dust control measures is dependent upon such factors as frequency, duration and timing. See Section 7 of the Air Quality Assessment Report.
CSC	What mitigation can be done to prevent maximum PM_{10} concentrations from exceeding the MOE interim AAQC of 50 ug/m^3 at 127 out of 150 receptor sites at least 13% of the time?	Various mitigation measures such as road sweeping or flushing with water have been shown to reduce the impacts of emissions of particulate matter from roads. It should be noted that the effectiveness of any dust control measures is dependent upon such factors as frequency, duration and timing. See Section 7 of the Air Quality Assessment Report.
Gov	Only the air quality in the valley, not in transportation corridors on a regional and local scale, of the proposed expressway is assessed.	The Terms of Reference for the Air Quality Study were circulated and reviewed by Provincial and Federal Agencies.
Gov	Local Air Quality: It is likely that the estimation of impacts remains a conservative one. The report gives undue weight to the exact locations of impact areas, which might better be generalized more. No assessment of PM2.5 levels was made.	PM 2.5 has been evaluated in the updated RWDI Air Quality Assessment report.
Gov	Report B.13 mentioned intending to deal with the very real topography of the project, by dealing separately with "inside of valley" and "outside of valley", but was dropped in a later draft A.5, without comment or justification. Air Quality models using US EPA models neglected topography (except for that the proposed highway itself)	The CAL3QHCR model used do not account for changes in topography. The final report provides qualitative effects of roadway grade changes on vehicular emission rates. See Section 7.

Gov	Estimates of highway-induced dust levels is probably too high, due in part to the choice of a model parameter. This is in part compensated by choice of an insufficiently conservative background level.	The Updated Air Quality Impact Assessment Report includes a Combined Effects Analysis report which considers all combinations of coincident predicted and measured hourly contaminants over the entire year.
Gov	Section 5.6: Predicted emissions in the report do not address grade change of the road. Coasting downhill results in an increase in hydrocarbons emissions. What are the effects on emission rates for diesel and other alternate fuels? How about the effects on emission rates for trucks and buses?	The Updated Air Quality Impact Assessment Report provides a discussion of grade changes. See Section 7.
Gov	The neglect of deposition into the waters of RHC is uncertain, but should be assessed in connection with other measures of avoiding the pollution of the watercourse.	The focus of the study is on airborne contaminants. The Terms of Reference reviewed by the Ministry of the Environment and the public, do not include deposition estimates in the Red Hill Valley Creek.
Gov	Appears to be a typo on P. 28 section 5.1.2.2, the identification of Receptor 48, should be receptor 98.	Correct. It should be receptor 98 instead 48.
Gov	Typo on Page 29 Section 5.1.3, the acronym TSP should be PM10.	Correct. It should be PM_{10}.
Gov	Document B.3: Impacts dealt only with the expected excessive PM10 levels. This neglects any increase/decrease in the particulate burden on a larger scale. Modeling work does not address PM2.5. A statement qualifying the conclusions would be in order.	PM 2.5 has been evaluated in the updated RWDI Air Quality Assessment report.
Gov	Document B.11: Model involves thermal plume, may be hot or cold. The model is described summarily and no model validation is provided.	A thermal Dynamic Impact Assessment was not part of the declaration order. As a result of public comments - RWDI used this model to assess the impacts of the road on temperature in the Valley. There is little demand for this type of model.
Gov	Canada/Us AQA: it would have been desirable if modeling results had been used to provide an estimate of at least total primary emissions for as many pollutants as possible, in context of the overall regional emissions, to facilitate this determination.	In the updated report, new pollutants of interest have been added including PM 2.5 and VOCs. Both are of regional interest.
Gov	Report B.12: Page 4: omits CO2, since this greenhouse gas was not considered by the model used for this table. An opportunity has been missed to extend the modeling effort to provide an estimate of the greenhouse gas impact.	CO2 was not part of the Terms of Reference for the Air Quality Study reviewed by government agencies and the public.
Gov	The lack of impact on Red Hill Creek of the 30% reduction in recharge	The Red Hill Creek Expressway Impact Assessment – Hydrogeological Component (Blackport & Associates, 1997) presented additional data relating to baseflow and streambed piezometers specific to the Red Hill Creek valley. The reach specific baseflow data in 1997 did not demonstrate groundwater discharge within Red Hill Creek adjacent to the permeable sand deposits noted above. Streambed piezometers installed along this reach and further downstream did not demonstrate the upward hydraulic gradients necessary for groundwater discharge. It was also noted that the Creek substrate and deposits immediately adjacent to the creek consisted of silty clays and that the hydraulic connection was not considered good. Given the above discussion it was presented in the DSR Vol.2 that a 30% reduction in discharge may occur in the groundwater sensitive area, more specifically the permeable sand deposit.
Gov	Several adjustments to the modeling data was required by RWDI. Revised emission estimates by RWDI, particularly respirable particulates must be included in the Cantox Report.	The Health Impact Assessment Report has been revised based on RWDI's updated modeling. However the Ministry has indicated that they will not be reviewing the updated Report. The report will be submitted to the Public Health Department.
Gov	Important to recognize the recent work of R.Burnett and therefore the possible inclusion of health effects in the assessment, due to the gaseous pollutants	Comprehensive discussion of the effects of urban air quality on human health are appended to the final report including work done by Rick Burnett.
Gov	No attempt to quantify the benefits to the communities which will see less traffic. No attempt to assess the improvements in air quality near these roadways (Centennial Parkway) and the subsequent health benefits that might be achieved for these communities.	The Terms of Reference for the Air Quality Study were circulated and reviewed by Provincial and Federal Agencies. The updated Air Quality Impact Assessment Report includes an assessment of Centennial Parkway.

Gov	Meteorological Data: Report indicated that it was necessary to combine two data levels to reduce the number of data-hours with zero wind speed. While modeling limitations are very low wind speeds are well known, the level combination approach is unusual.	The wind speeds may be lower at the MOE's Woodward Ave station due to differences in elevation and exposure, relative to the Hamilton Airport. The MOE's station is near Hamilton Harbour; where as the Environment Canada station is on the escarpment. Lower wind speeds would yield higher predicted concentrations. Winds at the Woodward Ave. Station were found to agree well with measured wind speeds in the valley.
Gov	It should be noted that the valley portions of the project will have somewhat different wind regime, with more common wind directions parallel to the valley.	A comparison was made between coincident hourly wind speed and wind direction measurements in the valley and at the MOE's Woodward Ave. station. There was good agreement between concurrent readings collected at both sites, See Section 4.3 of RWDI's Pre Construction Ambient Air Quality Monitoring.
Gov	One years data is used for the modeling, The US EPA recommends five years of data for such purposes	The US EPA CAL3QHCR dispersion model does not allow more than one years worth of data to be used. RWDI reviewed 5 years of meteorological data and selected a year with the highest frequency of calm events and stable atmospheric conditions- both of which represent adverse dispersion conditions.
Gov	Use of lower wind speed is expected to produce more conservative estimates overall. This suspect underestimate of speed probably compensates for the shorter-than-desirable dataset. These suspected wind direction differences indicate that the results would be interpreted more broadly.	As discussed above, RWDI evaluated and found the meteorological data used in the model was appropriate.
Gov	Report indicates that solar radiation data was used with tower measurements to estimate stability class. The report does not indicate the source of the data. It was not apparent how mixing heights were derived.	Radiation data are taken from the AES - Downsview meteorological station. The EPA practice allows the replacement of any element that is not measured at the site (cloud cover, cloud opacity, radiation.). This was the closest station with the available element. The calculated stability class distribution is quite similar to the Toronto Pearson Int'l Airport based on the same period and Pasquill-Gifford scheme. The SRDT method produced more stable and fewer unstable conditions, what will lead to a slight underestimate of concentrations for the ground based release.
Gov	I did not see any mention of the new noise barrier at the Burlington Street to Woodward Ave. Ramp area.	This issue has been addressed, please refer to the Technical Report for any more information.
Gov	(Note: I have not seen RWDI modeling report) Increased truck traffic and the emission increase associated with this was not addressed appropriately as input to the atmospheric models. This is necessary to obtain a realistic health impact estimate due to the Expressway	The traffic analysis has been completed and is available on the City's website. www.hamilton.on.ca.
Gov	First document contains little information on the potential noise impacts which will be generated by the Expressway. (RWDI)	Draft Summary Report Vol. 1 dealt with existing conditions. Draft Summary Report Vol. 2 addressed impacts.
Gov	Air quality reductions may necessitate the relocation of the Glencastle soccer Fields, and the City should be compensated at the market value of replacement lands and/or for any development work.	As a result of the draft air quality report (1998) the former Region worked with former City staff to find alternate locations for the soccer fields at local schools.
Gov	Would like to review the proposed report containing the protocol for traffic noise monitoring of the constructed Expressway.	The post construction traffic noise monitoring protocol will be developed in a separate document and submitted to the MOE for review.
Gov	On Page 8, The noise levels will not increase significantly because the widening is not significant and the road traffic volumes are not expected to increase significantly with the addition of the RHCE traffic, not because "they are already high".	This has been accounted for in the Vision 20/20 scenario.
Gov	On Page 22, there is a reference to noise on page 14, but no noise discussion could be found.	No, auto emissions do not have a positive impact on the air quality, only the reduction of auto emissions can cause that effect.
Gov	Page 27, Mitigation. MTO will consider construction of a noise barrier for the homes on Nash Road under its Noise Barrier Retrofit Program and not because of increases in levels due to this project.	The text has been modified to reflect this comment.
Gov	Congestion will occur and the speed limit will be exceeded, both of which will lead to increases in the emissions for the roadway. This will result in an underestimation of the health effects for the Expressway.	A new congestion scenario has been added to the updated air quality assessment report.
Gov	The lack of a regional analytical framework has also permitted the dismissal of the ozone issue. The narrow scope of the study has eliminated the consideration of an important issue. SO2, CO and NO2 need to be included in the assessment of health impacts for a variety of reasons.	The Terms of Reference for the Air Quality Study were circulated and reviewed by Provincial and Federal Agencies. The Health Risk Assessment Study has looked at CO, NO2 and SO2 impacts. By 2007 when the road is expected to be constructed, levels of sulphur in fuel will be substantially reduced in gasoline to reduce emissions of SO2.

Gov	Both the provision of new roadways and the removal of a significant green space and 10s of thousands of trees have impacts that need to be viewed from a climate change perspective.	The city of Hamilton recognizes that trees play an important role in Climate Change. The removal of trees and vegetation is addressed in the Terrestrial Report and the Draft Landscape Management Plan.
Gov	The mitigation strategies discussed are at best of limited benefit, and give a false impression that they would reduce the impacts of the expressway.	Mitigation proposed is typical for air quality impacts associated with roadways.
Gov	The Cantox report: they note that scientific literature cannot be used to address the issue of the increased personal PM0, exposure and health effects attributed to PM, they then proceed to make and present detailed calculations as to the additional health burden imposed by increases in personal exposure on local users.	The air emissions inventory analysis only considered tailpipe emissions. Some particulate matter (PM) is discharged from tailpipes ;however, the majority are released from the roadway surface. As such, any particulate matter emissions calculations would be underestimated. The IMULATE model developed by McMaster did not provide information on roadway surfaces; therefore, roadway particulate matter was not estimated. The air quality report provides a detailed assessment of PM. See Sections 2 and 3 of the final Air Emissions Inventory report.
Gov	Vehicle Emissions: the scope of report B.12 is limited to hydrocarbons, carbon monoxide and nitrogen oxides. What about particulate matter?	The air emissions inventory analysis only considered tailpipe emissions. Some particulate matter (PM) is discharged from tailpipes; however, the majority are released from the roadway surface. As such, any particulate matter emissions calculations would be underestimated. The IMULATE model developed by McMaster did not provide information on roadway surfaces; therefore, roadway particulate matter was not estimated. The air quality report provides a detailed assessment of PM. See Sections 2 and 3 of the final Air Emissions Inventory report.
Gov	Scenario 1: Report concluded on 52% and 143% of those using Centennial Parkway. Where do the values of %52 and %143 come from? These values are not reflected in the Table 4. Grade effects were not taken into account.	Based on the Table 3 presented in the RWDI report, pollutant emissions from a single vehicle using the north-south portion of RHCE were predicted to range from 52% to 143% of those using Centennial Parkway. The percent change in Table 3 is defined as, for example for CO, ($CO_{\text{Centennial Parkway}}$ - CO_{RHCE})/$CO_{\text{Centennial Parkway}}$. So, a 48% change represents 52% of those vehicles using Centennial Parkway, or 43% represents 143% of those using Centennial Parkway.
Gov	Scenario 2: Travel via RHCE versus Highway 403/QEW. Report concluded pollutant emissions from a single vehicle were predicted at 46% to 71%. Where do these values come from? Grade effects were not taken into account?	Based on the Table 4 presented in the RWDI report, pollutant emissions from a single vehicle using the north-south portion of RHCE were predicted to range from 46%(1-54%) to 71% (1-29%) of those using Highway 403 and QEW.
Gov	How are mixing heights derived?	Mixing Heights were derived based on the mean monthly values (i.e: contour lines) from "A Mixing Height Study for North America (1987-1990)" Environment Canada, December 1996. Those values were processed through MPRM meteorological processor for hourly calculations of mixing heights. As the reviewer noted, the CALINE (CAL3QHCR) model is not sensitive to mixing heights. So, any uncertainty in this parameter will not influence the predicted concentration levels. See Section 4.
Gov	CALINE user manual 8.1.7: " The model should not be used in areas where the terrain in the vicinity of the highway is sufficiently rugged to cause significant spatial variability in the local meteorology." This must be considered in interpreting the results.	Complex terrain can produce different flow conditions in the valley and that could be reflected in the predicted concentrations. It is important to note that the predicted contour line shape can differ from those presented in the report, but the levels of predicted concentrations should not change significantly. Section 7 provides a qualitative discussion of the effect of roadway grade changes on vehicular emission rates.
Gov	"background" PM concentration used (p.23) is not appropriate for this location. Urban sources are too close. An upper percentile value would have been more appropriate.	The Updated Air Quality Impact Assessment Report includes a Combined Effects Analysis report which considers all combinations of coincident predicted and measured hourly contaminants over the entire year rather than a fixed high background value.
Gov	Modeling was done without deposition. This neglects deposition into the potential fish habitat of Red Hill Valley Creek.	The focus of the study is on airborne contaminants. The Terms of Reference reviewed by the Ministry of the Environment and the public, do not include deposition estimates in the Red Hill Valley Creek.
Gov	Some discussion is warranted of the assumed "silt content of road dust". (p30) suggests that one value was used for the entire expressway (0.5g/m2). This value may be too high for much of the project- suggest using 0.1g/m2.	This has been addressed and updated to reflect current U.S. EPA values. See Section 4 of the updated Air Quality Assessment report.
Gov	If the measured results are used to refine the predicted results for the RHCE, will the 24-hour TSP and PM10 AAQC still be exceeded?	Not necessary to do so since the report is using updated U.S. EPA values.
Gov	Maximum 24-hour TSP concentrations are predicted to exceed the provincial criteria at most of the receptor locations. Is this acceptable? What is maximum 1-hr TSP value?	See modeling results Section 5 of the updated Air Quality Assessment Report.

Gov	AAQC will be exceeded at least 13% of the time at most receptors. Is this acceptable? What are maximum PM10 values?	See modeling results Section 5 of the updated Air Quality Assessment Report.
Gov	The actual location of high impact zones should be checked for dependence on wind direction. What are effects on residential areas in light of these comments?	The CAL3QHCR dispersion model accounts for wind direction. The Health Risk Assessment Study identifies impacts to residential areas.
Gov	EMISSION RATES FOR PM10: On page 22 and 30, the authors do not reference the source of the data, but is probably from US-EPA emission factor document. 2.In AP-42 The worst-case value 0.5g/m2 used is only an estimate. It might be more applicable to the expressway ramps and connecting roadways with a lower value of 0.2 g/m2 . 3. Even with a silt loading of 0.5g/m2 I don't understand how an emission rate as high as 13.41g/m2 was calculated for PM10.	In the absence of silt loading data applicable to the climatological conditions of southern Ontario, U.S.EPA AP-42 emission factors for paved roads (AP-42) were referenced [1]. A silt loading value of 0.5g/m2 was selected since this represents worst-case silt loading conditions for high ADT roads (at least 5,000 vehicles per day.). The silt loading value of 0.5g/m2 and the parameters listed in Table 11 were applied to the PART5 model. The PM10 emission rate was calculated to be 3.0g/VMT. This emission rate was applied in the CAL3QHCR modeling for PM10, as presented in RWDI's draft air quality assessment, dated May 15, 1998 (Reference #97-207-6GEN). The PM10 emission rate presented in Table 12 was a misprint. As mentioned by Dr. Bloxam, a silt loading value of 0.5g/m2 may be too conservative since post winter storm salting and substantial mud/dirt carryout conditions would likely occur infrequently along the Red Hill Creek Expressway. Between the QEW and Queenston Road: 0.2g/m2 will be applied to reflect potential mud/dirt carryout from the high level of industrial activity nearby. Between Queenston Road and King Street: 0.139g/m2 will be applied. All expressway on/off ramps: 0.1g/m2 will be applied to reflect lesser traffic volumes and slower speeds. Between King Street and Greenhill Avenue: 0.77g/m2 will be applied to reflect the adjacent residential area and green space; South of Greenhill Avenue: 0.015g/m2 will applied to reflect the adjacent green space (SEE TABLE 2)
Gov	USE OF AMBIENT AIR TSP/PM_{10} RATIO: In the report, the observed ambient air ratio of TSP to PM10 was used to scale the PM10 model results to give the impact on TSP concentrations. This methodology assumes that vehicle related emissions dominate both the TSP and PM_{10}.	For the updated air quality assessment (Reference #02-1387A), PM10 model results will not be scaled to predict TSP concentrations. TSP concentrations will be predicted directly by the CAL3QHCR model using the emission factors provided in Section 4.
Gov	OZONE LIMITING METHOD: This method can only be used when a comparison is being made with a NO_2 ambient air criterion. Calculation must take into account the fraction of the emissions, which could occur as NO_2.	The Ozone Limiting Method was applied to predict ambient NO2 concentrations to compare to the MOE's 1 hour Ambient Air Quality Criterion (AAQC) for NO2. The calculation assumed that 10% of the NOx emissions would occur as NO2.
Gov	Pages 28 and 29, the calculations of maximum likely hour average NO_2 concentrations must be considered.	For the updated air quality assessment, NOx emissions will be based on the US EPA's MOBILE6 model. Where total NOx levels are predicted to exceed the 1-hour AAQC, the Ozone Limiting Method will be applied to predict downwind NO2 concentrations for the remaining 90% of NOx emissions.
Gov	OTHER COMMENTS: The wind rose as its presented must be directions blowing towards rather than from.	The wind rose presented in the draft air quality assessment, dated May 15 1998 (Reference#97-207-6GEN) represents the wind flow or the direction that the wind is blowing towards instead of from. The wind rose will be revised to show the origin of the wind direction. It should be noted that the wind direction data was applied correctly in the CAL3QHCR dispersion modeling.
Gov	Vehicle Fleet Mix (Table 10) Is the vehicle mix determined from local data, or is it from files already in MOBIL5C? The percentage seems high.	The vehicle mix applied in the assessment is the default from MOBILE5C. For the updated air quality assessment, the default values from MOBILE6 for the vehicle fleet mix will be applied.
Gov	The sulphur content of on-road diesel is regulated to be 500 ppm or less.	The sulphur content of fuels was regulated to be 500ppm or less. As stated in the report, the SO2 emissions are very small relative to those of CO and NOx. Therefore, concentrations of SO2 were not predicted. In fact, since the time of the 1998 report, Environment Canada has announced further proposed reductions to the limit of sulphur in fuels. By 2005 the limit will be reduced to 30ppm in gasoline from the current 150ppm and 15ppm for diesel fuel in heavy-duty trucks. This will be commented upon in our 2002 report.
Gov	Are the variations in the concentrations predicted for receptors, due to the exact location of the road links?	CAL3QHCR can accept only 120 roadway links. Because of this constraint, some sections of the roadway were modeled as straight sections, where in fact there may have been a slight bend in the road (e.g. link section 68-69). Any variations in concentrations predicted for receptors in close proximity to each other and equal distance from the roadway are due to this simplification. For the updated Air Quality Assessment, CAL3QHCR will be modified in order to increase the number of links from 120 to 176 so that the proposed roadway alignment can be more accurately reflected.

Gov	(Page 30-31)The PM_{10} emission rate used as well as the location of roadway links relative to receptors could be the main cause of the high values predicted.	For the updated air quality assessment, the particulate emission rates previously discussed will be applied to reduce the conservatisms in the modeling.
Gov	The two way traffic volumes on HWY 404 were found to be about 15, 000 during the peak PM rush hour.	The statement is correct.
Gov	Measured TSP values along the Conestoga Parkway were much lower then modeling estimates indicated for the Red Hill Creek Expressway.	The particulate modeling will be updated for the updated air quality assessment based on more typical emission factors. The updated modeling results will be compared to ambient monitoring data from Conestoga Parkway and other appropriate monitoring programs such as the MOE's Hwy. 403/Main St. Station in Hamilton.
Gov	On page 27, the NOX half-hour point of impingement standard of .25 ppm was exceeded.	According to the Ontario Environmental Protection Act's Regulation 346 the point of impingement standards do not apply to motor vehicles (section 5, paragraph 1). Therefore a comparison of NO_x concentrations to the POI standard was not conducted.
Gov	Traffic Noise Impact Assessment Report contains numerous deficiencies both in its technical quality and completeness of information: (RWDI)	As the Expressway has already been approved (i.e. has already undergone an Environmental Assessment and work is progressing under an Exemption Order), the purpose of this Traffic Noise Impact Report was to update the noise impact modeling work performed for the original assessment as an aide in mitigation design, and not to prepare a full assessment document as would be required under a new Environmental Assessment. RWDI
Gov	Uncertainty with regards to the actual increases in sound levels which occur as a result of the Expressway. (a) Are the measured sound levels a true representative of existing levels? (b) Transient noise sources have been included. (c) Some measurements in Appendix C were conducted under extreme conditions. (RWDI)	Measurements are appropriate in determining existing sound levels since the majority of the proposed route is through green space with no existing road. Comparisons with noise measurements conducted as part of the original 1980 Valcoustics study show that the sound environment is consistent and RWDI's data is representative. Transient noise sources were excluded in determining ambient sound levels. All measurements were in compliance with NPC-102 , NPC-103 and QST-A1 procedures.
Gov	We are uncertain as to the extent of the traffic noise impacts which will be a result of the Expressway. Simplify the table. (RWDI)	As the Expressway is already approved, the purpose of the assessment was to identify areas where mitigation should be investigated, not to identify all receptors where impacts (i.e., sound exposure increases greater than 5 dB) would occur. Therefore, assessing impacts at the worst-case closest receptors is appropriate to determine which locations warrant mitigation. Noise impacts were examined at appropriate receptors including residences and schools.
Gov	Section 5.2 should refer the reader to an Appendix containing sample calculations of the noise impacts. (RWDI)	Sample calculations are provided.
Gov	Section 5.2 should indicate the indirect noise impacts the Expressway may have on the local community. (RWDI)	Significant changes in traffic volumes from existing conditions were predicted to occur only for some segments of Mud Street and Greenhill Avenue. Sound exposures along Greenhill may increase by as much as 5 dB, which is considered to be a just noticeable difference. Portions of this area have been included in our assessment (Segments S5-L2 and S5-L3), and a noise barrier was recommended. Sound exposures along Mud Street may increase by as much as 9 dB along some segments of the roadway. Sound exposure decreases are predicted along other segments. However, all development in the area has been built since the Expressway was approved, and the impact of Mud Street as a major arterial roadway was considered in the updated RWDI noise assessment.
Gov	Reasons why shorter noise barriers are being proposed should be indicated. A typical scenario could be used. (RWDI)	The examination of required barrier heights presented in the report are part of an initial investigation of mitigation feasibility only. The feasibility of barriers and required barrier heights and locations will be re-analyzed and updated during the detailed design phase for each major segment of the roadway. Shorter barriers were proposed along a number of Expressway locations where shorter barriers would provide sufficient attenuation to meet guideline requirements. A 3 m limit was chosen for property line barriers and a 4 m limit chosen for barriers along the Expressway right-of-way as "higher barriers render diminished improvements in attenuation and become increasingly difficult to maintain". Highway right-of-way barriers are not feasible for most locations, due to the elevated nature of most receivers. Construction of noise walls higher than 4 m is not typically done because of the difficulty in construction. A typical scenario is provided.
Gov	The full impacts of the predicted reductions in air quality for PM_{10} and TSP have not been fully explained. Even after mitigation, will these concentrations be below provincial standards? (RWDI)	The updated Air Quality Assessment report will have maps which will show directly the areas most affected and the extent of the impacts.

Gov	The report does not address the relationship between the air quality predictions and the proposed and existing trail systems, and potential impacts to users. Should mitigation measures be investigated, such as posting of signs?	The updated Health Impact Assessment Report addresses the impacts to users of recreation areas adjacent to the road and the Valley. There is a Landscape Management Plan for reforesting areas within the Valley which will help to reduce mobile pollutant levels. Ramp sweeping has also been recommended by RWDI to reduce particulate emissions from the expressway.
Gov	Understand the provincial objective for outdoor sound levels is the higher of 55 dBA. (RWDI)	This information is correct.
Gov	Sensitive areas where noise levels will exceed 55dBA should be identified as soon as possible, to ensure mitigation can be appropriately addressed. If some areas cannot be mitigated using barriers they should be identified. (RWDI)	The tables in the updated noise report show areas where future sound levels exceed 55 dBA and also indicate areas where a preliminary assessment conducted by the City indicates where barriers may not be feasible.
Gov	Not all sensitive land uses abutting the expressway are included in the mitigation mapping of noise wall studies. Report should clarify areas where mitigation is warranted due to noise increases. (RWDI)	Mapping has been revised to indicate all receptor locations.
Gov	The report does not address the potential impact of the noise level predications and the proposed and existing trail systems. (RWDI)	The noise model does not provide contours and hiking trails are not considered 'sensitive land uses' in Ministry of the Environment and Ministry of Transportation guidelines. However noise impacts can be inferred from distance between the trails and the road.
Gov	MITIGATION: It could be noted that further improvements to air quality would occur if transit use increased.	This has been accounted for in the Vision 20/20 scenario.
Gov	NET IMPACT: Could the sentence be modified to say that there will be a positive impact on air quality from auto emissions?	No, auto emissions do not have a positive impact on the air quality; only the reduction of auto emissions can cause that effect.
Gov	LOCAL AIR QUALITY: Impact without mitigation: Does this section say that the findings for PM_{10} and TSP are high in comparison with the Highway 404 findings? If it does, could the wording be changed to say this more simply?	Yes, this is what is meant. Clarification of this statement will be made in the updated version of the air quality report. As well, additional monitoring results from stations near comparable roadways will be presented.
Gov	AIR QUALITY: The control of pollutants needs to be focused on industry and transportation. Despite mitigation the proposed highway will increase TSP and PM10 levels. These mitigation measures will not offset increasing air pollution problems.	The air environment in Confederation Park is currently dominated by vehicular emissions from the QEW and the industrial area to the northwest. (RWDI) Apart from the ramps leading to and from the RHCE, which were included in this assessment, analysis of the impacts of the QEW was beyond the scope of the current study and no concluding comments can be made regarding the impacts on Confederation Park.
Gov	NOISE: Increases to noise levels as a result of the completed highway are inevitable. The possibility of utilizing architectural/landscape noise attenuating solutions close to existing buildings and outdoor spaces should be investigated.	The impacts of increased noise on wildlife were not assessed independently in EA studies. Nonetheless, noise was identified as a factor that will indirectly impact wildlife behaviour (refer to definition of Indirect Impact Zone in DSR Volume 2). There is a growing body of literature on the effects of road noise on wildlife. The Final Report will summarize wildlife categories and areas where noise is expected to have a significant impact. It should be noted that noise is already a significant constraint in the QEW corridor. The feasibility of various noise mitigation measures, including noise walls, berms, and architectural landscaping solutions, will be investigated during the detail design phase. Current MTO/MOE policies do not call for off right-of-way mitigation (i.e., retrofitting of existing buildings using special windows and/or façade constructions) for new highway construction. Such techniques are usually used for controlling noise impacts in new residential developments only.
Gov	Since RWDI's scenario is to assess emissions on the highways, the vehicle refueling loss should not be included in the emission rates, it was not mentioned in the reported.	The refueling losses have not been included in the updated Air Quality Assessment report.
Gov	Since MOE has lower emission rates than RWDI for CO and NOx, the trip emissions in MOE base case would be lower that the RWDI's values in tables 3 and 4 of the draft report.	Agree with comment.
Gov	As for HC, MOE emission rates are lower than RWDI and more significant in the 90km/hr speed. The MOE base case estimation would result in even lower trip emission in high speed, thus the larger percentage change in HC emissions for LDGV and LDGT.	While the absolute magnitude of reduction from the RWDI worst-case and MOE base case is somewhat different, the percentage change in emissions, as shown in Tables 3 and 4 of the report, is similar for CO and NO_x. The MOE predictions result in larger percentage reductions for HC emissions for light duty gas cars and trucks. Therefore, relative to the MOE values, the RWDI predictions are conservative and will underestimate the potential changes.

Gov	We could not verify the typical fuel thermal content of 36 MJ/L given on page 6 under 3.2 Modeling assumptions. Which of their referenced has this?	The typical fuel content of 36 MJ/L is a reference, inadvertently not included in the list of references. The missing reference is: "Introduction to Internal Combustion Engines" by Richard Stone, which provided the energy content per unit mass of various fuels. This has been added to the list of references in the updated report.
Gov	Worst-case conditions are outlined and indicate a vehicle speed of 90km/h. It is better to assume that a jam of stop and go would truly be worst case.	RWDI modeled two cases: (a) a calm, clear nighttime condition to examine how the roadway would cool down to lower temperatures than the surrounding environment due to radiative cooling; and (b) a calm, clear mid-day condition to examine how the roadway would heat up due to warmer temperatures than the surrounding environment, solar heat and heat from vehicles. For the nighttime condition, the worst-case scenario was no traffic, since only traffic would add heat and retard the cooling of the roadway surface. This case was illustrated in our report. For the daytime condition, the worst-case scenario for thermal effects was the peak hour traffic volume moving at the posted speed of 90 km/h, combined with maximum solar radiation. Normally, the peak traffic hour would not coincide with maximum solar radiation, but we combined the two as conservatism. Similarly, traffic jams would not necessarily coincide with maximum solar radiation.
Gov	Only the nighttime scenarios was during an inversion but when traffic is light. Both Summer Daytime and Spring/autumn nighttime scenarios indicated negligible thermodynamic impacts of the roadway.	Most inversions are the result of radiative cooling of the ground over night. Under this condition, the roadway surface would initially be cooler than the ground surface in the surrounding environment. Once traffic picks up during the morning rush hour, the road surface would begin to be warmed by heat from the vehicles. Since the roadway was cold to begin with, the end result would not be an exceptionally hot surface, but one that is only slightly warmer than the ground surface in the immediate surrounding environment. The roadway would also not be significantly warmer than any number of other streets and roadways in the area, which would also be experiencing the morning rush hour. Any resulting vertical air circulations would be small in scale and would not by anywhere near the required vertical dimension to cause fumigation of pollutants trapped in the polluted boundary layer.
Gov	Perhaps a lake based all-day type of inversion scenario would have been better to look at. Will this road with say a traffic jam, induce or intensify a lake breeze inversion? There are 2 possible worst-case situations which could arise.	The scale of vertical circulations that form over the roadway will not be anywhere near the required size to induce a lake breeze. At the same time that the RHCE is being warmed by vehicle traffic, numerous existing roadways in the area are also being warmed by traffic. Consequently, the RHCE will not stand out as a significant heat island. Temperature gradients will exist between the roadway surface and the ground surface in vegetated areas adjacent to the highway, as demonstrated by our modeling. On a larger scale, however, there will not be any significant temperature gradients produced by the expressway, since there is already an extensive network of roadways in the area.
Gov	During an inversion occurring simultaneously with a traffic jam, the road becomes a very hot line source. This leads to rising/falling air currents which could cause fumigations of pollutants from the polluted boundary layer.	The scale of vertical circulations that form over the roadway will not be anywhere near the required size to induce a lake breeze. At the same time that the RHCE is being warmed by vehicle traffic, numerous existing roadways in the area are also being warmed by traffic. Consequently, the RHCE will not stand out as a significant heat island. Temperature gradients will exist between the roadway surface and the ground surface in vegetated areas adjacent to the highway, as demonstrated by our modeling. On a larger scale, however, there will not be any significant temperature gradients produced by the expressway, since there is already an extensive network of roadways in the area.
Gov	During light southerly winds, the hot line source could split the main cell and could split the main cell and could possibly induce a lake breeze inversion. This could cause high pollution perhaps determine the frequency of this. We suggest a few dates from the meteorological database to select for the task.	The scale of vertical circulations that form over the roadway will not be anywhere near the required size to induce a lake breeze. At the same time that the RHCE is being warmed by vehicle traffic, numerous existing roadways in the area are also being warmed by traffic. Consequently, the RHCE will not stand out as a significant heat island. Temperature gradients will exist between the roadway surface and the ground surface in vegetated areas adjacent to the highway, as demonstrated by our modeling. On a larger scale, however, there will not be any significant temperature gradients produced by the expressway, since there is already an extensive network of roadways in the area.
Public	If a decline in air quality is expected to lead to the closure of Glen Castle Park, then people who live next to the Park will be negatively affected.	The updated Health Impact Assessment Report results, indicate there will be very low impact as a result of air quality at this location. Nevertheless the soccer fields are being relocated to accommodate a noise berm and stormwater management pond.
Public	Cantox used information and data supplied by the Region and RWDI reports, but the RWDI reports have a number of problems in them. As well, Cantox is critical of the RWDI reports and points out seven uncertainties introduced by	The traffic data and RWDI's report has been updated based on current scientific research and data.

	the RWDI modeling.	
Public	There is insufficient data in the RWDI reports to deduce and estimate of 8-hr max concentrations. Close consideration and a reanalysis of the risk assessment using the 1-hr and 8-hr levels for the case study exposures those who frequent the valley, is warranted.	24-hour averaging is consistent with health Risk Assessment practice. The only information available for CO and NO2 are in 1-hour averaging. Refer to the Carbon Monoxide section in the Final Report. The perponderous data that relates to health impacts, described in published literature, are based on 24-hour averages.
Public	Since sulphur dioxide has been left out of the analysis, and the effects of carbon monoxide, nitrogen dioxide and ozone have been minimized, it is clear that the adverse health impacts of traffic have been grossly underestimated.	Additional review of published literature and scientific opinion on health impacts of mobile emissions are addressed in the Cantox final Health Risk Report.
Public	Consideration of the concentrations and impacts around school zones needs to be done explicitly.	RWDI prepared estimates of predicted impacts at 14 discreet receptors which includes school zones and sidewalks used by school children. Impacts around school zones has been explicitly done in the Cantox report.
Public	The health effects impacts in the Cantox report are clearly rather low if you believe Dr. Burnett's recent data (Health Canada).	Effects from changing roadway grade, traffic speeds and free flow and queuing conditions were evaluated in the air quality assessment. Cantox evaluated the health effects.
Public	Based on Burnett's recent findings, the health effects impacts of emissions from vehicles on the Red Hill Creek Expressway will be significantly greater than estimates provided in the Cantox Report. Second, projected increases in the total number of vehicles and the increased number of trucks over the next 5, 10 and 2 years have been addressed in a most conservative manner.	Since 1998 there has been a lot of research done to clarify these issues raised by Rick Burnett. The updated Health Impact Assessment Report outlines current research in the field and shows how these pollutants have been addressed. Refer to the Appendix.
Public	It is my view that the projections in the reports underestimate by a significant margin the long-term trends in both vehicular emissions and their accompanying health effects impacts.	The final Health Impact Assessment Report has addressed NO2, VOCs and fine particulate matter as well as the long-term health effects.
Public	Are there different types of sound walls and road surfaces which could be used to mitigate noise? What are the costs of these options?	Refer them to the technical report
Public	On June 11, 1998 the Regional Chair stated that the City has committed to establishing permanent air quality monitoring stations in the Valley (# yet to be determined). Where will these station(s) likely be located? Will the City provide funding to the Ministry of Environment to maintain/run these station(s)?	The City has developed a monitoring program for pre, during and post construction and this has been supported by the Ministry of Environment. In the Design stage, additional monitoring will be considered based on the community comments received to date. Sites such as the Elizabeth Bagshaw School, Greenhill recreational fields (near Rosedale Arena) and trail areas have been suggested.
Public	Posters and other forms of communication should be utilized to explain to residents exactly what kind of noise increased they can expect and the affects this might have on them.	When the detailed mitigation is developed in the Design stage it will possible to communicate this to the residents more accurately.
Public	Noise impacts will reduce residents' property values. Will residents receive compensation for this?	At this point, no decision has been made on detailed mitigation. Detailed mitigation for noise impacts will be developed in the design stage and residents will be consulted then.
Public	Concern that if there are cost over runs, noise barriers will not be put up.	The City is committed to constructing noise barriers where they are technically, economically and administratively feasible. A detailed noise protocol will be developed in the Design stage and the community will be consulted.
Public	There should be sound barriers on any/all parklands. Trees should be planted all along highway corridors as a noise barrier.	The mitigation for noise will be detailed in the design stage. The effectiveness of trees for noise reduction depends on several factors including topography, width of trees planted and type of trees. It may not be possible to use trees as noise barriers in all locations.
Public	Given the high PM10 levels predicted, the highway should not be built.	The final Health Risk Assessment outlines the potential health risks associated with PM10.
Public	How many people live within 200 meters of the expressway and will be impacted by a decline in air quality?	The City does not consider it necessary to move people as a result of predicted air quality.
Public	10 dBA increase in noise levels is unacceptable.	There are provincial guidelines for what is considered to be a noise increase that warrants mitigation. The City is using the Ministry of Transportation Noise Protocol in determining where and how noise can be mitigated.
Public	I could not discern from the reports how these numbers referring to traffic flow and relative numbers of cars and trucks, were arrived at or what data was used to justify	The Region's traffic analysis data was provided to RWDI for the air quality assessment modeling. Cantox used the data from the air quality modeling. The traffic data has been updated by iTrans and the air quality and health

	these assumptions as reasonable.	risk assessment studies have been updated with this information.
Public	Have there been any studies done on current noise levels for the East-West portion of the Expressway?	Post-construction monitoring has been carried out. Results: all of the monitoring was at or below expected noise levels with the exception of one location. In this area the noise wall was reconstructed to sufficient height to reduce noise to an acceptable level.
Public	Page 3. The HAQI model inputs are all from the Region with no rationale or evidence in sight.	The Air Quality Impact Assessment Report has clarified the assumptions used in the analysis.
Public	The traffic estimates in the report are very conservative and it is highly probable that these levels will be reached sooner than in the report's timeframe.	A detailed discussion of net impacts is provided in the Combined Effects Analysis in the updated Air Quality Impact Assessment Report. The Combined Effects Analysis shows the frequency of exeedances of provincial standards.
Public	Concern that trucks and trains may be carrying hazardous waste through residential areas during the clean up of contaminated sites	Hazardous waste will be transported during the excavation on the Rennie Street landfill. This will be done by a licensed hazardous waste transportation company (trained drivers and emergency response equipment and procedures). Based on the lack of rail access at waste disposal sites, the waste will likely be transported by truck. During the detailed design process, alternate routes to City residential streets will be investigated. The following mitigation will also be considered (where appropriate): avoiding early and late hour traffic; accommodating school hours and using crossing guards; cleaning vehicles before leaving the site; street sweeping; transporting the waste in covered vehicles; using well-maintained vehicles; doing the work during winter months.
Public	Concern that noise receptor sites have not been established in areas where birds reproduce. It has been shown that noise affects bird reproduction.	There are currently two noise receptor locations. Noise generally affects bird reproduction when noise levels are great enough to mask out bird mating calls. The impacts of noise on specific bird populations would vary since the band frequency at which they hear at, is different for each specie. The noise mitigation table can be referred to for proposed strategies to encourage positive reproductive results from the bird populations, such as noise barriers, and reforested habitats elsewhere.
Public	What impacts will noise increases have on wildlife?	Noise was identified as a factor that will indirectly impact wildlife behaviour (refer to definition of Indirect Impact Zone in DSR Volume 2). Birds have been the primary focus of study in recent literatures, more so than any other specie of wildlife, and therefore limited information is available. Birds may have a decrease in reproduction, migration, and availability of food & shelter. It should be noted that noise is already a significant constraint in the QEW corridor.
Public	Concern that the air quality models did not take into account the new development and traffic volumes which will occur on the mountain as a result of the Expressway	iTrans most recent traffic report reflects both the current and future development on the mountain.
Public	Do the air quality models take into account present pollution levels?	The air quality model takes into account data received in 2001.
Public	Was turbulence from vehicles factored into the air quality predictions?	Turbulence from roadway traffic. The U.S. EPA emission prediction model PART5, was used to determine the particulate emission rate from the roadway surface. This model takes into account the weight and number of wheels along with the silt loading for the roadway to determine the emission rates. The dispersion model CAL3QHCR, which was used to predict downwind levels of vehicular exhausts, uses a roadway width adjustment to account for the increased zone of turbulence associated with moving traffic on the traveled portion of the roadway.
Public	Did the air quality models take into account the gearing up and down of trucks on the Expressway because of the grade?	Refer to the Air Quality Assessment Report Section 7.
Public	Have possible reductions in pollution as a result of the Drive Clean Program been factored into the air quality models?	Current US Environmental Protection Agency modeling accounts for improvements in fleets, engine efficiencies, as well as the reduction of sulphur in fuel.
Public	Concern that the temperature model does not account for the loss of trees that will result from building the Expressway.	Temperature effects have been assessed and the details can be found in the RWDI Technical Report Thermal Dynamics Assessment. The impact from the loss of trees was considered in RWDI's analyses. Regional temperatures are not expected to change as a result of the loss of trees in the valley
Public	More information is needed on the types of pollutants that were modeled and where exactly the study sites are located.	Refer to the updated Air Quality Assessment Report.
Public	Concern that air quality test sites were not established in natural areas.	The air quality modeling does include concentration contours over an expanded area with 735 receptors in total, taking into account natural areas.

Public	Why wasn't the derivative of benzene, which is found in diesel fumes, included in the air quality models?	There is no ambient air quality criteria specified for benzene in Ontario. Benzene is a component of VOC's which have been modeled. Refer to section 5 of RWDI's updated Air Quality Assessment Report.
Public	Were fine particulates and heavy metals included in the model which predicted that there would be air quality improvements on a Regional basis?	The regional modeling utilized the gaseous portion of tail pipe emissions. Fine particulates were not included due to detailed traffic data for the City (formerly the Region) which is not available, while heavy metals were not included because they do not have emission factors associated with them. (Based on McMaster University Imulate Model.)
Public	Air quality along Highway 20 should be studied.	The Highway 20 Air Quality has been modeled as part of air emissions inventory.
Public	Why do the models indicate that pollution beyond 200 meters on either side of the Expressway will dissipate when Hamilton is impacted by air pollution from Ohio?	The model shows the impacts of the road, the combined effects analysis shows the impact of the road in relation to background air quality levels which would include pollution from the City and in some cases from outside Hamilton.
Public	How accurate are the air quality models?	The U.S. EPA undertook model validation experiments for CO and found that CAL3QHCR (dispersion model) either equaled or over predicted the maximum observed measurement, when unpaired in space or time. Based on a comparison conducted by RWDI of predicted results for CO, PM_{10} and NO_x to measured ambient levels on expressways with similar or additional traffic, the modeled values are generally within a factor of two. Relative to other similarly sized expressways in southern Ontario, the CAL3QHCR model over predicts TSP by a wider margin, up to a factor of four. Refer to Section 6 of RWDI's Air Quality Impact Assessment Report.
Public	The Executive Summary should note the limitations of the model which was used to make the claim that air quality in the Region will improve anywhere from 3% to 16% as a result of the Expressway.	The Executive Summary states that vehicle emissions in the Region will decrease by 3-16%, based on McMaster IMULATE Model. It is difficult to measure the impact of lower vehicle emissions on air quality because there are other factors that affect air quality as well. Refer to RWDI's Air Emissions Inventory Report.
Public	Testing air quality on King Street has nothing to do with Glencastle Park where there is no traffic.	The model provides predictions for the Glencastle Park. Future monitoring could include Glencastle Park.
Public	It should be possible to map the air quality information so that it is more readily understood	Refer to Technical Report for detailed mapping. The Impact Assessment Report Summary will include maps with areas of predicted maximum concentration contours.
Public	How were the prevailing winds determined for the valley?	Based on a comparison of six months of hourly observations in the Red Hill valley at King Street to concurrent measurements at the nearby MOE Woodward Ave Station, the wind speed and wind direction readings were found to be similar. Refer to Section 4 in RWDI's Pre-Construction Air Quality Monitoring Report.
Public	The valley has its own microclimate which needs to be considered.	The microclimate was considered in RWDI's report entitled, Thermal Dynamics Impacts Assessment.
Public	Has there been a study on the air drainage from the escarpment?	Based on a comparison of six months of hourly observations in the Red Hill valley to concurrent measurements at the nearby MOE Woodward Ave Station, the wind speed and wind direction readings were found to be similar. Drainage winds from the escarpment would be accounted for in this survey.
Public	Have "thermals" created by the expressway been considered as micro climate modifiers?	See the Thermal Dynamics Impacts Assessment Report conducted by RWDI, Section 3.
Public	How will the Region mitigate the presence of PM_{10} in the valley and specifically the ball diamonds where our children play?	Fine particulate matter (PM_{10}) is present in the atmosphere all over Hamilton (and southern Ontario) at varying levels, so proposed reductions to remove its presence entirely are not reasonable. Measures to reduce emissions from the RHCE roadway by keeping the entrance ramps clean will be helpful in reducing emissions from the roadway surface.
Public	It is predicted that air quality on a regional basis will improve if the Expressway is built. How was this prediction arrived at?	The regional assessment predicts a decrease in vehicle tail pipe emissions not necessarily an increase in air quality. (McMaster University IMULATE Model)
Public	How did the Region determine that there would be a 3% to 16% reduction in vehicle emissions Region wide? Was the calculation based on the HAQI Report on Human Health Risk Assessment?	The prediction is based on a comparison between Year 2021 emissions with, and without, planned Regional roadway improvements in place. The methodology is discussed fully in the "Vehicle Air Emissions Inventory" report.
Public	Will Region wide improvements in air quality be short term or long term?	There is a predicted decrease in regional gas emissions during peak rush hour periods only, for the year 2021. Please see the "Vehicle Air Emissions Inventory" report and referenced original modeling reports. (McMaster EMULATE Model.)

Public	What kind of temperature increases will occur in the East end of Hamilton as a result of the Expressway?	There are not expected to be any significant changes in the temperature structure on a regional basis due to the construction of the Expressway. Temperature changes due to climatic variability on a continental scale, would exhibit a much greater influence.
Public	What will happen to air quality if the traffic predictions for the Red Hill Creek Expressway are wrong? What impact would there be on air quality if twice as many trucks use the Expressway?	The prediction of air quality impacts are directly related to a number of variables including the volumes and mix of traffic used in the analyses. Therefore any significant change in either the truck mix or volumes of vehicles are not expected to have an impact on the model predictions.
Public	How will air quality be impacted if there are traffic jams on the Expressway?	Vehicle emissions of CO and NOx increase when the engine is idling, as when in a traffic jam, however, particulate matter emissions decrease for stopped vehicles since most particulate is a product of the re-entrainment of road dust by the tires. A new traffic congestion scenario has been added to the updated air quality assessment.
Public	The loss of trees that will result from construction of the Expressway will reduce the oxygen supply in the area.	Due to the removal of trees, production of oxygen will be reduced in the Valley. However, no discernable change in ambient levels is expected. The City is preparing a Landscape Management Plan that will propose where trees can be replaced in the Red Hill Water Shed and elsewhere in the City.
Public	Concern that the temperature of the valley will increase if so many trees are cut down. Also the presence of the asphalt expressway will contribute to temperature increases.	Refer to Thermal Dynamics Impact Assessment Report (RWDI), Section 3.
Public	Noise increases have not been fully explained to residents. Noise levels are going to increase significantly regardless of mitigation measures.	The RWDI report Traffic Noise Impact Assessment, explains where noise is likely to increase. The Impact Assessment Summary Report shows where there will be significant increase in noise levels. Residents will be consulted in the Detailed Design Process regarding mitigation.
Public	What can be done to mitigate the sub-sonic sounds coming from the Expressway?	Set-back distances of all residences of concern are predicted to be sufficient that ground borne vibrations (sub-sonic sounds) resulting from Expressway operation will be below detectable levels.
Public	What kind of noise increases are expected to occur during peak traffic periods?	Freeways generally have fairly constant noise generation with very little variation from peak to off-peak periods. The increases in noise during peak traffic periods is not dependent on the highway noise but on the variation in background sound levels. For many areas which currently back onto valley lands (which are influenced primarily by the sounds of nature), there would be no difference in peak traffic periods from off-peak periods. Refer to section 5 of the Traffic Noise Impact Report Summary for areas where there are significant noise increases are predicted to occur.
Public	How accurate are the noise models?	The models used have been developed by the MOE based on work done by the USFHWA (US, Federal Highway Administration), and are semi-empirical in nature (i.e., are based on actual measured road traffic noise data). Comparison between measured and predicted values performed by RWDI for similar projects indicated that the model is generally accurate to within 1 to 2 dB, generally considered to be an imperceptible difference and good agreement.
Public	Under what climate conditions were the noise impacts predicted?	Climate conditions are not considered in standard noise modeling. The models assume the worst-case possible meteorology to determine the impacts.
Public	What are the noise levels on the 403 going up the escarpment? Will the Red Hill Creek Expressway be this noisy?	The study has not examined any existing noise levels on other major roads.
Public	Is it possible that the noise increases can be "masked" in some way?	There are known ways to reduce noise levels by creating barriers between the road and the receptor, however masking road noises is not reasonable since it would require a higher noise level. In general, masking systems are designed for stationary sources such as power plants.
Public	Reminder of an incident that occurred on the QEW: 1980's where chloride gas was released and occasioned evacuations in the area. Heavier-than-air gases might be 'channeled' down the valley, thus affecting a larger area more severely. I hope you have addressed this kind of issue.	The consideration of accidental releases of heavier-than-air gases was beyond the scope of this study.
Public	Page 7 "The Red Hill Creek Expressway will decrease vehicle emissions in the region by 3-16%."The origin of this statement fails to reveal any evidence of support in either the RWDI or Cantox reports. It appears to have arisen from a misinterpretation of results of the HAQI study. This error has repeatedly been drawn to the attention of the Region.	The statement is based on the findings of the EMULATE traffic projection model developed at McMaster University. The methodology is discussed fully in the "Vehicle Air Emissions Inventory" report.

Public	The fatal flaw in the air pollution assessment of the Red Hill Creek Expressway lies in its failure to properly estimate the likely density of heavy truck traffic on the North-South segment. They dismiss the complication introduced in determining emissions from heavy vehicles presented by the substantial gradient in this segment. Braking on down slopes, raising crankcase pressures leading to greater emissions has not been addressed.	The value of 7.5% for the diesel truck fraction was provided to RWDI by the Region of Hamilton-Wentworth. Additional work for the updated air quality report will include additional scenarios with an alternate value for the truck mix and additional traffic movements, to show the sensitivity of the model to these variables. The report states that CO and Hydrocarbon emissions could increase for gasoline powered vehicles due to the increase in grade (going up hill). No information is available for the more efficient diesel powered vehicles. See Section 7.
Public	Statement that the Expressway will reduce emissions and improve regional air quality should be withdrawn.	The claim is based on the findings of the IMULATE traffic projection model developed at McMaster University. The methodology is discussed fully in the "Vehicle Air Emissions Inventory" report. (RWDI)
Public	..."The Red Hill Creek Expressway will decrease vehicle emissions in the Region by 3-16%". There is absolutely no evidence to support this claim. The authors of the HAQI report from which this misrepresentation was drawn immediately denied that this claim had any basis in their report.	The statement is based on the findings of the IMULATE traffic projection model developed at McMaster University. The methodology is discussed fully in the "Vehicle Air Emissions Inventory" report. Section 3.
Public	The fact that the expressway is proposed to deal with growing traffic, which implies growing emissions is omitted. There is no critical assessment of how the rest of the traffic volume fits in and what the traffic data are based on. There is a need to cross-check this report with the other RWDI report on air quality for consistency.	Predictions from the Region show traffic growth regardless of whether the Expressway is constructed or not. This was accounted for in the air quality assessment. Appendix D.
Public	Page 2, Para 2. There is no explanation or evidence offered to support the claim that PM emissions are primarily the result of wheel-roadway interactions rather than vehicle tailpipe emissions.	Tailpipe emissions of particulate matter from gasoline powered vehicles are minor in comparison to the wheel-roadway interactions. Reference Watson et al 1996.
Public	Needed here is a thorough explanation of the PM notation that is not qualified as to size, since smaller particles tend to be associated with the emissions, especially diesel trucks.	Both PM 2.5 and PM10 have been modeled in the updated air quality assessment. PM emissions are not detailed to the air emissions inventory analysis. See Section 2.
Public	PM emissions were not included, and only car traffic was modeled for one peak morning hour, yet the region claims in the DSR reports that "decreases in vehicle emissions" will be realized.	The Air Quality Impact Assessment Report has clarified the assumptions used in the analysis.
Public	Page 4, Table 1. Without this table there would be no way of learning from the report text that the emissions in 2021 for both existing and new roadway scenarios are higher that in 1991.	It is identified in the report that total vehicle kilometers traveled will increase in the future (Section 3). It is also identified that the positive gains are due to reductions in the average congested vehicle speed related to the additional roadway capacity in the region that includes the Red Hill Creek Expressway.
Public	The fact that this (#12) only exists as a bunch of assumptions, is for the year 2021, for cars only, and still involves higher emissions and pollutant levels than at present, is never revealed.	The assumptions and methods used in the analysis are stated in the RWDI report.
Public	Inconsistency between the HAQI year 2021 used in Table 1, and the RWDI air quality report that used 2010 as the year the expressway will reach capacity.	In general, emissions from individual vehicles have been dramatically reduced in the past twenty years and further reductions have been projected by the U.S. EPA in the future. The selection of year 2010 for the future scenario is a reasonable and a conservative assumption as vehicle emission reductions would not be as pronounced as the year 2021. Moreover, an assumption of year 2010 over year 2021 is assumed to be a further conservatism as the expressway was not predicted to be at capacity until year 2021. With respect to RWDI's air emission inventory study, year 2021 was selected by the HAQI authors from unknown reasons - results for other years were not provided. The newer MOBILE6 model confirms emission reductions occurring at a faster rate than estimated by MOBILE5 (used in 1998) as a result of regulations requiring more vehicles with more efficient emissions and cleaner fuels.
Public	There is no spelling out of what the new roadways consist of in their entirety. (Off-peak hours there will be higher emission levels with the new roadway in place.)	New roadways include the Red Hill Creek Expressway and proposed bypass of Highway 5 around Waterdown.
Public	Page 5. No data or evidence to support any assumptions about the extent to which traffic on HWY 20 will really switch to the expressway. Also explain why it can be assumed that traffic on Hwy 20 will travel in a throughway manner once it switches to the expressway.	In the updated Air Emissions Inventory Report, the air emissions for Highway 20 have been evaluated for build and no build scenarios.

Public	Page 6. Data in Table 2 are given with no explanation or evidence in support.	The source of the data in Table 2 is given, as is indicated by the footnote to the table, as being calculated based on the Environment Canada mobile emission factor model MOBILE5C, using traffic assumptions for the year 2010. The factors are fleet averaged values and take into consideration variation in vehicular emissions as a function of speed and vehicle type. Effects from changing roadway grade, traffic speeds, free flow and queuing conditions were evaluated in the air quality assessment.
Public	Page 7, Table 3. None of the results here are qualified as per the assumptions made, regarding ignoring of grade, the free-flow traffic assumption and the 90km/h limit on the RHCE.	A discussion of assumptions were provided in the draft report and these have been expanded in the revised report.
Public	Note that the NOx is higher across the board for all vehicles, and are linked to smog and ozone which are not measured. Therefore you cannot say the RHCE will have a positive effect on air quality.	Emissions of NO_x were projected to decrease not increase during AM rush-hour periods as indicated in the report. Total hydrocarbons which include benzene, PAH's and other compounds, were included in the analysis.
Public	Page 7/8. Effects of grade are ignored, free-flow traffic on all roadways is assumed and the posted speed limits are used. When, except at night are the 403 and QEW not congested? When is the posted speed limit ever the speed that vehicles travel on these roads? Results from Table 4 are not critically reviewed to see how they conform to a real world scenario, and what they really mean.	The air emission inventory report has been revised to provide a better discussion of assumptions and methodology. The Air Emissions Inventory does not deal with such assumptions as higher speeds, congestion and grade, since the focus is on total emissions, not on impacts. The Air Quality Impact Assessment Report addresses the factors listed.
Public	Page 9. It is a lie to say that the expressway will have a positive effect on air quality, when in fact emissions will increase. The use of the words "net decrease" is plainly misleading.	The City is not trying to mislead the public. More clarity will be provided to the responses of the issues being raised. Since the basic assumptions include an increase in total number of vehicles and total kilometers traveled, an increase in total vehicle emissions is also required. Vehicular emissions of CO and HC are higher when vehicle engines are idling, where as vehicular emissions of NOx and particulate matter are higher when a vehicle is traveling. The expressway is expected to have a positive effect on air quality through a reduction in the average congested speed in the region and related idling emissions from automobiles in the region.
Public	There is no effort to really explain to the reader what the scenario analysis really modeled and how to evaluate the results.	The updated Air Quality Report has addressed these issues.
Public	Page 7. Claiming the expressway will reduce vehicle emissions in the Region by 3-16%, is a complete falsehood.	The City is not trying to mislead the public. More clarity will be provided to the responses of the issues being raised. Since the basic assumptions include an increase in total number of vehicles and total kilometers traveled, an increase in total vehicle emissions is also required. Vehicular emissions of CO and HC are higher when vehicle engines are idling, whereas vehicular emissions of NOx and particulate matter are higher when a vehicle is traveling. The expressway is expected to have a positive effect on air quality through a reduction in the average congested speed in the region and related idling emissions from automobiles in the region.
Public	The 1989 RWDI study also predicted NOx levels above provincial standards, not just PM.	RWDI's 1989 report did not indicate NO_x levels in excess of provincial POI standard, as it is not applicable for mobile sources. There is a 1-hour ambient air quality criteria for NO_2, however, the results did not predict any levels in excess of this criterion either. PM_{10} was not considered in this earlier study at all.
Public	One year of meteological data is not adequate to account for reasonably expected annual variations, and no explanation for this selection period is offered.	Five years of local meteorological observations were evaluated and the year with the highest proportion of adverse dispersion conditions, as defined by the highest number of hours of stable atmospheric stability conditions and light wind speeds, was selected for use in the dispersion model.
Public	Comparison with the Hwy 404 leaves out all the assumptions and comparative nature of the two roadways. There is insufficient data and information provided to make the comparisons that are made.	The comparison of the predicted impacts of the Red Hill Creek Expressway with measured observations for Highway 404 as well as Conestoga Parkway, Evans Ave, Kitchener and Etobicoke, are presented to show that the assumptions used in the assessment are conservative. As can be seen through the comparison, the predicted impacts are much greater than those observed near a highway with higher traffic volumes. The updated modeling measurements were taken beside a larger expressway than the RHCE yet recorded smaller values than were predicted by the dispersion model. (RWDI)

Public	MAIN REPORT: Only a restricted number of pollutants were covered (CO, NOx, PM10 and TSP), with PAH, benzene, ozone, VOC's, SOx, metals and others. These substances need to be included.	As stipulated in the Exemption Order, the scope of this assessment was limited to the impacts associated with the vehicular traffic on the Red Hill Creek Expressway, primarily on a local scale. The pollutants normally of concern associated with traffic and regulated by the MOE were assessed in this report. Some of the pollutants listed above are of more concern on a regional scale (e.g., ozone), and are beyond the scope of the current study. Others require chemical transformation in the atmosphere to form (e.g.. Nitrated and sulphonated PAH's, ozone) and the atmospheric transformation of these secondary air pollutants requires time so the impacts would likely not be within the Red hill Creek Valley or nearby neighbourhoods, and are therefore again beyond the scope of this study. VOCs have been addressed in the updated Air Quality Impact Assessment Report.
Public	The meteorological data from Woodward Ave, are not reflective of the valley environment and one year of data is not reflective of possible variation, including a future featured by global warming.	Meteorological parameters vary from year to year, however, the models and input assumptions are sufficiently conservative that unless the year is unusually abnormal, the results are still a valid representation of the likely worst-case impacts. Included in each of the two Air Quality Surveys-Meteorological measurements were made at King St/Albion Rd, as well as the Linc sites. Key parameters that affect atmospheric dispersion include wind speed and direction and as such, any incremental increases in ambient temperature due to Global Warming is a minor factor by comparison.
Public	Page 6. It would be interesting to know the duration of the maximums and the means.	In the updated analysis, curves have been developed where the reader can relate the duration of time to statistical parameters (maximum, means) at the worst case receptors for each parameter.
Public	Page 7. There needs to be measurements done of the CO in the valley itself. The present study measurements do not conform with the study objectives 1 and 2 on page 1.	Continuous ambient measurements of CO is included in the 6-month monitoring survey (King St/Albion Rd) and is reported in the updated Air Quality Assessment and the Pre-Construction Ambient Air Quality Monitoring.
Public	Page 7. NO2 is also a reactive free radical which will directly attack tissues, this is not mentioned.	This information is included in the updated report in Section 3, the respiratory effects of NO2 have been identified. See the Cantox Report for more detail. Nitrogen oxides in the RWDI report Air Quality Assessment, North-South Section Red Hill Creek Expressway, dated June 23, 1998, which reads: "NO_x contributes to haze and visibility reduction and is also known to cause deterioration to certain fabrics and damage vegetation."
Public	Page 8. There are no measurements of ambient NO or NOx that are relevant to the valley location.	Continuous ambient measurements of NO, NO_2 and NO_x were included in the 6-month (King St/ Albion Road) survey and is reported in the updated air quality assessment report.
Public	Page 8. Tables 3 and 4, there are no error bars or standard deviations on the data presented, therefore any trends are not statistically discernible.	This data is not available from the annual air quality summaries produced by the MOE.
Public	Page 9-10. No mention of emerging PM10 and PM2.5 concerns as can be seen in the scientific and regulatory literature. No mention of other standards or criteria from elsewhere or under consideration or recommended.	Both PM10, PM2.5 are addressed in the updated air quality impact assessment report. Some individual VOCs have been considered in the updated report. PAH's were also considered, See Section 5 of Air Quality Impact Assessment Report.
Public	Page 10. There should be data reported on daytime or peak traffic use, 8-hour levels of PM10 and TSP, since daytime exposures are most important.	This information is not available from the annual air quality summaries prepared by the MOE. There are no regulations or guidelines related to shorter averaging periods. However, 1 hour averaging period information from updated air quality assessment report has been provided to Cantox for updates to their assessments.
Public	Why is it that the PM10 frequencies of occurrences greater than the 24-hour criteria cannot be quantified?	This information is not available from the annual air quality summaries prepared by the MOE. Predicted level of PM10 and the frequency of exceedance will be provided in the updated air quality assessment. Combined effects analysis in the updated Air Quality Impact Assessment Report allows the reader to discertain the statistical value of interest at the worst case receptors. See figures in the report.
Public	No evidence to support the claim that the 24-hour PM10 exceedances of the criteria are due to industry rather than transportation.	Evidence to support these statements can be found in the cited reference. (Ontario Ministry of the Environment and Energy. 1995 Air Quality Data Summary – Regional Municipality of Hamilton-Wentworth, April 1997.) The updated Air Quality Impact Assessment Report sites the more recent MOE reference (Reference #13, Section 8)
Public	The locations for the monitoring stations are far removed from the Red Hill Valley, so these data as reflective of the valley is objectionable.	The City and MOE agreed on an Air Quality monitoring protocol to meet the 1985 condition of approval. It includes a 6-month pre-construction/ambient air quality monitoring survey was commissioned in December 1997 at the corner of King Street and Mount Albion Road. The results have been released in the updated air quality assessment.

Public	Page 12. Needed is a measure of the 8-hour maximums for the daylight hours in particular.	This information is not available from the annual air quality summaries prepared by the MOE. There are no regulations or guidelines related to shorter averaging periods. However, 1 hour averaging period information from updated air quality assessment report has been provided to Cantox for updates to their assessments.
Public	Page 13. What is the variance or range of the PM10/TSP ratio? How does it compare to other reference sources?	As requested by the MOE, the two parameters have been modeled separately in the updated air quality assessment. The ratio was taken from an MOE reference document and used to estimate TSP from modeled PM10.
Public	Page 13/14. It is stated that several VOCs were consistently detected, but at low levels. What does low levels mean? There should be discussion as to how these compounds and levels compare with lists of air TOCs and what the various agencies (MOEE, DOE, USEPA) have as programs and targets for reductions.	3 or 4 orders of magnitude smaller than their related provincial criteria. Given the low levels of these pollutants the useful information to be garnered from further analysis is very limited. The levels from the 3 MOE stations are in many cases just above or below the detectable level. In the updated report, 4 individual VOC species related to vehicular sources have been modeled. See Section 5 of the updated Air Quality Impact Assessment Report.
Public	The claim that the Expressway will "...decrease vehicle emissions in the Region by 3 to 16%" is an outrageous and false claim.	Air Emission Inventory does not deal with such assumptions as higher speeds, congestion, and grade. Because the focus is on total emissions, not on impacts. Updated Air Quality Impact Assessment Report addresses these factors.
Public	The so-called "decreases" are not absolute decreases from the present situation regarding emissions, but represent emissions higher than today, and which are "decreases" only in relative terms, relative to another higher emissions scenario modeled for 2021.	Air Emission Inventory does not deal with such assumptions as higher speeds, congestion, and grade. Because the focus is on total emissions, not on impacts. Updated Air Quality Impact Assessment Report addresses these factors.
Public	There is no data to support the traffic projections. The RWDI report merely states that the data were provided from the Region.	Air Emissions Inventory Report is based on McMaster IMULATE study. The updated assessment report is based on Itrans 2002 which are posted on the Red Hill Valley Expressway website. www.city.hamilton.on.ca/rhvp
Public	The heavy truck proportion is also lower than it is in reality.	The vehicle mix shown in Table 10 is the default mix used in MOBILE5C, and has been compared to data provided by the Region to validate it. In the Itrans updated traffic forecast estimates 10% medium/heavy trucks combined for an average day. As a conservation the MOBILE 6 Default of 12% heavy trucks was used.
Public	Page 22, bottom. Where is the underlying rationale for the free flow traffic conditions in the expressway case, and the idling conditions assumptions? Where is the analysis underlying the time distribution of traffic volume, and its rationale?	Free flow traffic is expected to be the normal condition for traffic movement on the Expressway. Assumptions underlying the idling conditions are based on information provided by the Region for traffic light cycle times at the various intersections linking to the Expressway. Daily traffic distribution data was, as is indicated by the cited reference, taken from data published by the Institute of Transportation Engineers, Traffic Engineering Handbook, 4th Edition 1991. The updated Air Quality Impact Assessment Report has included a congestion scenario
Public	Page 23, Table 13. This table contains only the lowest expected ambient level for PM10 and by and large the second lowest for CO and NOx. What about the 1 hour and 8 hour, and 24 hour levels?	The updated air quality impact assessment report includes a combined effects analysis, which couples hourly modeled and ambient measured levels from a number of MOE stations in Hamilton. (See Section 5)
Public	The assumption about what constitutes the ambient or background air quality levels of contaminates is another bias that has the effect of lowering the model predicted concentrations of the contaminants to essentially the lowest levels that can possibly be derived from the monitoring data. The annual averaging takes the smoothing and hiding process (of peaks and valleys) one step further.	The updated air quality impact assessment report includes a combined effects analysis, which couples hourly modeled and ambient measured levels from a number of MOE stations in Hamilton. (See Section 5)
Public	There is no evidence to support the use of the average annual percentile average values from another location as the background ambient levels.	Combined Effects Analysis couples the 1-hour modeled and coincidently measured ambient values, to derive the aggregate impact. The King St survey was based on a 6 month period, however a 12 month period is preferred, therefore MOE data was used for the combined effects analysis.
Public	Point being that if the modeled results as reported are to stand-up as "worst case" then the fact that the new traffic generated emissions in the worst 1-hour and 24-hour periods, will be added to the already existing 1-hour and 24-hour maximums observed in Table 9.	The updated air quality impact assessment report includes a combined effects analysis, which couples hourly modeled and ambient measured levels from a number of MOE stations in Hamilton. (See Section 5)
Public	Page 24. Assumptions pertaining to the meteorological data for particular year chosen, seems to mean the modeling is using insufficient and biased statistics, which is a classic logical fallacy. These assumptions need to be explained.	In the updated Air Quality Impact Assessment Report, the methodology for calculating hourly dispersion parameters has been revised to reflect recommendations from EC comments in 1999 & recent data. See Section 4.

Public	Page 24. The study scenario (section 4.3, para 1) is not rationalized and misleading. The para 1 states that it is a "reasonable worst case" but this needs to be drawn out point to point in detail with all the assumptions and givens noted and explained. Also Table 13 is not the highest background levels for contaminants.	Additional rationale is provided in updated Air Quality Impact Assessment Report Section 4.
Public	Since there is no road in the valley at present, what constitutes the "background" depends on the time period that is being measured. It can be argued that the analysis should add all the same averaging periods. A rationale and explanation of implications is needed for the use of the lower annual averages rather than the same period ambient.	The updated Air Quality Report Section 5 describes results of the Combined Effects Analysis.
Public	Page 24/25, Study scenario. Arguments can be made that this is not the "worst case" really, environmentally or toxicologically. The scenario itself is in need of close scrutiny as regards the implications of the assumptions, givens and these (refer to letter) comments. Generally, the scenario implies that there will be no change in anything in the model in the future.	Refer to Section 4 of the updated Air Quality Report.
Public	Page 25. The annual average daily traffic is just assumptions and givens, with no data, and no supporting evidence or rationale provided.	Traffic volume estimates were provided by the Region for the peak AM and PM rush hours. The distribution of traffic will change on weekends, but in general, traffic counts are reduced on weekends. As a result using the same distribution and high traffic volumes predicted for weekdays is a conservative assumption. Traffic data has been updated by iTrans see Appendix D in the updated report.
Public	Page 26. The omission of ozone and SO2 from the analysis is glibly brushed aside with questionable comments as unimportant. Ozone and SO2 are not considered. These omissions and their explanation lack credibility.	Refer to Section 3of the updated Air Quality Impact Assessment Report.
Public	Page 26. Sect 5.1. Add the maximum 1, 8 or 24-hour ambient or background to the maximum 1,8 or 24 hour modeled concentrations due to the expressway.	See the results of the Combined Effects Analysis, Section 5 in the updated Air Quality Report.
Public	Example of CO from Table 2 for #64.	See the results of the Combined Effects Analysis, Section 5 in the updated Air Quality Report.
Public	Example for NOx using Table 4 and 13, for #64.	See the results of the Combined Effects Analysis, Section 5 in the updated Air Quality Report.
Public	Page 27. The Ozone Limiting Method is hardly described at all in terms of assumptions and limitations.	See Section 4.5.7 for a more detailed discussion of the Ozone Limiting Method.
Public	How do the numbers in Table 3 compare with calculations of these same numbers using the OLM?	See Section 5 for the NO2 Combined Effects discussion.
Public	Page 29, PM10 section. These predicted concentrations need to be recalculated using the same approach as above. (#68- Refer to letter)	See the results of the Combined Effects Analysis, Section 5 in the updated Air Quality Report.
Public	It is also possible to do a similar calculation for the ambient PM10 data in Table 6b. The background level used in the report is less that the valley location max. The existing no expressway concentration is already in excess of the 24-hour interim AAQC.	See the results of the Combined Effects Analysis, Section 5 in the updated Air Quality Report.
Public	Page 30. First sentence Para 2. Given the assumptions and methodological manipulations of the stable or calm air conditions of the real world, as commented on several times above, how can one make such a statement? It completely ignores that calm air was basically adjusted out of the model.	Refer to Section 4.4.4 of the updated Air Quality Impact Assessment Report.
Public	Page 30. There needs to be a detailed explanation of how the 13% of the time for exceedances was derived, and the implications. Is this annually averaged? How do the calculation suggested in the above comments concerning the proper measure of the background affect this result? How sensitive is the calculation to model assumptions? Is the 13% evenly distributed over the year or is it concentrated at a particular time of the year? Does it occur in winter or summer?	Section 5 of the updated Air Quality Report. The Combined Effects Analysis is based on hourly measurements but does not allow for seasonal distribution.

Public	Page 30. The use of Highway 404 does not take into account the unique characteristics of the Hamilton and Red Hill valley locations and their relation to the Hwy 404 location.	The comparison of the predicted impacts of the Red Hill Creek Expressway with measured observations for Highway 404 are presented to show that the assumptions used in the assessment are conservative. As can be seen through the comparison, the predicted impacts are greater than those observed near a highway with higher traffic volumes. The measurements were taken beside a larger expressway than the RHCE yet recorded smaller values than were predicted. In addition to the 404 survey report, the updated Air Quality Impact Assessment Report also has the 403 ambient monitoring records included.
Public	Page 32. Everything within 200 meters of the roadway will be exposed to PM10 above the interim AAQC standard, and that the decline below that standard is very flat indeed. This is different then saying that the expressway has no impact beyond 200m.	The 1998 Report does not state that there are no impacts beyond 200m. The final report uses a different approach to mapping contours. See Section 5 of the Air Quality Impact Assessment Report.
Public	Page 36. Road grade was not considered. With the examples given of emission increase factors for cars of 3-fold for hydrocarbons and 11 fold for CO, how then can the report authors continue to refer to the results as "conservative"? The emissions of trucks and other heavy vehicles are also increased by grades, but this is not mentioned.	Refer to Section 7 of the Final Air Quality Impact Assessment Report which discusses the effect of changing road grade on vehicular tail-pipe emission rates.
Public	The gasoline-diesel vehicle mix is another issue that the reports did not discuss.	The value of 7.5% for the diesel truck faction was provided to RWDI by the Region of Hamilton-Wentworth. Additional work for the updated air quality report will include additional scenarios with an alternate value for the truck mix and additional traffic movements, to show the sensitivity of the model to these variables. The CO emission factors for heavy trucks are in fact less than those for automobiles.
Public	Increased numbers of trucks will change the traffic mix on the Expressway with concomitant increases in vehicle emissions and impacts above those predicted in the reports, these issues were not discussed in the reports.	Since 1998 there has been a lot of research done to clarify these issues raised by Rick Burnett. The updated Health Impact Assessment Report outlines current research in the field and shows how these pollutants have been addressed. Refer to the Appendix.
Public	In the section of Air Quality, a distinction has been made between regional and local impacts. I am certain that this model has grossly underestimated the area impacted by particulate pollution and thus the number of people experiencing adverse health impacts.	It is true that air borne pollution can be transported to distances many kilometres downwind. However, as the pollutant is transported downwind it is continuously being diluted by the effects of wind and, in particular, turbulence. Subsequently, the effect of any particular source is diminished as the distance from the source increases.
Public	Page 1, Section 1. The wordings chosen are misleading as a result because they do not accurately and fully explain what analysis was done, what the assumptions were, what was included and left out, and what results actually were in scope.	Full details of the assumptions and scope of the cited studies can be found in the actual studies themselves. References are provided for the reader, in the report.
Public	Needed is a complete listing of all the planned roadway improvements that were considered, what vehicles constituted "cars" and "sports utility vehicles" in the mix, what pollutants were included and what the emission levels were in each scenario and relative to the present time. Also needed: data on emissions for the whole time under study.	Full details of the assumptions and scope of the cited studies can be found in the actual studies themselves. References are provided for the reader, in the report.
Public	Need to explain that the net decrease in emissions is not an absolute reduction compared to today, but a relative reduction drawn from a comparison of two scenarios of future emissions that are both higher than today.	The assumptions and methodology in the RWDI report is very clear. The Impact Assessment Report in the Executive Summary now reflects this.
Public	Free-flow traffic is assumed, but with no data or evidence to back it up.	Free flow and congestion scenarios were modeled in the updated Air Quality Impact Assessment Report.
Public	Scenarios involving more traffic, more emissions, and why we would be building more roads and the expressway is never presented to the reader.	The updated Air Quality Impact Assessment Report provides a detailed account of atmospheric conditions of all scenarios suggesting, using all mentioned factors.
Public	Page 2. The Peak Traffic Periods will disappear in the averaging, when the PM10 and TSP measurements are put into a 24 hour period.	Averaging periods were chosen based on those used for the relevant regulated air quality guidelines. The longer term averaging periods include not only the peaks but also those times when the concentration is below the average. Information available to RWDI at the time indicated that "...the 24-hour maximum serves as the best available estimate for the worst-case concentration that would occur..." as is stated in the report by CanTox (Possible Human Health Effects from Exposure to Predicted Increases in Respirable Particulate Matter (PM) Due to the Red Hill Valley Expressway, dated June 11, 1998).

Public	Page 2-3. The selection of the meteorological station at Woodward avenue is highly suspect and will bias the results. A critical review of the problems inherent in choosing a met station outside the entire valley, is needed.	Generally speaking meteorological sensors placed within valleys as narrow as the Red Hill Creek Valley do not provide data which is better suited for modeling. The predominant winds in valleys are either up or down the axis of the valley, and very few cross-valley winds. This would lead to the erroneous non-conservative conclusion that there will be no crosswind related impacts associated with emissions from the Expressway.
Public	Page 4. The guidelines offered for comparison purposes does not include those from other jurisdictions and others that are proposed, especially for the PM2.5.	This report includes transportation parameters that are covered by MOE or Canada Wide Standards. The updated report includes PM2.5, which was just emerging as a parameter of concern in 1998.
Public	Page 5. The report states that no long-term air quality or meteorological measurements have been carried out in the area. Why is there still no data till almost 1998, and what exists is not long-term? Why is there no data measuring the impacts of the Linc on Air Quality?	A 6-month preconstruction/ambient air quality monitoring survey was commissioned in December 1997 at the corner of King Street and Mount Albion Road. The results have been released in the updated air quality assessment. An ambient survey has also been carried out beside the Linc and those results were also released in October 2002.
Public	A better explanation of what chemicals are and their toxicology is needed here. It is not sufficient to say low levels and leave it at that.	Since the levels are barely detectable, the toxicity has not been discussed.
Public	What does low levels of PAH mean? What about the 8-hour maximum value? What about the nitrated and sulphonated PAH, and other critical pollutant PAH? How do these levels compare with other locations?	27. See Section 3 of the updated report for an explanation as to why PAH's have not been modeled and ambient measured levels in Hamilton Air shed are not reported in the updated RWDI assessment.
Public	Page 14-16. How relevant are the monitoring station locations noted in the data tables, to the Red Hill valley location.	In 1998 there were ambient MOE monitoring stations that provided reasonable coverage in areas close to the valley which was used in the monitoring. However since then a number of MOE stations have been terminated and relocated to industrial areas along the harbour for more relevant ambient data the King St/Albion Road monitoring data was collected. See Section 6 in the updated Air Quality Report for a comparison of measured levels between King St/Albion Road and 5 years of MOE measurements at previous and current monitoring stations.
Public	PAH look like a problem, but again there is no measure of source identification re: transportation.	See Section 3 of the updated report for an explanation as to why PAH's have not been modeled and ambient measured levels in Hamilton Air shed are not reported in the RWDI updated assessment.
Public	Page 17. Table 9 only reflects winter data. Summer data is needed. There is no PAH or TSP in the table, which needs rectifying.	Vehicular tailpipe emissions are highest in the wintertime due to the colder temperatures and reflect worst case roadway silt loading and particulate. PAH's were monitored and reflected in the King St/Albion Rd monitoring report See Section 4.
Public	Page 18, top. There is no explanation of how this adjustment was made, what it is based on, how it is rationalized, and how it can be seen as an accurate representation of actual conditions at 10m? This adjustment does not seem valid, what is the error and uncertainty introduced here? The expressway will not be 30m in the air! Needed is a complete explanation of the adjustment process and all the possible errors and other limitations introduced by it.	Refer to Section 4 of the updated Air Quality Impact Assessment Report
Public	Page 19. There is no mention of substituting the 30m adjusted for the 10m.	For further discussion of Atmospheric Stability classes see Section 4 of the updated Air Quality Report.
Public	Page 20/21. There is no explanation for the reduction in the number of pollutants modeled. What about PAH, and benzene and SOx and metals to say the least?	Both PM10, PM2.5 are addressed in the updated air quality impact assessment report. Some individual VOCs have been considered in the updated report. PAH's were also considered, See Section 5 of Air Quality Impact Assessment Report. Benzene is modeled in the updated Air Quality report (Section 5) SOx is discussed in Section 3 in the updated report as to why it is not modeled. Metals were sampled in King St/Albion Rd and Linc monitoring stations only trace levels were encountered which were much less than their applicable MOE ambient air quality criteria.
Public	Page 21. Table 10. The assumptions in this table are liberal, not conservative (worst case). What about impacts on environment and health in the summer due to heat and sun, smog formation and general photochemistry kinetics?	The emissions model was based on winter conditions as emissions are highest in this season, and the dispersion model was run for an entire year with this worst case emission rates. Refer to Section 3 of the updated Air Quality Report for a discussion of smog related parameters.
Public	Table 10. The operating year is set at 2010, however the project rationale and planning horizon is 2021. This creates a consistency problem and likely biases downward the air quality impacts of the project.	The modeling assumes that lower emissions, fuel and engine improvements and fleet turnovers which will occur in the future. Year 2010 assumes the road is at capacity and with the above improvements the emissions are expected to be lower.

Public	The 2021 horizon used in the RWDI report "Vehicle Air Emissions Inventory" requires that design capacity not be exceeded, implying no congestion. It is ridiculous to assume no congestion. What roads are not congested at rush hour?	In the updated report scenario 3 will consider a morning rush-hour congestion scenario on the Expressway
Public	This 2021 assumption, and free-flow traffic assumption, in the "Inventory" report are evidently in conflict with the Air Quality Assessment report that assumption that capacity is reached in 2010.	The different dates are not in conflict since the two reports are addressing different objectives.
Public	The vehicle speeds for the expressway are not realistic compared to actual speeds driven on the highways directly connected to the proposed roadway.	MOBILE6 which was used in our analysis does account for drivers speeding over the posted limit on Expressway.
Public	The higher actual speeds, as more representative of reality, should be modeled.	MOBILE6 which was used in our analysis does account for drivers speeding over the posted limit on Expressway.
Public	In table 10, what is the rationale for the vehicle mix? There is no apparent distinction between ordinary cars, and large sport utility vehicles.	Updated MOBILE6 which was used in our analysis has 28 categories of vehicles (including SUV's) which is far more detailed than what is available from sources in Ontario.
Public	New model runs are needed to illustrate the impact of changing these assumptions to conform more with reality.	See updated Air Quality Report.
Public	Page 22, Table 12. The emission rates shown in this table appear to be the same for all classes of vehicles. Is this correct? The assumptions are biased towards lower emissions and less impact on air quality.	The emission rate presented in Table 12 is a fleet averaged emission rate, and includes the variation in both emission rate and proportion of vehicle type. Refer to Section 4 for a detailed discussion in RWDI's updated report.
Public	There is concern about how accurate the station at Elgin/Kelly reflects conditions in the Red Hill valley. Page 17 top, states they are reflective readings taken at comparable urban sites in the region, however, no explanation of what this means in concrete terms is given.	MOEs Elgin/Kelly station was used for CO data only in the updated Air Quality Report, because it best represents urban levels in Hamilton. CO is not measured by MOE on the mountain in Hamilton. PM10 is absent of continuous monitoring on the mountain. A 1-year record from MOE Strachan North Station was selected for the Combined Effects analysis (Section 5)
Public	The fact that table 9 draws on a limited time period may present a problem, however, the valley location should have been monitored for a lengthy period a long time ago and the fact that it wasn't reflects on the regions compliance with the 1985 approval order, and the integrity of the process.	Refer to Section 5 in the updated Air Quality Report.
Public	Point: the transient maximums or spikes, have the most potential for damaging impacts because they occur during the daytime, and perhaps especially in summer to account for photochemistry effects, and to account of more people being out and subject to exposure.	In developing Ambient Air Quality Criteria, the MOE has considered 11 limiting effects based on a number of varying environmental factors and have chosen the most appropriate values and averaging time. The combined Effects Analysis actual hourly measured values are used rather than assuming arbitrary elevated background. As such, maximum values are accounted for.
Public	The use of the Elgin/Kelly data needs a careful explanation and rationale, as regards what really constitutes an appropriate and scientifically defensible background.	The Elgin/Kelly station represents the best available location in the City. It is classified as urban and the measurements are most representative of the background concentrations in the area. Other stations in the area are affected by the cleaner air on top of the mountain, or dirtier air next to the major industrial sources.
Public	Page 24, para 2. What is the data source and rationale for the traffic volume data used in the model, but provided by the region? What information was not available and therefore defaults were used, and what were the defaults and what were they based on?	The data provided by the Region, and the U.S. EPA or Environment Canada approved model defaults are explained in the text and tables in the report. Traffic data has been updated by iTrans. See Appendix D in the Air Quality Assessment Report. Default traffic fleet values for the models are explained in Section 4.
Public	Page 39. Why wasn't the PAH measured, or why don't we and why wasn't' it modeled. There is no excuse for this omission.	PAHs and VOCs have been included in the 6 month pre-construction/ambient air quality monitoring survey was commissioned in December 1997 at the corner of King Street and Mount Albion Road. The results have been released in the updated air quality assessment.
Public	Where there are no Ontario standards for certain contaminants, there are no references to standards in other jurisdictions or from external agencies. These should be included where pertinent.	For all contaminants that relate to vehicular exhaust, where there are Ontario or Canada Wide air quality guidelines, have been used in this report.
Public	The 200 meter exceedance distance is inconsistent with the statement that the levels of pollutants cannot be detected above background beyond the 200 meters.	The 1998 Report does not report that there will be no impacts beyond 200m. The Final Report uses a different approach to mapping impact contours. Refer to Section 5 of the RWDI Final Air Quality Impact Assessment Report.
Public	Air pollution which exceeds provincial standards is unacceptable.	A detailed discussion of net impacts is provided in the Combined Effects Analysis in the updated Air Quality Impact Assessment Report. The Combined Effects Analysis shows the frequency of exeedances of provincial standards.

Stakeholders	However, some quotes from DSR Vol 2 refer to an increase of airborne particles produced by cars and trucks are: "Expressway construction and the introduction of vehicle traffic within the valley will change existing air quality conditions".	DSR Volume 2 has been updated along with the Air Quality Assessment Report and other air quality reports.
Stakeholders	Cantox section 7.2 lists a raft of uncertainties and assumptions underlying the numbers generated by RWDI. RWDI model did not consider many of the air pollutants known to be harmful – PAH's, ozone, metals, VOC's. Mitigating PM by doing the odd bit of sweeping will do virtually nothing.	Health estimates are based on the highest level pollutants and not on the average.
Stakeholders	Note that PM10 and sulphate represent major constituents of truck fuel exhaust gases. As the HAQI report on Human Health Risk Assessment points out, these two constituents are profoundly implicated in air pollution-related hospital admissions and premature deaths.	Initially, the PM10 and TSP modeling results were based on the ratio of these pollutants and no consideration was taken for the gravitational settling of the particulate matter. This is a conservative assumption as the TSP in particular is affected by gravitational effects. The results for the TSP in the initial analysis were found to be overly conservative so, as directed by the MOE, settling effects were accounted for in our subsequent analysis.
Stakeholders	OTHER COMMENTS: The DSR Volume 2 comments on air quality should be examined in the light of the Mr. Muir's review of the RWDI study that apparently provided their basis. The Region's own consultants dismiss the RWDI predictions as underestimates. (Cantox pg30-31).	We disagree with the supposition that our predictions underestimate predicted impacts. Cantox has indicated that RWDI's estimates are overestimates. The traffic data and RWDI's report has been updated based on current scientific research and data.
Stakeholders	This data table (5.1.1) is not likely accurate for truck traffic with its low percentages from 0% to a high of 7% for reasons that were stated earlier in this report.	The truck traffic analysis has been updated by iTrans. Refer to Traffic reports on the Hamilton website.
Stakeholders	Public sports events should be discouraged especially during rush-hour traffic periods. Vicinity of the Glen Castle playing fields and trail area on the west side of the RHCE between Barton Street and Queenston Road where the air quality assessment indicated that air quality levels would be highest.	The soccer at Glencastle will be relocated to the new fields behind Sir Wilfred Laurier and Bishop Ryan Schools. The goal posts have been installed in these locations. When the construction takes place behind Glen Castle, the fields will be removed and the other fields at the schools will replace them.
Stakeholders	Some technical definitions of environmental noise are required here and these are contained in the RWDI document, appendix A, page 1 and DSR page 27.	The final report includes a glossary for technical definitions
Stakeholders	Figures 5.1 to 5.8 (Draft Traffic Noise Impact Assessment document), indicates the necessity for noise walls along most of the proposed expressway, both east and west of the expressway.	An updated Noise Impact Assessment Report is now available that indicates where noise walls are warranted. The next step that the City must take is to determine where it is feasible to build noise walls or earth berms. This will be determined in consultation with the adjacent residents/land uses.
Stakeholders	Quotes DTNIA (RWDI) "Future sound exposures at Noise Sensitive Areas, resulting from the operation of the expressway were modeled using methods approved by the Ministry of the Environment and Ministry of Transportation.	The City Of Hamilton Transportation, Operation and Environment Division is responsible for the planning, design, construction, operation and maintenance of all roadways within Hamilton-Wentworth area (with the exception of Provincial roadways). This includes the generation of travel demand forecasts that serve as the basis for the air quality and noise impact assessments. The Ministries of Environment and Transportation have developed guidelines for municipalities to use in assessing and modeling noise from roads.
Stakeholders	It would have been instructive to suggest what king of air quality improvements will occur at locations along Centennial Parkway, Cannon St, etc.	The air quality modeling has not looked at these areas, however, the truck traffic and congestion on roads like Mount Albion Road and Centennial Parkway are expected to be reduced substantially.
Stakeholders	If we establish that truck volumes are increasing, year to year, it would be appropriate to extrapolate in some fashion for future truck volume percentages. Do we know whether MTO has done a study of future traffic demands on our major highways taking these factors into account?	Scenario 3 will address this issue in the update air quality assessment.
Stakeholders	Noise from the Expressway will increase if the truck mix goes up. The report should describe this increase as "profound" rather than significant.	The City has updated the Traffic analysis
Stakeholders	Where did the 7.5% figure for heavy duty trucks come from? Ask RWDI to revise the truck numbers and input these into the models for air pollution and noise.	The City has updated theTraffic analysis and RWDI has used the updated data for both the noise and air quality models.
Stakeholders	Page 14 DTNIA (RWDI) states "future traffic predictions for the design year 2012 were not available. " Road traffic data was provided by the Regional Municipality of Hamilton-Wentworth for the year 2021, and is in Table	See the Itrans report for an updated traffic analysis.

	5.1.1 in this section.	
Stakeholders	There is no real basis for selecting a 7.5% figure for heavy duty vehicles and an equivalent value for light truck vehicles. To use a mix based on Highway 404 traffic is not appropriate. I strongly recommend that the Region request a sensitivity analysis be done. We need to know a "worst case" scenario outcome.	A technical report that explains how the truck mix information was derived has been produced. This report also includes a second traffic scenario that reflects a "worst case" forecast.
Stakeholders	particulates and diesel gas emissions are likely on the low side- when the worst case scenario of traffic congestion on the Expressway is accounted for.	Scenario 3 will address this issue in the update air quality assessment.
Stakeholders	It seems inconceivable that the modeling used by RWDI could have come to the conclusion that PM10 and other dust particles could exceed Ontario guidelines by the same 13%. Did they assume that there are no air currents generated by vehicles, or from climatic conditions in arriving at this result?	Initially, the PM10 and TSP modeling results were based on the ratio of these pollutants and no consideration was taken for the gravitational settling of the particulate matter. This is a conservative assumption as the TSP in particular is affected by gravitational effects. The results for the TSP in the initial analysis were found to be overly conservative so, as directed by the MOE, settling effects were accounted for in our subsequent analysis.
Stakeholders	After discussions with RWDI personnel, it became clear that their air pollution and noise models were inadequate. Concerns regarding: Valley shape affecting air quality, impact of removing large areas of vegetation, ozone levels, meteorological data used. How can the public be expected to determine whether it is reasonable to get results about PM10 that match those for heavier dust particles? Does it make sense that small dust particles will not readily settle out and will indeed remain airborne due to traffic turbulence?	Models used to assess the air quality impacts are developed, validated and supported by the United States Environmental Protection Agency (U.S. EPA), and are recognized by various levels of government in many jurisdictions, including the Region of Hamilton-Wentworth, the Ontario MOE and Environment Canada. For additional information regarding validation studies performed for CAL3QHCR please see CALINE -3 - A Versatile Dispersion Model for Predicting Air Pollutant Levels Near Highways and Arterial Streets, Benson, P., Office of Transportation Laboratory, California DOT, Sacramento, California. November 1979. The models were applied in accordance with accepted industry practices and regulatory methodology. Meteorological data used were derived from a nearby MOE tower.
Stakeholders	Noise barriers will help somewhat- but do out Council Fathers who have to approve monies for mitigating realize that the cost is about $200/foot?	The uncertainties are not a result of the modeling performed by RWDI are in fact a result, for the most part, of inherent uncertainties in the methodology of any health risk assessment. In the CanTox Report, it is stated that 24-hour average concentrations are appropriate for health risk assessments, in general. However, for certain analysis shorter term averaging periods can add an additional level of assessment. Communication between RWDI and Cantox has been initiated to ensure that the shorter term averaging period data required by Cantox is provided to Cantox for the update to their report.
Stakeholders	Note that it is single loud noise events that affect sleep most seriously. Professor Dave Inis does not believe that the dBA measure is sufficient to capture traffic annoyance.	This study is based on information gathered less than five years after the facility was open to traffic. A review of the annoyance literature suggests that you need at least five years of experience with the new noise source before you can draw any long-term conclusions. Sleep disturbance is one of the major causes of annoyance due to noise. RWDI has not received the referenced paper, and therefore cannot comment on it directly. It is true that single noise events which are much louder than the background sound level have the potential to cause sleep disturbance. This is particularly true where there are large variations in the sound environment as can be found at airports adjacent to rural environments. Where the sound environment is more homogeneous, single events tend to be masked by other background continuous noise, a situation characteristic of highway noise. The noise model does not account for short-term annoyance events such as the one described. Refer to Section 2.3 of the Noise Assessment Report.
Stakeholders	There are additional schools not included on these lists. The children in these schools are the ones most likely to suffer from the increased traffic noise caused by the proposed expressway.	Of the list of twenty-three schools listed, there are six schools in the Red Hill study area. Air quality results in the form of predicted maximum concentration contours are provided for these schools. The balance of the schools listed, which are outside the study area, are expected to experience insignificant or no noise and air quality impacts. Cantox has selected some of these six schools for their detailed analysis of human health effects from vehicular emissions. RWDI has provided a detailed analysis of the predicted air quality impacts for Cantox's assessment including an evaluation of the combined effects.
Stakeholders	AIR QUALITY: The first sentence we can state categorically is false. There has never been any assessment of the effects of the Expressway on regional air quality.	The results presented in the "Vehicle Air Emission Inventory Report" are an interpretation of HAQI study findings. The limitations and assumptions are fully discussed in this report. (RWDI)
Stakeholders	The additional interchanges and 7% grade of the original design obviously means there will be a reduction in negative air quality impacts. This fact should be stated.	The grade on the escarpment crossing has changed from 7% to 4%. See Section 5.4 of the updated Air Quality Impact Assessment Report for a discussion of impacts due to roadway grade changes. The interchange designs have changed from 1985 but the numbers remain the same.

Stakeholders	The comments on climatic change found as well as the background study by RWDI on Thermal Dynamics completely ignore the fundamental concerns about the impact of the destruction of the Red Hill Forest and its replacement by an Expressway. The role of the valley as a "heat sink" is not addressed.	Thermal Dynamics assessment was initiated after the public requested it at a stakeholder meeting. The stakeholder did not request, in the initial scoping meetings in 1996, that the urban air circulation and general valley drainage patterns be addressed. The numerical modeling and related discussion in the RWDI report address the comments made by the stakeholder. The objective of the study was to estimate the worst case impact on ambient air temperature and humidity that could occur as a result of the removal of trees in RHCV. It should also be noted that several of the issues raised by the "Independent Assessment" were discussed in the RWDI background Technical Document (Thermal Dynamics Impact Assessment, North-South Section Red Hill Creek Expressway, Hamilton, Ontario, dated June 11, 1998). Neither the City nor Dougan have received a copy of the independent analysis referred to. Refer to TRTR for predicted impacts.
Stakeholders	Comments on noise fail to explain expected impacts in an understandable fashion. No promises to mitigate noise impacts.	A complete glossary that defines and explains the technical jargon is provided in both the Text of DSR2 pg.27, Factor Noise: Significance, and the RWDI Technical Background document Traffic Noise Impact Assessment, North-South Section Red Hill Creek Expressway, Hamilton, Ontario, (revised draft) dated June 1998, Appendix B has been included in the Impact Assessment Report Summary. The Region will determine during detail design if noise mitigation is technically, economically and administratively feasible to implement in areas where it is warranted. A report documenting how these decisions were made will be developed during this next stage of design.
Community and Human Impacts		
CSC	Edges of streams are sensitive and important in terms of cultural heritage.	Original water courses are considered to be areas of high archaeological potential. In Red Hill valley, the river has shifted over time so that the current location of the creek is not necessarily where it was prior to the arrival of the Europeans.
CSC	It should be emphasized that in other areas of the Region, as well as the whole Niagara peninsula, the same type of artifacts have been found for many years with little or no concern as to their value or disposition.	All archaeological sites and artifacts are identified, evaluated and mitigated through the same process throughout Ontario, and this Expressway is consistent with this process. Every archaeological site is important and the artifacts' ultimate disposition is decided in accordance with the ministry's process. Some sites in the Niagara Region have provided enhanced opportunity for public interpretation, such as the Colonial John Butler Homestead, Niagara on the Lake, and Kings Forest Park in the Red Hill Valley.
CSC	Where will the artifacts be moved to and how can they be accessed?	The City is currently investigating the feasibility of establishing an artifact repository in the City of Hamilton. Until then, the artifacts are held in trust by the archaeologist, according to the regulations of his license.
CSC	Will the pump house be directly impacted, or will the ambiance of the area just be affected?	The 1960 Pump House will not be affected and any landscaping will be in keeping with its current features.
CSC	Save the pump house if possible.	The Pump House will remain in its existing location.
CSC	Fewer road cuts will mean less impact to the Niagara Escarpment.	The previous design (1985) called for two cuts to the escarpment while the current design, supported by the NEC, calls for one cut.
CSC	Revised plan has lanes closer together which results in less negative impact on both the visual and the actual cost through the Escarpment	The previous design (1985) called for two cuts to the escarpment while the current design, supported by the NEC, calls for one cut.
CSC	Plant as many trees as possible and establish a maintenance program.	The Terrestrial Report outlines the options for tree planting. The Landscape Management Plan will propose a tree planting and habitat restoration plan.
CSC	Visual aesthetics should have a lower priority than other resource considerations such as the creation of a wildlife corridor.	Both visual and ecological factors have been taken into consideration.
CSC	Disagree that the Expressway will be able to adequately accommodate predicted 2020 traffic volumes. Development on the mountain and the increasing trend toward truck transportation has not been considered.	The projected traffic volumes have considered approved and planned development on the mountain as well as truck trends.
CSC	There is no mention of the health impacts.	Refer to Health Risk Assessment Report
Gov	Archaeology: The Remnant Track will not be directly impacted by construction, therefore no archaeological work is recommended for this cultural feature.	There very well could be unanticipated staging impacts (e.g.. Staging areas) and steps can easily be undertaken to protect any possible extant information. (ArchInc – Ron Williamson)

Gov	Cultural Heritage features that have been comprised by past human intervention should not be "written off". Extant features should be conserved and enhanced with rehabilitation works and/or interpretive displays.	ASI has provided mitigation action for all the cultural heritage buildings. There will be rehabilitation that interprets the cultural aspect. For example, there are radial line bridge abutments which are required to be displaced through creek re-alignment. Since original assessment, the western bridge abutment has collapsed into the creek bed. Wherever possible, cultural heritage features will be preserved. (Arch Inc)*
Gov	The exposure scenarios used in the assessment do not include one for residents who live immediately bordering the lower section of the roadway. It has not considered effects on the local residents who live between King and Barton Street in houses which will back directly onto the proposed roadway.	The updated Health Impact Assessment Report does include additional receptors in the community, including 10 of the 14 receptors, between King Street and Barton Street.
Gov	The inhalation parameters used to assess daily intakes are extremely high. The values in the report are not referenced.	An error was made by using an assumption that the hourly inhalation rate during activity would be applied for 24 hours. This will be adjusted for subsequent drafts of the assessment. Properly referenced values will be provided.
Gov	I foresee some problems with the final step in 1c. The number of people would very likely be much less than 100,000. A rough conservative estimate of the number of people involved in these scenarios followed by prorating the baseline incidence to the number of people involved, would provide a more reasonable picture.	The exposure scenarios have been updated in the final Health Impact Assessment Report to reflect more current research and approaches to health risk impacts. Refer to the Introduction of the final report.
Gov	Some exposure scenarios- people living 24hours/day 365 days per year in the "impact zone" of the expressway should be included. This scenario would likely represent a much larger number of people with an essentially year-round annual increase in exposure.	The exposure scenarios have been updated in the final Health Impact Assessment Report to reflect more current research and approaches to health risk impacts. Refer to the Introduction of the final report.
Gov	The health effect assessment includes only repairable particulate matter. Other transportation emitted pollutants like carbon monoxide, nitrogen oxides and sulphur dioxide are also important.	The updated Health Impact Assessment Report has addressed fine particulate matter (PM 10 and PM 2.5) as well as CO, VOCs and NO2. SO2 is not addressed due to the expected improvements in future fuel quality.
Gov	The City should be compensated at the market value of replacement lands.	The former City of Hamilton was provided with compensation.
Gov	Areas where the re-alignment of the Creek encroaches onto City owned lands, outside of lands previously transferred to the City, should be identified. Who is responsible for long term maintenance if there are problems? Should address details, requirements and easements for City owned lands for realignment and construction.	Since amalgamation this is no longer an issue. Maintenance is being addressed through the development of a maintenance management plan.
Gov	Mr. Gary Warrick's recommendations and changes on the "Summary Report of the Cultural Heritage Resources Assessment" were not incorporated in the Summary Report.	The City is working with MTO to ensure that all issues are addressed.
Gov	Mr. Warrick should be kept advised of any "excavation that will occur on Ministry of Transportation land." It will help to justify MTO expenditures associated with archaeology.	The MTO archaeologist has been kept advised of work that has been carried out on MTO land.
Gov	Page 29 under Impact to Built Heritage Sites, a sentence reads "Attrition of the effected built heritage feature by disruption of its setting and the net impact, although adverse, is considered minimal", this is difficult to understand. As well page 32 Under impacts to lower Escarpment Slope "From intermittent panoramic views of the Expressway as experience by Bruce Trail users throughout the Escarpment and valley area."	These two sentences have been clarified.
Gov	VISUAL: A land bridge and an extensive viaduct was presented as an option at the Escarpment brow to maintain a portion of the visual and ecological integrity of this geological/biological feature.	A report has been prepared on the options for crossing the escarpment with the assistance of City, Bruce Trail, NEC and HCA representatives. The NEC have supported the results of the report.
Gov	Under "Visual Resource-Niagara Escarpment" we support the proposed mitigation measures.	HRCA was subsequently invited to be part of the design team that explored alternatives way to cross the escarpment.
Gov	Proposed strategies for dealing with cultural heritage concerns is supported by this Ministry.	The City and the cultural heritage consultants are required to show the ministry how they have met with requirements of the Heritage Act.

Gov	As a result of public meetings, where the public expressed health related concerns with the possible increased levels of emissions from the Expressway, the City retained Cantox Environmental to conduct a health study.	During the public consultation on the Declaration Order a Health Risk Assessment was not identified a study that should be done. However, after the Declaration Order was approved, the public expressed an interest in understanding the health impacts of vehicle emissions from the road.
Public	Do Ministry of Environment air quality guidelines account for the fact that there are increased health impacts on children as air quality declines?	Please see A Compendium of Current Knowledge on Fine Particulate Matter in Ontario (1999). This discusses potential for changes in health outcomes for all members of the community. Health based standards are always set to address concerns for health of the most sensitive among the population (i.e. children and those with respiratory disease) likely to be exposed.
Public	There is a lack of concrete ideas regarding the preservation of the Valley's cultural heritage. The language of the report seems to imply that the heritage resources are not very important.	It is recognized that the Red Hill Creek Valley has been home to people for over 100 years. The Red Hill Creek Valley has witnessed a variety of cultural landscape changes over the past two hundred years; from wilderness to farmed landscape, and from an active farmed landscape to one that has been compromised, from the 1950s onwards, by urban pressures and detrimental fringe uses. Although archaeological sites will be disturbed, the data that is in them has been recorded according to the Provincially regulated process. There has also been a 1999 Public Education Program, as well as an additional program proposed with First Nation Interpreters.
Public	The report does not consider all of the possible health effects on people who live near the valley.	Health impacts on school children and other sensitive groups (including elderly, children and those with respiratory problems) are assessed in the final Health Impact Assessment Report. This report also looks at the combined effects of local ambient pollutants in addition to the road.
Public	Concern about impacts to heritage buildings.	A detailed survey has been completed of the impact zone above ground for built heritage. 16 features were indicated, for example: buildings, foundations, culverts, bridge abutments etc. There are no direct impacts to heritage buildings. The 1960 pump house will not be affected.
Public	It is not clear, that such Native Experts have been consulted so as to minimize the possibility of burial site disruption.	It is not customary to consult with aboriginal elders and those with special traditional knowledge regarding the finding of occupation or burial sites, due to methodology. However once excavations were started, the Sixth Nations and local aboriginals were referred to for interpretation, and will continue to do so until the mitigation process is complete.
Public	The landscape of the entire watershed needs to be well documented and recognized. DSR Vol 2 falls short of this.	The Watershed Plan documents the watershed landscape. The Technical reports have assessed impacts in the context of the Watershed.
Public	Residents should be compensated, through decreased taxes, for the decline in property values and health impacts that will occur as a result of poor air quality.	The updated Health Risk Assessment report identifies the potential for health risks associated with additional vehicular traffic.
Public	Concern that the estimated volume of heavy truck traffic (7.5%) is too low.	ITrans has provided an updated truck traffic estimate report with the most current data. Refer to Air Quality Impact Assessment Report (RWDI), Appendix D.
Public	It isn't clear that all areas have been adequately surveyed.	All impact zones have been surveyed.
Public	The work by Mayer Heritage Consultants and Unterman McPhail Cuming Associates seems to have been either ignored or summarily dismissed.	The work undertaken by the City has enhanced our understanding of the past. Detailed mitigation activities have been undertaken for all appropriate cultural heritage features. (ArchInc)
Public	Additional survey work should be carried out in the Red Hill Creek watershed, especially above the escarpment.	Areas to be impacted by the Expressway were surveyed, under the same regulatory process that was applied above the escarpment. Built heritage feature and cultural landscape survey work has been undertaken in both the Valley and the larger watershed. The watershed plan identified shows potential based on an understanding of the overall location of archaeological sites in the watershed.
Public	The individual elements/components should not be viewed in isolation, but rather as integral parts of a very complex whole, DSR Vol 2 fails to do this.	It is recognized that cultural landscapes may also be examined in a holistic manner. The approved use of he Red Hill Creek Valley as a transportation corridor involves a dramatic transformation of the landscape. For the purposes of environmental assessment involving the anticipation of expected effects and the formulation of impact mitigation measures, it is reasonable to identify sub-components of the larger cultural landscape, either as smaller cultural landscape units or individual built heritage features.

Public	Report treats these resources as discreet entities and fails to recognize how all aspects of the landscape in concert with each other are party of the area's heritage.	It is recognized that cultural landscapes may also be examined in a holistic manner. The approved use of he Red Hill Creek Valley as a transportation corridor involves a dramatic transformation of the landscape. For the purposes of environmental assessment involving the anticipation of expected effects and the formulation of impact mitigation measures, it is reasonable to identify sub-components of the larger cultural landscape, either as smaller cultural landscape units or individual built heritage features.
Public	The fact that landscape is experienced by users is overlooked in it entirety.	It is recognized that cultural landscapes may also be examined in a holistic manner. The approved use of he Red Hill Creek Valley as a transportation corridor involves a dramatic transformation of the landscape. For the purposes of environmental assessment involving the anticipation of expected effects and the formulation of impact mitigation measures, it is reasonable to identify sub-components of the larger cultural landscape, either as smaller cultural landscape units or individual built heritage features.
Public	The underlying philosophy of the DSR makes it easier to dismiss this area as being of lesser significance/importance.	While the significance of the cultural heritage of the valley is certainly recognized, there are, unfortunately, few remnants of this past. What is present has been documented (ArchInc)
Public	How is the City planning on mitigating the carcinogenic impacts of diesel fumes?	Mitigation is being addressed both through improved engine design and pollution control equipment on vehicles. Programs like Drive Clean and vehicle maintenance programs directly affect the level of diesel emissions.
Public	Has a study been conducted to determine what affects the impacts on air quality will have on human health?	A draft Study report was produced by Cantox in 1998, based on the output from RWDI's updated modeling.
Public	A study needs to be conducted on the long-term health impacts of PM_{10} and other air-borne pollutants.	There is sufficient information about PM10 and other air borne pollutants in urban areas, to assess potential health impacts associated with the project.
Public	A study should be conducted which examines the number of pre-mature deaths that will occur as a result of building the Expressway.	The updated Cantox report on Health Impact Assessments, has addressed the potential for pollution related illness and/or death. The contribution from the RAVE compared to all other sources of pollutants to the Hamilton air shed will be quite small. The effect of predicted changes in PM can be assessed using relationships developed for large populations (urban areas, not neighbourhoods). Beyond these general comments it is not possible to provide any definitive answer to the question that would support a statistically significant change for mortality in communities adjacent to the RAVE.
Public	The omission of any health effect assessment of pollutants other than PM10, is critical.	By 2007 when the Expressway is expected to be constructed, SO2 will be substantially reduced in gasoline due to the improved pollution control devices for automobiles. CO, NO2 and VOC's have been assessed in the final Health Impact Assessment Report.
Public	Cantox was instructed to use the 24-hour averaging period, even when assessing effects on workers and children, when the 8-hr and 1-hr periods would be the appropriate and more realistic exposure levels. It is reasonable to state that the health effect impacts estimated by Cantox are gross underestimates.	24-hour averaging is consistent with health Risk Assessment practice. The only information available for CO and NO2 are in 1-hour averaging. Refer to the Carbon Monoxide section in the Final Report.
Public	It is significant that Cantox concluded that the PM pollution in valley will be a health hazard.	Refer to the updated Health Impact Assessment Report for a discussion on incremental safe levels of pollutants.
Public	New scientific data and findings released recently, underscore the criticism that these estimates of health effects are grossly underestimated.	The updated Health Impact Assessment Report and Air Quality Modeling is using more current knowledge of air dispersion and localized pollutants and Health Effect changes in air pollution, to estimate impacts at the neighbourhood level.
Public	Will the Region relocate people who are adversely affected by a decline in air quality as a result of the Expressway?	The City does not consider it necessary to move people as a result of predicted air quality.
Public	Concern about mitigation for residents living within 200 meters on either side of the Expressway who will be impacted by a decline in air quality and may have to move.	The updated Health Impact Assessment Report and Air Quality Modeling is using more current knowledge of air dispersion and localized pollutants and Health Effect changes in air pollution, to estimate impacts at the neighbourhood level.
Public	A monitoring system, which warns people when air pollution levels reach dangerous limits, should be put in place following construction of the Expressway.	The City is committed to a pre, during and post construction air quality monitoring program as per and agreement with MOE. In addition, the City is willing to consider monitoring in other parts of the Valley. This will be decided in detail design.
Public	How does the City intend to monitor the effects increased amounts of PM10 will have on the health of residents living near the expressway (specifically the effects on the health of the children attending the three schools near the	The City does not intend to carry out a health survey related to the effects of the road as it would not be possible to determine impacts from the road versus impacts as a result of other pollutant sources inside and outside homes.

	expressway)?	
Public	I strongly oppose the construction of the North-South section, on the grounds that air pollution associated with it will lead to an unacceptable adverse health impact on the Region.	The updated health risk assessment and air quality assessment provide more updated information on health impacts.
Public	Since the Cantox report used the data from RWDI as a starting point, given the substantial weaknesses in the RWDI approach and outcome, it is not surprising that the health outcomes have been underestimated.	RWDI's modeling and traffic data have been updated. When looking at the effects of mobile emissions on human health, Cantox has based their modeling on this updated data.
Public	Assumptions about traffic speeds, free flow conditions, and failing to account for the expressway grade are all subject to serious bias towards underestimating the emissions and resultant health impacts.	Effects from changing roadway grade, traffic speeds and free flow and queuing conditions were evaluated in the air quality assessment. Cantox evaluated the health effects.
Public	There should be compensation for residents who experience a decline in property values as a result of the Expressway.	It is difficult to determine at if there will be a decline in property values as there are people who want to have access to an expressway.
Public	The Region should pay the real estate fees for residents who will have no choice but to move away from the area because of health problems.	This project has been approved since 1985. It is difficult to predict how people's health are affected by roads, however individuals must make their own choices and decisions about where they are prepared to live.
Public	How can the City and province afford the estimated $136 million for this project?! How can you be part of a decision that so negatively impacts the health of our community?!	Yes, and the alternatives being suggested fall short of the roadway capacity needs of this Community.
Public	What is the cost of wet sweeping and flushing and will it be done?	To be determined in detailed design.
Public	Page 37 and 38. Will the City assume the liability for the health impacts?	Since these comments have been made, the Health risk assessment report has been updated to reflect current scientific knowledge.
Public	Concern that archaeological sites will be lost forever.	The Provincially regulated process of identification, evaluation and mitigation, results in the preservation of information from archaeological sites, even though their physical locations will be disturbed.
Stakeholders	Attached is Murray Lumley's list of schools in proximity to the Expressway, as well as his assessment of noise and air quality impact related to school children.	The City has been in contact with several schools in the vicinity of the Expressway to discuss school transportation and safety issues.
Stakeholders	Lumley will show that with the two documents (DSR Vol2, Traffic Noise Impact Assessment (RWDI) & Air Quality Assessment (RWDI)), that the construction of the proposed Red Hill Creek Expressway would be detrimental to the health and well being of children who already live, play and go to school in the vicinity of the proposed expressway.	The Health Risk Assessment study is based on update air quality and health risk assessment approaches. It outlines the potential risks to those who live, work or play in the vicinity of the Expressway.
Stakeholders	ADDITIONAL ITEMS: I see little in the Impacts Documents relate to the people in neighbourhoods within the Expressway vicinity such as Rosedale, Red Hill, Corman, Vincent, Glenview, Kentley, Nashdale, McQueston, and Parkview East. Why is their health and well being not considered in the impacts, other than the noise barriers that may be erected?	The aim of the Expressway Impact Assessment and Design Process is to reduce, where possible, environmental impact through changes to the approved Expressway design and the development of mitigation measures. Residents that live closest to the Expressway in the neighbourhoods you mentioned will directly experience most of the noise and air quality impact and are therefore the focus of mitigation. However, the impacts to the overall community are both positive and negative and these are also being considered.
Stakeholders	Quotes on page 25-26 of Visual Assessment, which starts; "The cumulative impacts of these escarpment alterations are predicted to be extremely high..."	The road will result in a cut to the escarpment that visually will be noticeable from specific vantage points. The City has been working with the Niagara Escarpment Commission to design a cut that will be the least visually intrusive. Previously the road was crossing the escarpment in two cuts. Now the crossing has been combined in one cut on the west side as per the NEC's request.

Stakeholders	The comments on cultural heritage downplay their importance, dismissing them as "disturbed". There also appears to be no evidence of native involvement in this work.	Some of the archaeological sites, built heritage features and cultural landscapes that have been surveyed and documented in the Red Hill Creek Valley may have been described as "disturbed". This is a statement of their condition or integrity and does not necessarily relate to their importance, expected impacts or mitigation measures. (Native involvement) - It is required to consult with the nearest First Nation upon discovery of any human remains in the course of archaeological investigations. None have yet been found. (Native burial sites) - No burial sites have been encountered during any archaeological work within the Red Hill Creek Valley undertaken by either the Hamilton Region Conservation Authority in 1995 or the more systematic survey and exploratory investigations undertaken by Archaeological Services Inc. on behalf of the Region. The archaeological work carried out over the past decade in the Red Hill Creek Valley has revealed that most of the prehistoric aboriginal sites are small campsites or isolated find spots. These types of sites usually fit within the distance to water model, described in background documentation to the Watershed Management Plan, and may be predicted with some confidence. Burial site locations, however, are often determined by a number of cultural, ideological, spiritual or aesthetic reasons. Their locations are usually impossible to predict, and thus test for, using economic based methods of spatial analysis. In carrying out archaeological fieldwork, burial pits or any other form of soil disturbance resulting from past human activity (e.g., post holes, middens and cooking hearths) are, nevertheless, revealed as changes in soil colour. These changes result from a variety of natural or cultural processes such as biological degradation of organic materials, the deposition of ash or mixed soils during refilling of subsurface pits or the effects of fire or heat on soils. Archaeological deposits of whatever eventual depth, such as burials, are still, therefore, revealed in the upper soil horizons ("excavations of 10 to 12 inches").
Stakeholders	Cantox made mention of the "slightly greater risk" for children who walk to school, play in a schoolyard, or pass over the highway. And most damaging is the reference made to the young and elderly, who are encouraged to limit their exposures! (Cantox report).	Refer to the updated Health Impact Assessment Report for the current assessment of health impacts. As a result of uncertainties affects are overestimated rather than underestimated.
Stakeholders	Misleading: " saves provincial taxpayers approximately $50 million." This is completely false.	This cost is in comparison to the location that was proposed by MTO in the early 1990s that would have resulted in major excavation of two landfills and construction in van Wagner's Marsh and Red Hill Marsh.
Stakeholders	Comments on Visual Resources conclude that impacts generally cannot be mitigated. There is no indication as to what will be done about this.	The City has worked with a number of stakeholders including the Niagara Escarpment Commission to develop a design for the Escarpment crossing. The preferred viaduct design minimizes the impact to the lower escarpment. The NEC recommended benching of the escarpment to reduce the impact of a straight cut. This is documented in a report on the selection of the escarpment crossing design.
Stakeholders	FON finds it difficult to discuss impacts of the expressway on the Niagara Escarpment solely with reference to the report "Visual Assessment- Escarpment Crossing: Baseline Inventory and Impact Prediction (June 1998) by Hough Woodland Naylor Dance Leinster.	The Visual Assessment report only assesses visual impacts associated with escarpment land. Other technical reports address other environmental impacts.
Stakeholders	One must conclude that the presence of this proposed expressway destroys the environment of this school for all inhabitants and renders useless this site as an Outdoor Resources Centre for the children of the Public School Board.	The Region has discussed this project with representatives of both school boards and is endeavoring to minimize to the extent possible the impact the expressway project will have on students and staff. School board representatives will be asked to review plans in the Deign Stage. Access to the valley for students will be maintained through a pedestrian crossing at Greenhill interchange.
Stakeholders	Gross visual impacts must be evaluated for what they really are- an indication of innumerable, much more significant negative ecological impacts.	Both ecological and visual impacts have been assessed.
Stakeholders	The Visual impacts of the project on the Niagara Escarpment, recognized as especially significant by both a provincial land use plan and the UNESCO World Biosphere Reserve designation- have been scoped down, by the EA exemption order and the IADP.	The Terms of Reference for the visual assessment was reviewed by the public and agencies prior to submission to the Ministry of Environment. Workshops were held with the public to provide input to the visual assessment.
Expressway Design		

Gov	Page 40 and 41, implies that realignment is not an issue as all realignments will be better fish habitat than the existing alignment, is this correct? Has this been substantiated as being feasible and accepted by DFO? Is it planned that detail design will do the investigations, assessments and negotiations?	Indicator for habitat is Fish Productive Capacity as per DFO habitat policy. The final Fisheries Report includes impacts and mitigation, and this is summarized in the Impact Assessment Summary Report. The channel realignment and its impact on fisheries and mitigation has been reviewed by DFO. Additional discussion and submissions will be provided during Detailed Design.
Gov	Conservation Authority staff request the City investigate design options that would improve the above noted access problem into Confederation Park.	This type of connection is not possible in this area.
Gov	Absence of an analysis of the relative benefits of providing alternate forms of transportation i.e. expansion of mass transit vs. building the roadway. This report exists in isolation from those and there is no analysis of the relative benefits from an air quality perspective.	The decision to build the Expressway was confirmed in 1985. This study is looking at ways to reduce the Environmental Impacts associated, not alternatives to the roadway.
Gov	The North-South Expressway design does not accommodate direct access into Confederation Park for Potential patrons traveling northerly along the Red Hill Expressway toward the QEW/Expressway Interchange.	There is currently no direct access into Confederation Park from the Centennial Parkway interchange.
Gov	We commend the Special Projects Office for choosing to take a long-term approach to stream realignment.	The City feels that taking a long term approach is more sustainable from several perspectives: ecologically, technically and economically.
Gov	A concrete structure downstream of the concrete saddle at King Street should be removed.	The City is working with DFO to ensure no net loss of Fish Productive Capacity.
Public	Can the City/province afford the (under) estimated $136 million for this project? Alternatives: Don't' build an Expressway, spend on public transit instead. Widen Centennial Parkway. Build Crombies 1994 roadway.	The City has determined that it can afford this project.
Public	Four lanes up the escarpment should be sufficient	The current proposal is for 4 lanes
Public	The North-South section could be moved east to Fifty Road. This would have less impact on the valley.	This would not solve the problems with traffic capacity on Mount Albion Road or Highway 20.
Public	The City should construct a turning lane on Highway 20 between King street and Queenston Road. This would make turning safer on Highway 20.	This suggestion has been forwarded to the Transportation Department for consideration.
Public	Build an overhead ramp at Highway 20 and King Street. This would eliminate the south-bound stop and would ease the grade on Highway 20.	The Highway 20 alternative has been assessed in earlier studies and has not been considered further. This study is looking at how to minimize environmental impacts of the approved design and location.
Public	It would still be preferable to re-examine other alternatives, ie. highway 20 overpass or east of hwy 20 to Fruitland road. At least publicize why these alternatives are not being considered.	These alternatives were considered in the earlier EA and were not selected. This study is looking at how to minimize environmental impacts of the approved design and location.
Public	On several occasions, large machinery has been driven through the creek bed in order to access woody debris build up at the mouths of culverts. In some cases when access is restricted, earth has been back-filled into the creek in order to provide footing for equipment.	Any filling of the creek has been temporary in order to remove debris that restricted water flow in the creek.
Public	Even though the regional government was notified of the situation more than six months previous, the project did not finally get under way until the spring spawning run of white suckers, the most abundant large fish currently using the creek. During the channel repairs, no effort was taken to minimize impacts to the water quality of the creek or to the spawning fish. One of the authors of this report was present at the site and witnessed large quantities of sediment dumped into the creek as earth was added. The creek was further muddied as the machinery drove through the fresh earth and the creek bottom, causing excessive sedimentation and smothering fish eggs from the construction site to the mouth of the creek. This was such a blatant violation of the Fisheries Act and done so openly that onlookers could hardly believe what they had witnesses.	The temporary diversion project was done as an emergency project in consultation with all government agencies with an interest in the creek.
Public	What are the benefits of the Expressway to the taxpayers in the City?	The Expressway will address both present and future traffic congestion on local roads such as Mount Albion Road and Highway 20. In addition, it will provide access to the residential, commercial and industrial development on the east Hamilton/Stoney Creek Mountain and the area below the escarpment.

Public	The negative impacts are dramatic and numerous. It will be difficult to resolve all of these issues.	It is not always possible to mitigate for every type of impact. However, where it is not possible to directly mitigate an impact, compensation will be considered.
Public	What will happen if monitoring shows that the predictions were wrong – will there be further mitigation?	The purpose of monitoring is to determine if the impact assessment is accurate and to be able to address issues as they arise. In some cases further mitigation may be possible but in other cases the monitoring will provide valuable data about the accuracy of impact prediction for use on similar projects elsewhere.
Public	Cost of the project has probably tripled since it was first proposed and will continue to increase the longer we put off proceeding.	Construction costs are dependent on the economy at the time that the contracts are awarded.
Public	The concrete channel and culvert [at the King St. overpass] was identified by the Region's fisheries consultant, C. Portt and Assoc. (1997), as a barrier to fish migration and there have been no plans to correct the situation. The culvert also directs water at the existing stream bank, causing accelerated water velocity and interrupted sediment transport.	The King Street channel and culvert is being modified from 3 cells to 1 cell to ensure adequate water for fish movement during low flow.
Public	As an alternative to the Expressway, hook up the Lincoln Alexander Parkway with Mud Street to Highway 20. Upgrade Hwy. 20 to the QEW to make it safe. Upon completion of Fruitland Road access, extend the Lincoln Alexander Parkway east to hook up with the Fruitland Rd. Mountain access. This would complete the Region's ring road expressway that they wanted to build since the 1950's. At most only a 2 lane access is needed just west of Mount Albion Road to King Street.	The extension of the Linc to Fruitland Road would not resolve the problems with capacity of traffic on escarpment crossing roads in east Hamilton.
Stakeholders	"Alternatives to the Red Hill Valley route were examined but due to cost, neighbourhood disruption and environmental impact, non are considered more acceptable that the current Expressway project." This statement may be technically correct, but it is intentionally misleading.	Additional alternatives were also examined in the Crombie report (mid 1990s).
Stakeholders	Attention to these issues and independent monitoring of the construction work and the quality of the Creek and its wetlands could go a long way to satisfying our concerns.	The reduction of suspended sediment loads to Hamilton Harbour via Red Hill Creek is being addressed by the Expressway project. As well, the Region will fulfill the monitoring commitments it identified in the Exemption Order submission approved in 1997 (see pages 35 to 37). Proposed monitoring is documented in Impact Assessment Summary Report. Details of monitoring will be provided in design report.
Stakeholders	Regarding "Focused on Design and Construction": Any reduction in negative impacts, be it location specific or region wide, should be addressed in this document.	The purpose of the Impact Assessment is to show that design changes to the project have reduced impacts. The IASR describes improvements that extend beyond the valley. Examples include water quality and fisheries, which benefit the creek and other water bodies such as Hamilton Harbour.
Stakeholders	"Alternatives to the Red Hill Valley route were examined...none are considered more acceptable that the current Expressway project. " Is a gross understatement of the facts.	This was established by the Joint Board and through subsequent examination of alternative locations in the early 1990s.
Fish, Wildlife and Terrestrial Resources		
CSC	It should be noted that a number of wildlife corridors still exist.	The expressway will impair the function of primary wildlife corridors associated with the Red Hill Creek valley and Niagara Escarpment. However, some tertiary linkage functions will be retained through mitigation and design considerations, such as the viaduct, and culverts which will be sized to attain optimum movement results.
CSC	Wetland expansion, in addition to recreation or restoration, should be considered.	New wetlands will be created through the revitalization of the creek and will furnish further wetland cover, in the abandoned channel regions as well.
CSC	Road salt impacts not addressed.	The EMP will review the options for road safety, and if salt is chosen as the primary method, than the impacts on wildlife will be studied further. It is anticipated that salt spray will indirectly impact wildlife by damaging adjacent vegetation and contaminating surface water runoff,. The Landscape Management Plan will identify salt-tolerant native plant species for use in roadside plantings.
CSC	Air and noise impacts are serious.	Noise was identified as a factor that will indirectly impact wildlife behaviour (refer to definition of Indirect Impact Zone in DSR Volume 2). Examples of expected behaviour changes are: migration, mating process and availability of food and shelter. There is a growing body of literature on the effects of road noise on wildlife. The Final Report will summarize wildlife categories

		and areas where noise is expected to have a significant impact. It should be noted that noise is already a significant constraint in the QEW corridor.
Gov	Page 21: Direct/Indirect impacts: We disagree with the assumption that all indirect impacts to vegetation and wildlife will be restricted to within 50 meters of the road surface.	The indirect impact zone is identified in the Terrestrial Resources Technical Report (TRTR).
Gov	Indirect impacts will extend beyond the 50 meter setback used in the impact assessment.	The indirect impact zone is identified in the Terrestrial Resources Technical Report (TRTR).
Gov	Special regard should be given to areas in the Valley that contain high concentrations of breeding bird species. Region should investigate the utility of sound barriers along areas with important breeding habitats. (Mud St. to King St)	Forested sections of the upper valley will experience some of the impacts referred to. In these areas it is anticipated that the most intense edge impacts will be concentrated in the 50 m indirect impact zone. The extent of these impacts can be reduced through forest edge enhancement plantings, screenings and other mitigation measures. Nonetheless, the adjacent habitats will continue to experience long-term impacts due to noise. For this reason, we have indicated that these adjacent areas will experience high-level impacts to ecological functions that are unmitigatible in this location. Refer to the Terrestrial Resources Technical Report (TRTR) for forest restoration areas.
Gov	New slopes along the expressway should be re-vegetated using native vegetation species.	The TRTR recommends the use of Native Species and principles for mitigation.
Gov	Salt barriers should be installed along the expressway adjacent to natural woodland areas.	The maintenance management plan will outline a de-icing strategy for the road that minimizes the environmental impacts but maintains safety. The TRTR includes a fact sheet with the impacts of salt on the natural environment and mitigation options, including landscaping with salt tolerant species.
Gov	Page48-50: Impact to Significant Species: The proposed plan to relocate 7 rare species requires more detailed assessment and planning. Region should consider contacting local groups to see if they would be interested in undertaking rescue projects.	The details of the relocations will be addressed in the Design Report Partnership, in cooperation with local groups will be sought.
Gov	Permanent sample plots should be established for vegetation monitoring in high quality woodland areas adjacent to the expressway to monitor changes in species composition, increase in non-native flora, declines in species diversity and the presence of significant species identified in the biological inventory.	The TRTR will identify a monitoring plan which will be detailed in the design report with consultation with the Ministry of Natural Resources.
Gov	Permanent monitoring sites should also be established to assess changes in wildlife and fisheries communities/populations.	The TRTR will identify a monitoring plan which will be detailed in the design report with consultation with the Ministry of Natural Resources.
Gov	The monitoring program must be designed to answer specific questions related to this project. For instance: identify the specific question that need to be answered through the monitoring program. -identify suitable sample stations -identify the parameters/species/indicators that should be sampled to answer the research questions. -Identify appropriate sampling times and frequency -determine appropriate sampling techniques, statistical analysis methods -ensure that sufficient baseline data is available to compare pre-construction conditions with post-construction conditions.	The indirect impact zone is identified in the Terrestrial Resources Technical Report (TRTR).
Gov	Page 41 under "Impact", all statements appear to be condition changes have the actual impacts of these changes to fisheries been determined?	The final Fisheries Report includes impacts and mitigation, and is summarized in the Impact Assessment Summary Report.
Gov	Page 50,51, information on vegetation and wildlife, impacts and mitigation are too general, more details needed.	More detail is provided in the specific technical reports. This report is a summary of key impacts and mitigation. More detailed mitigation will be provided in the Design Report.
Gov	Ms. Cynthia Mitton-Wilkie: Page 40-41: Perhaps the table for fisheries should be rewritten separating the impact of the work from the mitigation that is integrated into the design.	Almost all of the fisheries mitigation is related to creek redesign work.
Gov	I thought that wetland enhancement/creation was possible in Van Wagner's marsh that would partially compensate for the loss, is this no longer the case?	High-level impacts cannot be mitigated, due to their effect on critical ecological functions. It may be possible to offset the loss of wetland functions through habitat enhancement and creation, however the success of these efforts cannot be determined until monitoring studies are

		undertaken.
Gov	HRCA staff request additional detail on what other areas are being compared to the Red Hill Valley and whether the migratory species being considered are diurnal migrants following the Escarpment or nocturnal migrants, not following the Escarpment, using the valley as a stopover.	Significant migratory use by songbirds has persisted in the Don River Valley in Toronto despite the construction and operation of the Don Valley Parkway. The degree of habitat fragmentation created by the DVP and urbanization in the lower Don valley, in combination with the elimination of shoreline wetlands on Lake Ontario, is likely comparable in many respects to that proposed in the Red Hill system. However, impacts to particular categories of birds may not be directly comparable. It is likely that diurnal as well as nocturnal migrants will continue to use the valley, although loss of suitable natural cover will affect numbers and possibly diversity. Expressway designers are currently indicating that lighting will be restricted to intersections and on/off ramps. Thus a bird's eye view would not see a solid ribbon of light, but rather small islands of light situated along its length. Nocturnal and diurnal migrants will still find that the southern entrance to the valley continues to offer areas to rest and feed. However, birds migrating along the Valley will likely be inhibited by bottlenecks in natural areas, lack of natural cover, noise and pollution.
Gov	Specific technical data will be needed by detail design. Ex: Fish species specifications.	The final Fisheries Report includes impacts and mitigation, and is summarized in the Impact Assessment Summary Report.
Gov	Fish species and their role as an important component of Red Hill Creek Ecosystem" need to be identified for detail design.	The final Fisheries Report includes impacts and mitigation, and is summarized in the Impact Assessment Summary Report.
Gov	FISHERIES: Red Hill Creek has been abused historically, which has degraded water quality and destroyed aquatic habitat.	DFO has been provided authorization under the Provincial Fisheries Act.
Gov	Construction of the highway will further degrade existing watercourses. Every reasonable effort must be made to improve existing problem areas and avoid the creation of new problem areas. Large planting stocks should be utilized.	The natural channel design approach will address many of the existing problem areas.
Gov	A net gain of fish habitat should be realized with the creation of compensating wetland.	The City has worked with DFO to ensure No net loss of Fish Productive Capacity. The Terrestrial Report has indicated where wetland restoration/enhancement should occur.
Gov	Page 40-Impact to Fish Migration: The King Street Concrete structure should be removed to maximize fish migration potential.	The City is working with DFO to ensure no net loss of Fish Productive Capacity.
Gov	Page 41-QEW/Burlington Street Interchange: Mitigation proposed for fish habitat may not be desirable from a wetland functions perspective or for the management of specific species guilds. Removal of the pier at Burlington Street should be assessed as to its effects on sensitive wildlife species present in the Marsh.	Wetland creation in this area is not currently a proponent of the project.
Gov	Page 50-51: The size of the significant wildlife and plant specie areas to be impacted should be mentioned in this section.	The total area of significant habitat in the QEW area to be impacted by road work is less than 1 hectare . Refer to the Terrestrial Resources Technical Report (TRTR). The impacted area is known to provide habitat for significant plant species, as well as suitable breeding habitat for significant bird species.
Gov	Regarding Authorization under the Fisheries Act, I would like a copy of referenced documents #1, 16, and 17.	The City will provide any reference documents to MTO.
Gov	DFO agreement is required (fisheries authorizations and compensations) before turnover to detail design. Also RHW is required to submit the formal application for fisheries authorization during detail design even though MTO is carrying out Detail Design. Were these requirements addressed/resolved? Minutes of meetings would be appreciated.	A submission was made to DFO in July 2002.
Gov	Page 51 lists impacts on vegetation. They should be investigated and resolved during preliminary design. A "bridging" document of current work would be of assistance.	All proposed mitigation has been determined to be feasible.
Gov	Page 50, there is no number given for the number of uncommon species in Hamilton Wentworth.	There are two species in the QEW study area considered to be uncommon in the Region (see technical report). This number was not included in DSR Vol. 2.

Gov	The report contained conflicting values of how much wetland habitat (Van Wagner's Marsh) was to be lost. (1.1ha and 0.6ha)	Last minute design revisions resulted in the discrepancies between the published values. The precise amount of wetland loss will be reported accurately in the Final Summary Report and Terrestrial Resources Technical Report.
Public	How and where, will new habitat for wildlife be created?	This issue will be addressed by the Landscape Mitigation Plan.
Public	The replanting of 2,000 trees does not make up for the loss of 47,000 trees. More trees should be planted.	More that 2000 trees will be planted. See the terrestrial report and the draft landscape Management Plan for recommendations on tree replacements.
Public	This completely altered surface regime will impact existing vegetation communities, both riparian and terrestrial, and displace most species that are dependant on the currently drier conditions.	As discussed in the Final Terrestrial Resources Technical Report it is anticipated that there will be localized tree loss, and changes in composition in favour of adapted floodplain species due to increased flooding. The net benefits of restored floodplain functions are expected to be beneficial to most biota.
Public	The proposal also states that as a benefit of the RHCE, three barriers to fish migration will be removed. The King Street culvert, a serious barrier to migration and a result of expressway construction, to this point remains. The Queenston road channel is also a result of RHCE construction and represents a violation of Fisheries Act. It therefore should be removed or modified regardless of whether the Expressway construction proceeds. The pilings at the Burlington Street bridge do not represent a barrier to fish migration, and therefore its removal represents a negligible improvement to fish habitat. This means only the concrete saddle above King St. will be removed (this relatively minor structure could likely have been removed relatively inexpensively bay a community fisheries improvement project). Immediately downstream, the much more substantial King St. culvert remains.	The King Street culvert is being modified from a 3 cell to a 1 cell structure to ensure adequate water for fish movement during periods of low water. The Queenston Road concrete channel is being removed and replaced with a natural channel design. The Burlington Street piers currently displace fish habitat and will be removed.
Public	Concern that constructed wetlands will be hazardous for people and wildlife because they will store the contaminants from stormwater running off the Expressway.	Scientific literature is limited and inconclusive with respect to this matter.
Public	Concern that habitat restoration efforts will not be effective, given the King and Queenston overpasses, erosion on the Lincoln Alexander Parkway embankments, and the damage done to the creek by armour stone walls.	The City is putting in place an environmental management system for construction and a maintenance management and monitoring plan for post construction. The Impact Assessment Summary Report and the Design Report will also indicate what will be required for ongoing maintenance and monitoring.
Public	If development causes creek instability, why is the Region building in the valley?	The construction of the Expressway in the valley involves stabilizing the currently degraded stream and floodplain system, in order that the two can be compatible in the context of ultimate watershed development.
Public	IMPACTS OF ROAD SALT ON CREEK: Road salt impacts the nearby vegetation and aquatic habitat and may also affect industrial use of Harbour water due to corrosive effect of chlorides. High levels of chloride in the creeks already observed in past winters are clearly the result of road salting.	The City will be preparing the Main Management Plan to address de-icing of the road in a way that has minimal natural effects but maintains the highest level of safety.
Public	See letter. We feel that the erosion process throughout much of the new channel will be impossible to mitigate effectively. The Region claims that nearly the entire length of the channel will be re-vegetated, but for this to be effective in preventing excessive erosion, mature trees would need to be planted. Regardless of re-vegetation, without the presence of large mature trees, massive erosion of the new channel seems certain.	The objective of the proposed creek re-alignment is to re-set a balance with the current and future land use objectives of the watershed (i.e. the hydrology) and to construct a stable plan, cross-sectional and longitudinal profile. It is recognized that some areas of the creek will continue to be exposed to abnormally high rates of erosion within the outer bank regions of the bends which will induce stream erosion that can not be mitigated by vegetation (i.e. rooting mass). That is why in-stream structures such as rock veins, log veins, root wads, cross veins and double wing deflectors shall be used to maintain grade control and mitigate and reduce the current rates of erosion.
Public	Carp barriers should be built to protect Van Wagner's ponds.	Carp barriers have not been identified as a need in this area.
Public	More on history of the Fisheries Community of Red Hill Creek.	The geology and hydrology of the Red hill Creek valley is different from that of the tributaries of Lake Ontario which were known to be major Atlantic salmon streams, and is different from Grindstone, Spencer and Ancaster Creeks which, unlike Red Hill Creek support successful reproduction of rainbow trout today. This indicates that Red Hill Creek is not, and was not, "comparable in nature".

Public	C. Portt & Assoc. (1997) disprove the assumption that the Chinook salmon smolts (actually parr) captured kilometers upstream in Red Creek were naturally reproduced. However, regardless of the origin of the young salmon, the fact remains that adult Chinook salmon spawn in the creek and that parr of this species are present. It can thus be concluded that suitable fish habitat exists for both life stages of this species. Chinook salmon, as well as rainbow trout and brown trout use Red Hill Creek on a seasonal basis. Since these fish are generally much less tolerant than the majority of Red Hill's resident species, there is no doubt that the entire fish community would benefit from management that acknowledges their presence. Groundwater resources are important in reducing summer temperatures. The section through the golf course immediately above this site has very little shading (Staton 1996) and therefore susceptible to solar heating. Further reductions in stream temperature could therefore be expected in this reach by enhancing riparian vegetation to increase shading.	The presence of brook trout bones in a midden does not necessarily indicate that the fish was caught in the stream which flows beside it. As the authors indicate, there is no way to prove whether or not Brook Trout occurred historically in RHC. There is no doubt that the presence of both adult and parr chinook salmon indicates that "suitable fish habitat" existed for the survival of the individuals at the time they were observed. The presence of stocked fish certainly does not indicate that the habitat is capable of supporting a self-sustaining population. The position of the authors, is that Red Hill Creek should be considered a cold water stream, or managed in order to turn it into a cold water stream. With the possible exception of the areas above the escarpment, based on the hydrogeology of the watershed, it does not appear possible. Hydrological investigations to date have indicated that there is limited Groundwater discharge to the RHC below the escarpment. Shading could potentially reduce maximum temperatures. The intent is to allow the stream to meander within regions with high rooting density to minimize bank erosion and to provide cover for diversity in habitat to the fisheries. The fact that rainbow trout have not become established in Red Hill Creek, but have become established in Grindstone and Ancaster Creeks suggests that is some aspect of the habitat in Red Hill Creek which is not suitable.
Public	The removal of debris itself represents the destruction of fish habitat, and is often directly harmful to many fishes. See letter.	The point raised is valid for many types of streams. However, the context of this pint is not valid. Red Hill Creek is within a lucustrine clay environment for much of the reach between the toes of the escarpment and Windermere basin. Observations from the tree falls demonstrate that all of the trees that have been falling into the creek and carried down stream are straight. This is an expression of the abnormally high rates of erosion along the creek. If the creek was in a pseudo steady state between discharge and erosion the lateral migration would typically occur at a rate whereby there would be a curvature recovery rate of the trees to compensate for the stream migration. As has been documented in the fluvial geomorphologic study, the tree falls result in altering the velocity distribution of the channel. Since the current state of the creek is an evolving entrenched system, the tree falls which alter the velocity distribution result in increase rates of bed and bank erosion. True, that tree falls typically increase scour depths and generate pools. However, bedrock is in close proximity to the bed of the stream, and in most cases outcrops on bedrock in the pools down stream of the Green Hill CSO. Therefore, because of the change in scour associated with tree falls and the proximity of bedrock, the pools do not get deeper but the stream erodes wider (see for example erosion cross sections 16B and 19A). These adversely high rates of bank erosion then also contribute to increased sediment loading to the stream and Windermere basin.
Public	Will the newly constructed floodplain be designed to allow fish movement from the floodplain to the creek? Will the newly designated large floodplain areas (reservoir) above King Street be contoured to ensure that most fish will be able to find their way back to the channel as the floodwaters recede? If this is not the case, large amounts of fish may be trapped and killed in this reservoir area. The problem of trapping fish in the floodplain is further enhanced by the rate at which floodwaters rise and fall within the Red Hill Creek Floodplain. What is the anticipated cycle in the reservoir area?	The site referred to is known as the proposed Greenhill Stormwater Quantity Management Facility. It would only come into effect in terms of flood water impoundment for events more significant than a 2 to 5 year storm during which time waters would spill from the proposed channel into the existing channel referred to as a remnant. If fish or other aquatic habitat are swept into this area during a major storm, there would be an opportunity to be reintroduced into a lower velocity zone (i.e. remnant channel) and ultimately discharge back to the existing stream upstream of TH&B. This would be considered a positive feature. The flood plain will continue to function and be re-connected to the channel to function at discharge greater than bankfull stage (i.e. more frequently than currently), which is a criteria for increasing the stability of the stream channel. Back water areas currently exist and will continue to exist in the future to maintain refuge in high water conditions. This will also be accomplished through the use of in-stream structures. Although the primary objectives of the in-stream structures are to mitigate and reduce bank erosion, they provide structure and quiescent water in high discharge events for fish. It is not clear what the author means by a "flood cycle". However, in terms of the supporting hydrologic analysis, each area has been modeled for over 30 years of rainfall runoff during which time any event, in terms of its duration and stage within the proposed stormwater management facility, can be defined. Typical periods of inundation, though, would be less than one day and would be highly dependent on the volume of the storm.

Public	Relocating the fish populations is another major consideration. No explanation as to how this will be accomplished has been offered. Even if every effort is made to be thorough in collecting and moving these fish, there is no doubt that severe losses will be incurred. The loss of fish will continue after the re-location is completed. The new channel will be void of aquatic invertebrates, the main stable for stream fishes. Invertebrate populations will take several years to return to acceptable levels, and even then, some sensitive species existing only as remnant populations, may be lost forever.	As portions of the new channel are completed and connected to the old channel, there will be a surplus of substrate material left in the old abandoned channel. The substrate material in the old abandoned channel will be excavated in the wet subsequent to blocking of the channel. This material will be used in portions of the channel that is being constructed as the substrate. Carried within the sediment will be community of benthic organisms which will be transferred to the new channel in the transfer of the sediment. Many of the logistics of the cycle times and transfer locations will be part of the detailed site construction drawings and salvage drawings and inventories.
Public	Two notable features of fish habitat that will be lost under the existing RHCE plan include a pool at the Heritage Bridge abutments and the loss of one of the only functioning floodplain wetlands to an off ramp onto King Street.	From a fish habitat perspective, the wetland in question was electrofished in 1998 and found to contain only brook. The bridge abutments are failing, or have failed. (Portt)
Public	How much of the valley floor will be covered by the Expressway?	This has not been calculated. However approximately 70 hectares of habitat will be removed for the project.
Public	How much land will be impacted by the realignment of the creek?	The stream design estimates that 31,000m^3 of excavation will be required which will convert 10 hectares of existing flood plain into a stable creek alignment.
Public	How will the loss of trees affect the rate of erosion?	In many cases, the proposed stream alignment will flow within paleo channels (historical channels) or within higher density vegetative communities. By placing the stream within these areas, channel stability will be achieved upon construction since dense vegetation communities presently border the alignment. A riparian corridor will be developed in areas where vegetation density is low (approximately 1-2 channel widths on both sides of the stream) to ensure that enhanced bank stability through stream bank plantings is achieved.
Public	These are but a few recent examples of the disregard the regional government has shown towards the Fisheries Act (the Queenston channel would be yet another notorious example.).	The Queenston Channel received approval from the appropriate agencies at the time it was built. The creek realignment work that is being proposed now will realign the creek to the opposite site of the valley into a natural substrate. When the Region realized that the weir and the channel were preventing fish from moving past, staff coordinated a multi-agency approach to remediating the problem. The solution is considered to be temporary until the creek realignment is undertaken.
Public	Considering that the Niagara Escarpment is a recognized World "biosphere" how can you justify, and how did you get permission to destroy this part of the escarpment?	The Joint Board public hearing in 1985 approved the road and the permit requirement for work in the escarpment area.
Public	How much money will be spent on replacing the trees that will be lost?	The current estimates for measures to mitigate impacts to the terrestrial ecosystem are summarized in the final Terrestrial Resources Report. That report recommends replacing five (5) trees for each tree removed, either in the Expressway corridor or elsewhere in the watershed.
Public	Wetland re-creation is difficult - how much is going to be spent on this?	The current estimates for measures to mitigate impacts to the terrestrial ecosystem are summarized in the final Terrestrial Resources Report. The recommended measures include expanding existing wetlands, and creating new wetlands, resulting in an overall gain in wetland cover. Wetlands of the types that are being impacted can be successfully recreated.
Public	How many of the different vegetation types which are found in the valley will be lost or impacted?	The Terrestrial Resources Background Inventory Report (dated July 1997) merged the various classifications to develop vegetation cover types (VCT) that could be easily interpreted by the public. Based on these simplified categories, 6 VCT will be impacted. The target is that reproduction will strive in new habitats that are created elsewhere in the Landscape Management Plan. Table 2 in the Draft Terrestrial Resources Technical Report (dated June 1998) provides a breakdown of the types of communities included for each VCT.
Public	Concern that there will be a reduction in absorption and evapo-transpiration when trees are cut down to build the Expressway.	See RWDI and Blackport responses. The floodplain trees will have to absorb more water once the creek is realigned, which will increase the infiltration. So even though there will be fewer trees, the ones present will be more active (with evapo-transpiration) then they currently are.

Public	Information is needed on what is going to be done about impacts to wildlife: foxes, deer, coyotes, raccoons, rabbits, rats, mice, birds, migrating birds, butterflies, and migrating butterflies.	Most wildlife will be impacted to some degree by the development, but this does not necessarily mean they will be displaced from the valley. Some species (e.g. meadow species) may benefit from habitat changes. Cumulative impacts on wildlife has been assessed on the basis of a) loss of specific habitat types, b) likely effects on species of concern whose current use of local habitats is documented, c) impacts on critical habitats and ecological functions such as linkage and migration, and d) impacts on overall habitats at the watershed scale. As discussed in the Terrestrial Resources IADP Technical Report, the determination of net impacts is currently tentative as it will be dependent on confirmation of detail design of the expressway and creek realignment, and the degree to which mitigative measures are successfully implemented. Mitigation options are a) Rescue all removable wildlife, b) communicate expected action of non-rescue able wildlife.
Public	Concern that animals will over run neighbourhoods once their habitat has been destroyed by construction of the Expressway.	The displacement of wildlife species is considered a serious issue both in relation to direct habitat removal as well as displacement of species. Efforts to mitigate these effects, as indicated in DSR Vol. 2 (pages 49, 51), will include creation of new habitat, particularly for species of concern if feasible. It is noted in DSR Vol. 2 (pages 49 and 51) under Habitat Enhancement and Creation that habitats known to support significant species will be recreated or restored. It is intended that that wildlife species that become displaced, will be able to seek refuge in some of the newly created habitats. It should be recognized that the expressway will be built over a period of several years, and wildlife populations will not be immediately affected by road kills. Ultimately, road kills will affect the sustainability of some local wildlife populations and hence gene flow in the vicinity of the valley corridor. The Final Report will provide more information on wildlife susceptibility to road kills, and possible mitigation measures.
Public	Concern that vital wildlife corridors will be destroyed.	The expressway will impair the function of primary wildlife corridors associated with the Red Hill Creek valley and Niagara Escarpment. However, some tertiary linkage functions will be retained through mitigation and design considerations, such as the viaduct, and culverts which will be sized to attain optimum movement results. Some secondary and tertiary linkage functions will be retained through mitigation and design considerations, however these opportunities will be limited due to the extent of habitat removal and fragmentation.
Public	What will be the effect of cutting off the migratory route for animals and birds by constructing the Expressway? How will these impacts be monitored and mitigated?	It is difficult to predict the absolute impacts of development on migratory birds until post-construction monitoring is initiated. Monitoring will provide data, which can be compared with the baseline data provided in the Red Hill Valley Biological Inventory. However, measures of habitat loss and loss of function indicate that changes to the numbers and species composition of migratory birds using the corridor can be expected. This will be examined in more detail in the mitigation table in the Final Report.
Public	Concern about the spread of garlic mustard which is exacerbated by development and opening of the canopy.	Garlic mustard, as well as several dozen other exotic plant species, are already prevalent throughout the valley and Escarpment. Expressway construction will take precautions to avoid spreading these undesirable species throughout the system. Mitigation includes; aggressive planting or spraying.
Public	Concern that the loss of 0.6% of the class 1 wetland is significant.	Loss of wetland area is considered a high-level impact to the wetland function within the PSW. The target is to create new areas, which will compensate for the loss of the wetland.
Public	Concern that the breeding of the Least Bitten will be affected by the Expressway.	Known nesting sites for Least Bittern in Van Wagner's Ponds and Marshes will not be directly affected by the Expressway. The expressway will however, remove wetland habitat considered suitable for this species.
Public	How will impacts to wildlife be mitigated?	The mitigation options for the impacts to habitats that sustain wildlife will be addressed on pages 9 and 10 of the Draft Technical Report.
Public	Where will the Region source the rare Carolinian species (walking fern, blue whosh, hepatica acutiloba) found in the Valley?	Walking Fern habitat will not be affected by the project. The Landscape Management Plan will address how native plant species will be obtained.
Public	Concern that diesel fumes and other traffic emissions will negatively affect the regrowth of vegetation.	Refer to Air Quality and Thermodynamic Impact Reports (RWDI)
Public	What kind, where, and how much vegetation planting will occur?	This issue will be addressed by the Landscape Mitigation Plan.

Public	There is little or no documentation of Red Hill Creek's fish communities prior to 1967 (C. Portt & Assoc. 1997) Based on background information on other Lake Ontario tributaries, several conditions may be accepted as typical in history for a system like Red Hill Creek, but again little proof is available to support any definite conclusions.	This is correct, there is little documentation of fish communities from 1967.
Public	How many wildlife crossings will be needed?	Numbers of crossings are not as critical as their strategic placement and design. In general, a larger crossing, which introduces adequate daylight, provides good sight lines for wildlife safety, and some cover, can be more effective than a small culvert. However, such structures are very costly, and some species may avoid using them if humans are actively sharing the space. The Terrestrial resources study team has provided guidelines for crossings at the Escarpment and downstream within the valley. However, culverts and bridges will not fully compensate for the loss of linkages within the Study Area. Measures to promote wildlife use of culverts will be considered in the Landscape Mitigation Plan, which will guide detailed design of these facilities.
Public	Concern that culverts will not be effective as wildlife crossings	Numbers of crossings are not as critical as their strategic placement and design. In general, a larger crossing, which introduces adequate daylight, provides good sight lines for wildlife safety, and some cover, can be more effective than a small culvert. However, such structures are very costly, and some species may avoid using them if humans are actively sharing the space. The Terrestrial resources study team has provided guidelines for crossings at the Escarpment and downstream within the valley. However, culverts and bridges will not fully compensate for the loss of linkages within the Study Area. Measures to promote wildlife use of culverts will be considered in the Landscape Mitigation Plan, which will guide detailed design of these facilities.
Public	Since parts of the valley are environmentally sensitive extra precautions should be taken during the construction phase.	The Environmental Management Plan will anticipate all issues that may arise and construct as environmentally cautious as possible. Refer to Region (DFO/MOEE/MNR) best practices.
Public	What evidence is there in the scientific literature to support the success of the re-creation of wetlands?	Wetland recreation is a field that has been under development for the last few years. The bibliography makes reference to literature which, recommends innovative means in creating wetlands such as seed banks which have worked quite well.
Public	How do you intend to re-create habitats for waterfowl and the least bitten?	Guidelines for habitat creation for particular species are available through Environment Canada, Ducks Unlimited and other sources.
Public	Seed stock and plant material should be regionally sourced (ideally from site).	Seed stock and plant material are of great importance, and as much as possible will be collected on site prior to construction.
Public	No mention of the impacts the loss of trees has on wildlife, the loss of cooling vegetation, air quality problems, water quality from runoff, excavation of contaminated sites, visual impacts, loss in property value, needed relocation of recreational lands, salt-spray from the roadway which will kill vegetation.	It is noted in DSR Volume 2 (pages 49 and 51) under Habitat Enhancement and Creation that habitats known to support significant species will be recreated or restored. It is intended that wildlife species that become displaced will be able to seek refuge in some of the newly created habitats. It should be recognized that the expressway will be built over a period of several years, and wildlife populations will not be immediately affected by road kills. Ultimately, road kills will affect the sustainability of some local wildlife populations and hence gene flow in the vicinity of the valley corridor. The Final Report will provide more information on wildlife susceptibility to road kills, and possible mitigation measures. The impacts of increased noise on wildlife were not assessed independently in IA studies. Nonetheless, noise was identified as a factor that will indirectly impact wildlife behaviour (refer to definition of Indirect Impact Zone in DSR Vol. 2). The LMP will identify salt-tolerant native plant species for use in roadside plantings.
Public	What is actually going to happen here (cumulative impacts) and how does it compare to the present?	Cumulative impacts are summarized in the Draft Terrestrial Resources Technical Report. The cumulative effect of Expressway construction and usage as it relates to the following factors was considered in the impact analysis: a) loss of specific habitat types, b) likely effects on species of concern whose current use of local habitats is documented, c) impacts on critical habitats and ecological functions such as linkage and migration, and d) impacts on overall habitats at the watershed scale. As discussed in the Draft Terrestrial Resources Technical Report, the net impact to ecological functions in the valley is considered high. High-level impacts cannot be mitigated within the study area. (Dougan)

Stakeholders	Serious Potential impacts are not addressed in either report. (Natural areas adjacent to the indirect impact zone will be compromised.	Michael Mesure of the Toronto-based Fatal Light Awareness Program (F.L.A.P) was contacted regarding the possible effects of expressway light on wildlife behaviour. He stated that artificial lighting (street lighting, highway light standards, vehicle lights) can affect the breeding habits of birds, however these effects are difficult to quantify and studies are limited. Mitigation measures should aim to limit usage of light standards to intersections and on/off ramps. Consideration should be given to not positioning light standards in sensitive areas, and plantings should be used to shield adjacent habitats. Normal street lighting or those used on most highways usually do not have a significant negative impact on bird migration. Most light standards are not overly tall and the column of light does not usually extend upwards, thereby attracting birds. However, newer light standards, such as those now being used along the 401 in Toronto, are much taller that the older ones. In certain circumstances, especially when conditions are foggy, these light standards have the potential to attract birds and cause injury. Lights can have more of a negative impact when they are located next to buildings and other man-made structures where collisions could occur. Michael Mesure was not aware of any studies that specifically examined highway lighting and its effects on bird migration. However, one study in Hawaii looked at shearwaters that were being attracted to streetlights when returning from the ocean (Reed et al., 1985).These impacts will be most concentrated within the indirect impact zone that includes most of the lower valley and some of the adjacent urbanized area. The existing plant community cover to be removed in the lower valley already is predominantly edge, in close proximity to long-standing urban conditions. Core forested habitats will not be directly altered in the upper valley. Forested sections of the upper valley will also experience some of the impacts referred to. In these areas it is anticipated that the most intense edge impacts will be concentrated in the 50 m indirect impact zone. The extent of these impacts can be reduced through forest edge enhancement plantings, screenings and other mitigation measures. Nonetheless, the adjacent habitats will continue to experience long-term alteration. For this reason, we have indicated that these adjacent areas will experience high-level impacts to ecological functions that are largely unmitigatible.
Stakeholders	There is no mention of the impact of this project on the hydrology of the Valley, in DSR Vol2, and again underestimates the ecological impact of the project.	The final Surface Water and Storm Water Technical Report contains a discussion of existing and post-Expressway hydrology. The final Terrestrial Resources Technical Report contains a detailed discussion of the ecological changes that can be expected after the road is built and the creek reconstructed.
Stakeholders	Renovation of Existing Wetlands: in the watershed. If some of this marsh is lost, replacement of that marsh with suitable habitat to compensate.	Rehabilitation of lost wetland is proposed in the final Terrestrial Resources Technical Report.
Stakeholders	The renovation of the existing wetlands is suggested in the Biological Inventory and should be included in the mitigation program.	Rehabilitation of lost wetland is proposed in the final Terrestrial Resources Technical Report.
Stakeholders	Bird Corridor: Concerned that the IADP seems to give scanty attention to the Red Hill Valley as a critical migratory bird corridor. The cumulative effect on migratory birds of the degradation of more and more migratory corridors must not be dismissed.	Many bird species and large numbers of individual birds have been documented as using the Red Hill Valley during migration (especially spring), but none of the available data indicate that it is a "critical migratory bird corridor". The work on existing migratory use of the valley, assembled by Macdonald (1995) suggested that the valley may serve as a "'mini-migration' corridor". No investigation of adjacent urbanized habitats has been undertaken to provide comparative data that would indicate that migratory use of the valley is distinct from the broad-scale phenomenon of bird migration. The TRTR provides additional discussion of this matter.
Stakeholders	Attention must be drawn to the "Assessment of the Avifauna of the Red Hill Valley" in the Biological Inventory of the Red Hill Valley, which places the importance of the valley for migratory birds in a broader, regional context.	The Red Hill Valley Biological Inventory proposed a theory to explain how birds migrate through the Valley. Unfortunately, comparable baseline data does not exist for the adjacent urban areas, making an objective evaluation of the migratory significance of the Valley corridor relative to the surrounding urban landscape. Furthermore, the distance required to cross Lake Ontario from the Niagara Escarpment is not much greater than if a bird were to depart from the Lake Ontario shoreline. However, the Valley provides the only intact north-south natural link between the Niagara Escarpment and Lake Ontario in the urbanized east end of Hamilton. It does provide a plausible departure hypothesis, but its veracity has not been tested with actual research. The TRTR provides additional discussion of this matter.

Stakeholders	Biological Inventory proposes a theory that may support the special regional importance of the valley to migratory birds. Quote starting "Migratory land birds, especially those that move by day....."	The Red Hill Valley Biological Inventory proposed a theory to explain how birds migrate through the Valley. Unfortunately, comparable baseline data does not exist for the adjacent urban areas, making an objective evaluation of the migratory significance of the Valley corridor relative to the surrounding urban landscape. Furthermore, the distance required to cross Lake Ontario from the Niagara Escarpment is not much greater than if a bird were to depart from the Lake Ontario shoreline. However, the Valley provides the only intact north-south natural link between the Niagara Escarpment and Lake Ontario in the urbanized east end of Hamilton. It does provide a plausible departure hypothesis, but its veracity has not been tested with actual research. The final Terrestrial Resources Technical Report provides additional discussion of this matter.
Stakeholders	The estimated number of trees to be removed (40,000-page5) does not correspond with the background study whose estimate is 41, 471.	All tree estimates are approximates
Stakeholders	On page 6, we are told that only 14% of the QEW study area "will be cleared as a result of construction activity. No mention is made of the area "negatively impacted" as was done for the valley portion of the study area.	The final TRTR provides the most current estimates of areas impacted by construction in the QEW study area. The QEW corridor is considered to be already negatively impacted by factors such as dust, erosion, sedimentation, saltspray, noise, air pollution etc. whereas these will be new impacts in most of the valley.
Stakeholders	Page 4 promises the Region will "ensure no further degradation of the water quality of Red Hill Creek and Hamilton Harbour." The statement is both deceptive and incorrect.	As noted in Table E.1 previously cited in the July 1998 report, mass balance modeling predicts a reduction in loading following construction of the Expressway and its associated mitigation work. The stormwater management system and CSO Abatement Program, as well as the treatment of runoff from existing developed areas, combine to result in net improvement in terms of annual loadings of various contaminants. Runoff from future development will have to ensure no net impact to receiving water courses.
Stakeholders	Page 6: "when the project is completed there will be an overall increase in the quality and quantity of fish habitat in Red Hill Creek." No reference point Is provided. Are we comparing the historical creek before settlement? The creek before the Region began dumping sewage into it in the 1950s?	The City is comparing the proposed future condition to that which currently exists, and which will exist in the future if no steps are taken to remediate current trends.
Stakeholders	Background studies on Fisheries has not been made available. Page 40- statement that none of the wetlands affected by this segment are fish habitat is false.	This wetland from a fish habitat standpoint, appears to have been created in 1991 when the Creek was realigned. Samples of this area by electrofishing in December of 1998, showed that numerous brook sticklebacks were present, but no other fish were captured. This is documented in "Fisheries Existing Conditions and Predicted Impact Report" C.Portt and Assoc.
Stakeholders	FISHERIES: The FON takes issue with the statement on page 41 of DSR Vol 2 "the natural design (of the creek channel after re-alignment) is seen as a positive alteration which will result in a net gain in fish productive capacity." This seems to suggest that the expressway will bring about a net gain in fisheries when in fact those gains could be achieved in their own right without expressway construction.	The most effective way to restore and maintain the physical habitat in Red Hill Creek is to re-construct the creek so that its form is stable under the current and future flow regime. This could be done without building the expressway.
Stakeholders	No mention of impacts to fisheries during construction except with regard to stream cover. Fails to note that the entire stream re-alignment project is unprecedented in size and highly uncertain in outcome. Role of groundwater in fisheries habitat is ignored.	In the preliminary and detailed natural channel design document which is in preparation, many examples of successful stream rehabilitations will be included as examples of structures and reaches similar to what will be the outcome of the Red Hill Creek valley. It should further be noted that Water Regime has initiated peer review of the project by one of the very best individuals in North America practicing natural channel design principles by Mr. Dave Rosgen of Wildland Hydrology in Colorado, U.S.a. I would support the comment that there have also been a number of failed natural channel designs in the province and across the world. Specifically many if not all of these failed designs have been a function either: limited data collection for calibration of existing and future conditions, poor design, poor inspection, and largely poor construction. As a researcher of rivers across Ontario (Annable, 1996a,b), Canada, and the United states, the amount of data collected on this project is highly supportive of the level of detailed investigation and design for this scale of project. This is further supported by the peer review to date. Water Regime and specifically Dr. Annable is recognized within his professional peer group of a hand full of people as one of the strongest researchers and successful designers of stream channels in the country. Also, the City of Hamilton as part of the natural channel design process has agreed to retain a contractor specific to the stream restoration trained in the field operations of natural channel design. Furthermore, there

		will be continuous site inspection by Water Regime throughout the course of the project and Water Regime will provide experienced operator training to the contractor in the exact construction of in-stream structures.
Stakeholders	Renovation & maintenance: of the water quality, bottom type, base flow and stream gradient in the Creek such that the aquatic life of the Harbour utilizes the Creek in their necessary life cycles can do so.	No Response needed
Stakeholders	Members of HNC have contributed thousands of hours of volunteer time to identifying the wildlife resources or our community and educating the public. To see those efforts and policies discarded so easily is extremely dismaying.	The City recognizes the volunteer efforts of the Naturalist Club and the inventory work that has been done in Valley. This work is referenced in several reports. The City is committed to mitigating or compensating for the loss of wildlife habitat.
Stakeholders	The assertion that the net impact to these indicators " Will be determined after the Landscape Restoration Plan is completed " is vague in light of information available in the TRTR. Some information from the TRTR is excluded from DSR Volume 2. (Page 16)	The Terrestrial Report outlines the net impact.
Stakeholders	Understood that DFO will be consulted on a suitable replacement habitat if there is any incursion into the existing wetlands, and their recommendations approved and actioned. We want to review this as well.	DFO will provide guidance on fish habitat compensation. Any additional wetlands compensation is at the City's discretion.
Stakeholders	In Draft Air Quality Assessment (RWDI)- page 38. Comments on wind screens as well as how trees can be helpful in reducing the transport of suspended roadway dust outside of the valley. It should be mentioned that almost 47,000 trees are being removed. There fore the very thing that could mitigate the impact of dust from traffic will be removed from the neighbourhoods defined by the school locations.	The only school that is directly adjacent to the Expressway is Elizabeth Bagshaw School. In this location there are no trees that could shield it from Expressway, however a noise barrier will be placed adjacent to the road in this location.
Stakeholders	The only natural area of significant size in Eastern Hamilton is the Red Hill Valley. We can only conclude that the loss of eastern Hamilton's largest natural area cannot be justified on any grounds.	While Red Hill Valley is a significant size, there will be several hectares remaining after construction of the road.
Stakeholders	Quote from Terrestrial Resources Technical Report which includes "High-level impacts will occur throughout the Red Hill Creek Valley system including the re-entrant section into the Niagara Escarpment."	ESA impacts are documented on pages 36 and 37 of DSR Volume 2. In addition, the Land Use Report identifies that the ESA area will be impacted. The Region's Environmentally Significant Areas Impact Evaluation Group (ESAIEG) has been involved in the IADP from the beginning. ESAIEG provides advice to the Planning & Development Department on development proposals within or adjacent to Environmentally Significant Areas. The ESA designation will be re-evaluated by ESAIEG after the Impact Assessment Summary Report has been produced.
Stakeholders	The same report notes that "the calculation of overall net habitat loss cannot be finalized until mitigation plans are completed, approved and successfully implemented." This indicates that the ecological impacts of the proposed highway will not be known conclusively until after-the-fact.	The update Terrestrial Report includes net habitat loss as per proposed mitigation.
Stakeholders	No where in the report is it acknowledged that at least 95% of the expressway corridor is identified as Environmentally Significant Areas in the Regional Official Plan- Red hill Valley. How meaningful an ESA designation will be given the unmitigable, high-level ecological impacts that are forecast throughout the report.	ESA impacts are documented on pages 36 and 37 of DSR Volume 2. In addition, the Land Use Report identifies that the ESA area will be impacted. The Region's Environmentally Significant Areas Impact Evaluation Group (ESAIEG) has been involved in the IADP from the beginning. ESAIEG provides advice to the Planning & Development Department on development proposals within or adjacent to Environmentally Significant Areas. The ESA designation will be re-evaluated by ESAIEG after the Impact Assessment Summary Report has been produced.
Stakeholders	With 43 significant plant species, one vulnerable bird species, one regionally rare bird species and a vulnerable mammal species, the study area deserves more protection than any highway could ever afford it.	The impact on natural features is included in the Terrestrial Report.
Stakeholders	Page 6: "Irregardless of the Expressway, if corrective measures are not used, the creek will eventually widen to five times its present width and permanently remove approximately 30% of the vegetation that exists within the valley." No evidence is provided for this claim and cannot	These issues are addressed in the technical report" A Stream Network Inventory, Fluvial Geomorphologic Assessment, Impact Assessment and Preliminary Natural Channel Design of Red Hill Creek."

	be found in any background study released by the Region.	
Stakeholders	92 sites were identified and used by the Region to designate 80 Environmentally Significant Areas within the current Regional Official Plan.	The City recognizes the Club's long history and expertise in wildlife work. The City has worked in partnership with the Club and respects their input on these issues
Stakeholders	Then state "High-level impacts include the removal or significant disturbance of existing natural areas resulting in the net loss of ecological function that cannot be mitigated within the study area. "	The City recognizes that there are impacts from roads that cannot be mitigated within the road corridor or in the vicinity. The Terrestrial Report identifies other areas in the watershed and in the City where mitigation can be provided.
Stakeholders	Authors assumed that medium-level impacts will occur to Vegetation and Wildlife and to Significant Species.	Habitat will be removed and fragmented as a result of the road construction
Stakeholders	Quote continues on " ...the small woodlots of the Mount Albion Conservation Area could serve as a migrant 'trap'.... (Page 140)	The TRTR provides additional discussion of this matter.
Stakeholders	No mention is made of the impacts on wildlife migration. There is no date on the mitigation maps.	Both the Technical Report and DSR Vol. 2 indicate that expressway will result in high-level impacts to ecosystem functions including the "loss of critical linkage functions along existing primary and secondary linkage corridors (i.e. Red Hill Creek Valley, Niagara Escarpment, and Davis Creek valley)". Linkages and corridors include watershed-scale routes used by migrating wildlife. Effects on corridor functions, migratory use, waterfowl staging, and significant species and habitats are summarized on page 16 of the draft Technical Report. The Region's commitment to mitigation is documented in the Exemption Order (pgs. 29-30) and DSR Volume 2 (pgs. 48 – 51, and 54).
Stakeholders	Page 5: " 292 hectares of open space/ natural area within the Valley study area." Given that the Red Hill Creek Escarpment Valley ESA contains 594 hectares, there is a discrepancy.	The TRTR defines the limits of study areas 1 & 2 which do not necessarily conform to the Impact Assessment.
Stakeholders	The description of impacts on natural areas is misleading because it applies to the entire valley area. The indirect impacts extend beyond the boundary of the study area.	We carefully delineated the study areas to summarize impacts at the watershed scale. At the south end of the valley, we determined that the entire re-entrant portion will sustain high-level impacts. At the north end, the valley is significantly degraded by urban encroachment (residential, industrial, former landfills, QEW) and currently falls below the critical corridor width of 100 m downstream of Barton Street. The impacts will arguably be greater in new areas where the Expressway will reduce the functional corridor width below 100 m. However, representation of high impacts on ecological functions reflects broader scaled repercussions; finer scaled impacts could be considered if detailed design and associated mitigation works were available.
Stakeholders	MITIGATION: the authors claims for vegetation and wildlife mitigation are questionable and unsubstantiated. (Example on page 49)	The Terrestrial Resources Technical Report (TRTR) and Landscape Management Plan further develop the mitigation concepts. Details of mitigation will be developed in the design stage and documented in the design process.
Stakeholders	The unsubstantiated claim is a gross-simplification and represents a major error. MITIGATION: the authors' claims for vegetation and wildlife mitigation are questionable and unsubstantiated. (Example on page 49)	The approach to mitigation is based on recommendations from the Red Hill Creek Watershed Plan. It is acknowledged that where the road is constructed, there s a permanent loss of habitat, however it is possible to enhance, rehabilitate and recreate habitat.
Stakeholders	The greatest impacts will be felt in the road corridor, where 75.1ha of vegetation and wildlife habitat will be completely removed. It is arguable whether the ecological function of 40,000 trees could be mitigated within the entire Region of Hamilton-Wentworth.	Replacement will initially focus on Valley and QEW area, next on Watershed and outside Watershed if necessary.
Stakeholders	An advisory Group and Landscape Restoration Plan will not be able to offset this key high-level impact to vegetation and wildlife habitat.	The TRTR summarizes the predicted Net Impacts.

Stakeholders	SIGNIFICANT SPECIES: The loss and impact assessment of these highly valuable terrestrial resources (diverse flora and fauna) found in the study area has not been determined nor are they even mentioned.	The TRTR summarizes the predicted Net Impacts. Most wildlife will be impacted to some degree by the development, but this does not necessarily mean they will be displaced from the valley. Some species (e.g.. meadow species) may benefit from habitat changes. Cumulative impacts on wildlife has been assessed on the basis of a) loss of specific habitat types, b) likely effects on species of concern whose current use of local habitats is documented, c) impacts on critical habitats and ecological functions such as linkage and migration, and d) impacts on overall habitats at the watershed scale.
Stakeholders	The list of significant species identified in the IADP is incomplete.	DSR Vol. 2 is a summary document. As such, it only lists those significant species that will likely be impacted based on our current knowledge of where the species occur in the Study Area. For a comprehensive and current listing of significant species and their status, refer to the Terrestrial Resources IADP Technical Report.
Stakeholders	6 nationally and provincially rare species were reported to reside in the study area. All of these species will potentially suffer from habitat displacement.	The TRTR itemizes the current state of species observed in the study area.
Stakeholders	Considering the high-level impacts to ecosystem functions, it is likely that these rare species will become extirpated from the valley.	The TRTR describes measures to salvage and relocate species where possible.
Stakeholders	CORRIDOR FUNCTION: There are no less than seven ESAs that will be negatively impacted by expressway construction and operation; these impacts have not been mentioned.	The expressway will negatively impact adjacent ESA's and other natural areas through the fragmentation and removal of critical habitats. These impacts are related to the high impact on ecological functions identified in DSR Vol. 2.Although they are considered unlikely to result in changes to the status of these areas as ESA's, fragmentation by the expressway will compound ongoing loss of habitat cover elsewhere in the Watershed and Region, further contributing to dramatic habitat loss across southern Ontario and in particular within the Carolinian Zone. The Final Report will give a more detailed account of the anticipated impacts.
Stakeholders	Concept of Direct and Indirect Impact Zones needs clarification. The definitions differ from the TRTR and the DSR VOL 2.	In the final Terrestrial Resources Technical Report a Direct Impact Zone is identified where the road will be built, and a Direct Impact Mitigation Zone (50 m beyond the road) where direct impacts will be mitigated. Indirect Impacts are discussed in the report, some of which will extend hundreds of metres beyond the road corridor.
General Concerns		
CSC	It is hard to determine what the net impacts of the Expressway will be because the construction of the CSO is included in the project definition. What are the impacts of the Expressway itself?	The Red Hill Valley CSO pipe will mitigate water quality impacts from existing combined storm sewer systems not impacts associated with the road. However, the pipe is an alternative to three CSO tanks that would be required in the valley if the road was not built. The pipe removes the annual overflows that would occur if the three tanks were built.
CSC	The Expressway is needed to lessen present, not future, traffic congestion.	The Expressway will address both present and future traffic congestion on local roads.
CSC	Contaminated sites will be cleaned up.	Contaminated sites will be addressed as per MOE's Guidelines for Use at Contaminated Sites and any other regulatory requirements for the disposal of waste.
CSC	It is positive that a hiking trail will be permanently established.	The trails are an important feature to maintain in this area.
CSC	There is a need to look at the regional impacts of the Expressway not just local impacts.	The impact assessment has assessed impacts in a watershed context. This impact assessment is focused on the impacts of the changes in the design.
CSC	Local residents will be negatively impacted but there will be regional improvements.	There will be both positive and negative impacts on the local and regional environment.
CSC	Impacts to residents in the valley will not be nearly as great as the current impacts to residents on Upper James, Upper Wentworth, Upper Ottawa, Upper Wellington, Wellington, Main, King, Cannon, Mount Albion, Barton and Kenilworth streets, as well as those residents on Centennial Parkway.	There will be both positive and negative impacts on the local and regional environment.
CSC	The impacts are clearly laid out in the DSR Volume 2.	As a result of comments received and updated information the impacts outlined in DSR volume 2 will be revised.
CSC	Positive impacts should be elaborated on.	Both positive and negative impacts will be outlined in the final Impact Assessment Summary Report.

CSC	The DSR Volume 2 should tell the public how they can get involved in the detail design phase.	A consultation plan is included in the Impact assessment Summary Report for the Design stage.
CSC	What is the feasibility of providing mitigation to residents?	Noise mitigation will be examined in detail in the design stage. Some areas are very easy to mitigate noise while in others areas it may not be possible. The Impact Assessment Summary Report indicates where it is possible, not possible and may be possible to provide mitigation. Residents will be consulted on the detailed mitigation plan.
CSC	Stop signs, or right angle turns should be located at the end of the off ramps in order to help slow the traffic exiting the Expressway.	Stoplights are located at the king Street, Queenston Road and Barton Street off ramps. Stop signs are located at the Greenhill interchange due to lower volumes of traffic and the design of the interchange.
Gov	Pages 35, "Transportation": 1st paragraph should read: "...accommodate the 2021 volume projection of up to...	This has been added
Gov	Page 1, first bullet under 1998 Expressway Design, should the limits be identified here.	This table shows the differences between the two designs within the same area therefore the limits do not need to be identified here.
Gov	Page 4, first paragraph, add "via interchanges" before ...at Mud Street, Greenhill Avenue..."	This has been added.
Gov	Page 4, the paragraph after the bullet pints, change the beginning of the sentence to "The MTO will design, construct and fund..." and then end to "...the continued safe and effective traffic operation of this provincial freeway"	This has been added..
Gov	DSR Vol. 2 be finalized to reflect these discussions or a minimum draft DSR Vol. 2 be reviewed to ensure there are no conflicts or contradictions with recent recommendations and commitments.	The Impact Assessment Summary Report was finalized in consultation with MTO.
Gov	Page 14: Draft DSR Vol 2 and DSR Vol 2 have discrepancies. Advise as to how these more detailed mitigation strategies will be documented to ensure accurate transfer to the detailed design phase?	It is not clear what the discrepancies are that are referred to. The mitigation details will be provided in a Design Report. The Environmental Management Plan will take the detailed mitigation and develop a guide for construction to ensure that all of the mitigation is being implemented.
Gov	Could we receive copies of the agency sign-offs and any concerns or conditions they have that would effect the detail design of the QEW section.	This will be provided to MTO as sign-offs are received.
Gov	If it is expected that detail design will need to be carried out expeditiously due to a tight schedule every effort should be made to ensure as few uncertainties and issues as possible are carried forward from preliminary design.	The detailed designs and mitigation will be reflected in a Design Report.
Gov	Draft DSR VOL 2.: Mitigation Map for the QEW Section, Map 3B does not include in its legend the dotted line for trails which it shows.	The final maps will include trails in the legend.
Gov	Page 15: It may be premature to make any statement in DSR Vol 2 regarding MTO's future responsibilities regarding detail design.	This section will reflect current funding agreements
Gov	Page 20, there are dates given for construction and road openings, Do these dates need to be updated?	This section will be updated where necessary.
Gov	Page 21, Assumptions regarding the areas adjacent to the roadways that will be impacted should be qualified to indicate there will be exceptions.	The rationale for the area of impact will be provided and will indicate that the areas affected depend on the type of impact.
Gov	Map 1 shows no watercourse realignment south of Nash Road, is that correct?	All of the watercourse realignment for this project occurs south of Nash Road and Brampton Street. The Rennie Street Remediation Project includes work north of Nash Road.
Gov	Mr. Sam Ng (landscape and Restoration Advisory), his comments should be reflected.	Mr. Ng continues to be a member of the Landscape Restoration Advisory Group and his comments are reflected in the Landscape Management Plan.
Gov	Perhaps the mitigation section for the removal of area in Van Wagner's Pond should state that the enhancement work to be conducted will be determined in consultation with DFO.	The fisheries mitigation reflects the mitigation approved by DFO
Gov	Pages 46-47: The statements indicating that sediment will enter watercourses during construction should be re-written.	The statements reflect the potential for sedimentation during construction.

Gov	Page 54: (Restoration work for Van Wagners/Red Hill Marshes) Shouldn't MTO be mentioned in the table as a Group/Individual/Agency that will be consulted during development of the restoration plans for this area?	MTO has been added to the list of stakeholders to be consulted.
Gov	Can the City of Hamilton Wentworth provide copies of the documents above to Ms. Mitton-Wilkie?	The City will provide any reference documents to MTO.
Gov	Attached to the letter are comments from Mr. Chris Blaney and Ms. Diane Ivanauskus.	These comments have been addressed.
Gov	Mr. Steve Jacobs provided comments (MTO Senior Project Engineer)	These comments have been addressed.
Gov	Page 15: are the median dimensions shown in figure 2.1 correct?	This has been checked.
Gov	Page 16: fist paragraph should indicate "capital construction costs".	This section will be updated where necessary.
Gov	Page 16: under MTO responsibility, 1st paragraph should be QEW improvements". Under MTO investigations it should be "after detailed traffic assessment".	This has been added
Gov	Figure 2.2: should preferred scheme be added?	The map will indicate that Option C is the selected option.
Gov	Loose ends identified by Sandy Nairn, could you advise if these were resolved?	These have been addressed
Gov	Is the "wetland restoration Plan" done by the Preliminary design landscape planning firm and Jim Dougan, being pursued through the LRAG?	The mitigation outlined in the Terrestrial Report is incorporated into the Landscape Management Plan
Gov	J.Dougan and C.Portt were to quantify more exact impacts to PSWs (Red Hill Wetland and Van Wagners Ponds" has this been completed?	Refer to the Terrestrial Report and the Fisheries Report
Gov	Pam Hubbard was to solicit MNR input on the loss of Key bird staging habitat by larger radi E-S ramp at Burlington street, was this done? DFO requested a letter as to why only one alternative to this and how they got from photo mosaic alt "C" to 1:2, 000 alt C1 at QEW, has that been sent and their concern addressed?	MNR and DFO have been circulated Draft Summary Reports and the draft technical reports for their areas of responsibility. The City is responding to comments they have raised on those documents.
Gov	Mitigating Measures: it is recommended that design parameters be changed to reduce highway construction costs, thus permitting the implementation of mitigative measures. Regardless of the changes made to reallocate funds toward mitigative measures, the point we wish to underscore is that the amelioration of the negative impacts of the highway on the Red Hill Creek Valley system can not be compromised.	The costs of construction are being balanced with mitigation that is feasible and effective.
Gov	FACTORS: In several instances, no mitigative measures will be effective short of not proceeding with the project. In other cases, additional mitigative measures may lesson the impact of the proposed highway.	In some cases is not effective or possible and this is indicated in the Impact Assessment Summary Report. The City is looking at enhanced mitigation in other areas such as habitat restoration and replacement.
Gov	Measures that will alleviate highway construction impacts should not be "short changed". The "landscape rehabilitation plan" could play a large role in mitigating visual impacts.	The City is recommending rehabilitation and restoration outside the road corridor and the creek corridor.
Gov	The City has agreed to work with the HRCA staff to develop detailed design for the west end affected by the proposed construction, which will maximize mitigative efforts.	The City is committed to working with HCA in this area. MTO will also be involved in the design work
Gov	IMPLEMENTATION: We would prefer to issue individual permits for each separate contract that is let. 1)Expressway/CSO construction 2)Landscape rehabilitation 3) Stream realignment.	The City will discuss the permit requirements with HCA in detailed design and in conjunction with other permits issued.
Gov	HRCA staff would like to be involved in the development of an environmental management plan. Items should include plant community preservation, construction timing within/near sensitive ecosystems. Financial strings should	The City will consult with the HCA on the Environmental Management Plan.

	be attached to these items.	
Gov	HRCA staff would like to be involved in construction status meetings.	HCA's request will be considered in detailed design and incorporated into the Environmental Management Plan
Gov	HRCA staff would like to review the detailed design drawings of all works as early as possible to finalize our permit. Emphasize the importance of high quality mitigative measures.	The HCA will be given the opportunity to review detailed design drawings
Gov	The DSR should not represent the findings of the Draft Technical Report as being more quantitative that they actually are. The DSR should be revised accordingly.	The results of the technical reports were used for the DSRs. The final report will carefully take the final report results and summarize them.
Gov	Noted that Sandy Nairn had previously commented on the June 1998 "Executive Summary".	The Executive Summary is taken directly from DSR vol.2. Therefore the comments provided on the Executive Summary will be responded to in DSR vol.2 as it has been updated (the Impact Assessment Summary Report). These changes have been made.
Gov	Ms. Cynthia Mitton-Wilkie provided comments.	MTO continues to be involved in discussions regarding DFO authorization and other agencies.
Gov	HRCA is on record as being opposed to the proposal for the RHCE.	This has always been the position taken by the Conservation Authority. Nevertheless they have participated in providing constructive input that will assist the City is making sound environmental decisions.
Gov	Impacts predicted are presented in a factual manner with realistic measures proposed as mitigation	The City is proposing mitigation that is both effective and implement able.
Gov	Page 50, Map 2B: the report states that 0.5 ha of Provincially Significant wetland will be impacted; but Impact Map 2B states that 1.1 ha will be impacted.	According to the Hamilton-Wentworth Natural Areas Inventory Volume 1 (1995), 167 wildlife species are designated either rare or uncommon (i.e. "regionally significant") in Hamilton-Wentworth. This represents 51.5% of the 324 extant wildlife species. More specifically, this total is based on the following wildlife groups: butterflies, herpetofauna, birds and mammals. Note it does not include information on fish, or other insect groups such as odonata (damselflies and dragonflies). In terms of plants, 342 species are considered "regionally significant"; this represents 38% of the known native flora.
Gov	Report should include a brief discussion of the procedures which will be followed during complaint investigation with regards to compliance reporting.	An environmental management plan detailing construction activities and noise and vibration mitigation, monitoring and complaint investigation will be submitted to the MOE in a separate document, prior to the start of construction. The traffic noise monitoring protocol will also be developed in a separate document and submitted to the MOE for review.
Gov	On page 8, the bullet point on annoyance due to noise is wrong and it should read: Impact Level 0-2.99 dB,3-4.99 dB, 5-9.99 dB, 10+ dB Impact Rating: Insignificant, Noticeable, Significant, Very Significant	RWDI followed up with the author from the MTO and the appropriate categories will be provided in the updated noise impact report.
Gov	Please advise on progress of Diane Diamond coordinating the CEAA review.	No CEAA review is required for this project
Gov	Has it been determined who will prepare and submit the Design and Construction Reports associated with past approvals/exemptions?	The City is responsible for submitting these reports
Gov	Please confirm if: the Municipal Exemption Order allows RHW to modify MTO's approved plan.	There is no MTO approved plan for works associated with this project
Public	The technical data provided in the Executive Summary is extremely brief, incomplete, and misleading. Where is this information collected, compiled, and organized for public discernment. Where can the public review the details of the consultants' reports.	The Executive Summary is meant to give an overview of key findings. The detailed technical reports that support the Impact Assessment Summary Report and the Executive Summary should be referred to for substantive information. All technical reports are available at City libraries and municipal centres and on the project's website (www. hamilton.ca/rhvp)
Public	There are other priorities for our tax dollars such as education, firefighters, sewers, and health care.	The city has carefully weighed the cost of building this project.
Public	Complete intransigence about going ahead, regardless of anything – On page 3 it states "However nothing in this condition will interfere with the issuance of the permit pursuant to S.28(3) of the Conservation Authorities Act or the overall proceeding of the project in accordance with the decision of the Joint Board". This attitude reflects an inability to admit that there are any basic flaws in the project regardless of what evidence may be uncovered. See letter.	This quote is from a decision by the Joint Board in 1985 following a public hearing on this project.

Public	Concern about how the costs of the Expressway will be covered, and by who will they be covered.	Of the $139M, the City and MTO are splitting the cost approximately 50/50.
Public	I note that they seem to be using chloride salt solutions for "anti-icing", so the same concerns apply unless substantially less chloride is projected to be used.	A Maintenance Management Plan will address the de-icing or anti-icing approach that will apply to the Expressway. The objective of anti-icing will be to minimize environmental impacts while maintaining safety.
Public	The Red Hill Creek should not be straightened nor crossed for an expressway!	The proposal for the creek is to stabilize it by creating a natural creek form (i.e. not straightened) and to cross the expressway as few times as necessary.
Public	I want to see how the City is going to receive and react to the comments that it will get.	The City has taken all of the comments received very seriously and has revised the reports to respond to the comments received. Additional studies have been carried out because of public comments (air emissions inventory, thermal inventory of the valley, health risk assessment, southern flying squirrel study)
Public	The City of Hamilton and the Regional Government of Hamilton-Wentworth consistently do physical damage to Red Hill Creek	There are several infrastructure projects that have affected the valley historically by several agencies including the former City, Region, Ontario Hydro and TransNorthern Pipeline, rail lines and roads.
Public	This project did not however, include alterations to the King street culvert to correct the underlying hydrological problem.	This is why the City now wants to take a more holistic approach to the creek design and create a stable creek from the base of the escarpment to the lower reaches.
Public	What is the role of the Ministry of Natural Resources in the approval of the Expressway?	The Ministry of Natural Resources administers the Lakes and Rivers Improvement Act. The City must meet the requirements of the Lakes and Rivers Improvement Act in constructing the expressway and the creek realignment work.
Public	How many stages will there be in the construction of the Expressway?	There will be approximately fourteen construction contracts starting in 2003 and finishing in 2007.
Public	Cities go downhill when expressways are built.	Cities need viable transportation networks in order to move goods and services and to support employment centres. Each City differs in terms of the types of transportation that are available based on several factors such as population and employment density, geography etc.
Public	The north-south section of the Expressway should be built as proposed and approved.	The City is completing the design and construction in a way that minimizes the impacts to the environment.
Public	The City has improved the design of the Expressway and has made an effort to make everyone happy.	The City is completing the design and construction in a way that minimizes the impacts to the environment.
Public	Construction of the Expressway is long over-due.	The City is completing the design and construction in a way that minimizes the impacts to the environment.
Public	The Red Hill Creek Valley is a natural recreation and tourist attraction, as well as a wellness centre. Each tree provides oxygen, and its own unique scent – nature's finest and most delicate micro medicines.	The City recognizes the value placed on the Valley by the public and is attempting to minimize the impacts, however there will a loss of trees and areas of open space.
Public	If the Valley is polluted people will suffer ill health.	This is a difficult statement to address as there are many factors that contribute to people's health. Not all of the valley will be used for construction, in particular the south end is less affected than the north end.
Public	We should be protecting the natural environment we have in our own backyard. People should not have to travel hundreds of miles for rest and relaxation.	The City recognizes the value placed on the Valley by the public and is attempting to minimize the impacts, however there will a loss of trees and areas of open space.
Public	Quality of life and property values will decline if the Expressway is built.	It is difficult to comment on the impact to property value as it depends on the individual's interest in having close access to an expressway.
Public	Complete the connection between the Lincoln Alexander Parkway and Mud Street and monitor the traffic patterns over 2 years. Then a decision about whether to build the Expressway can be made.	This has been done and there is still congestion on local roads and in particular on escarpment crossings.
Public	Residents on the Greenhill access route were told that there would be a walkway into the valley. The space is not wide enough to accommodate an Expressway and a walkway.	There will be a walkway separated from vehicular traffic by a physical barrier on the Greenhill Interchange bridge. The walkway will be able to access the Valley and connect to the Valley trail system.
Public	How will residents access Glen Vista into Greenhill and make a left hand turn onto Mount Albion with traffic going both ways?	Mount Albion Road will be closed at the bus turnaround near Glendale Golf Course, therefore there will not continue to be large volumes of traffic on the remaining road.
Public	Concern about the safety of children crossing Mount Albion to get to school.	Mount Albion Road will be closed at the bus turnaround near Glendale Golf Course, therefore there will not continue to be large volumes of traffic on the

		remaining road.
Public	The temperature inversion problem has never been addressed.	RWDI has prepared a report on thermal changes to the Valley as a result of the Expressway.
Public	A complete EA assessment has not been conducted. The 1985 Joint Hearing didn't address anything north of Brampton Street. The QEW interchange was to be dealt with in a separate EA hearing. This has not taken place to date.	This impact assessment is documenting the impacts to the study area north of Brampton Street as per the Declaration Order. The Joint Board agreed that the connection to the QEW had to occur.
Public	There should be a moratorium on use of Red Hill Valley.	The City recognizes the value placed on the Valley by the public and is attempting to minimize the impacts.
Public	Concern about the quality of planning of the Expressway.	The City is attempting to provide the most complete impact assessment possible. Several studies are being carried out that are not required by legislation but are in response to community concerns.
Public	Residents in the East end of Hamilton will suffer impacts from noise, pollution, and will be put at risk by trucks carrying dangerous chemicals.	Residents all over the City are exposed to various levels of noise, air pollution and truck traffic.
Public	The United Nations has distinguished this area with a unique "Biosphere" designation, why are we destroying this area with seven miles of four lane pavement.	The City recognizes the value placed on the escarpment and the Valley by the public and is attempting to minimize the impacts.
Public	Why is the interchange being built in wetland area?	The Red Hill Creek expressway Interchange at the QEW will not impact the Red Hill Marsh and Van Wagner's Ponds wetlands. However minor changes required to a ramp on the Burlington Street Interchange, and additional lane creation on the QEW, will require slight encroachment into the wetlands, this area will be restored elsewhere in van Wagner's marsh. A mitigation program to expand wetland cover to compensate for this loss is recommended in the final Terrestrial Resources Report.
Public	The City should publish a map/drawing in "The Hamilton Spectator" which clearly depicts the recreational and access lands that will remain after the Expressway is built.	The Impact Assessment Report and the draft Landscape Management Plan clearly show the area that remains after the Expressway is constructed.
Public	Vertical barriers should be built on the Expressway bridges to separate pedestrians from motorists.	On the Greenhill and Barton Street bridges there will be a physical barrier between the pedestrians and the motorists. These are bridges that students are expected to cross to reach schools (Barton) or to go into the Valley for projects (Greenhill). These areas were identified from discussions with schools and school boards and from the public.
Public	The 360 degree turn to go westbound on the Linc, while having eastbound go straight through is of concern	The final alignment will be different from what exists today. Refer to the map in the Impact Assessment Summary Report for the final alignment.
Public	The technical data provided in the Executive Summary is extremely brief, incomplete, and misleading. Can you indicate where this information is collected, compiled and organized for public discernment?	The Executive Summary is meant to give an overview of key findings. The detailed technical reports that support the Impact Assessment Summary Report and the Executive Summary should be referred to for substantive information. All technical reports are available in any public library in Hamilton and in municipal service centres and on the City's Red Hill Valley Program website.
Public	The expressway will only lead to an increase in traffic volumes	Local roads in the area are already at capacity and cannot take much more traffic. Additional traffic will be generated by future approved development on the mountain. The Expressway will provide an alternative to Mount Albion Road and Highway 20.
Public	How does the expressway fit in with the goals of Vision 2020, how will the expressway sustainable develop Hamilton?	The Expressway will accommodate development already approved but awaiting a transportation network.
Public	The valley will be improved as a result of the planting, etc. Right now many people use the valley as a dumping ground.	There are both positive and negative impacts associated with the road and creek construction.
Public	It is misleading to link the CSO pipe with the expressway project	The construction of the CSO pipe is contingent on the expressway construction, since it would not be constructed otherwise. Without the Expressway there would be three separate CSO tanks in the Valley in addition to the two Greenhill tanks. This would mean three more separate discharges to the creek. If the pipe and the road are constructed concurrently, however, these three discharges would not occur and therefore the impact of the CSO pipe is less than the impact of the three tanks.
Public	It is misleading to link the stream restoration with the expressway project.	While the creek restoration could be addressed without the Expressway, the solution would be somewhat different than what is being proposed. The creek works must consider the bridges and culverts that are being constructed. Although the City has reduced the number of culvert crossings, and modified the structures there will still be additional crossings required

		and this must be considered in the creek design work.
Public	There will not be enough space in the valley for the expressway and walking paths.	A Recreation Master Plan includes a revised trail plan for the Valley. While the amount of land available for the trail has been substantially reduced, it is possible to maintain a trail system. The draft Recreation Master Plan is included in the draft Landscape Management Plan that is available for comments.
Public	There has been a verbal agreement between Stoney Creek Council and Centennial Ratepayers Group that no upgrades be done on Centennial Parkway until the Red Hill Creek Expressway is built.	The work on Centennial Parkway is not linked to the Expressway.
Public	A cost-benefit analysis of the Expressway should be conducted.	The City is carrying out a cost benefit analysis. The results will be made public when the study is completed.
Public	How will the people who live in the valley be compensated?	Mitigation has been determined based on the impacts. The Impact Assessment Summary Report indicates the general mitigation for each area of impact. The detailed mitigation will be identified in the Design Report.
Public	Will the City cover the costs of treating health problems that will affect people later in their lives?	It is difficult to differentiate health problems that occur as a result of e.g. road emissions. Individuals must assess their own health risks and decide on the environment that meets their needs.
Public	The City should consider how much economic impact the Expressway will have in terms of tourism and consumer spending.	It is difficult to assess the economic impact on tourism and spending as these factors are also influenced by several other factors.
Public	Concern about the costs associated with realignment of the creek.	It has been shown that the costs of natural channel stream design are cheaper in the long term than the costs of maintaining hard engineered structures that stabilize creek banks.
Public	The City should pursue the possibility of making the Expressway a toll route. The user-pay system would hopefully decrease QEW to 401 truck traffic, and help offset the costs of construction.	The City is exploring the feasibility of tolls.
Public	The City can not afford the capital costs and the maintenance costs of the North-South section.	The construction, maintenance and operation costs will be provided to Council.
Public	The Expressway will cause the economic death of the "Downtown" area.	The Expressway provides another crossing of the escarpment which provides easier access for east end residents to employment and services in the downtown. Downtowns do not currently serve the same function that they did years ago. Providing a transportation network for the suburban areas does not necessarily impact the function of the downtown.
Public	What are the projected costs of the project (in year 2000 dollars)?	The capital cost of the project is $139M.
Public	It would be a more efficient use of tax payer's money, and less environmentally damaging, to fix up Highway 20 instead of constructing the Expressway.	Highway 20 does not address the transportation problems that the Expressway addresses.
Public	There is no evidence that new investment in the City, directly made as a result of the expressway, will be greater than the cost from higher taxes and poorer quality of life.	Access that promotes the development of industrial parks and commercial land results in higher taxes being paid to the City from these land uses. The City needs to increase its revenue from industrial/commercial uses.
Public	The longer the Expressway is delayed the more the project will cost.	Costs tend to increase as the years pass. However, the construction costs depend on the tender bids at the time.
Public	If the North-South section of the expressway is not built then the East-West section will have been a waste of tax payer's money.	The East-West section of the Expressway serves a purpose for the traffic accessing the mountain but its function as a link to the QEW is certainly reduced.
Public	The Regional Chair and the Councilors should be present to listen to the public's concerns.	There have been several forums where councilors have attended public meetings and where the public have presented their ideas to the Council or committees of council. The public concerns raised at public meetings have been provided to Council.
Public	Concerns about who would be accountable if the actual impacts are worse than those predicted.	The municipality will be carrying out a monitoring program.
Public	Why is the Expressway being built when there are so many negative impacts and people do not want it built?	There are both positive and negative impacts. The City is attempting to address the negative impacts. Likewise there those who support the road and want it built as quickly as possible and those who do not support its construction.
Public	The Expressway will be part of an efficient transportation system which will promote a sustainable economy.	This is the City's position as well.

Public	Beautify Hamilton, don't stifle it by building an Expressway to no-where.	There are ways to beautify Hamilton while also building an effective transportation network.
Public	The Expressway project flies in the face of the human lifestyle directions required for the 2nd millennium to assure quality of life. There is a need for environmental enhancement and a change in the modes of urban transportation, not an Expressway.	Changes in transportation mode are dependent on several factors which are not all within the ability of the municipality to change. Despite Vision 2020, people are still using cars more than transit. Roads are still required to move goods and services.
Public	Proceed with building the Expressway before more people get killed on Centennial Parkway (especially at Centennial Parkway and King Street). Wildlife and plant habitat is important but saving lives should be the priority. Centennial Parkway is overused, it is a hazard to those using it and to everyone in the area.	The City is balancing the need for safe efficient roads with the need to minimize the impact on the natural environment.
Public	The Expressway will relieve traffic congestion on Centennial Parkway and therefore improve air quality in the City.	The Expressway will reduce congestion on local roads especially escarpment crossings in the east end. The Air Emissions Inventory Report provides an overview of the overall air quality changes in the City while the Air Quality report indicates the air quality changes expected in the vicinity of the Expressway.
Public	The Expressway will help make Hamilton the hub of an ever-increasing Niagara Peninsula, and will encourage industry to move into the area and create jobs.	The Expressway will provide a better link to commercial and industrial areas.
Public	Highways create more traffic, more cars, and less of a City. See Jane Jacobs "The Death and Life of American Cities".	Cities need viable transportation networks in order to move goods and services and to support employment centres. Each City differs in terms of the types of transportation that are available based on several factors such as population and employment density
Public	Who is the Expressway being built for, and who will it benefit?	There are residential, commercial and industrial development on the mountain that are contingent on a connection to the QEW and the 403.
Public	The Expressway is not wanted and not needed.	There are residential, commercial and industrial development on the mountain that are contingent on a connection to the QEW and the 403.
Public	The Expressway will lead to urban sprawl in Ancaster.	Urban planning takes the need for transportation networks into account. The Expressway was approved in conjunction with planning for development of urban areas in the former Region.
Public	Traffic Volumes are nowhere near crisis levels and have not increased significantly in the last 15 years.	Escarpment accesses in the east end are congested at peak hours. Roads like Mount Albion Road continue to take large volumes of this traffic.
Public	Instead of building the Expressway Highway 20 should be improved and a bus lane added.	The option of using alternate routes has been considered in the past. It has been determined that this is the route that will be constructed. This part of the project is looking at how to reduce the impacts associated with this route.
Public	The Expressway should not be built in the Red Hill Valley.	The location of the Expressway was determined through a public process and a hearing in the mid 1980s. It was revisited in the mid 1990s through discussions with provincial representatives who subsequently decided that this was the most effective location.
Public	The City should be considering alternative transportation systems.	Vision 2020 examined sustainable transportation including the use of more public transit. However the use of public transit has not increased.
Public	The public has not been allowed to participate in discussions related to need, cost, and location of the Expressway.	The need, cost and location of the Expressway was determined through a public process and a hearing in the mid 1980s. It was revisited in the mid 1990s through discussions with provincial representatives who subsequently decided that this road was needed and in the most effective location. The City has determined that the cost is affordable.
Public	How could an Executive Summary be released for the Draft Summary Report Volume 2 when the Report wasn't finished?	The Executive Summary provides an overview of key findings. The technical reports that support the key findings were completed and the Draft Summary Report Col. 2 was being written when the Executive Summary was released. It was released prior to the other reports because there was a demand from the public for an overview of the impacts to the made public as quickly as possible. The Region was committed to providing information as quickly as possible.
Public	There should be another set of public meetings following the release of DSR Volume 2.	Public meetings were held following the release of DSR Volume 2. Presentations were provided to the public and consultants and City staff were available to answer questions.
Public	A full environmental impact assessment should be conducted.	A full environmental assessment was completed in 1985. The Declaration Order approved the City to carry out additional environmental assessment work for the design changes that were made to reduce environmental impacts even further.

Public	Will there be monitoring for future impacts and how they will be mitigated?	The Impact Assessment Summary Report outlines the monitoring that will be carried out. The Design Report will provide details on the monitoring plan and the Environmental Management Plan will outline how monitoring will be carried out during and after construction.
Public	Concern about the slow pace at which authorization for creek realignment is proceeding.	The City is working closely with the Department of Fisheries and Oceans.
Public	The public's concerns have been ignored and their questions have not been answered.	The City has carefully considered all of the concerns and questions that have been raised. Several studies (not identified in the Declaration Order) have been initiated directly as a result of public concerns. (e.g. Air emissions inventory, thermal dynamics, health risk assessment for air quality, southern flying squirrel study, landscape management plan, environmental management plan, maintenance management plan, updated traffic analysis)
Public	There should have been a referendum on the need for the Expressway.	There are differing opinions on the efficacy of referendums. Various councils have decided not to use this option.
Public	It is an historical fact that Hamilton was given the Red Hill Valley to protect as natural green space for future generations. The City of Hamilton unanimously voted against using the Valley as an Expressway route. It was the Regional government which approved the route.	The idea for the expressway goes back to the 1950s and development on the mountain was designed based on it being in place. The road planning began when the Region was created in the 1970s. The Region voluntarily subjected the road to an individual environmental assessment.
Public	Concern that there is a verbal agreement between Stoney Creek Council and The Centennial Parkway Ratepayers Group that no work (upgrades) will be done on Centennial Parkway until the Red Hill Creek Expressway is built.	see previous comments on this.
Public	All necessary permits should be obtained before any work starts.	The City already has several of the permits that it needs. It intends to obtain all other permits as per legislative requirements.
Public	The economic need for the expressway should be re-evaluated.	The City is carrying out a cost-benefit analysis. The results of this study will be made public.
Public	Feel like the expressway is a done deal, a foregone conclusion.	The decision to build the expressway was made several years ago by Council and has not changed.
Public	Why is the City building an Expressway when most metropolitan areas are moving away from construction of highways?	Each City has to assess its transportation needs and decide what meets their needs to service land use. The road has been planned for a long time.
Public	The Expressway will just be a short-cut for trucks traveling from the United states.	While it is likely that the road will be used by through traffic it will also be used by local traffic and traffic accessing industry and commercial areas.
Public	Improvements to water quality and fish habitat should take place regardless of the Expressway.	The City has several projects underway or completed in the Red Hill watershed to improve water quality and fish habitat including the new CSO tank at Greenhill, the Rennie and Brampton Street remediation project, the Montgomery Creek sub watershed plan and creek realignment, the Davis Creek Sub watershed Plan, and the Upper Ottawa Street slope stabilization project.
Public	We have needed another road up the Mountain for a long time. We will need it in the future with the continued growth on the Mountain.	One of the main reasons for the Expressway is to provide another escarpment crossing to allow traffic from the mountain to access employment areas below the mountain.
Public	IADP- DSR VOL2: There are a lot of disjoint pieces of impacts referred to, and only some have supporting evidence to back up the document. There is a need to assess the cumulative impacts of the Expressway.	The purpose of releasing the DSR Vol. 1 & 2 was to obtain feedback from the public and agencies on the impact assessment and mitigation and to improve the project through suggestions and comments made on the draft documents. In addition, cumulative impacts were addressed by assessing the impacts in the context of the Red Hill Creek watershed plan and other environmental policies and programs such as the Hamilton Harbour Remedial Action Plan. .
Public	References to the Watershed Planning Process are misleading. An example of the region misleading the reader into thinking the watershed plan working groups were all in favour of the expressway.	DSR Vol.1 and 2 describe the results of the Red Hill Creek watershed planning process. The Region (now the City) identified the need for a watershed plan in the Exemption Order in order to better examine the cumulative impacts associated with the project. The Watershed Plan participants did not advocate for any specific development in the watershed but rather developed an understanding of the state of the watershed and the issues that need to be addressed. They also identified actions that could be taken to address the issues.
Public	OVERALL COMMENTS: There is a need to go back to the beginning of the process and start again. It was not legitimate to issue a DSR document without any supporting documentation. There is no evidence to support what the region chose to say in the DSR.	Several technical reports that support the draft summary reports were released for public review in 1997 and 1998. Once the project started up again in 2002, the City released several new draft reports for review. All technical reports have been finalized and released with the final impact assessment summary report.

Public	The reports that are still missing must be provided.	Several technical reports that support the draft summary reports were released for public review in 1997 and 1998. Once the project started up again in 2002, the City released several new draft reports for review. All technical reports have been finalized and released with the final impact assessment summary report.
Public	The DSR is full of unsubstantiated claims and statements of fact, that upon close scrutiny just do not stand up.	All specific comments have been addressed in the final reports. The comments and suggestions from the public have been seriously considered and where feasible have been incorporated into the project planning.
Public	I agree we need a correction to the traffic problem on Albion Road, however a three-lane road would suffice. This would preserve a great environmental woodland, hiking and play area.	The solution to the traffic problems on the mountain accesses cannot be solved by expanding Albion Road by one lane.
Public	I feel certain the future Linc will be extended to Fruitland Road or beyond in a lesser built-up area to take care of the above problem.	An extension of Fruitland Road across the escarpment does not resolve the mountain access issues in the east mountain/west Stoney Creek area.
Public	It has been determined by, and summarized within this review, that the RHCE project as currently stated will be detrimental to Red Hill Creek's diversity and sustainability as a productive Lake Ontario tributary. Many of the impacts associated with the creek will also affect Windemere Basin and Hamilton Harbour.	The City and its consultants have been working with the Department of Fisheries and Oceans to ensure that the creek work is incompliance with the Fisheries Act and the no net loss of productive capacity policy. Since these comments have been made, a fisheries report and a stream realignment report have been prepared and released for public review.
Public	It quickly became obvious that although Red Hill Creek was a highly significant valley feature, little or no effort was expended on detailing the proposed alterations of this feature, in the form of reports. For the most part, this has left the public blind to the Region's intentions and has excluded the possibility of public input.	The City and its consultants have been working with the Department of Fisheries and Oceans to ensure that the creek work is incompliance with the Fisheries Act and the no net loss of productive capacity policy. Since these comments have been made, a fisheries report and a stream realignment report have been prepared and released for public review.
Public	None of the details regarding construction timing or procedure have been revealed to the public. For, example it is not yet known how the transfer of water will occur from the original channel to the new one, or what length of time will be given to allow for stabilization. See letter. It is highly unlikely that even under ideal conditions, a project of this size could be completed within a time frame of least impact. This window would only exist when the majority of fish have left the system for the winter, and there are no fish species migrating or spawning.	Much of these points are issues which are determined in the detailed design of the channel and with the contractor. However, because much of this channel is being re-located, much of the stream channel will be constructed in the dry which will have zero effect on the existing fish habitat and migratory episodes. Creek crossing will likely occur via temporary crossing structures and stages of the new channel connected to the old channel as they are completed. A criteria for the final placement of many of the in-stream structures is that the newly designed channel must have flowing water to optimize the placement and the spacing of certain rocks.
Public	Specific disturbing points: 1-There is no such thing as "100 ppm coliform (Provincial Standard)", page 8.	Referring to the Provincial Standard quoted on page 8 of the report, it should read "100 counts/100mL"
Public	Why is the Expressway considered a Regional Road?	It is a regional road because it is intended to serve City development (Residential, industrial, commercial)
Public	What steps could be taken to keep "through" trucks off the expressway?	Lower thru truck traffic volumes might be achieved with lower enforced speeds for trucks or with tolling of trucks. No decisions have been made on either.
Public	If the Expressway is not built there will not be an increased demand for housing on the mountain, and consequently, there will not be an increase in traffic volumes to warrant the construction of the Expressway. There is a positive feedback loop between the Expressway and increased housing and traffic.	There are several housing developments on the Mountain that are approved but their construction has been delayed pending the construction of the road.
Stakeholders	Mention of the "Stoney Creek Landfill" is curious. The Expressway does not enter Stoney Creek at any point.	Background information reviewed by Dillon indicated that an area on the east side of Red Hill Creek, north of Brampton Street, has been used for waste disposal by the Village of Stoney Creek. This is documented in Dillon's Phase 1 report. The area is indicated in the State of the Watershed Report as a "Former Waste Disposal Site (Unknown Age and Size)". The 1998 Expressway Design does not intersect this area.
Stakeholders	The Regional Government should lobby the Harris Government for permission to shift the $20,000,000 promised for the '98 installment of the RHCE to the property tax side. Perhaps the Ontario Government would agree to a deal that reduces its commitment for an ill-advised roadway.	The Province's investment in this project is to support growth, which is directly related to jobs and increased non-residential tax assessment.
Stakeholders	We seek assurance that certain impacts are addressed, now that more details are becoming better known.	The mitigation that is included in the Impact Assessment Summary Report will be implemented.

Stakeholders	The process has lacked integrated community planning. We recommend serious consideration of such planning for the City in light of urban sprawl, downtown renewal and related issues.	The City is carrying out an integrated planning process called GRIDS.
Stakeholders	RE: CSC Meeting (Sept 24, 98), I felt that the public's input was largely ignored. The majority of the people who took the time to come out and have their opinions heard were obviously opposed to the expressway. The situation made me uncomfortable at times because of the preponderance of pro-expressway individuals on CSC.	The Region (now the City) has always made it clear that the planning for the project has already been completed. The impact assessment process approved by the Minister of Environment as a Declaration Order is focused on reducing impacts associated with the approved road through better design. The City has taken very seriously all of the comments that have been made by the public. Public input has been very useful in helping to understand the issues that need to be addressed in the context of the impact assessment.
Stakeholders	The City wants public input to make it a better community for all; but on the other hand it largely ignores the views of a constituency that uphold the very tenets of sustainability that the City claims to support. Balanced decision-making is supposed to place equal emphasis on economic, environmental and social/health aspects. DSR Vol 2, excludes the health study report by Cantox, failed to embrace consequences to the citizens of low socio-economic state. Troubling is the effect the expressway will have on children. Several of the Conclusions from the Cantox report are scary! (And these are based on very unconservative estimates of air pollutants about which I will say more.)	Mitigation is being addressed both through improved engine design and pollution control equipment on vehicles. Programs like Drive Clean and vehicle maintenance programs directly affect the level of diesel emissions. The Health Risk Impact Assessment Report has been updated substantially to reflect current science. The results of this report should be referred to for a current assessment of health impacts.
Stakeholders	A reasonable, open and representative government should have been prepared to sit down and discuss these concerns, especially in light of new information available at that time, but this was not the attitude of Hamilton-Wentworth.	Many Councils over the years have received reports on the impacts associated with the Expressway, have listened to community concerns and have weighed the positive and negative impacts.
Stakeholders	Requests by the public to provide input were denied until after Council had reached a decision. Less than 24-hours after the public submissions ended, the staff decision on the project was released and it included no reference whatsoever to the public input received.	The reports that were released in 1997 and 1998 were draft reports. All impact assessment reports and the consultation report will be provided to Council in early 2003..
Stakeholders	The City demanded an exemption from the Act, and Regional officials publicly threatened the provincial government that if such an exemption was not granted, then the City would use the partial approval obtained in 1985 to destroy the valley without a useable expressway.	A Declaration Order is an accepted way to amend an approved project. The Region wanted to reduce the environmental impacts by modifying the design. Even though it was not required to do this, it was felt to be the right thing to do given the concerns raised by the community.
Stakeholders	A so-called "public consultation" was also conducted by the City with regards to the current IADP. The "Exemption Order Request (May 1996) completely ignores this public input of overwhelming opposition.	The April 1996 proposed assessment report was based on input received at 3 public and 1 interest group events as well as 53 written responses that were received over a 30-day review and commenting period. During that time 153 people signed in at the public events, 36 attended the interest group meeting, 37 completed and returned comment sheets, and 16 forwarded letters to the Region. Of the written responses, approximately 20% told the Region to "stop wasting time and get on with the project", 40% were "opposed to the Expressway for a number of reasons", and the remaining 40% offered "qualified support for the Regions proposal". Regional Council was made aware of the results of this public consultation program before the Exemption Order was submitted to the Minister of the Environment.
Stakeholders	The CSC includes organizations who were arbitrarily placed on this committee even though they have a clear conflict of interest. The only labour organization in the Region that has publicly supported the expressway, was also the only labour organization named to the committee by the Region.	n July 1997, the Region met with The Friends of Red Hill Valley and 22 other interest groups to discuss the potential for stakeholder group involvement in the Expressway impact assessment and design process (IADP). The list of invitees was based on the written expressions of project interest submitted to the Region between January 1996 and July 1997. At the conclusion of the July meeting all participants agreed that the proposed Community Stakeholder Committee (CSC) should be formed. It was also understood that membership would remain open to any group that wished to contribute to the IADP. This opportunity was later advertised and promoted at CSC meetings. The CSC was comprised of groups that support, oppose and hold neutral views towards the Expressway project. In the fall of 1997, a subcommittee was formed to develop a Terms of Reference that would guide CSC input during the IADP. One of many issues they were able to resolve included the potential conflict of interest that you raise again in your submission.

Stakeholders	The records of the CSC show clearly that dozens of criticisms and questions raised in the CSC by Friends of Red Hill Valley and other individuals and organizations went unanswered. Comments and questions raised by members of the public, in meetings in Dec, Jan, and February were never replied to.	The role of the CSC was to provide advice and recommendations to the Region on matters within the scope of the IADP. Draft responses to the comments CSC members made on DSR Volume 1 were distributed at the February 1998 meeting. The 11 other meeting records (July 1997 to September 1998) show how other questions raised by CSC members were addressed by the Region. Some of the groups that oppose the Expressway, formally left the CSC in April 1998 after an attempt to change the committee mandate was unsuccessful. The resolution put forward by the W.A.T.E.R representative recommended: "That the Community Stakeholder Committee recommend to Regional Council that this committee, or an appropriately reconstituted committee, be given the mandate to address public demands to justify the need, cost and location of the proposed north-south expressway" (Memo to The Chairman and Members of Regional Council – April 16, 1998). These concerns were forwarded to Regional Council's Transportation Services Committee on March 18 1998 (Report # 5.11) with the recommendation that the project continue as described in the Exemption Order. Council supported staff's recommendation.
Stakeholders	INSIDE COVER DSR: DSR VOL 2, opens with a group of falsehoods on the inside cover, including "The purpose of this document…is to provide concerned parties with an understanding of ..how impacts will be reduced." Most discussion of mitigation fails to include specific promises or explanations of what actual mitigation will take place.	Comments on the draft reports were helpful in developing more specific mitigation which is reflected in the Impact Assessment Summary Report.
Stakeholders	There are dramatic shortcomings in both DSR Volume 2 and the accompanying background documents which must be rectified prior to the initiation of a proper consultation process on the predicted impacts of the Red Hill Valley Expressway.	The comments received on the draft reports have been addressed in the final Impact Assessment Summary Report.
Stakeholders	"Resource Protection":" We are obliged to protect the natural features upon which we rely for enjoyment, relaxation, education and for provision of the basic components to sustain life. To fulfill this obligation, the City is committed to the long term protection of the natural environment" The impacts of the Expressway clearly violate this.	The Official Plan states that "Nothing in this Plan shall preclude the construction of this roadway through the Red Hill Creek Valley." (Part C, Section 4, Subsection 4.3.1.18, Hamilton-Wentworth Official Plan). The City is committed to mitigation and compensation where impacts cannot be avoided.
Stakeholders	HNC rejects the documents produced for the City as part of the IADP for the Red Hill Creek Expressway, as incomplete, erroneous and unacceptable.	The reports provided at this time were draft. The comments received from the public and the HNC were valuable in finalizing the reports.
Stakeholders	First task has been to ensure that Hamilton-Wentworth staff working on the impact assessment are well acquainted with those goals of the Remedial Action Plan.	The RAP was represented on the Community Stakeholder Committee. Consultants cited RAP goals and objectives in technical reports and the summary reports.
Stakeholders	2nd task: suggest measures which might mitigate impacts.	The technical reports and the Impact Assessment Summary Report indicate mitigation that will be undertaken. The Design Report will identify specific mitigation and monitoring plans.
Stakeholders	3rd task: to ensure our groups understand the predicted impacts of the Expressway as they pertain to the RAP goals.	The technical reports and Impact Assessment Summary Report outline how the Expressway Project affects RAP goals.
Stakeholders	I prefer to wait until other agencies have completed their reviews before presenting RAP stakeholders with an analysis of how the project may help or hinder the attainment of RAP goals.	Recent correspondence (Oct. 2002) from RAP indicates that they do not want to provide comments on this project.
Stakeholders	The opening statement suggests, misleadingly, that the project exists only to meet future demand. There is a present and pressing need for this project, and this should be stated.	This project has been planned since the early 50's and as such has been needed since that time. We agree that there are present problems which require solution.
Stakeholders	In comparing the 1985 design to that of 1998: Had the authors chosen earlier designs for the basis of comparison, the Region could claim an even greater reduction in detrimental environmental impacts.	The Exemption Order specifically calls for a comparison between the 1990 Ministry of Transportation design for Burlington Street/QEW and the Regions current proposal as well as the 1985 designs for the remainder of the road.
Stakeholders	It would be clearer if the development of most of Hamilton Mountain was targeted as responsible for the present erosion problems which the realignment will address.	The final impact assessment report will indicate that development within the Red Hill Creek Watershed (i.e. Hamilton Mountain) contributes greatly to the existing erosion problem.

Stakeholders	Clarify the Indirect Impact Zone and include a note addressing potential ecological Impacts to adjacent natural areas. Include Direct/Indirect Zones on the Impact Map would improve the report.	The Terrestrial Report clarifies the Indirect Impact Zone. There are several impact areas depending on the factor. For example, the noise impact zone is different from the terrestrial resources impact zone. These are shown in different ways on the IASR Impact maps.
Stakeholders	BARC is lucky to have access to an independent source of expert advice through the Hamilton RAP.	As a member of the CSC since September 1997, BARC participated in the development and implementation of a consultation program that involved a number of community workshops, briefing sessions with technical consultants, information centres, and public meetings (see Chapter 2). The CSC also provided comment on the technical nature of the information generated by the Region.
Stakeholders	It is our "advice that to get it right the first time will be the most frugal strategy.	the City agrees that it will be important to have the right approach to mitigation. The Community Stakeholder Committee (including BARC) provided review of all of the draft reports in 1997 and 1998 and this was very helpful.
Stakeholders	The maps (Map 2A, or Mitigation Map 3A) in Draft Traffic Noise Impact Assessment and DSR VOL 2, all indicate that the proposed expressway construction is immediately behind the school building.	the Elizabeth Bagshaw School is immediately adjacent to the Expressway corridor. However, there will be a noise wall between them.
Stakeholders	Earlier this year, CONE copied you on a letter we wrote to the Federal Minister of Fisheries and Oceans and the federal Minister of the Environment outlining our concerns about the proposed expressway.	This letter was never received.
Stakeholders	Highly concerned about this major, highly environmentally intrusive infrastructure project. It would be a real credit to the Hamilton-Wentworth regional government if it were to decide that protection of the Escarpment were to take precedence over construction of an expressway for which the need has, in our view, not been adequately established.	Need was established through the approvals given by the Joint Board after a public hearing in the mid 1980s. There are several developments on the Mountain that are on hold until the road is constructed.
Stakeholders	Approval is now 13 years old and circumstances have changed. Many features of the Expressway that are being proposed for "self approval" by the Region were not part of the 1985 EA approval. (2)The Niagara Escarpment Commission continues to be involved in the process more by virtue of the approvals imposed by the 1985 Joint Board decision than for any other reason.	The need for and location of the Expressway has not changed. The purpose of the current impact assessment is to propose changes to the approved design that will ultimately reduce environmental impacts.
Stakeholders	It is CONE's position that the Region has utterly failed to prove that this expressway is necessary to the public interest and has utterly failed in the past decade to canvass seriously the many practical alternatives to the expressway, at least one of which was proposed as recently as 1994 by David Crombie.	See comments above re: need. The Crombie proposal did not undergo environmental assessment. Crombies alternative was located in the valley.
Stakeholders	The Red Hill Creek Expressway does not meet the requirements of the Niagara Escarpment Plan. We cannot find that the region has met the following objectives: to protect unique ecologic and historic areas, to maintain and enhance the quality and character of natural streams and water supplies, To provide adequate opportunities for outdoor recreation.	The Joint Board Hearing approved the project under the Niagara Escarpment Planning and Development Act.
Stakeholders	We can only point to some of the statements in the report to indicate that your own consultants believe that negative impacts of the expressway cannot be mitigated.	When building a road there are always some impacts that cannot be mitigated. However, there are many areas where the City is proposing to improve existing conditions.
Stakeholders	CONE believes that the proposed Expressway will cause irreparable harm to the Niagara Escarpment in the Hamilton Area.	This cut is no different from other road cuts along the escarpment. See above re: work with NEC.
Stakeholders	A Quote from the Region's Official Plan which starts "Opportunities to experience nature should not be taken away from future generations either through our decisions/actions or by neglecting our responsibilities for protecting, preserving and enhancing the natural features that exist in this Region.	The Region's Official Plan also states that nothing in the Official Plan shall cause the Expressway not to be built.

Stakeholders	Quote from DSR Volume 2 starts "Impacts to ecosystem functions along the Niagara Escarpment and along the Red Hill Valley will be high regardless of changes made during detail design and construction.	As stated above, roads create both positive and negative impacts. These are trade-offs when constructing transportation systems.
Stakeholders	How useful an ESA designation in the Regional Official Plan is when the designation can effectively be disregarded when it becomes inconvenient.	The ESA designation was made after planning decisions on the road were made. ESAs do not preclude development.
Stakeholders	Niagara Escarpment: FON questions the Region's commitment to its Official Plan policies to protect Environmentally Significant Areas in light of the Red Hill Creek Expressway proposal. We question the Region's commitment to the purpose and objectives of the Niagara Escarpment Planning and Development Act and the Niagara Escarpment Plan in light of the Region's consistent, long-term support for the highway project.	Planning for the roadway preceded the ESA designation. The Region's Official Plan states that nothing in the plan shall cause the Expressway not to be built. The 1985 approval provided NEC approvals.
Stakeholders	It must be reiterated that the Niagara Escarpment Commission, has never supported the expressway project and continues to provide input only in the context of the approvals imposed by the Joint Board decision.	The Niagara Escarpment has always stated that it does not support the Expressway but it has supported decisions made by the Region (now City) to reduce environmental impacts. For example, the escarpment crossing viaduct design has been supported by the NEC (February 1999).
Stakeholders	Conclusions of that report " The Escarpment face serves as a green ribbon framing a regenerated scenic valley, and is highly sensitive to visual alterations (page 14)	COMBINE with below
Stakeholders	"The expressway will create a physical barrier by bisecting the valley and separating land uses and points of interest. Alterations to human/wildlife movement routes and altering both drainage and vegetation will result in changes in the adjacent landscape that will cause visual impact. (page 24)	Combine with below
Stakeholders	" The cumulative impacts of these Escarpment alterations are predicted to be extremely high. No amount of side slope re-grading or new vegetation cover will reduce this degree of impact both in the longer views and in the longer views and in the short-distance vantage areas. (page 25)	COMBINE with below
Stakeholders	"The rock cut to create the Escarpment crossing creates a significant scar in the Escarpment brow that cannot be mitigated with planning buffers. (page 26)FON concludes that the RHCE will have major and unacceptable imparts on the ecological features and functions of the Red Hill Valley. We cannot support any of the mitigation measures proposed in the Region's consultants' reports because so many of the ecological impacts, simply cannot be adequately mitigated.	COMBINE with below 27, 28, 29 and 30 The decision as to what is adequate mitigation is partly decided by regulatory agencies and the City. Construction of roads in undeveloped areas always result impacts that cannot fully be mitigated in that area. The Terrestrial Report however, highlights mitigation that can be carried out outside the road and creek corridors to benefit other ecological areas in the valley, the watershed and the City.
Stakeholders	We have seen no evidence that the provision of comments from the public has had an appreciable impact on the course of action which the Region of Hamilton-Wentworth has embarked upon, or on the assessment of the environmental impacts of that course of action.	The purpose of the Declaration Order was to carry out an impact assessment and design process that would reduce the environmental impacts of the project. The public has affected the assessment of environmental impacts in the following way: the City carried out studies that were not part of the original study design. They include: Human Health Effects from Exposure to Predicted Increases in Respirable Particulate Matter (prepared by Cantox Environmental, 1998); Vehicle Air Emissions Inventory (prepared by RWDI, 1998); and Thermal Dynamics Impact Assessment (prepared by RWDI, 1998). The Region also held public meetings, briefing sessions, and issued public notifications and newsletters designed by or at the request and support of members of the Community Stakeholders Committee (CSC). The public participated in design workshops on the landscaping plan and the viaduct design at the escarpment and helped to make decisions on aspects of those reports. Government agencies advocated for the City to take a systems approach to impact assessment by doing watershed planning and using natural channel stream design to address fisheries and water quality issues. These approaches have been taken even though there is not a legislative requirement for them.
Stakeholders	The subsequent 1979 decision to proceed with the expressway project was wrung from the City and Regional councils through a combination of back room deals as well as exaggerated growth predictions subsequently had to be lowered by 100,000 people.	This is information that cannot be verified.

Stakeholders	It appears inevitable that submissions from the public which in any way disagree with the Region are likely to be summarily discarded.	The City welcomes input from the public and has changed designs and approaches as a result of public input. However, the City has made clear that they are not willing to replant the road.
Stakeholders	The current exercise continues the dismal pattern of neither providing people with an accurate and reasonable evaluation of the consequences of the proposed expressway, nor allowing for appropriate public input and comment.	The draft reports were intended to be revised based on public input. The City fully expected the public to ask questions and to provide suggestions that could then be considered in finalizing the reports.
Stakeholders	DSR VOLUME 2: It is not feasible for a volunteer organization to respond to such a massive volume of material (DSR Volume 2) in such a short time period, and certainly a holistic review is impossible in this time frame.	The former Region provided 60 days for review of the material and provided several public sessions with consultants and Regional staff to understand the results of the reports. Staff were available for questions at any time. The CSC designed the consultation process. However, when the concern of time is only raised at the end of the review process it is difficult to respond to.
Stakeholders	The review of these background studies (which DSR Vol 2 is based) requires a wide variety of scientific and professional expertise to properly evaluate DSR Volume 2. We understand some reviews from volunteers have been submitted to the Region.	The technical consultants that prepared the studies were available at several public meetings and through the CSC meetings to respond to questions.
Stakeholders	While each of these submissions should be carefully considered by the Region, they represent only a small portion of work that is necessary to evaluate the background studies. The results of these reviews makes very clear that much of the consultant work on this project is shoddy and incomplete. The DSR volume 2 should be re-written in the light of these suggested improvements before a reasonable opportunity will exist to review its contents.	The purpose of a draft review period is to provide the public and government agencies an opportunity to comment on the information presented and to provide suggestions on issues that need more explanation, on mitigation opportunities etc. The City considered all of the comments and suggestions received and will reflect changes in the final impact assessment documents.
Stakeholders	Some background documents, especially those on stream re-alignment and fisheries, have not yet been released.	impacts to terrestrial, recreational and heritage resources caused by the creek realignment work were measured and recorded in DSR Volume 2. At that time, the Region had a preliminary stream alignment design that spatially illustrated the limits where direct environmental impacts would likely occur. However, the final set of impact assessment documents will contain more detailed information on the Region's stream realignment and fishery impact work.
Stakeholders	No information has been released explain the determination of traffic predictions for the Expressway project. Despite many written and verbal requests, the Region has repeatedly refused to release this information, perhaps because it will show that the Expressway is not necessary.	An updated traffic assessment has been prepared by iTrans and has been released.
Stakeholders	EXECUTIVE SUMMARY: The summary should be the last document released, not the first. How could it be evaluated when the background studies it summarizes had not been made available.	The Executive Summary provided an very broad overview of the impact assessment process and is taken from the front of the Draft Summary Report Volume 2. It was released as the other documents were being printed to respond to the requests from the public for immediate information. It was not intended to be commented on in isolation from other reports.
Stakeholders	Would it be considered appropriate to comment on an executive summary without being provided with the document it summarized and the appropriate background documents?	The Executive Summary provided a very broad overview of the impact assessment process and is taken from the front of the Draft Summary Report Volume 2. It was released as the other documents were being printed to respond to the requests from the public for immediate information. It was not intended to be commented on in isolation from other reports.
Stakeholders	Page 12 of Executive Summary claims that there will be "further opportunities for community input". However at its first meeting following the release of the DSR, the CSC decided not to allow public input into its deliberations.	The September meeting of the CSC was a working session devoted to assembling member comments on the Region's draft documents. At the conclusion of the meeting members decided to disband the Committee as they felt that they had fulfilled their Terms of Reference requirements. Never the less, DSR Vol.2 outlines several opportunities for public input to the design stage.
Stakeholders	We are left with the DSR VOL 2 suggestion that some secret meetings with individuals and groups hand-picked by the Region may occur at unspecified times and in unknown locations.	the consultation outlined in DSR vol. 2 is a direct response to requests by community groups and agencies to be involved in future stages of the project.
Stakeholders	The omissions from the list of organizations to be included in these meetings (page 53 and 54 of DSR Volume 2) are instructive. The recreational trails consultation has no place for the many volunteer organizations that have been monitoring these trails. (Red Hill Valley Volunteer, King's Forest Orienteering Club).	the consultation outlined in DSR vol. 2 is a direct response to requests by community groups and agencies to be involved in future stages of the project.

Stakeholders	Exclusion from the "consultation" on recreational parks include the Rosedale Parks Committee and three other very active neighbourhood groups.	the consultation outlined in DSR vol. 2 is a direct response to requests by community groups and agencies to be involved in future stages of the project.
Stakeholders	Coincidentally each of these organizations has taken a strong stand against the expressway project.	the consultation outlined in DSR vol. 2 is a direct response to requests by community groups and agencies to be involved in future stages of the project.
Stakeholders	A review of the Executive Summary makes it very clear that its release was a political activity intended to try to promote the Expressway and downplay its very considerable impacts.	The release of the Executive Summary was in response to public requests for information as soon as possible.
Stakeholders	A review of the Executive Summary makes it very clear that its release was a political activity intended to try to promote the Expressway and downplay its very considerable impacts. Chart on Page 1 is inaccurate and misleading.	The fifth lane you're referring to is a truck climbing lane for slower moving traffic (see page 4 - DSR Volume 2) and not a through lane. This additional lane would apply to both the 1985 and 1998 expressway designs. (Escarpment Crossing) - When the report was published the Escarpment crossing working group was discussing the type, location and length of structure that should be built to accommodate wildlife, pedestrian and cyclist movement under the Expressway. A specific viaduct design has since been selected and supported by the Niagara Escarpment Commission (see report on the viaduct design on the website). (Interchanges) - The second column refers to modifications only not deletions. (Ramps) - There is no indication that there are no ramps in the 1998 design and Figure 1 shows the difference (Creek) - The natural channel design approach will be listed as suggested. It is also described on page 4. (Pedestrian crossings) The pedestrian crossings are shown in the draft Landscape Management Plan. The development of the Recreation Master Plan also reviewed pedestrian crossings of the QEW at Woodward and other areas suggested by the public. The draft Landscape Management Plan shows several options. (Stormwater Ponds) – Stormwater ponds would be built for either design.
Stakeholders	Page 3, the statements in the first column share the common feature of NOT telling the reader what the impacts will be. What is the place of such salesmanship in a document supposedly presenting impacts? Why are these the statements made at the very beginning of the document?	The purpose of the assessment work was to reduce the environmental impacts of the 1985 approved Expressway design through design changes and other mitigative measures. Therefore the focus of the report is on the environmental impacts of the proposed design changes and improvements to the mitigation proposed in 1985.
Stakeholders	The region is not on schedule. "Detailed Design, Construction and Monitoring" for "Fall/Winter 97/98" has not even begun. It is grossly dishonest of the Region not to mention this scheme (not starting construction before summer/fall 1999) in the DSR Vol 2.	Figure 3 of the Exemption Order was submitted to the MOE in May 1996. Approval to proceed with the IADP, however, was not granted until March 1997, a 10-month change to the overall project schedule. At the time that the DSR vol.2 was written, the Region was on schedule as per their estimate of time required to complete each phase. Since then, work stopped on the expressway while the Region/New City of Hamilton dealt with the application of federal environmental assessment to the project.
Stakeholders	The DSR proper that begins on page 4 contains so many unsubstantiated and misleading political statements that it would require a document of at least twice its size to record them all.	The CSO pipe and Expressway are both City projects. The class environmental assessment (Class EA) recommends that the CSO pipe will be built beneath the Expressway from approximately King Street to Barton Street. Cumulatively, the CSO pipe and Expressway storm water management facilities will improve the existing water quality in Red Hill Creek.
Stakeholders	Note that the Expressway project originated over 45 years ago and despite the "assessment" process it underwent in the 1980's and the exemption order process in 1995-97, three of the four "components" described on page 4 were first revealed to the public as part of the project in June 1998, and not part of the project in the exemption order request filed by the Region in June 1996. It is abusive for new elements to be hidden until very recently and then sprung on the public.	Stormwater management and natural channel stream design concepts were mentioned in the 1996 Exemption Order submission (pages 29 and 30, and again in appendices E.2, E.3, and E.4) and in the November 1997 DSR Volume 1 (pages 80 and 81, and Maps 1-3). As for the CSO pipe, the Class EA report that links this project with the Expressway was released in draft form for public review in November 1997. Page 40 of the Exemption Order states that "... interchange alignments could include modifications to the QEW corridor within the East/West study limits." At the time of the Exemption Order submission, it was clear that the Trumpet 'B' type interchange impacted the Burlington Street interchange (see diagram on page 39) but functional details concerning the Trumpet 'A' impact on this same interchange were not. Clearly a natural creek design project that stabilizes an erosion prone creek and reduces sediment loading to Hamilton Harbour, and a stormwater management strategy that improves water quality produce positive environmental impacts.
Stakeholders	"the Region initially addressed need and alternative locations in 1982..." This date was merely when the Regions' investigations were reported. They were actually conducted in 1978-79, a full two decades ago.	This is correct. The Region looked at alternatives several years ago and the final location was approved by a Joint Board and supported by Cabinet.

Stakeholders	"The Region and Ministry of Transportation then revisited the need for the project in the 1990's." This revisiting was so definite that the Region cannot tell exactly when it took place.	The Report lists the reports which support these statements.
Stakeholders	The region has produced a "Draft Summary" which is as comprehensive and detailed as such a document can be while under the title of "Executive Summary".	The Draft Summary and the final Summary Report are based on the findings of several technical reports. The City felt that was important to provide an easily readable document for the majority of readers who want an overview of all the work that has been completed to date. However, all of the technical reports are also available for those who prefer to read them.
Stakeholders	"What does the project include section" : re-emphasize the pressing need for, and tremendous benefits of, the channel realignment, stormwater management facilities, and combined sewer overflow pipe.	The City agrees that this project is much more than an Expressway. The Impact Assessment Report speaks to this in several areas.
Stakeholders	The authors of DSR Volume 2, are to be commended for their ability to delve through reams and reams of material and arrive at a brief yet thorough summary.	The Draft Summary and the final Summary Report are based on the findings of several technical reports. The City felt that was important to provide an easily readable document for the majority of readers who want an overview of all the work that has been completed to date. However, all of the technical reports are also available for those who prefer to read them.
Stakeholders	The maps provide a lot of information but at the same time are easy to read. Excellent work.	The maps have been updated to provide an even easier ability to read.
Stakeholders	Misleading: "the current proposal incorporates a trail system whereas the 1985 Expressway design did not." This sentence does not bother to mention that a trail system already exists in the valley, and that the trail system will be seriously degraded by the expressway proposals.	The former Region worked with the former City of Hamilton on the trail that was constructed in the valley. It was acknowledged and accepted that parts of the trail would have to be relocated as a result of the Expressway and the creek work. The Recreation Master Plan has been updated (see draft Landscape Management Plan) and a new trail system is being proposed.
Stakeholders	It is critical that all information, both positive and negative, be presented clearly.	The City agrees that it is important to present all types of impacts.
Stakeholders	DSR Vol 2 falls short on several key points. These inadequacies can be addressed using information available in the TRTR.	The Terrestrial Resources Technical Report has been checked against the summary report again. While we want to ensure that the summary report accurately identifies impacts and mitigation, a summary report will not provide the same level of detail as the Technical Report.
Stakeholders	BARC is unable to provide detailed comments at this point as they are awaiting feedback from members of the RAP technical team.	BARC attended all of the Community Stakeholder Committee meetings and technical review meetings with the technical consultants. Subsequently RAP has indicated that they will not be providing comments on the Expressway project. Nevertheless, RAP objectives have been incorporated into the assessment process. The issue of the application of the Canadian Environmental Assessment Act has been resolved by a federal court decision.
Stakeholders	BARC appreciates the opportunity to provide input on the DSR Volume 2.	Input from organizations like BARC are important in helping the City to finalize the impact assessment documents.
Stakeholders	Interest in getting together with the Region and John Vandermark to discuss the matter of bicycle access from the south end of the valley across the combined expressway to connect up with the Caledonia Trail.	Mitigation design will be further addressed by the City during the detailed design phase.
Stakeholders	Misleading: " allows the Region to reduce sediment loading to Hamilton Harbour." Infect the background documents admit that sediment loadings to the harbour will increase, especially during construction.	As a result of the natural channel design work, the current rates of erosion are expected to be reduced by one to two orders of magnitude. This information is documented in the final Creek Impact Assessment report.
Ground & Surface Water Quantity and Quality		
CSC	Will ground water recharge be impacted?	Refer to Section 4.2 of the Hydrologic Inventory and Impact Assessment Report (Blackport & Associates).
CSC	City should investigate alternative stormwater management options such as a downspout disconnection by-law.	The Red Hill Creek Watershed Plan includes several opportunities for storm water management. However, the Watershed Plan determined that these are worth pursuing in addition to the storm water management proposed in this project.
CSC	Anti-icing instead of de-icing techniques should be utilized to reduce the amount of road salt used on the Expressway.	The city is preparing a maintenance management plan for the project that will be based on the city's recently approved winter maintenance plan.
CSC	Emergency response measures for spills need to be developed for all highways in the City.	The City has a spills response number to phone when any spills occur in the city.
CSC	City should investigate the purchase of more efficient	The city is preparing a maintenance management plan for the project that

	salting trucks and equipment.	will be based on the city's recently approved winter maintenance plan.
CSC	The City should investigate the possibility of restricting certain traffic on the Expressway in order to reduce the risk of spills.	Transportation of dangerous goods and hazardous materials is regulated by the provincial and federal government.
CSC	Windermere Basin and other sediment ponds should be cleaned out.	The City is considering options for cleaning out sediment from Windermere Basin as a separate project.
CSC	The location of snow dumps, which contain a large amount of road salt, should be investigated.	There are currently no City snow dumps in the vicinity of the Red Hill creek or other tributaries of the creek
CSC	How many hectares/acres of habitat enhancement or creation will there be?	The target is to replace hectare for hectare.
CSC	Where and how will the rare bird species be relocated, and how will it's habitat be recreated?	There are no specific 'rare' birds, there are just some species that will be more sensitive to impact than others, such as the Least Bitten. Individual rare birds would not actually be relocated, however, if their breeding habitats will be impacted ad inadequate habitats exist elsewhere in the valley, then habitats may be re-created. Maps 3A and B in DSR Volume 2 indicate potential mitigation sites identified with input from review agencies and groups involved in habitat restoration. Habitat re-creation is proposed within the Van Wagner Marsh area, however it is subject to soil, design and conservation authorities.
CSC	How were water quality improvements predicted?	An exhaustive literature review was conducted of the removal rates associated with various forms of stormwater mitigation, use of MOE environment database of associated pollutants and their loading within the Red Hill Creek system, as well predicted loading impacts from roadway infrastructure. All of the foregoing has been integrated into what is known as a Mass Balance Model which is used to predict the annual loading and the associated mitigation within the watershed system (see July 1998 Philips Report) Section 5.2, Appendix E.
CSC	How many regional storms are expected?	The Regional storm for this part of Southern Ontario is Hurricane Hazel which has a predicted recurrence interval between 1 in 500 years and 1 in 10,000 years.
CSC	What impact will road salt and spills have to the structure of the harbour?	The project includes treatment of runoff from the expressway in stormwater management facilities which are designed to meet the Highest Provincial standard for stormwater management facility design. Refer to the Maintenance Management Plan being developed which will recommend a de-icing strategy which minimizes the impacts on the environment but maintains the highest standard of safety. Limited literature is available on the effectiveness of stormwater management facilities or other stormwater management techniques for removing salt, hence he may be able to help out.
CSC	What is the impact on the harbour?	In terms of surface water, the peak flows, runoff volumes, and erosion regime are all anticipated to be the same or slightly less than existing conditions. Runoff volumes may marginally increase, however, the direct increase due to the expressway is anticipated to be approximately 1%. Erosion of the existing stream and associated downstream sedimentation within the harbour is also anticipated to be substantially reduced due to the proposed natural channel design works. The Environmental Management Plan will outline how erosion will be managed and controlled during construction. Refer to Impact Assessment Design Process (Philips) Section 5.23.
CSC	Constructing ponds, such as the one at the end of Dartnall Road, could help mitigate spills.	There are several ponds proposed throughout the north-south expressway.
CSC	Will water quality improve with the clean up of contaminated sites?	Construction of the expressway project and its associated mitigation works such as, City projects like the Brampton Street, Rennie Street and Upper Ottawa Landfill class Environmental Assessments have addressed leachate discharge to the creek. The Expressway Project will involve the removal of 70,000 cubic meters of waste adjacent to the creek at the Rennie Street Landfill site.
CSC	How will spills be dealt with?	In terms of liquid spills, the proposed stormwater management system has been designed to capture all highway runoff. In the event of a spill, fore bay areas with a large amount of available volume can be shut down, in an effort to entirely contain the spill, prior to direct discharge to the stream. In certain locations, supplementary techniques such as oil and grit separators can also be incorporated into the final design for spill containment.

CSC	Were CSO tank discharges considered in the statement "Contaminated recharge water which infiltrates into the groundwater system may not meet Provincial Water Quality objectives (PWQCs) where the water discharges"?	It is not clear where the reference comes from, however, typically the Red Hill Creek and its flood plain, in the vicinity of existing CSO outfalls, are not areas where significant recharge occurs. Note: to SPO: Bill Blackport and Dr. Dixon will have more insight.
Gov	Meeting PWQs in the discharging groundwater after mitigation	Given the above discussion concerning the potential for a hydraulic connection, it is not expected that any significant amount of infiltrating groundwater will migrate directly to Red Hill Creek. The proposed stormwater management facilities will be assessed in more detail for potential groundwater pathways on a site specific basis.
Gov	Insufficient or un-interpretable data was presented in the impact assessment. An assessment of all potential loadings relative to changes in-stream contaminant concentrations versus PWQO must be presented for the SWM facilities.	This information is contained in the Storm water Technical Report dated July 1998 .
Gov	The SWM pond performances were indicated in terms of %reduction in loadings, but an assessment of loadings relative to changes in-stream contaminant concentrations vs. PWQO was not provided.	Refer to Section 6.2 Surface Water and Stormwater Quality Technical Report, July, 1998, Philips Planning and Engineering, for rationale.
Gov	The positive effects of the CSO (valley pipe storage facility) should be separated from the impacts of the expressway in order to accurately assess the expressways impact on the creek.	The construction of the CSO pipe is contingent on the expressway construction, since it would not be constructed otherwise. Without the Expressway there would be three separate CSO tanks in the Valley in addition to the two Greenhill tanks. This would mean three more separate discharges to the creek. If the pipe and the road are constructed concurrently, however, these three discharges would not occur and therefore the impact of the CSO pipe is less than the impact of the three tanks.
Gov	Main concerns with the DSR relating to: a 30% reduction in recharge in the sensitive groundwater areas.	The overall watershed groundwater flow system and linkages were presented in the Red Hill Creek Watershed Plan – Hydrogeological Inventory (Terraqua Investigations Ltd. 1997). Findings relating to baseflow measurements indicated that intermittent groundwater discharge was present within the Creek in the vicinity and upstream of the Greenhill CSO. It was also presented that this groundwater linkage was most likely related to recharge through the more permeable sands immediately to the east of the Creek in this area. The Red Hill Creek Expressway Impact Assessment – Hydrogeological Component (Blackport & Associates, 1997) presented additional data relating to baseflow and streambed piezometers specific to the Red Hill Creek valley. The reach specific baseflow data in 1997 did not demonstrate groundwater discharge within Red Hill Creek adjacent to the permeable sand deposits noted above. Streambed piezometers installed along this reach and further downstream did not demonstrate the upward hydraulic gradients necessary for groundwater discharge. It was also noted that the Creek substrate and deposits immediately adjacent to the creek consisted of silty clays and that the hydraulic connection was not considered good. Given the above discussion it was presented in the DSR Vol.2 that a 30% reduction in discharge may occur in the groundwater sensitive area, more specifically the permeable sand deposit. This reduction was based on a conservative estimate of the area of the expressway as a percentage of total area of the sand deposit assuming no mitigative infiltration. The first issue concerns a loss of this recharge in relation to the groundwater linkage/discharge to Red Hill Creek. A preliminary approach to assess impact considers the total volume of water lost from a 30% reduction in recharge. A reduction in permeable area of 0.27 sq. km and an infiltration rate of 350 mm/year corresponds to a reduction in groundwater discharge of 3 l/s. This calculation conservatively assumes all of the recharging water would discharge to the adjacent reach of Red Hill Creek. A value of 3 l/sec is small compared to the overall volumetric baseflow discharge, the majority of which occurs above the escarpment. Additional field data collected in 1998 relating to groundwater discharge in Red Hill Creek included two rounds of baseflow measurements, the installation of 11 streambed piezometers and 4 mini-piezometers, 7 testpits and 122 boreholes. The baseflow measurements were not conclusive in showing groundwater discharge to the Creek. The borehole data collected by Water Regime, and testpits indicate clays and silt-clays within the valley and adjacent to the Creek. The streambed piezometer data and borehole logs do not indicate a hydraulic connection via a direct groundwater pathway to the Creek.

Gov	The re-alignment of the RHC, the documentation for the proposed alignment was limited. The potential implications for erosion, sediment loading and associated contaminant transport as well as potential loss of oxbow habitat etc, were not detailed. The re-alignment work must be completed to the satisfaction of the Ministry of Natural Resources and the Federal Department of Fisheries and Oceans.	Since these comments, additional technical reports have been prepared and submitted to the Federal Department of Fisheries and Oceans. Additional detail will be provided in Detail Design.
Gov	MNR supports the use of natural channel design methods for the relocation or Red Hill Creek. However they have reservations about the ultimate geomorphologic stability of the relocated channel.	The report referred to is an interim draft which provided only insight into existing conditions from the period of study at the time. A comprehensive report has been completed (August 31, 1999) which provides further information to address any outstanding concerns.
Gov	GROUNDWATER: Important to separate swale infiltration from groundwater discharge points to allow for surface and/or subsurface "curing" of contaminants. HRCA staff request further rationalization of the conclusion that net groundwater impacts will be insignificant.	The areas of permeable sand and gravel where recharge may potentially be impacted are the same areas where storm water management facilities and passive infiltration are to be considered.
Gov	Page 42- Impacts on Groundwater: The City should examine the implications of the proposed compensation measures on these groundwater contributions. More detailed information is required, and documentation by the City is suggested.	The overall watershed groundwater flow system and linkages are presented in the Red Hill Creek Watershed Plan – Hydrogeological Inventory (Terraqua Investigations Ltd. 1997). Findings relating to baseflow measurements indicated that intermittent groundwater discharge was present within the Creek in the vicinity and upstream of the Greenhill CSO. It was also presented that this groundwater linkage was most likely related to recharge through the more permeable sands immediately to the east of the Creek in this area. The Red Hill Creek Expressway Impact Assessment – Hydrogeological Component (Blackport & Associates, 1997) presented additional data relating to baseflow and streambed piezometers specific to the Red Hill Creek valley. The reach specific baseflow data in 1997 did not demonstrate groundwater discharge within Red Hill Creek adjacent to the permeable sand deposits noted above. Streambed piezometers installed along this reach and further downstream did not demonstrate the upward hydraulic gradients necessary for groundwater discharge. It was also noted that the Creek substrate and deposits immediately adjacent to the creek consisted of silty clays and that the hydraulic connection was not considered good. Given the above discussion it was presented in the DSR Vol.2 that a 30% reduction in discharge may occur in the groundwater sensitive area, more specifically the permeable sand deposit. This reduction was based on a conservative estimate of the area of the expressway as a percentage of total area of the sand deposit assuming no mitigative infiltration. The first issue concerns a loss of this recharge in relation to the groundwater linkage/discharge to Red Hill Creek. A preliminary approach to assess impact considers the total volume of water lost from a 30% reduction in recharge. A reduction in permeable area of 0.27 sq. km and an infiltration rate of 350 mm/year corresponds to a reduction in groundwater discharge of 3 l/s. This calculation conservatively assumes all of the recharging water would discharge to the adjacent reach of Red Hill Creek. A value of 3 l/sec is small compared to the overall volumetric baseflow discharge, the majority of which occurs above the escarpment. Additional field data collected in 1998 relating to groundwater discharge in Red Hill Creek included two rounds of baseflow measurements, the installation of 11 streambed piezometers and 4 mini-piezometers, 7 testpits and 122 boreholes. The baseflow measurements were not conclusive in showing groundwater discharge to the Creek. The borehole data collected by Water Regime, and testpits indicate clays and silt-clays within the valley and adjacent to the Creek. The streambed piezometer data and borehole logs do not indicate a hydraulic connection via a direct groundwater pathway to the Creek. The second issue concerns the quality of groundwater discharge to the Creek resulting from degraded infiltrating storm water. Given the above discussion concerning the potential for a hydraulic connection, it is not expected that any significant amount of infiltrating groundwater will migrate directly to Red Hill Creek. The proposed storm water management facilities will be assessed in more detail for potential groundwater pathways on a site specific basis. The overall assessment of groundwater discharge to the Creek was monitored through 1999 and in 2002. See Hydrological Inventory and Impact Assessment Report, Section 4.2 (Blackport & Ass)
Gov	Page 44 and 45, Mr. Ram Dharamdial's comments regarding Surface Water should be reflected.	The City is working with MTO to address any surface water issues.

Gov	Impacts associated with the Combine Sewer Overflow Pipe (CSO), requires some action on the part of the City whether or not the Expressway is constructed.	Yes, but the type of facility and its associated impacts would be different.
Gov	The alignment of the roadway and related design considerations will only be considered with respect to their potential impacts to water resources.	This is in reference to the ministry's mandate re: water quality.
Gov	RE: CSO- clarification is needed as to the suitability of associating reductions in contaminants derived from the installation of this structure with the mitigative measures of the expressway.	The construction of the CSO pipe is contingent on the expressway construction, since it would not be constructed otherwise. Without the Expressway there would be three separate CSO tanks in the Valley in addition to the two Greenhill tanks. This would mean three more separate discharges to the creek. If the pipe and the road are constructed concurrently, however, these three discharges would not occur and therefore the impact of the CSO pipe is less than the impact of the three tanks.
Gov	Has the feasibility of the general stormwater management measures in section 2.4 been confirmed? Can mitigation commitments be met as worded? If not, re-word paragraphs.	All stormwater management facilities are considered feasible and are documented in more detail in the Surface Water and Stormwater Quality Technical Report, July, 1998, Philips Planning and Engineering.
Gov	SURFACE WATER: HRCA staff have some concerns about pond water at (Greenhill Avenue and Mount Albion Road) locations, and the potential impact on the stability of adjacent ravine slopes. The potential for slope failure due to the saturation of the toe of slope at these locations should be investigated.	Refer to geotechnical Reports (MaCallum)
Gov	WATER QUALITY: MOEE level 1 protection criteria is the minimum design standard for all stormwater runoff control facilities.	The rationalization for using this standard is multi-fold, including 1. the proximity of the Expressway to the receiving stream (Red Hill Creek). 2. The higher levels of contaminant loadings associated with roadways vs. conventional development form and 3. The attempt to address the "zero" increase as per the RAP objectives.
Gov	Cadmium and lead are not assessed in the technical report dealing with surface and stormwater quality.	While it is correct that these two metals are important to freshwater life and are known to be currently at high levels in the Red Hill Creek, it was not considered necessary to include a detailed analysis of their loading rates since other heavy metals (copper and zinc) have been assessed. Since the mechanism of removal is similar for most heavy metals, the results of the copper and zinc assessment can be considered indicative of the results for both cadmium and lead. The specific post-construction monitoring parameters will be determined in Detailed Design through the Environmental Management Plan.
Gov	I did not see anything in the Draft Technical Report that quantified the reduction in recharge or established that this reduction would not impact on Red Hill Creek. Nor did I see anything that established that the discharging groundwater will meet PWQs.	The overall assessment of groundwater discharge to the Creek was monitored in 1999 and in 2002. Detailed Design Report will address quality of infiltrating water, when stormwater management facilitates are designed.
Gov	With respect to stormwater management, wetland areas, wet ponds and grasses swales are proposed in the summary document. It is difficult to interpret the SWM system, since it is unclear as to what exactly is proposed.	Refer to Section 6 Surface Water and Stormwater Quality Technical Report, July, 1998, Philips Planning and Engineering.
Gov	The net change to water quality resulting form the expressway itself was not determined. The appropriateness of jointly evaluating these structures (SWM system and CSO storage facilities) is not clear.	The "net change to water quality" has been determined. Refer to Section 6.2 Appendix E of Surface Water and Stormwater Quality Technical Report, July, 1998, Philips Planning and Engineering.
Gov	The loss of the wetland (0.5 hectares) needs to be examined in light of mitigation/compensation requirements related to fish habitat.	The City is working with DFO to ensure no net loss of Fish Productive Capacity.
Public	DSR Vol. 2 pg. 41 – Here it is warned that although a natural channel design will be employed in the creek realignment proposal, "Bank protection (hardening), already exists in Red Hill Creek, and this may increase as a result of expressway construction". This essentially means that although approximately 800 meters of hardened structures will be removed, there may actually be a net increase in bank hardening? See letter.	The context of this comment was to demonstrate that the current concrete lined (and gabion baskets) are exacerbating the channel erosion processes. If the creek is left in its current form, additional hardenening may be required to maintain the channel in the current alignment and to mitigate further erosion caused by the 1985 proposed alignment around bridge infrastructure.

Public	Concern that sediment will collect around the bridges that will need to be constructed where the expressway crosses the creek.	The in-stream structures employed in a natural channel design approach enhance sediment routing through the creek system such that adverse deposition does not occur. Moreover, the structures used decrease bank erosion rates far above any conventional revetment strategies. Therefore, the potential for stream bank erosion and / or compromising of infrastructure is minimized.
Public	Concern that runoff from the Expressway will cause water quality problems.	Reference Table E.1, in IADP- Surface Water and Stormwater Quality Technical Report, July, 1998, Philips Planning and Engineering. The report indicates an improvement to all water quality parameters.
Public	The consequences of these substantial disruptions [to groundwater discharge] has not even been considered. In light of the above noted significance of groundwater, any changes [to groundwater discharge] could have serious consequences to the existing and potential fisheries resources throughout the remainder of the watershed. That being said, it is essential that the City direct thorough study to this matter before proceeding with the detailed design.	The more detailed 1999 hydrogeological study indicated that there was no significant groundwater connection to the main branch of Red Hill Creek from the golf course and downstream. It was further quantified that the potential for recharge reduction was not significant with respect to the overall flow in the creek and that recharge may actually be enhanced in certain locations.
Public	The overall impact to the RHC watershed and Hamilton Harbour will surely be a net increase in heavy metals and PAH's.	The mass balance modeling used to evaluate the impact of the Red Hill Creek Expressway and the associated mitigation techniques has demonstrated that there would be a reduction in heavy metal loading. Reference expected copper and zinc and PAH's reduction between 0.5 and 3.5% (Ref. Table E1, July 1998, Philips Planning and Engineering Limited). Storm water ponds along the shoulder of the expressway will not be considered compensation for habitat loss. The Department of Fisheries and Oceans does not consider storm water management ponds to be acceptable as compensation. Their purpose is to treat stormwater.
Public	These 21 stormwater ponds will serve a multi-fold purpose, and impart both positive and negative impacts on various resources, including Red Hill Creek.	No response necessary. It is not known what negative impacts result from ponds- they are mitigation practices.
Public	Pond size, location (proximity to water sources), percent of Expressway water collected and retention time, are all variables that affect the function of stormwater ponds. To date, none of these factors have been quantified, and released to the public.	Refer to the Impact Assessment Design Report: Surface Water and Water Quality.
Public	One of the more staggering claims made [in the Executive Summary and DSR2] is that "the Region will utilize a natural channel design approach to resolve the creek erosion problems..." (RHCE:Executive Summary 1998). At this point it is unclear how a natural channel design will accomplish this goal of reducing erosion, as the main causes of the problem (flash flooding) will not have been addressed. Also, if built the RHCE will precipitate further urbanization of the upper watershed, further increasing watershed hardening which is expected to have a compounding effect on channel stability.	The objective of the proposed creek re-alignment is to re-set a balance with the current and future land use objectives of the watershed (i.e. the hydrology) and to construct a stable plan, cross-sectional and longitudinal profile. It is recognized that some areas of the creek will continue to be exposed to abnormally high rates of erosion within the outer bank regions of the bends which will induce stream erosion that can not be mitigated by vegetation (i.e. rooting mass). That is why in-stream structures such as rock veins, log veins, root wads, cross veins and double wing deflectors shall be used to maintain grade control and mitigate and reduce the current rates of erosion.
Public	A natural channel design is a practical and proven means of correcting minor waterway erosion problems, but to our knowledge it has never been applied on a scale of this size, and within such a highly urbanized watershed. A "fresh" carved channel in the Red Hill Valley floor will not last at all, given the force, and frequency of the uncontrolled flood pulses. No guarantees can be offered for its' success, nor have examples of other comparable projects been presented. In contrast, there are several documented cases of failed projects available for consideration.	It should further be noted that Water Regime has initiated peer review of the project by some of the very best individuals in North America practicing natural channel design principles. I would support the comment that there have also been a number of failed natural channel designs in the province and across the world. Specifically many if not all of these failed designs have been a function of either: limited data collection for calibration of existing and future conditions, poor design, poor inspection, and largely poor construction. This is further supported by the peer review to date. Water Regime and specifically Bill Annable is recognized within his professional peer group of a hand full of people as one of the strongest researchers and successful designers of stream channels in the country. Also, the Region as part of the natural channel design process has agreed to retain a contractor specific to the stream restoration trained in the field operations of natural channel design. Furthermore, there will be continuous site inspections by Water Regime throughout the course of the project and Water Regime will provide experienced operator training to the contractor in the exact construction of in-stream structures.

Public	Once the water transfer has been made, the channel will begin to erode, and redefine its boundaries. This will create a tremendous amount of sedimentation that will move downstream and dump into Windemere Basin. The sediment loading will accelerate the filling of the basin and translate into larger and more frequent dredging costs. Dredging in Windemere Basin last occurred in 1988 and now 11 years later is needed again. At it's current level, the basin will not hold the material that will be flushed out of the newly created channel. Sediments will begin to pass through to Hamilton Harbour, further hindering the objectives of the Hamilton Harbour Remedial Action Plan.	As part of the natural channel design within the lower portion of the valley, a prime directive is to reduce the rates of horizontal and vertical erosion within the design creek, relative to the existing conditions. This information will be documented in the final impact and preliminary design report. However, it is anticipated that the rates of erosion will be reduced by one to two orders of magnitude. This will be verified in the preliminary design and impact portions of the report. This will result in significant decreases in sediment loadings to the wetland regions.
Public	There has also been an unsettling lean towards reducing the size of the culverts being used to convey Red Hill Creek beneath the roadways. The Region claims that this change in project design will decrease construction costs and improve fish habitat. This is not the case, and may well be more detrimental to fish movement, creek stability, and flood prevention, than larger structures. Hard bottomed culverts of any size will also eliminate creek meandering, an integral part of having a natural channel design.	The cross-sectional profile of the existing culverts are being altered to emulate a main thread bankfull channel and to begin to emulate a floodplain (more of a natural profile). In areas where new bridges are proposed there is a full span 2.5 to 3 times the width of the bankfull channel. If the velocities in the floodplain continue to be abnormally high, additional flood plain culverts are being added to proposed and existing bridge crossings to maintain a flood plain velocity distribution and reduce/eliminate adversely high erosion down stream of the bridges.
Public	Concern that the realigned creek may not take on the path that the consultants expect	The natural channel design approach has been a long standing and proven method of stream rehabilitation. This is also the preferred method of restoration endorsed by various Federal (DFO, DOE) and provincial ministries (MNR, MTO, OMAFRA, MOE etc.). The integrity of the alignment is based upon proper collection of watershed data, proper selection of the appropriate contractor and constant site supervision. Moreover, the geometry that is developed follows the physical tolerances of the river system to derive a long-term stable channel form. Also, additional in stream structures are used to assist is stabilizing the stream (i.e. minimizing erosion) and assure that the dimension, pattern, and profile of the stream are sustained over long periods of time.
Public	How will different methods of ice removal affect terrestrial resources?	The ice removal process that is determined to be the safest and most economically and environmentally efficient will be utilized on the Expressway. If salt is chosen as this method, than the impact of salt spray on wildlife will be investigated. It is anticipated that salt will impact wildlife by damaging adjacent vegetation and contaminating surface water runoff. We will provide a summary of current knowledge of road salt effects on wildlife in the Final Report. Refer to the salt fact sheet in the Technical Report.
Public	How will stormwater management ponds be monitored long term?	A monitoring and maintenance program is currently being developed as part of the Detailed Design Process.
Public	It is stated that the Expressway will increase stormwater run-off by 1%. 1% of what – the total volume that might flow into the valley under present conditions?	Yes, this refers to total runoff through the valley.
Public	Can the Expressway be moved or adjusted so that it does not cross the creek as many times?	The Creek has been proposed to be realigned to the west side of the Expressway, along virtually its entire alignment, with the exception of a localized section in the vicinity of the landfill site north of the CNR. This eliminates several crossings resulting in only ramp and existing arterial roadway crossings, as opposed to the mainline Expressway crossings.
Public	Is it possible that improvements in water quality could be achieved without building the expressway?	Yes. There are numerous opportunities that have been cited within the Red Hill Creek Watershed Plan that are not dependent on the Expressway construction.
Public	Will there be dredging in the wetland area in order to remove the contaminants which will build up there?	Yes there will be a Maintenance program, developed during the Detailed Design Process, which will include dredging. Refer to section 6.2.3 in IADP-Surface Water and Stormwater Quality Technical Report, July, 1998, Philips Planning and Engineering

Public	The new floodplain will be fresh and "unwashed". This essentially means that it has never been subjected to a sheet of moving water before. The first rainstorm that floods these areas will likely remove enormous amounts of soil and debris and flush it back into the creek. The initial result will be a significant increase in the creek and harbour sedimentation, and huge deposits of debris left at many downstream locations. These debris jams may retard the ability of the culverts to convey the water, and deflect impact to the banks.	The flood plain is currently inundated in any over channel flow and will continue in the future. Furthermore, the velocities on the existing and design floodplain are low, relative to the channel flow. These are areas of natural deposition of fine grained material, debris and ice. This will continue in the future. As part of the natural channel design within the lower portion of the valley, a prime directive is to reduce the rates of horizontal and vertical erosion within the design creek, relative to the existing conditions. This information will be documented in the final impact and preliminary design report. However, it is anticipated that the rates of erosion will be reduced by one to two orders of magnitude. This will be verified in the preliminary design and impact portions of the report. This will result in significant decreases in sediment loadings to the wetland regions. In many areas, the flood plain will be left in a natural state, as the new stream alignment will be the only disturbed area. In other locations where the flood plain area will be constructed, various biological and engineering techniques will be used to minimize erosion and improve stability including planting, surface treatment, erosion mats, specialized grading and many other siltation control techniques. In addition a key element proposed to reduce post-construction sedimentation will involve staging the construction of the stream such that it is stable prior to use.
Public	it appears that the Region has not considered the effect of the RHCE project on groundwater discharge from a fisheries perspective. The impact of RHCE is expected to cause a 30% reduction in recharge in the sensitive groundwater areas. Incredibly, the Region concludes that "overall, groundwater impacts are not considered significant" (dsr2).	The first issue concerns a loss of this recharge in relation to the groundwater linkage/discharge to Red Hill Creek. A preliminary approach to assess impact considers the total volume of water lost from a 30% reduction in recharge. A reduction in permeable area of 0.27 sq. km and an infiltration rate of 350 mm/year corresponds to a reduction in groundwater discharge of 3 l/s. This calculation conservatively assumes all of the recharging water would discharge to the adjacent reach of Red Hill Creek. A value of 3 l/sec is small compared to the overall volumetric baseflow discharge, the majority of which occurs above the escarpment. Additional field data collected in 1998 relating to groundwater discharge in Red Hill Creek included two rounds of baseflow measurements, the installation of 11 streambed piezometers and 4 mini-piezometers, 7 testpits and 122 boreholes. The baseflow measurements were not conclusive in showing groundwater discharge to the Creek. The borehole data collected by Water Regime, and testpits indicate clays and silt-clays within the valley and adjacent to the Creek. The streambed piezometer data and borehole logs do not indicate a hydraulic connection via a direct groundwater pathway to the Creek. Therefore do not anticipate an impact on fisheries.
Public	See letter. It therefore seems likely that the stream may receive increased loadings of sodium, chloride and other pollutants from groundwater inputs further degrading stream water quality and stressing the aquatic community.	It is not expected that any significant amount of infiltrating groundwater will migrate directly to Red Hill Creek. The proposed storm water management facilities will be assessed in more detail for potential groundwater pathways on a site specific basis.
Public	No effort has been made to estimate the total area of potentially flooded valley that would result from different size rainstorm events. It is clear however, that several extensive areas have been allotted for inundation by floodwaters, but nothing quantitative. Upstream of King street there will be a substantial increase in floodplain area, while downstream there will be a substantial reduction.	It should be noted that currently in stream reaches down stream of the Green Hill CSO the flood plain is inundated (i.e. greater than zero water depth) for any flow event greater than the spring freshet (approximately the 2 year return period). Particularly in areas down stream of Queenston Road the floodplain inundates the valley from valley wall to valley wall. This will continue under the rehabilitated creek design and encouraged to minimize erosion of the channel. Refer to Impact Assessment Design Process by Philips, section 5.1 to 6.1, for a detail scope and extent of floodplain for various storm events.
Public	What will be the life expectancy of the newly designated large floodplain area above King Street and on Davis Creek? See letter. Does the Region have predictions on the rate of in-filling of this area? Further to this what will be done as the water retention capacity of this area diminishes? And what effect may in-filling have on the riparian vegetation and on interrupting sediment transport within the creek?	Each site has been designed in order to maximize sediment transfer by the stream, hence mitigating the extent of flood plain sedimentation. It should be recognized that both of these areas are currently being inundated by flood waters and that flood plain sedimentation is also a natural process. Further mitigative studies and analyses are also proposed for the Davis Creek Subwatershed to reduce instream sediment load and further increase the stability (i.e. fluvial processes/sediment transport) of the Upper Davis Creek System.

Public	Concern that the removal of trees will mean that water vapour is not filtered, and consequently that rainfall is more polluted.	Trees release water vapour into the atmosphere through the normal course of transpiration in the leaves. In general, water is initially drawn from the soil via the roots of the tree and released to the atmosphere through the leaves. Once in the atmosphere, the moisture is mixed and when conditions are appropriate for the formation of rainfall, the water droplets fall to the earth. These droplets initially form around dust particles or nuclei, and as they fall, are capable of washout of other dust particles, some of which may contain trace amounts of contaminants. The level of pollution in rainfall is a function of the extent of contamination in the air mass through which these droplets are falling. In summary, trees do not filter water vapour. They can provide some relief in removing dust particles by providing an impingement surface.
Public	Within Volume 2, three major changes to Red Hill Valley's surface hydrology are proposed. These features are intended to form the basis of the RHCE flood prevention plan, yet have been promoted as mitigation options to compensate for extensive habitat loss and water quality degradation, resulting form the Expressway and its runoff. (3 components are: 5k of creek realignment, 2. Construction of 21 stormwater ponds, 3. Re-defining of RHC floodplain)	The creek realignment is being proposed because it is the solution which will provide the best stream habitat post-construction. From strictly 'buildability' and flooding perspectives we could armour the creek banks and put in all of the extra bridges and reduce the amount which is realigned somewhat. The stormwater management ponds are intended to treat run-off form the highway, and therefore are mitigation "options".
Public	There is little information available as to how the contaminated water will be collected from the Expressway, or diverted from local developments to the stormwater ponds.	Technical support document titled, "Impact Assessment and Design Process, Surface Water and Stormwater Quality Technical Report", July 1998, Philips Planning and Engineering Limited, addresses the issue of the size and associated drainage area and function of the various stormwater quality facilities proposed (Ref. Table 6.6).
Public	It is not likely that the stormwater ponds will have significant positive influence on the risk of flooding within the valley. A visual interpretation of the DSR maps shows that the ponds are of sizes insignificant to flood protection, and are often located in the middle of interchanges, thus limiting the storage capacity.	The proposed system of stormwater quantity management will, in fact, reduce instream peak flows to less than existing conditions, compatible with the associated infrastructure that exists currently and that which is proposed for the Red Hill Creek Valley to its outlet. Most of the ponds cited by the author are stormwater quality ponds which are not expected to have a significant influence on flood mitigation. However, the major facilities identified (quantity control) will have the result outlined above.
Public	The numerical predictions appear to be very precise, being single values with no range of same. This is unwarranted and is even admitted in the text. To make things worse, references are quoted which give the rosiest picture from the point of view of the proponents of the expressway. (Example provided, see letter). On page 54, Philips admits that "the maximum pollutant removal efficiency of stormwater management practices ranges from 50%-90% depending on the specific pollutant constituent and specific practice". It would seem from this that a 15 fold removal of sediment, which amounts to a 93.3% removal seems overly optimistic. Philips does not seem to me to be justified in making single figure predictions reflecting a relatively favourable scenario, as they have done. This lack of a range of values of predictions is a major problem throughout the report, because it gives the impression that it is possible to make predictions more precisely than is justified.	The example the reviewer refers to was presented in the text merely as an illustration of a point – that the most effective Erosion and Sediment Control Plans focus on controlling erosion rather than sediment control. With regard to predicted values provided from the Mass Balance Model, it is difficult to present a range of values due to the nature of the model and the input data. While a more direct disclaimer could be included in the text, the imprecise nature of the model is implied through the description of the mass balance model (reference page 36), which emphasizes "characterization of pollutant loading". It should also be noted that model calibration and the relative nature of the results provide a certain qualitative level of confidence in the results. Refer to Section 6.2 Surface Water and Stormwater Quality Technical Report, July, 1998, Philips Planning and Engineering.
Public	Unrealistic aim to meet mandate. On page 55 it states "Water quality which presently does not meet the Provincial Water Quality Objectives shall not be degraded further and all practical measures should be taken to upgrade the water quality to the Objectives". As quoted on page 54, pollutant removal is between 50-90%, so there are bound to be residual impacts in critical areas. Given that the predictions mentioned in Problem 1 (paragraph 1) may not be accurate, it would be difficult to know when PWQO will be exceeded. These two problems compound each other.	While it is true that pollutant removal is between 50 and 90%, for stormwater management, it should be noted that more than just the expressway stormwater runoff will be treated. Since runoff from existing land use areas would also be treated, residual impacts would be mitigated.

Public	Lack of consideration of important pollutants, their effects and measurement – There is no consideration of Nitrogen, as ammonia, nitrite or nitrate, no consideration of general toxicity and no discussion of the salt that would be use to de-ice the highway. There is no discussion of the anticipated increase in urbanization that would occur around the highway, particularly on the Mountain. There is no consideration of the effects of the contents (salt, toxins) of runoff flooding the catchment areas on the flora and fauna in these catchment areas or of the accumulation of same on the habitat or the people using the area. In table 6.8, page 62, there is no provision for monitoring the effects of the highway, on the catchment areas, let alone on the surrounding habitat, as part of management. It seems that monitoring stops after the main effects of construction are over (page 63). Surely monitoring and the evaluation that requires it is an integral part of any management process.	The ice removal process that is determined to be the safest and most economically and environmentally efficient will be utilized on the Expressway. Refer to the salt fact sheet in the Technical Report.
Public	5.04 x 10e15 faecal coliforms per 100ml (table 5.13, page 38) is an absurdity, it would be impossible to fit that many bacteria into 100ml	Table 5.13, page 38 should note the faecal coliform units as "total counts/year", not as the stated "counts/100mL".
Public	There is a contradiction between Table 6.7 (33% removal of fecal coliforms) and appendix E.2 Table (68% removal of the same bacteria)	Table 6.7 should present the removal rate for faecal coliforms as 68%.
Public	People living on Upper East Mountain should be encouraged to take actions to reduce stormwater flow coming off the mountain.	The Red Hill Creek Watershed Plan has identified a series of programs and actions to address the rate and quality of storm runoff.
Public	Marsalek et al. (1997) concluded that "the runoff chemistry indicates that uncontrolled discharges of highway runoff could significantly impact receiving water quality." Considering the severity of these findings, it is imperative that there be no possibility of untreated stormwater runoff entering RHC.	Refer to the Impact Assessment Design Report: Surface Water and Water Quality. The co-ordinated program is for net improvement in loading.
Public	The proposed use of the Greenhill Ave site is disturbing, given that there is a problem with the holding tank at that site: the smell already indicates a problem and the constant discharge was measured in the winter of 1998 by the team of WATER and found to contain very high levels of total coliforms and E.coli (see page 46 of report). The fact that the site No.2 was even considered as a catchment is highly disturbing, as this is inside the Ottawa street Landfill Site, which is known to contain toxic leachate and to be a problem even without additional stress.	Since these comments have been made there has been a remediation project completed at Upper Ottawa Street landfill and the second Greenhill CSO tank is under construction.
Public	It is stated in DSR that runoff from existing developments will also be diverted into the valley for treatment in these ponds, but does not indicate what quantity this will be. The ponds will have no impact on the contamination currently entering the creek from such sources as leaking landfills and CSO's for example.	It is correct that stormwater management is not 100% effective and it is due to this reason that, as part of the Expressway project, the Region is proposing to treat existing developed areas and the combined sewer overflows. The contaminants that are captured in the sediments within the stormwater management ponds have varying levels of toxicity and in many locations have been used as conventional non-hazardous landfill.
Public	What would be the expected maintenance schedule be on such ponds and what guarantees would there be that the Region stick to it? Costs of maintenance?	Maintenance depending on the type of system and the contaminant loading will involve a variety of activities including annual inspections of operations, bi-annual cleanup of aesthetic garbage, cleanout of fore-bay zone of primary grits and sediments on a 5-year frequency and rehabilitation of wetland capture zone 20+ years. In terms of guarantees, the program will be part of the overall management strategy for the Red Hill Creek Watershed and Expressway. In terms of the cost, there are unit rates which are available for these types of activities.
Public	After a period of time, the water is discharged back into RHC (DSR, 1998). It is unclear what is meant by the word "discharged" in this situation as no information has been provided as to how these ponds will be maintained, or remain effective, in the event of large, closely timed rain events.	It is proposed that the stormwater management facilities capture runoff and detain it for a period of 24 to 72 hours depending on the location. This will, in effect, have the result of extending the instream flow hydrograph reducing flows during critical erosion periods and allowing it to discharge during periods of lower instream flows, thereby reducing instream erosion.

Public	In DSR2, the region claims an overall increase in in-stream cover over time "as vegetation matures". In what time frame is this?	See the Terrestrial Report and the draft Landscape Management Plan for an overall time frame of restoration.
Public	Although the Region has proposed stormwater detention areas (5 to 100 year event), it is not known what impacts if any these and other works may have on annual peak flows which is the root of the present channel instability problem.	Refer to the Impact Assessment Design Report: Surface Water and Water Quality.
Public	Will the Expressway have an overall negative impact on creek water quality?	There is intended to be net improvement with all proposed mitigation.
Public	Most disturbing is the lack of any Regional commitment to consider the possibility of creek re-alignment failure. This is a very real, and potentially dangerous situation, that has received no contingency plan.	Natural channel design is a proven method of long term creek rehabilitation which has been endorsed by: the Federal Department of Fisheries and Oceans, Ontario Ministry of Natural Resources, Ontario Ministry of the Environment, Ontario Ministry of Transportation, the Conservation Authorities of Ontario, the American Fisheries Society – Southern Ontario Chapter, Ontario Streams, Trout Unlimited, The American National Wildlife Service, the U.S. Environmental Protection Agency and several other organizations. See for example the Natural Channel Guidelines published in 1994. The objective of the proposed creek re-alignment is to re-set a balance with the current and future land use objectives of the watershed and to construct a stable plan, cross-sectional and longitudinal profile. It is recognized that some areas of the creek will continue to be exposed to abnormally high rates of erosion within the outer bank regions of the bends which will induce stream erosion that can not be mitigated by vegetation (i.e. rooting mass). That is why in-stream structures shall be used to maintain grade control and mitigate and reduce the current rates of erosion.
Public	Concern that the proposed re-alignment of the creek is too close to Charlotte Street.	The realignment of the creek will be in the valley close to the base of the valley wall in that area. (see maps in the Impact Assessment Summary Report).
Public	Concern that re-aligning the creek will result in a loss of recreational area.	The creek does not affect the recreational area but the berm for the flood control and the interpretive features for the Iroquoian Village will result in the loss of baseball diamonds. The area will still be natural and will include a trail system. It will be a passive instead of an active recreational area.
Public	Last of 13 original streams – should be preserved.	The creek is currently very unstable as a result of storm water controls on the Mountain and straightening in the valley for infrastructure projects several decades ago. It will be relocated and stabilized using natural materials so it will continue to function as a natural stream. See the Creek report for information on why the creek needs to relocated and the options for how it could be done.
Public	Modern day barriers could be used to minimize erosion there is no need to realign the creek.	Hard barriers or structures have proven to be ineffective over time and to be very costly to maintain in the long term.
Public	Using the CSO project to prop up the expressway is really objectionable. This project has nothing to do with the Expressway, but it owed to the health of the harbour and community.	The construction of the CSO pipe is contingent on the expressway construction, since it would not be constructed otherwise. Without the Expressway there would be three separate CSO tanks in the Valley in addition to the two Greenhill tanks. This would mean three more separate discharges to the creek. If the pipe and the road are constructed concurrently, however, these three discharges would not occur and therefore the impact of the CSO pipe is less than the impact of the three tanks.
Public	Concern that the loss of trees due to construction of the Expressway will lead to less natural uptake of stormwater.	The current floodplain ecosystem is inactive, and will become active once the new creek alignment is completed. The remaining floodplain forest communities will continue to provide detention and uptake functions. The creek rehabilitation goal is to create a more tolerant and better functioning ecosystem in the valley. Constructed wetlands will be utilized as part of the overall stormwater management plan for the expressway, and these will provide natural alternatives for water treatment.
Public	More than 25% of the valley will be impacted by the Expressway.	It is predicted that approximately 25% (or 74 ha) of natural area (i.e. greenspace) will be physically removed or altered by the expressway and associated infrastructure. High-level Impacts to ecosystem functions will occur throughout the entire valley, including the re-entrant section into the Niagara Escarpment. (Just update and confirm this 25% figure)
Public	How will vegetation loss affect ecological functions in the valley?	The effect on ecological functions is discussed in section 344 of the Technical Report and DSR Volume 2. Examples of affects listed are: corridor functions, migration, staging, food/shelter, flooding, thermodynamics and habitats.

Public	Increased runoff and sediment from the construction and watershed development is either ignored or glossed over.	It would be difficult to "judge" the absolute impacts of development on migratory birds unless post-construction monitoring is initiated to provide information to compare with that from the Red Hill Valley Biological Inventory. However, measures of habitat loss and loss of function indicated that some changes to the numbers and species composition of migratory birds using the corridor can be expected. This will be examined in more detail in the Final Report. (Dougan) The author of this inquiry is directed to the Surface Water and Stormwater Quality Technical Report which include a comprehensive discussion and evaluation of stormwater quality impacts due to the proposed roadway.
Public	Concern that there will be a net loss in the valley's ability to handle stormwater as a result of the Expressway being built.	The issue has been addressed through the incorporation of major stormwater quantity management facilities at Dartnall Road (already built), and proposed at Greenhill Avenue and Mount Albion Road (Davis).
Public	Concern that flooding will result if the Expressway is built.	In most locations under severe storm events the depth of flooding will be reduced due to the larger bridge and culvert openings proposed for the Red Hill Creek.
Public	Is there any sort of plan in place to address possible problems if stormwater ponds become toxic?	The Monitoring and Maintenance Plan will be developed as part of the Detailed Design Process and will address such actions.
Public	Concern that the use of constructed wetlands to purify water will not be effective.	There is sufficient documentation in the literature which indicates that constructed wetlands are effective to the levels cited in the July 1998 documentation by Philips Engineering. In addition, the mandatory monitoring which the City is currently performing for Dartnall Road interchange indicates similar removal rates for the contaminants cited.
Public	Concern that constructed wetlands will be hazardous for people, especially children, and wildlife because they will store the contaminants from stormwater running off the Expressway	The majority of the facilities cited will not be in areas directly accessible in an authorized form, to humans. Specialized safety measures such as deterrent planting and safety benching within the design of the structures will keep the majority of uninvited intruders out of the danger areas. The comment that the contaminants will be hazardous should be placed in context since a similar situation currently exists along the whole of the Red Hill Creek. With the proposed stormwater management it can actually be managed in a confined zone and periodically dredged and cleaned out.
Public	Red hill Valley already has floodplains, with adapted plant communities; however, these will be abandoned with the new creek re-alignment, and in most cases filed with expressway.	In some locations new flood plains will be created, however it should be noted that many of the existing flood plain areas are becoming increasingly disconnected from their flood plains due to the erosion (downcutting) of the creek. The new creek system will provide a more functional flood plain in the long term which is accessed by flood water much more frequently than the present system.
Public	Concern that the creek may erode the expressway.	The in-stream structures employed in a natural channel design approach enhance sediment routing through the creek system such that adverse deposition does not occur. Moreover, the structures used decrease bank erosion rates far above any conventional revetment strategies. Therefore, the potential for stream bank erosion and / or compromising of infrastructure is minimized.
Stakeholders	Major reductions (30%) are called for in the suspended sediment loads to the Harbour from the Creeks, including RHC.	As outlined in the Surface Water Technical Report (reference Table E1), the Expressway with proposed mitigation (including CSO abatement) works will reduce total suspended solids loading on an annual basis by approximately 6% to the harbour.
Stakeholders	Note the current degraded state of Red Hill Creek's hydrology is entirely the responsibility of the City of Hamilton. The local government has never taken any interest in preventing or correction the hydrology problems, except now when they may pose a threat to the expressway project.	The Regional Municipality of Hamilton-Wentworth has initiated the watershed planning process and identified numerous programs and rehabilitation projects aimed at addressing the watershed hydrology and associated problems.
Stakeholders	Note that drainage from highways is contaminated with materials that have been alleviated, by industry, in the Harbour at considerable cost. Is there some way that expressway runoff can be controlled and/or treated so as to minimize its impact on the Creek and associated wetlands as well as the Harbour?	It has been proposed to use the highest standard (Level 1) stormwater quality treatment to mitigate the impacts of contaminated runoff from the roadway surfaces and associated appurtenances. This will involve the use of constructed wetlands such as that recently constructed at the Dartnall Road Interchange, as well as using the filtration offered by surface drainage in swales and filter strip systems.
Stakeholders	Perhaps it would be worthwhile to clear out Windermere Basin, in advance of expressway construction and then again after the vegetation has settled in, following the completion of construction.	Detailed erosion and sediment control plans will be a requirement of any construction within the valley. However, it is recognized that this will not be 100% effective.
Stakeholders	The wetlands should not be subject to highway drainage both because of the 'choking' effects of sediment and the contaminants in the drainage water.	As outlined previously, Expressway drainage is being proposed to be directed to stormwater management facilities, treated and then discharged to its receiver, either an adjacent wetland and/or the creek system.

Stakeholders	Section titled "Water Quality and Quantity" makes no comments on the quantity aspect since the expressway will certainly increase stormwater runoff.	It is indicated in the summary that stormwater detention areas are being designed to protect the Expressway and QEW from major storm events. One has already been constructed, Dartnall Road, and two are currently being planned, one at Greenhill and the other at Mount Albion on the Davis Creek. The net result of this quantity management program will be a reduction in the current flood susceptibility within the valley.
Stakeholders	What does "up to 100 year storm" mean? What is the likely cost of rehabilitation for flooding? What account has been taken of global climate change I determining the likelihood of flooding events?	A 100-year storm has a 1% chance of occurring in any one year. In essence, over any 100-year period on average it would be expected to occur once. It should be noted that the Regional event is considerably more constraining than the 100-year storm in the order of three times higher flow rate and would occur every 500-10,000 years. Hence, the page 44 of the Summary Document is quite accurate in that the Expressway will be flood-free up to the 100 year storm, but inundated during the Regional event. Flood levels at Greenhill will not be considerably lower under a Regional storm than a 100-year storm. Design features will be incorporated into the Expressway design to minimize the potential for severe damages during such a storm event. These include specialized subgrade and pavement design, minimizing steep slopes and stabilizing erosion-prone areas. Notwithstanding, due to the extreme nature of a Regional storm event, elimination of all potential damage would not be feasible and hence, precise estimation of the potential damage cost cannot reasonably be predicted with any certainty. Currently, the analysis has incorporated 30 years of historical rainfall runoff processes and modeling reflects this condition. In addition, the design is inherently conservative in that it does not account for "manmade" storage behind structures, such as culverts and bridges, throughout the watershed. Hence, there is already a fairly significant factor of safety involved in this planning and design process.
Stakeholders	The water Quality statements are highly misleading because they include the impacts of the CSO facilities that the Region is required to construct irrespective of the Expressway.	The City is constructing a second Greenhill CSO tank.
Stakeholders	Now that the CSO project impacts are included as mitigative measures under the expressway project, it is difficult to determine the impact of the Expressway alone.	Note to SPO: Can you provide some direction on how we should respond to this. We can provide estimates of mitigation effectiveness without the CSO abatement, however this may not result in a favourable perspective and may indeed support the need for the construction of additional mitigative infrastructure in order to meet the "zero increase target" (Philips)
Stakeholders	Prevent any drainage from the expressway dropping directly into or near the water courses.	.As outlined previously, Expressway drainage is being proposed to be directed to stormwater management facilities, treated and then discharged to its receiver, either an adjacent wetland and/or the creek system.
Stakeholders	The Remedial Action Plan calls for: restoration and enhancement of the existing habitat for fish and wildlife, Reduction of flows from CSO's, Major improvements in the quality of effluent of the Woodward Avenue WWTP, 30% reduction of suspended sediment loads to the Harbour.	The creek realignment will restore and enhance existing fish habitat, and reduce suspended sediment loads to Hamilton Harbour. The CSO pipe will reduce CSO outfalls from 20 – 27 times per year to approximately 2. There will be permanent changes to wildlife corridor functions however restoration and rehabilitation projects will enhance habitats elsewhere.
Stakeholders	WATER QUALITY: as it impacts upon the contribution of water pollutants discharged to the Harbour. These concerns are reflected in the loadings of suspended solids, nutrients and toxic substance discharged into the Harbour.	The Surface Water and Storm water Quality report addresses this issue.
Stakeholders	BARC has concerns with the potential impact of the proposed expressway on the Hamilton Harbour Watershed.	The City has taken RAP targets into consideration in the impact assessment process.
Stakeholders	Could there be a program established to reduce peak flows in the lower valley?	The Red Hill Creek Watershed Plan has identified a co-ordinated system for the management of stormwater runoff quality and quantity, which includes the use of a distributed system of neighbourhood type quality and quantity facilities which essentially reduce peak flows in the lower valley to rates below existing. Included in the stormwater management approach are two proposed major, online quantity control systems at Greenhill and Mt. Albion, as well as the existing SWM Facility at Dartnall Road.
Stakeholders	We need documented measures to alleviate potential erosion losses during construction and means to trap sediment before it gets to the Harbour.	As part of the natural channel design within the lower portion of the valley, a prime directive is to reduce the rates of horizontal and vertical erosion within the design creek, relative to the existing conditions. However, it is anticipated that the rates of erosion will be reduced by one to two orders of magnitude. This will be verified in the preliminary design and impact portions of the report. This will result in significant decreases in sediment loadings to the wetland regions. Refer to Erosion Control in Surface Water and Stormwater Quality Technical Report, July, 1998, Philips Planning and Engineering.

Stakeholders	There are ways that detention basins could be used to alleviate the flood peak in the Creek.	The Red Hill Creek Watershed Plan has identified a co-ordinated system for the management of stormwater runoff quality and quantity, which includes the use of a distributed system of neighbourhood type quality and quantity facilities which essentially reduce peak flows in the lower valley to rates below existing. Included in the stormwater management approach are two proposed major, online quantity control systems at Greenhill and Mt. Albion, as well as the existing SWM Facility at Dartnall Road.
Stakeholders	Friends of Red Hill have no doubt that the Department prefers that streams are not savaged in the first place.	The City is working with the Department of Fisheries and Oceans on mitigation that is acceptable to them.
Stakeholders	DFO should be consulted on the ideas inherent in the proposed alteration of the course of the Creek in the lower reaches. Straitening the Creek seems to make more difficult fish access and less suitable habitats.	WRI - DFO will undertake a scientific peer review of the stream design. In actuality, the final stream rehabilitation will have an increased stream length, higher sinuosity and shallower stream gradients without any migration barriers to fish. In addition a greater diversity if stream morphologies will be incorporated within the rehabilitated reach which include riffle pool sequences (which presently exist within the existing reach) and step pool reaches which will be incorporated. This will further increase the diversity of fish habitat.
Stakeholders	We ask that all the potential impacts on the watershed from the expressway and future development in the water shed be mitigated directly or by compensory work. We look at loadings from the Creek as "net to the Harbour"- not "net to the Expressway project.	The "net change to water quality" has been determined. Refer to Section 6.2 Appendix E of Surface Water and Stormwater Quality Technical Report, July, 1998, Philips Planning and Engineering.
Impact Assessment Design Process		
Gov	After final IADP report is finalized, we will provide you with formal City of Hamilton comments.	City Departments will be consulted during the development of the final Impact Assessment Summary Report. That report will be provided to them for information.
Stakeholders	The IADP is not a true assessment of the environmental impacts of the proposed highway. The original EA for the highway is a full 13 years ago. Circumstances have changed since then, (increased scientific knowledge, as well as additions to the project that were never contemplated or included in the original approval.	The changes being proposed to the expressway design and the additional impact assessment work being done reflect the changes that have occurred over the past few years.
Stakeholders	These changed circumstances (over 13 years) should be examined in a bona fide environmental assessment process. Need and alternatives have been entirely scoped out of the IADP and the Region had clearly decided to proceed with the project long before the IADP even began.	The Region (now the City) was very clear in the consultation for the Exemption Order that it was not reviewing at the need and location for the road. The need for another individual environmental assessment was addressed when the Minister of the Environment approved the Region's Exemption Order submission in March 1997. The original EA established the need for the road and the environmental assessment approval. The work being done now supplements that approval by further reducing impacts through design changes and additional impact assessment.
Land Uses		
CSC	The term "recharge" should be defined for readers of the DSR Volume 2.	"Recharge" is water that infiltrates into the water table and subsequently moves downward. Discharge is water that moves upwards towards the watertable and subsequently reaches the surface. This definition is included in the Impact Assessment Summary Report.
CSC	Clean up of contaminated sites will benefit the residents in the Rennie Street area.	In the past year the City also has undertaken a class environmental assessment study to address leachate discharge from the Rennie Street landfill to the creek and is currently constructing the leachate collection and creek realignment work there.
CSC	Has relocation of the hydro tower been considered?	The project consists of relocation of three hydro towers (one at the brow of the escarpment at Mount Albion Road, one in the QEW/Centennial Parkway interchange and one beside the Burlington Street interchange on the north side.
CSC	Is there a proviso for property owners who wish to have their property bought out?	No, except for project construction related reasons.
CSC	Concern that the North-South section of the Expressway may lead to urban sprawl, unwanted development, and the death of the downtown area.	The Expressway is needed to service planned an din some cases approved development. Most of this development is on hold pending construction of the Expressway.
CSC	Establish a bike trail at Kenilworth that connects with the Caledonia trail.	This would be outside the scope of the Expressway project but it is a project that has been identified in the red Hill Creek Watershed Plan. The City currently is developing a master trails plan. The contact at the city should be contacted for additional information (Marilyn RIdeout)

CSC	The City should meet with the School Board to discuss the possibility of utilizing school property to replace lost facilities.	The City has talked to School Boards about the replacement of the Glen Castle soccer fields and have agreed on alternative locations.
CSC	Preserve the Red Hill Valley recreational Trail.	Several parts of the Red Hill Valley Trail will be relocated to accommodate the Expressway and the realigned creek.
CSC	What concentrations of contaminants will be removed?	At the Rennie Street Landfill, approximately 70,000 m^3 of waste will be removed to accommodate the Expressway. Most of this is solid, non-hazardous waste. It is estimated that approximately 1200 m^3 is PCB contaminated hazardous waste. All excavated waste will be taken off-site to a licensed disposal/destruction facilities.
CSC	What volume of contaminated material will be removed, and where will it be sent?	For the Rennie St. Landfill, see above. At the Nash Road Scrap yards, fill materials are contaminated with petroleum hydrocarbons and metals. It is estimated that approximately 5,000 m^3 of fill under the Expressway footprint contains contaminants exceeding the MOE's generic criteria for soil at a commercial/industrial site in a non-potable groundwater situation. Any soil with contaminant concentrations that are a risk to human health or the environment will be removed or remediated. Soils that are not considered to be a risk to human health or the environment may remain on site in accordance with MOE's guidelines.
CSC	Have the sites been characterized?	Environmental investigations have been undertaken on the sites within the approved corridor. The sites have been characterized, where remediation is required, additional characterization will be undertaken though the design process. Refer to Contaminated Sites Impact Assessment Report.
CSC	Will all contaminated properties be accessible for clean up?	The properties that have been identified to be cleaned up are in developed areas and are accessible.
Gov	Confederation Park is of particular concern to HRCA staff and it is suggested that there will be significant impacts to this already narrow, linear waterfront open space. Vehicular access to Hutch's restaurant needs to be assessed as well as the impacts on surrounding businesses.	The impacts to businesses in the area have been addressed in the CN Watson report.
Gov	Understood that the City will improve existing trail networks and open space functions with the funding they receive from the sale of land for the expressway. Work should include pedestrian bridge near Brampton street, and Van Wagners Marsh interpretive trail.	The former City of Hamilton is now incorporated into the new City of Hamilton. A trail system is being developed for the entire Valley area to address areas of the trial that will be relocated for the road and the creek realignment. This will be included in the Landscape Management Plan.
Gov	The Dillon Report identifies 4 closed landfills within or adjacent to the study area, but does not adequately identify the locations and extent of each of these landfill sites.	Figure 7-1 in the text has been updated based on more recent investigations. Three of four sites are now known not to be former waste sites.
Gov	(Section 7.1.4) states that "...no previous site contamination investigations have been completed for this portion of the study area". Based on the study area in Fig 7-1, this statement is incorrect.	The statement in Section 7.1.4 "...no previous site contamination investigations have been completed for this portion of the study area" is incorrect. As indicated in the references and discussed in Section 6.5.1.4, Dillon did review CRA's 1990 report. Although conclusion #2 in Section 7.5 is based on the CRA findings, a discussion of CRA's findings relative to the east side of the creek, north of Brampton Street, was not included in Section 7.1.4. This section has now been modified. (Dillon)
Gov	Although chemical analysis of soil samples did not find the wastes sampled to be hazardous, the sample from trench T12 had concentrations of cadmium and lead which would require the waste to be classified as a registerable solid waste, which requires generator registration under EPA Reg. 347.	This part of the study area has since been excavated for disposal offsite as part of the Erosion control and leachate management for Rennie Street & Brampton Street landfills. (Dillon)
Gov	A significant potential implication of the findings in the Conestoga Report has not been taken into account by Dillon or the Region. (EPA Part V Section 46)	This site has been determined not to be a landfill site and has since been excavated for offsite disposal as part of the Erosion control and leachate management for Rennie Street & Brampton Street landfills.
Gov	Relocation of Glencastle Park, Rosedale Park baseball fields may be necessary. Kings Forest Golf Club will be affected. One half of Leaside Park will be lost. Globe park will not be affected.	The Region agreed to relocate the Glencastle Park soccer fields and the City of Hamilton Parks Department carried out the relocation (field posts erected at nearby schools - grading still to occur). The impacts to the Golf Course and mitigation are outlined in the Golf Course Impact Assessment Report. An updated Recreational Master Plan is being prepared for trails and recreational fields. MTO has revised the ramp design at Burlington Street based on community concerns about the reduction in size of Leaside Park and therefore the park will not be affected. Globe Park is not anticipated to be affected either as fisheries mitigation can be achieved through the redesign of the creek.

Gov	Comments of the City of Hamilton Departments of Public Works and Traffic, Culture and Recreation should also be considered respecting the City Parks and recreational uses.	These old City of Hamilton Departments were consulted. In the new City of Hamilton the departments with these functions are also being consulted.
Gov	CONTAMINATED SITES: Road construction, particularly at the northern end of the project may uncover unmapped contaminants. Should this occur, staff recommend that the needed money be spent to remove/treat the full extent of the contaminated site.	The Environmental Management Plan includes procedures for dealing with contamination found unexpectedly during construction.
Gov	Consideration should be given to contaminated/potentially contaminated areas contiguous to the proposed road alignment. The impact of construction, changes in permeability and drainage features to other known contaminated sites should also be evaluated.	The Phase 1 Environmental Site Assessment did consider potential or known contaminated sites adjacent to the Expressway corridor that could impact, or be impacted by, construction. See the Contaminated Sites Impact Assessment Report.
Gov	Has Dillon's soil contaminants study design where the ball parks are been completed?	The ball diamond at Globe Park is no longer an area being considered for mitigation.
Gov	LAND USE AND INFRASTRUCTURE: Section between Mud Street and Brampton Street will be significantly impacted even with mitigation. The impact of the proposed highway on trail links outside the official study are is very serious. An overpass to accommodate local and visiting hikers/cyclists is needed.	The HCA participated in the study to determine the best way to take hikers and cyclists across the expressway near the escarpment. The 220 m viaduct was chosen as the most effective structure for both humans and wildlife. Links to other trails have been addressed to the extent possible in the Recreation Master Plan.
Public	Have heard very little about the thousands of families who have purchased new homes on the Mountain on the assurance that the Red Hill Expressway would be built.	The Land Use Report identifies the future development on the Mountain that is dependent on additional transportation access across the escarpment.
Public	The businesses that establish themselves on the East Mountain with the promise that the Expressway would be built.	The Land Use Report also identifies that commercial/industrial development is contingent on escarpment access.
Public	The construction of the highway will be an unmitigable catastrophe for the whole valley. It is impossible to state that any part of the valley will not be radically impacted and changed by the placement of this roadway in it.	Not all parts of the Valley are impacted by the road and the creek particularly in the southern section. The northern section will be substantially changed. Not all of the impacts are considered negative. The changes to the creek and the storm water management are positive changes. However, the construction of the road will remove and fragment habitats. The City is looking at rehabilitation and restoration of habitats in the valley, the watershed and in the City that will add to the value of existing habitats.
Public	Is there an elevation diagram of the Expressway at the Escarpment crossing?	The Impact Assessment Summary Report shows a cross section of the road and the escarpment. The Visual Assessment Report and the Escarpment Crossing Design Report also show the escarpment crossing.
Public	Traffic Volume Predictions	See iTrans Report, 2002
Public	Concern about the Bruce Trail crossing the expressway.	A representative of the Bruce Trail Iroquois Club participated in design workshops to determine how the expressway should cross the escarpment and maintain a crossing for hikers.
Public	There is no need to have ramps through Leaside park.	As a result of comments from the community the Ministry of Transportation has redesigned these ramps and Leaside Park is not going to be affected.
Public	If you close Melvin Ave. what happens to pedestrian and cyclist traffic? Some kind of path along Barton and Pottruff would be appropriate it built at the same time.	The Barton Street interchange ramps have been designed to slow down traffic coming off the expressway. The overpass has been designed to have a pedestrian/bike path separated from vehicular traffic by a barrier.
Public	Concern about proximity to schools and homes	In some areas, the road will pass close by schools and homes. In some cases there will be a berm or noise wall separation while in other areas there may be trees and a fence.
Public	We should not have to loose any parkland.	Unfortunately, the road will remove park land that cannot be replaced in the valley.
Public	Looking at the maps it appears that more of the trails are disrupted than will remain in place.	A small portion of the trails will be replaced by the road. A larger section will be relocated as a result of the creek realignment.
Public	Making an addition to a golf course is not the same as replacing lost parkland.	This is acknowledged. The City is looking at other areas in the watershed that could be designated for park land.
Public	What amount of money has been set aside to compensate for parkland losses, to create new parks, or to move existing ones?	The former City of Hamilton was compensated with funds for the loss of park land. In addition, the new City will pay for any relocation costs.
Public	A pedestrian bridge should be built to carry people across the Q.E.W. from the Van Wagner's ponds to the Red Hill wetlands.	This was identified in the Red Hill Creek Watershed Plan. It has been identified in the Red Hill Valley Recreation Master Plan as well. It would require approval from the Ministry of Transportation.

Public	There should be a bicycle lane on the Expressway.	An expressway is not considered a safe roadway for cyclists because of the speed of vehicles and trucks.
Public	How will the Bruce Trail be re-routed? Will the Bruce Trail Association be consulted?	A representative of the Bruce Trail Iroquois Club participated in design workshops to determine how the expressway should cross the escarpment and maintain a crossing for hikers. It was decided that the Bruce Trail should cross under the expressway viaduct at the base of the escarpment.
Public	Leave the Soccer Field at Glen Castle Park.	There will not be space for the soccer fields at Glen Castle Park as an earth bern will be constructed there.
Public	As many pedestrian crossings, bridges, tunnels, etc. as possible should be built so people can access the valley.	There will be several places where the public can access the Valley (see the map in the Impact Assessment Summary Report and the draft Landscape Management Plan.
Public	A path along Barton Street to Pottruff Road, with a barrier to protect cyclists from motorists, should be built.	This is the plan.
Public	If the road is cutting through a park can we not provide more pedestrian crossings (bridges, tunnels)	See the map in the Impact Assessment Summary Report and the draft Landscape Management Plan for pedestrian crossings.
Public	Is it possible that improvements to fish habitat could be made even if the expressway is not built?	Yes, it would be possible to make fish habitat improvements regardless of the expressway.
Public	Concern that there will be impacts associated with re-alignment of the creek which have not been considered.	The Department of Fisheries and Oceans has carefully reviewed the proposal and has had the proposal peer reviewed. There will be a monitoring program associated with the creek realignment.
Public	Who will the sites be remediated for i.e. people, wildlife, fish, expressway users, etc.?	The City is putting in place an environmental management system for construction and a maintenance management and monitoring plan for post construction. The impact assessment summary report and the Design Report will also indicate what will be required for ongoing maintenance and monitoring.
Public	Concern that the full impacts on contaminated sites are not known because the Region must still purchase some private lands before an inspection of potential contamination can take place.	All private lands have been investigated.
Public	Concern that there could be disturbance of possible contaminants in the landfill sites and scrap yard if the Expressway is built.	Potential impacts from disturbing the waste and contaminants relate to groundwater/leachate control, surface water run-off, dust, and odour. Procedures to minimize these impacts during excavation, construction and post-construction, will be developed in consultation with the MOE. See the Contaminated Sites Impact Assessment Report.
Public	SPILLS: Toxic substances, especially liquids are an obvious concern, especially since the Expressway is proposed to go over or close beside the Creek through much of its length.	In terms of liquid spills, the proposed stormwater management system has been designed to capture all highway runoff. In the event of a spill, fore bay areas with a large amount of available volume can be shut down, in an effort to entirely contain the spill, prior to direct discharge to the stream. In certain locations, supplementary techniques such as oil and grit separators can also be incorporated into the final design for spill containment. Contact should be made with the Region's Spill Response Unit to respond to this issue. Refer to Surface Water and Stormwater Quality Technical Report, July, 1998, Philips Planning and Engineering.
Public	Concern about impacts to fish during construction to realign the creek.	Assuming that the creek reconstruction will occur in sections, there will be an opportunity to remove fish from the old section and release them in the new section. However, there will be mortality. It will not be possible to capture all of the fish from the old channel, and additional mortality may occur among the fish that are captured and released into the new channel. Most of the fish which live in the creek are short-lived, and have high mortality rates in nature, such as the Blacknose Dace, and Fathead Minnows. Efforts will be made to avoid re-routing flow out of the old channel and into the new one at times of the year when there are significant numbers of fish in the creek which have migrated upstream from the harbour or Lake Ontario.
Public	What assumptions were used to predict truck traffic volumes on the Expressway?	See the Itrans report which outlines the updated traffic analysis and its assumptions about truck traffic volumes.
Public	Concern that there is contamination north of the CNR tracks which may be disturbed.	There is contamination north is the CNR tracks. On the west side of the red Hill Creek, approximately 70,000 m3 of waste will have to be excavated. On the east side of the creek, the Expressway will be constructed on two former scrap yard properties which are contaminated.

Public	Did the contaminated site study only look for areas of high risk? What is considered high risk?	The contaminated sites impact assessment followed a phased approach to identify known or potential contaminated sites. Historical and existing site activities which may have caused site contamination were flagged for consideration.
Public	What standards or levels will the sites be cleaned up to?	Contaminated sites will be managed in accordance with the Ministry of the Environment's *Guideline for Use at Contaminated Sites in Ontario.*
Stakeholders	Concerned that planning for development of roads, industry, residential, and infrastructure could take place in a way which is not sustainable, and may not necessarily aid in the restoration of the Harbour.	Land uses are planned for and public comment is provided for in the review and approval of Official Plans which take into consideration all types of land uses and infrastructure need to sustain it.
Stakeholders	Comments on Land Use leave most questions and issues resolved, referred to either detailed design or further investigations. We believe the impacts to recreational facilities in or near the valley have been understated. No mention is made of the Cantox study in this section regarding degraded air quality.	A Land Use Report was circulated for comment in October 2002. That report addresses recreational impacts. The Cantox study was not completed at the time that the DSR vol.2 was printed as the health risk assessment report was done in response to public comments and was not part of the terms of reference for the Declaration Order. It will be added to the Impact Assessment Summary Report.
Stakeholders	Section 1.1.2 "Land use changes in or adjacent to Environmentally Significant Areas" . the Expressway project is obviously completely incompatible with these policies.	Environmentally Significant Areas do not preclude development, however the impact to the ESA will be assessed and where possible mitigated or compensated elsewhere.
Stakeholders	A short list of recreational areas that will be lost if the Expressway is built, it given to illustrate the significant losses to the health and well being of children and adults in the neighbourhoods that lie along the RHV where this expressway is proposed.	Recreational impacts are identified in the Land Use report. The draft Landscape Management Plan shows how some of these impacts will be mitigated.
Stakeholders	Quote the portion of the plan related to ESA's as a form of "reply" to that exemption: " Land use changes in or adjacent to ESAs will only be permitted where..."	The Region's Official Plan also states that nothing in the plan shall cause the Expressway not to be built.
Stakeholders	Part C of the Regional Official Plan focuses on Land Use Strategies and includes policies on protection of ESAs.	This is correct, however the Official Plan has also acknowledged that the Expressway will be built in this area.
Transportation		
CSC	Has there been a consideration of whether/how truck traffic volumes will be affected by the completion of feeder lines into the Montreal- Windsor rail corridor?	iTrans has found no indication from local industries about these specific rail feeder lines. In general, there tends to be very little shift from truck to rail use and hence, any feeder lines would provide a marginal reduction in truck traffic. If new feeder lines are meant to link a new intermodal (truck/rail) terminal, then you could see a localized increase in truck traffic around this new activity centre. There has been no indication from research by iTrans that there will be an intermodal truck/rail terminal near the Expressway
CSC	A four-lane highway may not be sufficient to handle future traffic volumes.	It is anticipated that at some time in the future additional lanes will be required The design of the road has taken this into consideration.
CSC	Clarify what areas of the City will experience a decline in traffic congestion, and how much alleviation there will be.	All areas of the City will experience some affect to traffic congestion in varying degrees, areas closer will experience a much higher reduction
CSC	Will impacted residents be contacted to address relocation issues? This should be clarified.	In the detailed design Stage there will be consultation with the adjacent neighbourhood in order to develop detailed mitigation.
Gov	Note under Mitigation for traffic operations high accident rates and change tight radius to constantly decreasing radius.	MTO has been actively involved during planning and MTO will undertake detail design as per current Ministry requirements.
Gov	Should comment on auxiliary lanes and impact of interchange traffic;	MTO has been actively involved during planning and MTO will undertake detail design as per current Ministry requirements.
Gov	TRANSPORTATION: Monies could be reallocated from highway construction (6 lanes) to mitigative efforts if the Red hill Expressway is only 4 lanes. This potential savings in construction costs coupled with a slower design/posted speed could render extra funds.	The Expressway is currently being designed as a 4 lane road. It is not clear how a slower road would save money.
Public	Concern that traffic will back up trying to turn left onto the Expressway.	The correspondent has not provided us with the location of the "left turn concern" and we are unable to address this matter until this is done.
Public	There seems to be a lack of information regarding current truck traffic volumes on the QEW and the 403. If the City does not have this data how can predictions be made about the volume of trucks that will use the	The City has revised the traffic projections based on the most recently available commercial vehicle volumes.

	Expressway?	
Public	How did the City predict future traffic volumes? Was future development and housing on the mountain taken into consideration?	Traffic volumes are projected based on anticipated growth in both population and employment throughout the City. Future development on the mountain was accounted for.
Public	Did traffic volume predictions take into account the widening of Highway 20?	All anticipated feasible road widenings have been accounted for in the model.
Public	Concern that cuts to public transit will affect the traffic volume predictions.	Transit usage is dependent on a number of factors. Cuts can be absorbed through a number of means which may not affect the usage.
Public	How accurate are the traffic volume predictions?	Traffic volume predictions are just that predictions. A number of factors can result in volumes being higher or lower than the predictions. The City continual review the predicted volumes versus actual volumes to ensure as high a level of accuracy as possible.
Public	Since the predicted traffic volumes on the Lincoln Alexander Parkway turned out to be low, why does the City think its traffic predictions for the Expressway are accurate?	The predicted volumes on the Lincoln Alexander Parkway were low. However, as stated above many factors can influence traffic volumes, such as increased commercial and residential development in the adjacent lands.
Public	Is it even possible to predict future traffic volumes?	Yes it is possible to predict future traffic volumes
Public	How much time will people save by using the Expressway?	It is estimated that the time savings will be on the order of 5 minutes from the interchange at the QEW to Highway 403 along the Red Hill versus the equivalent trip along the QEW/403.
Public	How much traffic relief on Highway 20 will the result from building the Expressway?	The overall capacity of Centennial Parkway is governed by the key intersections at Barton Street, Queenston Road, and King Street in the Lower City. We have reviewed the current levels of service on Centennial Parkway for northbound traffic in the AM Peak Hour and note that volumes are approaching the capacity of the roadway. We have reviewed a Year 2010 scenario without the Expressway, and note that the northbound traffic volumes on Centennial Parkway in the AM Peak Hour will exceed Level of Service F. With construction and completion of the Expressway we expect this level of Service to improve to a range between C to D. However, as development on the East Mountain proceeds with the completion of the Expressway, we expect modeled AM peak hour traffic volumes for the "trend scenario" to increase on the Expressway with Levels of Service E by the Year 2019. As traffic builds on the Expressway, delay also increases and we would expect traffic to build on Centennial Parkway accordingly.
Public	What is the specific volume of traffic currently using the 403/QEW "Hamilton By-pass"?	Highways 403 and the QEW are under the jurisdiction of the MTO an d our office may not have the most recent traffic volume information on these highways. Further, to specifically answer the question - the Ministry would have to conduct origin-destination studies or license plate studies to determine the amount of through traffic using these highways as a "Hamilton By-Pass".
Public	Concern that a large percentage of trucks from the United States which currently use the QEW will use the Expressway because it will be a 9 kilometre short-cut	It is estimated that by the year 2021 approx 3000 trucks per day could potentially divert to the Red Hill.
Public	Will there be traffic increases on King Street and Kentley Avenue and hence more motorists short-cutting between the Expressway and Eastgate Mall?	The traffic travel patterns on King Street will change from the current scenario. Our traffic demand modeling uses the AM Peak Hour, which is generally not the "peak shopping period".
Public	How much traffic on the QEW is through traffic?	Detailed traffic analysis for the QEW area is available in the Hamilton/MTO Preliminary Design Report, November 2002.
Public	Concern about the safety of children crossing Lawrence Road and Mount Albion Road.	There will be an intersection with lights at the King Street interchange. Mount Albion Road will be closed south of the Glendale Golf Course and will not be connected to King Street.
Public	Define terminology such as "arterial".	A glossary will be provided in the Impact Assessment Summary Report
Public	There will be increased congestion on the QEW with the addition of another interchange.	The QEW is being upgraded to reflect future traffic demand in this area.
Public	There will be a back up of traffic at the stop lights at Kenilworth as people try to turn left to get onto the expressway.	It is not anticipated that traffic accessing the Expressway will affect traffic at Kenilworth.

Public	Do not like the access from Barton east bound to the Northbound freeway – left turn – another intersection, more accidents.	This is the safest way to make left turns.
Public	Should have higher speed ramp to QEW north from freeway south. More roll-overs like Brant Street – 403 west.	The connection of the QEW to the Expressway will reflect current MTO safety and design standards.
Public	Concern that affected parks will not be able to be relocated within the same neighbourhood due to a lack of space.	The Leaside and Globe Parks are not being affected due to design changes and public concerns. The City will make every effort to work with the local community in the Rosedale area to ensure that recreational fields are provided where they are needed.
Public	Concern that pedestrian access to the valley, trails, and recreational areas will be negatively impacted.	There will be several places where the public can access the Valley (see the map in the Impact Assessment Summary Report and the draft Landscape Management Plan.)
Public	Concern that pedestrian and cycling traffic will be impacted by the closure of Melvin Avenue.	Melvin Avenue crossing the valley will be removed. The Barton Street Interchange is being designed to slow traffic at lights for safer pedestrian crossing and to include a pedestrian sidewalk that will be physically separated from motorist traffic by a barrier.
Public	Suggested mitigative strategies: A toll of sufficient value be exacted from each heavy vehicle.	The City is examining the feasibility of tolling.
Public	There is no indication provided for where the traffic volumes data came from, and no supporting analysis.	The City retained iTrans to update the traffic analysis. That report is available on the website.
Stakeholders	No account is made for the movement of construction vehicles beyond this narrow boundary indicated on the maps as only 75 meters in width in many locations.	The Design Report will address mitigation during construction and the Environmental Management Report will outline how it will be implemented during construction.
Stakeholders	Comments on transportation operation and safety are extremely facile and essentially declare: "trust us". There is no information on sources of information.	Transportation operation and safety are primarily a function of speed, and associated road geometrics which are standardized to a large extent by MTO for roads of this type.

4.3 Draft Technical Reports

Air Quality, Noise and Weather Conditions		
Source	Question/Issue	Response
Gov	Air Quality: With a meteorological change apparent over the last several years resulting in hotter, drier summers, what future impacts can be expected on invaluable particulate matter and other airborne matter adjacent to the Parkway? Can changing weather conditions be expected to skew the results of the monitoring?	Ambient levels of particulate matter (PM) vary by hour of day and are affected by a number of factors including weather conditions. Drier conditions can cause higher ambient levels of PM. The most important factor in establishing ambient levels of contaminants are the emissions followed by wind direction and wind speed.
Gov	Can other levels of more toxic air borne particulate such as zinc and lead levels be expected to increase as well? Also, only one area was studied. It may be more beneficial to obtain representative samples (and compare them) at two locations along the Linc.	Based on a cursory review of the MOE's historical monitoring results from across Hamilton and the Linc survey, ambient levels of most airborne heavy metals appear to be similar. Levels of airborne metals beside the Linc' are not expected to increase appreciably. Zinc is not reported by the MOE. Ambient lead levels have declined substantially in Ontario since the removal of lead from gasoline. Additional ambient monitoring is proposed after completion of the Red Hill Creek Expressway, not the Linc.
Gov	Pre-construction: Air quality measurements were not undertaken in the warmer, usually drier months of summer. The traffic volume on King Street and Mt. Albion Road is not that which is to be expected on the expressway. If a daily maximum of 22,000 vehicles is estimated on the expressway, how is that expected to affect the air quality in the valley?	The pre-construction survey was designed to capture ambient levels before the RHCE is in operation. As the survey was only 6-months, representative conditions for a full year were not provided. The dispersion modelling assessment, conducted by RWDI and reported under separate cover, provides predicted impacts from the RHCE under worst-case traffic conditions. These modelling results were also coupled with 12-months of ambient monitoring records from local MOE stations to derive an estimate of the combined effect of the proposed roadway in addition to the background.
Gov	What are the predicted effects of climate change (E.g. Hotter, humid, drier conditions and during periods when air containing particulate and vehicle emissions is trapped in the Red Hill Creek Valley by air inversion and the effects of the Escarpment) on the environment with the expressway in place?	The effects from climate change were not explicitly looked at but 5-years of local meteorological data was reviewed and the year with the highest proportion of adverse dispersion conditions (including temperature inversions) was selected for the modelling analysis. Based on a comparison with survey results from the King St survey, data from the MOE's station on Woodward Ave was found to closely represent valley conditions.
Gov	What are the predicted effects on air quality in the Valley also given the loss of vegetation (as a filtering element) resulting from the expressway construction and creek channel realignment?	The loss of vegetation in the study area was not explicitly accounted for in the detailed air quality assessment; however, a qualitative discussion was provided in Section 5.5.
Gov	Table 4.1.1.1 is a summary of measured ambient CO stats for 1996 to 2000 at the Elgin/Kelly Street monitoring Station and the King Street/ Mt. Albion Road station. It is suggested that annual averages of CO were higher in 1996 but have been consistent and lower in more recent years. There is no explanation offered as to why.	No reason was given by the MOE for the City of Hamilton, but in their 2000 annual air quality report for Ontario, it was noted that the trend in annual average and maximum 1-hour and 8-hour levels of CO for the period, 1991 to 2000, have declined from 25% to 39% despite an increase in vehicle kilometres travelled. This improvement is likely due to improvements in engine design that has reduced CO emissions.
Gov	Post construction Monitoring: The draft report continues to attribute PM10 exceedences and other elevated values above 30 mg per cubic metre completely to traffic emissions from the expressway. The pollution roses presented do not show absolute average levels of PM10, rather they show frequency of hourly averages above a threshold and thus are strongly influenced by wind frequency. Based on data provide previously, most higher levels were due to long range transport of particles from outside the City. The difference between average levels during low concentration periods and highest peak periods was 8 to 15 mg per cubic meter in a series of graphs for each month of sampling.	Acknowledged although it should be noted that RWDI noted in their Executive Summary that "The south-south-westerly wind direction would *suggest* that roadway emissions from the Lincoln Alexander Expressway was the *probable source*." RWDI was retained to compare the survey results to long-term statistics from other MOE stations across the city not coincident readings during the same sampling period.

Public	Another difficulty is accounting for the relative increase in truck traffic that will materialize if the expressway is built. The City estimates 3000 new, through trucks, which we assume is the equivalent of 9,000 to 15,000 cars on an emissions basis. So based again on the Linc data, the new trucks alone will induce between 2.3ug/m3 and 3.8ug/m3 in additional PM-10, or an additional 0.23% to 0.38% increase in premature mortality in the exposed population. The additional morbidity can also be calculated using the data cited above. There is also the increased cancer risk associated with the diesel exhaust.	The model used by RWDI (Mobile 6) accounts for the specific emissions associated with heavy and light duty diesel trucks along with the mix of 26 other types of vehicles expected to use the designed road. (1) The traffic scenarios proposed for future uses of the RHVE include the predicted proportion of these heavy diesel powered vehicles and their associated emissions. (2) It is important to recognize that the regulation of both the composition of diesel fuel and the type of diesel power plants for trucks will reduce their emissions from those levels currently found for these vehicles. These changes in the fleet composition and their emissions have been considered in addressing the emissions predicted for the various receptor locations adjacent to the proposed route of the RHVE, and are described in the Cantox Report. (3) It has been recognized that epidemiological analysis of human exposures to diesel emissions do contribute to increased non-cancer and to cancer-related health effects in populations who receive occupational (chronic, long-term) exposure. As discussed in the Cantox Report, these studies examined health effects observed in locations and among individuals exposed to substantially poorer air quality than that found in Hamilton, or as predicted from operating the RHVE. The actual increases in particulate matter and other emissions expected at the multiple receptor points along the proposed route of the RHVE are described in the Cantox report. The Cantox report found no evidence for measurable increases in morbidity or mortality for persons living in these communities.
Public	Recall that the 35,000 - 40,000 vehicle per day traffic at the Linc "post" monitoring station was associated with a 10ug/m3 increase in the PM-10 concentration, similar to the daily increase at the Red Hill "pre" station. But also note that the Linc morning level, after the overnight traffic lull, is 6ug/m3 higher than at Red Hill. This might indicate that the Linc traffic induces a permanent increase of 6ug/m3 over no Linc. Using the 10ug/m3 increase in PM-10 associated with 35,000 - 40,000 vehicles on the Linc, it can be conservatively estimated that a similar traffic volume on the Red Hill expressway will induce at least a similar increase there. As noted above, one difficulty is allowing for traffic switching from other routes close to the expressway, so as not to overestimate the pollution burden of traffic on the expressway, and thus the ultimate pollutant (PM-10) concentrations.	The dispersion model analysis used by RWDI to assess the impact from roadway emissions is the best method to assess the predicted impact. Both the expressway and major adjoining and intersecting roads are accounted for in the model. This was completed for the RHCE in our April 2003 report.
Public	The RWDI studies contain a totally inadequate and shoddy assessment of the health risks of the various pollutants monitored. They make much of the point that there are no exceedances of MOEE criterion levels, but these are so incomplete, and out of date, that there is evidence that they are in no way protective of human health. It is very clearly acknowledged, everywhere, except in Hamilton in seems, that air pollution is a significant health hazard and threat to public health. And as noted above, studies in Toronto have indicated significant health effects due to CO and NO2, but these too are ignored.	PM-10 levels are discussed in the final Health Impact Assessment Report and in the Appendix. The relationship between volume of vehicles and respiratory impacts are extensively discussed in the Appendix.
Public	There are other examples of the total absence of any consideration of real health effects of the reported pollutant concentrations and their variations. The scientific literature indicates that there is no level of PM-10 that is completely safe. In other words, every ug/m3 has it's own disease burden, in a seeming straight line, right up from zero.	PM-10 levels are discussed in the final Health Impact Assessment Report and in the Appendix. The relationship between volume of vehicles and respiratory impacts are extensively discussed in the Appendix.
Public	There are several ways to consider the health effects of the RWDI reported levels of PM-10, but one is particularly illustrative. This is the change in average PM-10 levels over the day in the "post" case of the Linc. The data show a change, with the onset of traffic, from about 18 as a low to about 28 as a high. So in round numbers, and in particular during the hours of the day when human exposure would generally occur, the traffic volume in the area of the Linc that was monitored caused the PM-10 concentration to increase by 10 ug/m3.	PM-10 levels are discussed in the final Health Impact Assessment Report and in the Appendix. The relationship between volume of vehicles and respiratory impacts are extensively discussed in the Appendix.

Public	Added on top of this premature mortality is the morbidity. The scientific data for these is listed above. In short, an increase of 20ug/m3 will result in morbidity effects, such as hospital admissions, asthma attacks, emergency room visits, and new chronic bronchitis cases that are about double those effects cited above. The truck traffic would add an additional burden to this through the additional PM-10 associated with it.	PM-10 levels are discussed in the final Health Impact Assessment Report and in the Appendix. The relationship between volume of vehicles and respiratory impacts are extensively discussed in the Appendix.
Public	As noted and implied above, there are numerous scientific studies linking PM-10 and other traffic-related air pollutants with human disease and death. As is often pointed out by the researchers, the premature mortality effects, and to some extent, the acute morbidity effects noted above, are just the tip of the iceberg. There are many reasons to accept the reality or plausibility of chronic effects, including evidence on mortality, asthma, particularly in children, cancer, cardiovascular disease, and respiratory disease, as well as toxic mechanisms due to fine particles.	Refer to the Health Impact Assessment Report Appendix. The relationship between NO2 and asthma has been comprehensively addressed.
Public	The additional air pollution emissions that the expressway and additional truck and other vehicle traffic will generate in the Red Hill Valley airshed will result in a significant increase in this disease burden in the exposed population. This will particularly affect those already living there, but also all those who will live in the developing urban areas, which in Heritage Green alone will eventually number about 43,000, up from the 18,000 or so that live there now. the recent McMaster University study shows how children can inherit genetic defects from their parents who are exposed to air pollution. Some more of these are going to result from increased levels of PM-10 that result from the proposed construction of the expressway, and for sure from the already completed Linc.	Refer to the Health Impact Assessment Report Appendix. The relationship between NO2 and asthma has been comprehensively addressed.
Public	We live on HWY 20 and I cannot explain to you how terrible it is to eat dinner in your house and hear the empty transport trucks make such a loud noise that your guests think it is an earthquake. We do not ever intend on moving from our home. The hedges that we had planted over 10 years ago on our lawn do not help much with the noise.	The truck traffic on Highway 20 is expected to decrease significantly with the construction of the Expressway.
Public	Because I have waited in vain for more than 4 years to get a promised written response to comments I submitted, again at City invitation, to several previous reports in October of 1998.the City would be cautious and defer actions until all the approvals are in hand.	The City thanks all those who have patiently waited to responses to their comments. In the normal course of project development various approvals are obtained at different times in a project. The City is working to secure all necessary approvals, permits etc. as per the normal project development process.
Public	Without issuing supporting documentation, the City has indicated that they expect about 70,000 vehicles per day to use the expressway, with about 6000 trucks daily, 3000 of which will be totally new through truck traffic that will then use the Linc. The reliability of these data is a question mark	Morbidity calculations have been assessed in the Final Health Impact Assessment Report.
Public	The City underestimated the traffic volumes on the Linc substantially, which raises the concern that the expressway estimates are similarly underestimates. The history of City traffic projections for these projects displays a large range and shows that these projections are highly unreliable. For example, in 1989 the east-west projection started at 26,000 to 35,000 and was not supposed to reach 62,500 until 2006, a volume surpassed in 1999.	Some of the traffic that is currently using the Linc is likely to use the North-South Expressway when that is completed. Therefore, even though there is an increased number of traffic over predicted numbers, the traffic patterns will likely change when the north-south section is opened.
Public	There is no reason to think that the expressway traffic volumes will be significantly different from the Linc traffic of 70,000 to 80,000 vehicles within a short time after it opens, and not in 2021. And since it will provide a shortcut, and open the Linc and itself to the traffic flows of the QEW and the 403, the truck volumes will certainly increase, and the overall traffic and truck flows on the Linc will surely increase as well. These likely possibilities all suggest higher than official estimates of truck and overall traffic on both the Linc and the expressway in the nearer term.	There is no way to verify these statements. Truck traffic can be controlled with speed limits and enforcement. These methods are being examined.
Public	One problem with this estimate of truck traffic is the lack of consistency with the projections of truck traffic being used to justify the Mid Peninsula Highway. The City projections are claimed to be for the year 2021; however, these numbers don't mesh with the Mid Pen. The projections for this highway are	The truck traffic estimated for the Mid Peninsula Highway is based on inter-regional traffic and does not include significant numbers of intra-regional truck traffic. The analysis included in the mid-peninsula works was used as one data source.

	based on long term growth in goods, tourist, and commuter transportation along the basic patterns of the past.	
Public	Assuming compound growth at the rates expected over 32 years (2000 to 2031), this means that the average day truck traffic will grow to 16,143 - 22,708 vehicles, and the "workday" traffic will grow to 19,553 - 27,505 vehicles by 2031. As can be seen, there are difficulties reconciling these estimates with the City ones, and more generally, with the existing traffic on the Linc, however, that cannot be explored here, but is in need of attention.	Your calculation is not correct. Based on an anticipated 3% growth rate in truck traffic it is anticipated that in the 32 year period you projected over truck volumes would be approx. 9000 vehicles. Your numbers would equate to a truck percentage of 45%.
Public	Thus, it is clear that these additional deaths and diseases, and their associated cost burden (we haven't even touched on the economic and health care costs involved here) are avoidable and preventable, and this fact must be recognized and publicized in any reasonable and credible public consultation process on the expressway or any other major road proposal. At the present time, this is not occurring. It seems that the expressway has become the holiest of Sacred Cows to which any cost in money and health will be sacrificed.	Refer to the Health Impact Assessment Report Appendix. The relationship between NO2 and asthma has been comprehensively addressed.
Public	What about extra emissions? If there is an accident on the expressway, the vehicles are just going to be sitting there idling away? I don' t recall reading anything in the drafts about this.	These are likely to be short term events. The Congestion scenario in the air quality modeling report outlines the impacts of these types of events.
Public	Since the air pollution impact of both the North-South and East-West sections of the Expressway and its concomitant burden of illness depends critically on assumptions about traffic flow and vehicle type, it is clear that items (3) and (4) are essential to a proper analysis. I would suggest that you extend the comment period for the two October 2002 RWDI reports to 30 days after items 3 and 4 are available to the public.	These are monitoring reports that do not depend on traffic predictions. They are measuring existing air pollution levels.
Public	Approach Ottawa for infrastructure funding in exchange for municipal support for Kyoto principles.	The federal government currently is not contributing to the cost of the project. The City will explore the federal government as a possible source of infrastructure funding through its recent programs.
Public	Kyoto principles may also be met by turning the Red Hill Creek Valley into a national park. With the offer of the land for a park, the City should be financially compensated for giving up a potential transportation corridor	There would still be a need for an escarpment crossing in this location and therefore this solution does not work for the City.
Public	These RWDI monitoring reports claim to represent the fulfillment of certain requirements of the provincial approval process. In fact, this requirement of the approval process has not been met, since, for one thing, no pre-, or ring, construction monitoring of the East-West section, the Linc, was ever done. The City has failed to provide any reports and supporting references for estimates of light and heavy traffic loads to the expressway and to the Linc. I submit that the City has failed to meet the requirements of said approval process, and is not in compliance with the Exemption Order.	Exposure response relationships have been extensively dealt with in the updated Health Impact Assessment Report and in the Appendix.
Public	RWDI can be asked to estimate what the levels of PM-10, CO, and NOx would be assuming double the traffic that was present during the period of their monitoring (and to estimate concentrations within 165 feet of the Linc). In addition, changing the traffic composition to include truck volumes consistent with the construction of the north-south section in the valley should also be modeled and estimated by RWDI.	RWDI will use the updated traffic information provided by Itrans in their revised analysis.
Public	It is of concern that in both studies the monitoring period was only six months, and these months were not even comparable periods. Specifically, the "pre" study was for December 1997 to June 1998, and the "post" study was from May to November 2000. A more adequate sampling period would be 12 months in both cases, for what should be obvious reasons.	The duration of the ambient surveys was agreed to by the MOE and formalised into a sampling protocol.
Public	It is also of concern that the "post" study is much inferior in coverage and depth than the "pre" study. In the "post" study only PM-10 was monitored continuously, whereas, the "pre"	Cantox has reviewed several studies to determine the cause and effect of several pollutants. See Appendix of the Final Health Impact Assessment Report.

	study continuously monitored CO, NOx, NO2, and NO in addition to PM-10.	
Public	Since the City has failed to record traffic volumes since 1999, it is difficult to be precise here about the traffic volumes in the monitoring period of 2000. Therefore, for present purposes, and to be conservative about unit vehicle contributions to the PM-10 concentration, the higher traffic volume numbers are used in further analysis. Thus, the onset of say a 40,000 vehicle traffic volume, a volume that excludes a lot of trucks that will appear if the north-south expressway is built, causes the PM-10 concentration to increase by about 10ug/m3.	PM-10 levels are discussed in the final Health Impact Assessment Report and in the Appendix. The relationship between volume of vehicles and respiratory impacts are extensively discussed in the Appendix.
Public	It is also interesting to consider the reported data on the cumulative frequency distribution of daily PM-10 levels. These cumulative frequency data should be recalculated to reflect concentrations during the hours of peak human activity and exposure.	PM-10 levels are discussed in the final Health Impact Assessment Report and in the Appendix. The relationship between volume of vehicles and respiratory impacts are extensively discussed in the Appendix.
Public	The RWDI "pre" report indicates PM-10 levels that change from approximately 12ug/m3 in the morning to about 22ug/m3 with the onset of traffic. This change, presumably due to traffic, of 10ug/m3, is similar to the "post" change at the Linc, however, the Linc reaches a higher overall level of 28ug/m3, or 6ug/m3 higher. There may be numerous reasons for the difference, but the levels (including those of CO and NO2) are similar to those observed in Toronto sites influenced by traffic. It is also worth noting that the "pre" monitoring station is a lot closer than 500 feet (more like 50 feet), but is located in a place downwind from the middle of the valley rather than from the roadway.	Morbidity calculations have been assessed in the Final Health Impact Assessment Report.
Public	It is evident from the two RWDI monitoring studies that the areas and populations close to the Linc and to the proposed expressway are already being impacted, and their health already affected, by current levels of traffic generated air pollution.	Refer to the Health Impact Assessment Report Appendix. The relationship between NO2 and asthma has been comprehensively addressed.
Public	The ambient air-monitoring period was only six months, in both cases, and not even comparable 6- month periods. Although it would be more costly, it would have been better to monitor through a 12 month period in both reports (Post Construction Ambient Air quality Monitoring for Lincoln Alexander Parkway & Pre Construction Ambient Air Quality Monitoring)	The 6-month Pre-, during and post-monitoring periods were discussed with the Ministry of the Environment and agreed to be a reasonable time period.
Public	"Post Study" - the only continuous monitoring that was done was for PM10. In the earlier study, NOx, NO2 and NO as well as CO and PM10 were monitored continuously. Both gaseous species (NOx etc, and CO) should have been monitored in the second study, because NOx and CO are much more selective markers for road traffic sources than is PM10.	The monitoring for the Linc was discussed with MOE who suggested only PM10 have continuous monitoring. Refer to Section 1 of RWDI's Post Construction Ambient Air Monitoring.
Public	Location of the post Linc monitoring site is virtually at the eastern terminus of the Linc, and the city's own data show that this is an underestimate of the Linc traffic perhaps by 50%. Any additional air pollutant emissions into the RHV airshed will introduce a substantially increased burden, particularly to those now living in the area.	The RWDI final Air Quality Impact Assessment Report presents options for additional monitoring that have been considered by the City.
Public	Although strictly speaking the ambient monitoring reports will not be influenced by changes in traffic modelling assumptions, information from these reports can and will be used in estimating the burden of illness associated with the proposed changes in the expressway.	Data from monitoring reports related to the Region's air quality station were used with MOE long term monitoring stations across the city. In the updated air quality study the data was used to confirm meteorological data and MOE Woodward Ave Station. Then the air quality study used local MOE stations for the combined effects analysis. This data was provided to Cantox for the Health Risk Assessment.
Stakeholders	Why was a computer modeling survey of Expressway air quality levels not undertaken as a logical 'add-on' to this pre-construction survey?	RWDI updated their 1998 study findings with an air quality assessment report dated April 2003.
Stakeholders	Why were no air quality monitoring stations set up IN the Valley, as well as on its perimeter?	The air quality monitoring stations were based on discussions with MOE
Stakeholders	I am concerned that when an estimated 70,000 vehicles a day begin using the Expressway, levels of PM10 will exceed the Air Quality Criteria with alarming frequency. I would also like to see monitoring stations established in the Valley.	The City will discuss the potential for additional monitoring in Detail Design.

Stakeholders	I was in contact with RWDI recently and was led to believe that the noise impact study results will be essentially the same as in the '98 report. What is troubling about the modeling, however, are the traffic volumes and the percentage of heavy trucks that you and iTrans disagree over. Why are your figures right and theirs wrong? (Spectator articles of Oct. 2002).	iTrans has predicted that 10% of the truck traffic on the Expressway is expected to be heavy truck traffic. The model used by RWDI has a default value of 12%. This percentage was used by RWDI as a conservatism not as a disagreement with iTrans.
Stakeholders	The provincial standard of 55 dBA for sound level over a 24 hour period may be accepted by people who now experience 50 dBA as their ambient level. However, there are hundreds of residents who live in quiet neighbourhoods who will be affected by traffic noise in a serious way - even with the sort of mitigation proposed by RWDI.	The noise impact will vary from north to south depending on the existing noise levels. See the noise technical report for specific information.
Stakeholders	The City is going to have to mitigate noise in a major way. The use of noise barriers as given in the '98 report will not ameliorate the impact sufficiently, in my view. When people suffer from sleep deprivation and cannot converse outside with their neighbours and friends, some other mitigation solution is called for.	The City will be carrying out a detailed noise mitigation plan in the next stage of the project and will work with the residents to address noise impacts.
Stakeholders	The impact of traffic noise from the proposed facility on humans is not considered in the report. Noise will have very significant negative impacts on human use of the valley including on trail users, birdwatchers, and golfers. The elevation of the roadway onto a viaduct would presumably increase the noise impacts. This factor should have been examined and taken into account in the decision to install a viaduct and in the decision as to its length	The City followed provincial guidelines on how to model noise and assess impacts.
Stakeholders	Air quality impacts are not mentioned in the report. However a 1998 study by Cantox warned that children and the elderly should limit their exposures and not frequent the Red Hill Valley once the expressway has been completed. Presumably, such impacts will also affect other species. Again, the decision to install a viaduct and its length should have been considered in light of the air quality impacts of alternative designs.	The viaduct study looked at design options for the viaduct. The air quality impacts are addressed in the RWDI Air Quality report
Stakeholders	I do not accept the 7.5% heavy trucks in the mix as being reasonable once access for U.S. trucks is upgraded, which is what is happening now. The way the traffic numbers were arrived at in the analysis does not reflect NAFTA highway objectives nor to the improved Canada-U.S. border crossings that are already being implemented. It seems very reasonable in such circumstances to support the numbers the iTrans Transportation Planning and Traffic Consultants are predicting for Red-Hill, i.e. more than 1 million trucks per year who won't start or stop in the city. If iTrans is right, we will have much greater noise levels than RWDI is predicting.	The updated air quality and noise assessments will include updated traffic projections from Itrans.
Stakeholders	The argument that there will be an alleviation of air pollutants as a consequence of relieving city streets of stop-and-go traffic is not supported by studies done in other cities which clearly show that expressways induce more traffic overall and become policies which will promote clean air rather than make it worse.	RWDI has not received any reports from the stakeholder in support of his position. Itrans has conducted a detailed analysis of traffic projections for the future and these data have been used in the RWDI air quality and noise models.

Stakeholders	Since a noise barrier will be needed to mitigate traffic noise impacts, in any event, it seems reasonable to assume two vertical walls on both sides of the roadway that would act structurally as well as acoustically. A roof cover spanning the walls, together with supports located in the space separating northbound from southbound traffic would constitute a box enclosure having reasonable spans, to create, in effect, an above-ground tunnel. A ventilation system coupled with an air purification system would allow for clean air discharges from the envelope. The result would be virtual traffic noise mitigation, and elimination of air pollution from vehicles traveling through the RHCEE. If the roof was designed to be flat or only slightly sloped, an immense roof garden stretching from the escarpment to the QEW would be possible. The sidewalls could be ivy covered with tree plantings nearby that might allow the flying squirrel population to continue to live in the valley.	No Response Needed
Community and Human Impacts		
Gov	Please clarify in the documentation that Hutch's restaurant is leasing the property and we are the managers of the land for the City of Hamilton (Pg 12).We should have been surveyed as an affected business. Will there be compensation for lost business during construction?	The IASR will clarify that Hutch's is leasing the land and HCA is the manager of the property. The consultant has contacted the HCA and discussed the issues raised. The construction work will be carried out when the seasonal businesses will be least impacted. There will only be two minor road realignments in this area and they can be scheduled to minimize impact to businesses.
Public	In your response dated December 9th you stated the following: In fact, it's estimated that between an average of 195 fewer collisions each year will be avoided by the construction of the expressway. Also, the estimate of 195 is conservative; using a less conservative approach, the figure is an average of 426 fewer collisions per year. Aside from the human factor, this translates into a predicted collision cost savings of just over $3 million annually using the lower number and a savings of about $7.5 million annually using the higher number. Please provide the detailed data on your traffic accident claims. I believe this claim was raised in 2000 but the supporting documentation has never been released. If this information is being used to justify the expressway project the public deserves an opportunity to examine these details more closely.	The request has been forwarded to the author of this report.
Public	The intersection at Paramount and Mud has become deadly .it was suggested to council that at least the truck traffic could be diverted from our neighbourhood by insisting that they come off the link at Darnall and use Highway #56 to get to Highway #20 - why was this never followed through?	This intersection will operate much differently when the east-west traffic from the Linc is diverted to the Expressway instead of being directed to Highway 20.
Public	I see it as shortcut for truckers who do not start and stop in Hamilton, they just sail through! How does this benefit Hamilton?	Some of the truck traffic is likely to be through traffic but it is difficult to estimate how much. There are ways to reduce through truck traffic by e.g. enforcing lower speed limits.
Public	I thought the expressway was supposed to be a local road to benefit local users and would take trucks off local streets. Sure doesn't look like it to me! How does this benefit Hamilton?	Some of the truck traffic is likely to be through traffic but it is difficult to estimate how much. There are ways to reduce through truck traffic by e.g. enforcing lower speed limits.
Public	The burden of maintaining the road is entirely on the shoulders of the local taxpayers. Why should we have to bear the burden of provincial traffic? How does this benefit Hamilton?	This will be a local road as opposed to a provincial road and therefore the City will be responsible for maintenance. The City benefits from having access to and from the Mountain development and from getting through traffic off local city streets like Mount Albion Road.
Public	What about air quality, health and noise, especially for the people living in close proximity of the expressway, you know, the people in the east end? First it was 60,000 vehicles and not its 70,000 a day. How does this benefit Hamilton?	The air quality, health and noise impacts are addressed in technical reports.
Public	Do any of you people who want the expressway actually reside in the east end? For all the people who want the expressway that live in Ancaster, Dundas etc. what would you say if an expressway was going to be built in your backyard, so to speak? You would be furious, you would not stand for it!	Many east end residents have expressed support for the Expressway.
Public	If the expressway is built, we have to put up with emissions from this! For just once, it would be nice to be treated like Westenders not Eastenders.	Highways exist in both the east and the west end of the City. The east end of the City has a need, however, for an escarpment crossing in order to support development and revert local streets to local use.

Public	Building the expressway will only increase traffic and destroy valuable wilderness and create more health problems, we can't even take care of current health problems in a timely fashion. How will this benefit Hamilton?	The positive and negative impacts associated with the project have been assessed.
Public	Rail Connection with passenger service from airport and western wards would lessen passenger highway traffic commuting to Toronto and would help meet Kyoto targets while increasing property values due to variety of commuting possibilities.	The purpose of the road is not to provide better access for commuters to leave the community but rather to provide better access to existing City commercial/industrial employment areas.
Public	I believe it will be good for lower city residents who are unfortunately used to having trucks roar through their neighbourhoods everyday. And of course, it will provide a link to HIA from the east end and Niagara region.	no response necessary
Public	We have plenty of parks and wildlife here in our city and it is very silly thing to worry about some kind of flying squirrel. I live around the creek and as far as I can see it is just a dirty damp area where a lot of rubble accumulates. That's all. Also did anyone against the expressway ever think that it is a danger to children, which can drown or get lost or even abducted by a criminal? Is that more important or is the flying squirrel more important?	The City acknowledges that the community holds differing values about the Valley. However it is important the City identify the environmental and community issues and address them to the extent possible.
Public	the loss of trees/green space, additional car/truck pollution and noise- why? who are we building this roadway for? I do not find the traffic around Hamilton congested enough to merit this expenditure	The need for the road has been established and reconfirmed over the years.
Public	I believe more thought should have been given to the ENTIRE project...we currently have the east-west "link" which just empties (very dangerously) into my RESIDENTIAL neighbourhood - just what were the "experts" thinking?	The intention was to complete the north south link immediately following the Linc. This work was halted during a federal court case but is currently underway again.
Public	Checked the city documents at the library but did not see any traffic studies pertaining to projected and present traffic flow of the Lincoln Alexander Parkway and projected traffic flow for the proposed Red Hill Creek Expressway since January 1997.	The updated traffic analysis prepared by iTrans is posted on the Red Hill Valley Project website.
Stakeholders	Businesses: I am deeply disappointed by the narrow Terms of Reference, used as a basis for this very limited report. It makes sense to put all of the information on the table- examining the pros and cons of both sides, adding up projected costs and benefits and then	The terms of reference for this study was outlined in the Declaration Order and approved by the Minister of the Environment.
Stakeholders	The quotes from the Vision chosen by the Dillon authors make no mention of transportation. The Dillon authors also avoid any mention of the numerous references to transportation found in the Vision and its implementation documents such as the "order of transportation priorities" that puts walking, cycling, and public transit ahead of goods movement and private motor vehicles	The section of the report on Vision 2020 will be revised to add the transportation specific statements from the Vision documentation. The purpose of this assessment process is to reduce the environmental impacts of the Red Hill Valley Project through changes in design. This supports the transportation statement to minimize impacts as a result of roads.
Stakeholders	Finally the Dillon authors provide a piece about the new greenwash Environmental Health and Safety Integrated Management System. Not surprisingly, there is no mention of how this might relate to the expressway project, since it doesn't. Will this "system" protect the health of the residents of the Red Hill Valley and the surrounding neighbourhoods, or merely provide a green sheen to the action of the municipality determined to destroy the Red Hill Valley and poison the air of adjacent residents?	Chapter 2 of the Land Use Assessment is intended to provide the reader with an understanding of the "big picture" initiatives in the City of Hamilton that to some extent influence individual projects. The City's Environmental Health and Safety Integrated Management System is an ongoing program that will ensure that City staff give consideration to environmental and safety issues in all their activities and decisions. It is not intended to suggest that the City's Environmental Health and Safety Integrated Management System will change the outcome of the Red Hill Valley project. In support of this initiative, the City is developing an Environmental Management Plan (EMP) specifically for the Red Hill Valley Project. The EMP will be developed in the Design Phase and will guide design, construction, maintenance, operations and monitoring. It will clearly outline how the City will be addressing mitigation and monitoring during and after construction and will also address training of field staff, government agency liaison, emergency measures. The EMP will include an environmental protection plan for construction, a maintenance management plan and a community relations plan. The Community Relations Plan will define how the City will provide information to the community during construction and will provide clear avenues for the community to communicate with the City.

Stakeholders	"There is no information on how many people live here, how many have respiratory health ailments, what the current value is of their homes, whether they make use of gardens for some of their food, whether the valley in its current state provides any benefits to them, whether they make use of the valley in its current state, or any other information about these REAL PEOPLE and their lives. Instead the bulk of the commentary is on POSSIBILITIES of redevelopment in other areas.	The report addressed both existing uses and future uses that are approved and proposed in the vicinity of the Red Hill Creek Valley. The report does reflect that the existing land uses on either side of the valley are primarily residential and Table 3 identifies that increased noise and air quality; change in traffic at interchanges for students who have to cross the valley; street closures; additional traffic on Greenhill Ave.; and recreational impacts are the key impacts that are likely to be experienced by residents with the completion of the Red Hill Creek Expressway. As noted above, the table will be revised to make reference to the potential for visual/aesthetic impacts from the expressway. (See above comment) Detailed study of the specific characteristics of each existing neighbourhood was not undertaken rather it was recognized that all people have the potential to experience these negative impacts.
Stakeholders	Mention is made of the fact that the catchment area of a number of schools will be divided by the proposed expressway, especially in the "middle" section, and it is admitted that school children will have to cross the expressway on streets such as Barton and Queenston. Why is there no comment on the health impacts occasioned by such behaviour? The 1998 Cantox study on the health effects of the expressway specifically concluded that children and the elderly "should be encouraged to limit their exposures, and not frequent the Red Hill Valley once the expressway has been completed." They also warned that children who pass over the proposed highway will be at greater risk for respiratory irritation or asthma. Why aren't these warnings noted by the Dillon authors.	The air quality and health risk assessment reports have been updated as a result of more current scientific approaches to both fields. The current results do not attribute the Expressway with major changes in air quality that would be a substantive risk to residents. Given the recent changes to school boundaries, the school boards will be consulted to determine if children are still required to cross the bridge at Barton Street.
	Expressway Design	
Gov	(Golf course): Bridges will have to meet the recommendations outlined in the Natural Channel Design report and withstand the Hurricane Hazel Flood event. These ponds as well as the bridges required to cross the realigned creek will require a permit	The City has a permit and will be fulfilling the conditions of the permit.
Gov	Page 119: on page 117 there were 16 bridge crossings in 1985, this page there are 21?	The 16 bridge crossings (WRIS, 2002 pp.117) refer to the crossings explicitly by the 1985 alignment of the expressway. The 21 bridge crossings on pg. 119 of WRIS 2002 refer to all of the bridge crossings within the valley which include pedestrian and golf course bridges.
Gov	With the relocation of the creek, the trail (1996) will be disturbed. The reinstatement of the trail should be part of the project and included in the design plans.	A draft Recreational Master Plan including a realigned trail is available for public review.
Gov	To restore the creek to a healthy system, out-dated methods of development should be reconsidered. For example, treating the problem at the source will be beneficial to the system.	The City sponsored a Watershed Plan to gain an understanding of the problems with the creek. The current problems with the creek are the result of development methods that are not longer practiced. Developments must treat stormwater management much differently that they have previously.
Gov	Page 4: the original Expressway alignment would have probably required a longer section of Van Wagner's Beach Road to be realigned, and a significant impact on our business. This should be documented in the report as it is unique to the original alignment. (Pgs 5,9,12,19)	This has been documented in the Impact Assessment Report and the Economic Impact Report.
Gov	Page 19: Construction, the original alignment would have affected our business operation specifically and directly through the loss of buildings, revenue and a need to relocate new facilities to maintain operations of Confederation Park.	This has been documented in the Impact Assessment Report and the Economic Impact Report.
Gov	(RE: Niagara Escarpment Expressway Crossing Alternative Design Report): The grading and landscaping of the affected area is an important mitigation aspect that should be carried forward in the design drawings and Landscape Management Plan	This will be carried forward into Design.
Gov	Page 113: the selection of a qualified contractor is imperative. A general tendering process should not be used.	The intention is to use only qualified contractors.

Gov	Section 2.2 identifies a number of design parameters for structures crossing under or over the realigned creek. These will need to be carried forward in the detail design.	Agreed.
Gov	Page 148: reference 64, we currently own and operate this flow monitoring station. Should this refer to section 3.7? Is this included in the cost of the project and has Water Survey of Canada been contacted?	The flow monitoring station will be addressed in consultation with HCA and Environment Canada.
Gov	Page 174, we would appreciate a copy of the roll-out drawing for design review. It is recommended that a built drawing is prepared.	This will be provided in the Design stage.
Public	This project violates and goes against the principles and spirit of Sustainable Development defined as development that meets the needs of The present without compromising or jeopardizing the ability of future generations to meet their own needs. I say this based on the many arguments that have been put forward by opponents to this project that are well documented.	The former Region/City has addressed this concern on many occasions during this project.
Public	What happened to rail service? Trucks should be secondary.	Rail service will not address the access to residential, industrial and commercial areas on the Mountain.
Public	Get an all-day train service from downtown Toronto to Hamilton Airport, extending the GO train service from Burlington up to the airport.	This doesn't address the problems being addressed by the Expressway.
Public	Any assessment of transportation needs since initial approval given in 1985? (In light of the Kyoto protocol, or changing Canadian behaviours away from use of automobiles, or to lessen the impact on local industry and their compliance with Kyoto by reducing our emissions)	The transportation need has also been assessed in 1994. The Crombie report acknowledged the need for another escarpment crossing for transportation.
Public	Any assessment of transportation needs since initial approval given in 1985? (In light of provincial plan to connect mid-peninsular highway to Red Hill Valley expressway and the extra wear and tear on the expressway?)	The problems being addressed by the Mid Peninsula Highway are different from the problems being addressed by the Expressway.
Public	Any assessment of transportation needs since initial approval given in 1985?(In light of changes in development and transportation patterns since 1985, particularly with respect to Munroe Airport.	More development has been approved on the Mountain since 1985. There are several areas where development is on hold until the Expressway is constructed.
Public	His comment is: Build The Bloody Thing. It's long overdue!!	no response necessary
Public	How can we even entertain the idea of constructing the north-south expressway at this time, let alone maintaining the roadway in the years to come? Hamilton is currently battling with a $59 million shortfall - taxpayers CANNOT continue to pay for unnecessary projects! We have sewers, infrastructure and garbage issues that will cost money, but must be addressed	The City is currently carrying out a cost benefit analysis of the road. The costs of constructing and maintaining the road will be considered in the analysis.
Public	The opponents to this project have made their case well and the City of Hamilton has not responded to their reasons why this project should not proceed in a way that has made a convincing case why it should proceed. In my view the City of Hamilton has listened closely enough to the objections as made evident by the lack of appropriate responses to those objections.	All of the comments received on this project are being responded to as part of this document.
Public	I'd like to point out that with the world situation today, the timing for this debate is awful. Historically, citizens have been forced to ration gasoline during a time of war and one year from today we could see the streets devoid of traffic. And as more people realize that our dependence on cars and trucks helps, by the way of oil revenues instable elements throughout the world , who knows, perhaps people will voluntarily drive less.	Traffic has steadily increased as development has increased in this area. An effective transportation network is critical for this development.
Public	McQusten set up this reserve to be a park forever . If Hamilton must have it's own Beltway, it should be approached with an open mind. I don't think that other options, like a cut around Fruitland Road have been explored fully.	Other options like Fruitland Road have been looked at and deemed to be inadequate to address transportation deficiencies in this area.

Public	Please call Mr. Tim Rogers 905-570-7159 He wants to know if there will > be a walkway along the brow from the east side to the west side which will > go either under or over the expressway to connect Bruce Trail.	The Bruce Trail will connect at the base of the escarpment where there will be a viaduct (land bridge). The trail will go under a 220 meter long viaduct.
Stakeholders	The proposed project will require a 75-80 metre wide cut in the face of the Niagara Escarpment to a depth of 12-15 metres. It also includes more than three kilometres of expressway construction and operation INSIDE the Niagara Escarpment Plan Area. These impacts constitute the single largest and most destructive assault on the Niagara Escarpment World Biosphere Reserve since the inception of the Niagara Escarpment Plan and the Biosphere designation. Friends of Red Hill Valley urges the Commission to protect the escarpment with even greater vigour from this proposed project.	The Niagara Escarpment Commission is subject to the conditions of the Joint Hearing Board. Commission staff have been working with the City to ensure that their issues are being addressed.
Stakeholders	In the "1985" section, the report says that the Region received a permit for the project. This is quite curious given that the conditions for issuing this permit included the provision of a "detailed grading plan", and "a detailed tree preservation plan". These conditions could not possibly have been met by the Region for the current project under discussion since this report is only now proposing the design, and that for only the portion in the immediate vicinity of the escarpment face.	The City is working to fulfill its permit provisions as the project moves through design to construction. Grading plans and tree preservation plans are normally developed in the latter stages of design.
Stakeholders	The re-write of history continues in the "1991-94" section of the report. The first sentence is mis-leading. It neglects to mention that the province indicated its opposition to any expressway IN Red Hill Valley. It also neglects to mention that a provincial study undertaken in 1993-94 by Clayton Research found that there was no traffic need for an expressway.	The City is not aware of the Clayton Research report. The province requested David Crombie to assess the location of the road. He recommended that road be in the Valley in part. However, his proposal was never assessed for impacts and was not accepted by the City.
Stakeholders	The "1991-94" section acknowledges a provincial "compromise" but curiously neglects to mention that this compromise did not require a new cut in the face of the escarpment and very dramatically reduced impacts on the lands of the Niagara Escarpment Plan Area	The Crombie proposal would have created a widening of the escarpment cut at Mount Albion Road. It was never assessed for feasibility or impacts.
Stakeholders	Reference is made to the width of the escarpment cut BEFORE the proposed design changes as being a maximum of 65 meters wide. However, no reference is made in the text to the width of the cut NOW proposed.	Before the design changes there would have been two cuts through the escarpment (one on either side of the hydro corridor. The current proposal is for one cut of the escarpment. The Niagara Escarpment Commission has provided input to the design of that cut.
Stakeholders	In the section of the report on page 19 on viaduct length, it is noted that the "optimal length" is 325 meters. Nevertheless, the selected viaduct length is only 220 meters.	The 325 meters was examined but was not considered to be the best length as the topography in the northern 100 meters would be too high and close to the bottom of the structure and would not provide as much benefit as the rest of the viaduct.
Stakeholders	On page 20, one of the drawbacks identified for the 325 meter viaduct versus a shorter one is that there would be "more unvegetated area beneath the structure that is of limited value to wildlife". This evidence suggests that viaducts will result in areas with little or no vegetation. The Niagara Escarpment Commission and other regulatory bodies should take note of this attitude of the proponent, and regard any promises about caring for nature as highly suspect.	The City is looking at how to maximize light penetration under the viaduct to encourage vegetation growth. Nevertheless, the ability to cross under the road is considered to be more desirable than a road on fill for reasons cited in the report.
Stakeholders	The report neglects to mention the fact that most of the study area is a designated World Biosphere Reserve. Perhaps the proponent isn't aware of this, or doesn't think it's a significant designation. Certainly the proposed project pays no respect to this designation	The Land Use Report identified the Escarpment as a World Biosphere Reserve.
Stakeholders	The report indicates that "two high quality trails" and a wildlife corridor will be located underneath the expressway viaduct. However, there is no indication of where precisely these features will be located or what measures will be taken to separate these functions.	The draft Landscape Management Plan proposes a trail system.
Stakeholders	In June of 1998 a visual impact assessment report was presented by Hough Woodland Naylor Dance Leinster. It also noted high visual impacts. No mention is made in the current report of this earlier document, or of the involvement of this consultant in the evaluation of impacts. This omission is worrisome. The opinions of this consultant on the most recently proposed escarpment crossing design should be	The same consultant that carried out the visual assessment was part of the working group on the escarpment crossing. Therefore the design development by the working group took the visual assessment impacts into consideration.

	sought and considered by the proponent and the NEC.	
Stakeholders	Most of the discussion on impacts in Tables 1 and 2 is unnecessarily speculative.. This and other throwaway comments about longer views being less affected, landscapes softening, etc. detract from the credibility of the report.	The same consultant that carried out the visual assessment was part of the working group on the escarpment crossing. Therefore the design development by the working group took the visual assessment impacts into consideration. The draft visual assessment report form 1998 has been augmented with computer visualization images.
Stakeholders	The report neglects to examine the impacts of a three to four year construction period associated with the project, including very extensive blasting operations. Presumably the impacts on wildlife would be very severe during this period and may result in extirpation of various species.	The terrestrial report takes construction into consideration in assessing impacts.
Stakeholders	Formal references to various documents are made on page 8 of the report and elsewhere within the report. However, the report does not include a bibliography.	The reports are all available on the City website.
Stakeholders	In fact, NO precise costs are given for ANY of the 18 items in the table (Table 3).	The cost information was provided to the extent that it is available at this time and to provide an overview of the range of costs for mitigation and monitoring. Precise costs in many cases will not be determined until the detailed mitigation and monitoring strategies are developed in the detail design stage. Specific references to costs for realigning the creek are provided in the report "A Stream Network Inventory, Fluvial Geomorphologic Assessment, Impact Assessment, and Preliminary Natural Channel Design of Red Hill Creek " which was made available for public review in October, 2002.
Fish, Wildlife and Terrestrial Resources		
Gov	Fisheries: Under Section 4.2 Methodology, was any sampling undertaken during drought conditions? If so, this should be taken into account since it may affect the reliability of the results.	We have taken into account variations in lake levels and flows in our assessment.
Gov	Fish sampling detected 5 common fish species present in the Red Hill Creek Watershed, yet only one sampling event during a single season took place. We therefore question the results obtained from only the one event. Multiple sampling events should be undertaken.	The results of fish sampling by other investigators are also considered. The five dominant species are consistent with the results of Staton, reported in Table 1.
Gov	Under Section 6.1.2.6 Riparian Vegetation: The salvaged sod mats and shrubs that are proposed for planting at various locations along the new channel may not be adequate to provide sufficient erosion and sedimentation control.	Additional plant material will be used if necessary. The monitoring program will identify areas where additional work is required to ensure stabilization.
Gov	Loss of shading to the creek provided by the mature vegetation cover is a concern. The consultant suggests that the natural vegetative community is not expected to be in the advanced stages of succession for an estimated 15-20 years. What are the expected impacts to the creek community to be during this time frame?	As indicated, large changes in temperature are not anticipated. The dominant fish species that are currently present are tolerant of urban stream conditions and are not expected to be adversely affected by modest temperature changes, should they occur.
Gov	Under Section 6.1.2.7 Water Temperature: The loss of existing vegetation and the cooling effect of the canopy cover may cause the creek water temperature to warm, resulting in negative impacts on the current aquatic community. Perhaps the City can address this in some fashion or maybe has in the Landscape Master Plan. (Please confirm)	The Terrestrial Report outlines the recommendations for landscaping in areas adjacent to the creek. The draft Landscape Management Plan also outlines the principles and concept for landscaping alongside the creek. Over time and as the newly planted vegetation grows and matures there will be better canopy cover over the creek.
Gov	With reference to Table 10 (Evaluation Summary for the Anticipated Environmental Impacts: There is no defined scale for the +/- method. There is no mention of temperature impacts with the exception for a temporary reduction in shading of the creek which is given a ration of only 1.	As indicate above large changes in temperature are not anticipated and no major impacts are expected.
Gov	Section 6.1.4.1 Benthic Invertebrates: There are no results on the presence or absence of existing populations and we wonder how details on post-construction can be given in the absence of details on the existing colonizations.	Pre-construction sampling will be conducted. Benthic invertebrate communities will be monitored to assess the rate at which re-colonization occurs, and comparisons will be made between re-aligned and unaltered reaches as construction proceeds.
Gov	Section 6.4.2 Infilling of Wetland: The area to be filled exhibits a wetland vegetation may also provide some natural wastewater treatment which may directly lead to improved habitat quality where fish are found. More study is necessary to deal with this matter.	Any minor loss of passive stormwater treatment through filling of the adjacent wetland as part of the QEW works would be more than off-set by the creation of the formal SWM plan for the highway in this location, which has been designed to not only treat the QEW widening, but also a substantial portion of the existing roadway.

Gov	Section 7, Monitoring: We feel that a monitoring program should also include: descriptions of the approaches and methods to be used including target indicators, Monitoring of the chemical parameters of water quality should be included in addition to the biological monitoring components; A description of the frequency and duration of monitoring efforts; A description on how the monitoring results will be used to adapt and modify current plans; Monitoring the establishment and health of riparian vegetation.	A comprehensive monitoring program is being developed and will be reviewed by Fisheries and Oceans Canada to ensure that it meets their requirements.
Gov	Snow Drift: We are uncertain if the consultant has taken into account the removal of a substantial number of trees in the valley for the actual expressway construction, creek channel alterations and the rehabilitation of the former creek channel. The NEC recommends that additional planting of vegetation within or close proximity to the Niagara Escarpment Plan Area be native species, indigenous to the Red Hill Creek Valley.	In the assessment of snowdrifting conditions for the proposed Red Hill Creek Expressway RWDI assumed the removal of all trees and shrubs within the general area of the proposed construction. In Figures 3 to 7 of our report, the Snow Source Boundary is shown with a green broken line. Our assessment assumed only 0.5 or 1.0 foot high ground cover within these boundaries. All other vegetation was presumed to be removed. The Tables contained in Appendix A of our report show which sites where covered with 0.5 or 1.0 foot high ground cover to minimise the potential for drifting snow.
Gov	Flying Squirrel: regards to the wide-road references, it was not determined in this study, how the squirrel actually crossed. Did it glide, run or access the railway underpass?	Based on the normal movement behaviour of the squirrels, it was assumed that they crossed by gliding as there is available canopy and the distance involved is well within the known gliding range of the species. However their actual mode of movement was not tested.
Gov	We have to conclude that it is extremely unlikely that the flying squirrels will cross the Red Hill Creek Expressway. The flying squirrel habitat will be cut off at the Expressway.	It is considered unlikely that the squirrels will be capable of gliding across gap created by the Expressway. However, the 220 m viaduct may provide opportunities for terrestrial movement; enhancements to encourage such movement will be examined during detailed design.
Gov	The report does not address the amount of squirrel habitat to be lost and fragmented as a result of the construction and related remedial works for the Red Hill Expressway. More work is required to address this issue.	Approximately 0.79 ha of Escarpment forest known to support the flying squirrels will be removed by the Expressway. This will fragment the known habitat, however the 220 m viaduct may provide opportunities for terrestrial movement; enhancements to encourage such movement will be examined during detailed design.
Gov	Description of Van Wagner's and Confederation Ponds are based on conditions before rehabilitation works we undertook in 1998.	This has been updated
Gov	Page 38: 2nd paragraph, existing flows based on current development conditions or on built out conditions, should be clarified.	Our final design is based on build out.
Gov	Page 51: 1st para, last line: editing errors.	Point taken
Gov	We question the conclusion that the loss of fish habitat with some filling in of Red Hill Marsh and Van Wagner's Pond and marsh is not important. It may not be critical habitat but it is habitat.	Point taken
Gov	We support the reconnection of Red hill marsh to the creek as a fish habitat improvement measure. If work within Confederation Park is proposed, we would like to be consulted.	This will occur during detailed design
Gov	Page 65: Fish passage is not a definition of fish habitat.	Point taken
Gov	Page 97: we strongly support the provision of naturalized buffers adjacent to creeks as recommended.	no response necessary
Gov	(RE: Flying Squirrels Report)The project should include the recommended monitoring project to assess the impact of the road and test mitigation methods as a minimum.	The monitoring program will be developed and documented in the Design Report
Gov	We will require the Department of Fisheries and Ocean's approval prior to issuance of a HCA permit.	This is acknowledged.
Gov	(RE: Golf Course): Hole 2: the species, size and condition of the trees should be documented and replaced as part of the Landscape Management Plan.	We have not been mandated to prepare a landscape management plan. When this is to be prepared, we would be glad to participate in its development or, simply, give our comments.
Gov	However, we feel that the authors fail to extend interpretation of their results to the logical conclusion that the Red Hill Creek Expressway, specifically, will have detrimental effects on the southern flying squirrel population. This is not clearly stated anywhere, although substantial supporting evidence is contained within the report and this presumably was the main reason for commissioning the report.	The Southern Flying Squirrel Study concluded that roads have a barrier effect on the movement of southern flying squirrels; in the absence of alternative routes for squirrel movement the Expressway would present a significant barrier to movements by the squirrels. However the extent of negative effects of the Expressway on the population is uncertain in light of the proposal to construct a 220 metre viaduct at the Escarpment that will potentially allow terrestrial movements by the squirrels and other species.

Gov	The narrow road site used in the experiment (Mount Albion) is two lanes wide (page 44), whereas the treatment road (Upper Centennial) is four lanes wide. It seems a logical extension that if narrow roads are crossed less frequently than control or gap sites, and wide roads are crossed even less frequently than narrow roads, then the impact of a very wide road would be substantial.	The Southern Flying Squirrel Study concluded that roads have a barrier effect on the movement of southern flying squirrels; in the absence of alternative routes for squirrel movement the Expressway would present a significant barrier to movements by the squirrels. However the extent of negative effects of the Expressway on the population is uncertain in light of the proposal to construct a 220 metre viaduct at the Escarpment that will potentially allow terrestrial movements by the squirrels and other species.
Gov	The results of the study clearly indicate that the proposed expressway *will* fragment the squirrel population to at least some extent, and the proposed mitigation is entirely untested for flying squirrels at this time. There is no evidence in this study or elsewhere that squirrels would use the proposed 'viaduct' to cross the expressway, and this in fact seems unlikely given that gliding is the preferred means of locomotion in flying squirrels (page 40), and that squirrels were never detected in man-made structures throughout the course of this study (page 44).	While it is clear from the findings of the study on the Escarpment that wide roads inhibit squirrel movements, the possibility of terrestrial movements remains untested. As cited in the Study, there is evidence in the scientific literature that southern flying squirrels are capable of moving on the ground over distances of at least 400 metres between forest fragments. Although it would be technically difficult to test the frequency and direction of nightime terrestrial movements by the squirrels in the vicinity of a busy highway, such movements cannot be ruled out.
Gov	Page 2 of FSReport: · Population estimate "up to 34 squirrels" should read "population estimate of approximately 31 individuals" (page 71).	Agreed. The value of 34 squirrels represents the upper limit with standard error applied.
Gov	Page 3 of FSReport:"There is no evidence that the population is isolated"- this was not tested at all, and this statement should be deleted. The map on page 17 clearly indicates that the areas to the west and east of Red Hill Valley are not currently known to contain flying squirrels. As stated on page 71 "... the presence of mature escarpment forest does not ensure the presence of local flying squirrel populations." Conversely, the statement could read "There is no evidence that the Red Hill Valley population is connected to other populations."	Southern Flying Squirrels were detected as far east as was sampled (New Mountain Road); there are reports that the squirrels are also present further east on the Escarpment, in the Grimsby area. On this basis there is currently no evidence that the squirrel population is isolated.
Gov	Page 3 of FSReport: Add to conclusion 4 "Wide roads have a greater barrier effect on flying squirrel movements than narrow roads, and this effect is unlikely due to the canopy gap." (page 72)	Unfortunately the Study was unable to test the effects of a wide gap in the absence of a road; therefore we cannot conclude that the observed barrier effect is solely because of the wide road. The study design was restricted by available road and gap situations where southern flying squirrels currently are present.
Gov	Page 3 of FSReport: Add a conclusion 5- "The proposed Red Hill Creek Expressway would have a barrier effect on the southern flying squirrel population	The Southern Flying Squirrel Study concluded that roads have a barrier effect on the movement of southern flying squirrels; in the absence of alternative routes for squirrel movement the Expressway would present a significant barrier to movements by the squirrels. However the extent of negative effects of the Expressway on the population is uncertain in light of the proposal to construct a 220 metre viaduct at the Escarpment that will potentially allow terrestrial movements by the squirrels and other species.
Gov	The southern flying squirrel is nationally designated as a species at risk (Special Concern) and is also provincially rare (S3) in Ontario. Section 2.3.1 b) of the Provincial Policy Statement of the Planning Act states:" Development and site alteration may be permitted in significant wildlife habitat if it has been demonstrated that there will be no negative impacts on the natural features or the ecological functions for which the area is identified." Significant wildlife habitat includes the habitat of species of conservation concern as well as wildlife corridors. Clearly, both would be compromised by the completion of this project, to the detriment of southern flying squirrels.	The provisions of the Provincial Policy Statement do not apply to major infrastructure projects, which have been assessed in accordance with the Environmental Assessment Act. The Terrestrial Resources Report concludes that the Expressway project will have significant impacts to ecological functions including migratory use of the Escarpment and valley habitats which form part of primary corridors. This includes effects on the southern flying squirrel; however the proposed 220 metre viaduct could reduce these impacts.
Public	I can't seem to get those last four flying squirrels off my mind. The ones you didn't' recapture. Did they die a slow strangulated death because of these collars?	It is not possible to know what happened to these squirrels.
Public	Any assessment on significant butterflies and other insects in the prairie grasses?	Relative to habitat loss/changes in existing vegetation structure, the impact of light on butterflies and insects is negligible. Mitigation is being proposed to create suitable butterfly habitat in the watershed.
Public	Any assessment on flying squirrels- are squirrels only to be found in the escarpment-linked woods due to lower levels of light at night?	It is not likely that the level of light is an issue, more so the type and state of habitat is more important.

Public	I have reviewed the Southern flying squirrel study and found the work to be reasonable, but lacking in some important elements. The general conclusion that I draw from the report is that the large scale disturbance of road building combined with the resultant habitat fragmentation is likely to do cause significant harm to the population of Southern Flying Squirrels living in the Red Hill Valley. The outcome is likely to extirpate the population, ultimately. Isolation from Dundas Valley (if absence of SFS in habitat between Dundas Valley and RHC has been assessed correctly) puts the Red Hill Valley population at significant risk of extirpation with no rescue population (report Page 34).	Habitat loss is undoubtedly a serious concern to the flying squirrel population. However, it is premature to conclude that flying squirrels will be extirpated from the valley as a result of habitat loss. This is a complex issue that requires further study. The proponent at no time dissuaded such enquiries and was never hesitant to entertain that a PVA that would address such issues was a reasonable approach, only long-term monitoring would determine whether extirpation occurred. That longer-term resources to collect the relevant data on vital rates were not forthcoming is another matter. This study focuses on short-term questions about the immediate and measurable effects of road widths on SFS movements. Creek realignment work does not have the same level of disturbance as the Expressway construction. As the creek construction area is much narrower and will minimize vegetation destruction impacts. In some areas a closed canopy may be able to be maintained.
Public	First, we know that the Southern flying squirrels are classified as S3 by the MNR. The biology of this species suggests that they sensitive to human activities and therefore of special concern (Page 7 report). We also know that some S3 status species are susceptible to large scale disturbances. It should be obvious that road construction represents a large scale disturbance to a small valley habitat. This disturbance seems to have been neglected in any discussion of the effect of the road on flying squirrels.	The affects of road operation are discussed in general in the Terrestrial Report, and recommendations are made for mitigation (noise, light, crossings). Refer to Section 4.2. During construction, impacts to adjacent areas, outside the corridor will be minimized through fencing restrictions on equipment etc. Recommendations have also been made (times of clearing), to minimize impacts.
Public	Aside from direct damage from the road, the carving of habitat into smaller fragments is known to be harmful to Southern flying squirrels (Stabb and Aird 1990; Page 28 report); isolating sub-populations and increasing the risks of local extinction (Page 44 report). Failure to find Southern flying squirrels in Chedoke Civic Ski club is troublesome and consistent with population failure with fragmentation by roads (403 and Jolly cut; report Page 34). Site evaluations and the presence/absence study revealed that the squirrels are restricted to areas of the escarpment – note that these are the areas of the valley that are most free of roads with the largest forest fragments. (report Page 24) Report supports this argument about forest fragments needing to be large (report Page 28). Montgomery Creek site (North of Greenhill) lacked squirrels and seems to have been cut off from the RHV population by the two lane Greenhill road (report Page 34)	It is not possible to say, with the information available, that Greenhill is a barrier to Southern Flying Squirrel movements.
Public	A 4 lane road is a greater barrier than lesser roads (report Page 55). The planned expressway with increased traffic is likely to be an effective barrier indeed! The width of the Red Hill expressway will exceed the maximum known gliding distance of a SFS. The additional disturbance of increased traffic will strengthen the effectiveness of the barrier. Roads have a barrier effect on SFS and wider roads have a greater barrier effect (report Page 77). King street appears to be an effective barrier to movement by SFS and this is to be expected with the construction of a 6 lane expressway – the report prepares us to expect this highway to be an effective barrier. (report Page 56).	This is correct. The Expressway is likely to act as a barrier, however it is not known the extent to which it will effect the Southern Flying Squirrel population.
Public	The proposed 200 m long viaduct through which the squirrels are expected to move seems poorly thought through. How wide will it be? How will it be vegetated properly to favour movement by the squirrels (Page 8, report). The report suggests that Southern flying squirrels avoid clear cut areas (report Page 45). It seems unlikely that they will cross a viaduct unless it is properly vegetated. Despite one squirrel crossing highway 20, the 118 m gap at King street may be a significant barrier (report Page 28).	The purpose of the 220m viaduct is to provide a crossing for Bruce Trail/Red Hill Valley hikers and wildlife as well as to minimize the impacts to surrounding landscape and visual environment. At this point it is not clear if Southern Flying Squirrels will use the area beneath the viaduct, however consideration for other wildlife species has been done. A long viaduct like this, increases the permeability of wildlife movement. King Street presently constitutes a barrier now as there are no Southern Flying Squirrels found north of there, and will continue to be a barrier.
Public	Study 1 suggested a population viability study and simulation examining the effect of removing the habitat that would be lost to the road – It did not appear that such a study was undertaken. Why not?? (See Page 18 report).	This will be explained in the Final Southern Flying Squirrel Report. The practice of follow-up monitoring is being called upon more widely in the planning and landscape design literature, because we know that too many times (when new issues like this one about road effects on SFSs arise) opportunities to learn from past experience that could inform present decisions simply have not been seized upon. When the RHC Expressway is built, then the opportunity to study it pre-, during and post-construction on flying squirrels will be extremely valuable for future road designs or considerations.
Public	The recommendations are poor – 1. monitor effect of the expressway on SFS – Most likely outcome based on the	It is not possible to make this conclusion at this time.

	reported absence of SFS from habitat fragments, large scale disturbance and the barrier effect of the road – another population of SFS extirpated!	
Public	Recommendation 2 – erect poles – we don't even know if they are gliding across and they will not be able to make it all the way across anyway – temptation to become splattered on windshields of Buffalo-bound diesel trucks?	Areas where artificial gliding platforms are recommended, are areas where the risks from vehicles are minimized. If Southern Flying Squirrels will cross, it will be at night when traffic volumes are reduced.
Public	Recommendation 4 genetic analysis of gene flow – would only indicate a genetic connection and would not at all address the issue of whether a population was isolated enough to become extinct. Gene flow would restrict genetic divergence but not demographic failure unless the connections were very good	Population extinction is believed to be governed by environmental, demographic and genetic stochastic factors. To make the best possible predictions about the fate of a population, it is advisable to study more than one of these factors. If gene flow is occurring between populations then individuals must be moving between them. The degree of interconnectedness could be assessed through population genetic studies.
Public	Finally, The proposed testing of hypotheses about the impact of the road on Southern flying squirrels as a monitoring effort is most likely to bring scorn upon the decision makers who favoured the road if it is allowed. Alternatively those folks could recognise various risks, including the decimation of flying squirrels by disturbance during construction, habitat fragmentation, and road kills. It is clear that road construction will have very negative consequences for this sensitive species.	It is clear that the road at a minimum will act as a barrier and will eliminate habitat for the Southern Flying Squirrel. However at this time the extent of that impact is not possible to predict. Mitigation and monitoring measures may alleviate some impacts and help to understand long-term effectiveness of mitigation.
Stakeholders	I strongly disagree with the conclusions of C.Portt and G.Coker, that the present fisheries habitat will be improved by the proposed 7km reconstruction of the Red Hill Creek. Their thinking ignores three facts. 1. The Red Hill Creek Fisheries habitat is already improving. 2. Money intended for creek realignment needs to be spent on water control measures and watershed protection on the mountain. 3. The Creek and the Valley are interdependent. A water table change or Expressway runoff could kill countless trees and leave creek banks exposed.	We believe that our conclusion is correct. The approach that is being adopted is consistent with the watershed management plan.
Stakeholders	Even if flows are reduced to a point that might allow the possibility of a healthy, dynamic stream channel, excessive erosion of the new channel seems almost certain before mature trees and their root systems can become established. Construction of the new channel will result in the loss of large riparian trees. Even in sections that use the 'paleo channel', estimates indicate that trees will be removed for several meters from the edge of the new bank. Such tree removal will effectively remove all canopy cover over the entire Creek. This will cause direct exposure to solar warming and cause high stream temperatures further stressing the aquatic system.	The in-stream structures that have been proposed for Red Hill Creek have been used very successfully in the past to mitigate bank and bed erosion. These structures serve as transitions to allow mature riparian vegetation to develop along the stream banks and act in the future as continued in-stream mitigation's of near bank shear stress.
Stakeholders	Portt and Coker (2002) have made only a brief mention of salmonid spawners and further comment on specific issues warrant mentioning here. C. Portt and Assoc. (1997) go to great lengths to dispute that the salmon smolts (actually parr) captured kilometres upstream in Red Hill Creek were naturally reproduced.. It seems far more probable that this parr was naturally reproduced. Regardless of the origin of the young salmon, the fact remains that adult Chinook salmon spawn in the creek and that parr of this species are present. It can thus be concluded that suitable fish habitat exists for both life stages of this species	The fish fauna of the creek is consistent with a warm water stream. This view is supported by Fisheries and Oceans Canada.
Stakeholders	As Hamilton Harbour continues to recover under the Hamilton Harbour RAP, healthy tributary streams will be directly required for the perpetuation of many harbour species, including forage species such as common suckers and cyprinids, as well as predators such as northern pike.	Point taken
Stakeholders	Specific concerns are warranted for the lower reaches of the Creek. The expressway plans require further disruption of this reach including the removal of part of the leachate collection for the Rennie dump, and the removal of 70,000 cubic metres of highly toxic material from this landfill. This poses very obvious serious risks to the creek, fish populations and the marsh. Thus, there are two major changes to the creek channel in this region, with the additional risk of exposure to a potentially disastrous toxic spill into the creek if the new channel fails.	Comments regarding the removal of 70,000 cubic meters are inaccurate (See Contamination Report)

Stakeholders	In the present report by Portt and Coker (2002), the significance of groundwater is minimized with the following statement on page 4: "Below the Escarpment the underlying Queenston shale has low permeability, as does the overburden in most areas. As a consequence, there is relatively little groundwater infiltration or discharge." No further mention of groundwater discharge or its potential importance to the RHC fishery is made. In contrast, the hydrology technical report, by Terraqua Investigations Ltd. (1997), identified a 'major groundwater discharge zone' in the reach halfway between King Street and the escarpment. Thus, the stream temperatures moderated by this major groundwater discharge zone demonstrate excellent cold water potential for the lower RHC watershed	The groundwater report by Blackport does not support this conclusion.
Stakeholders	Since the overall maximum temperature for the reach of RHC in question was 24.5C, the thermal conditions are relatively close to those reported from the lower Wilmot Creek. As such, it would be realistic to suggest that the existing temperatures in this reach could potentially support cold water species such as rainbow trout.	The approval body for this work is Department of Fisheries and Oceans.
Stakeholders	Unfortunately, it is apparent that Portt and Coker (2002) have not considered the effect of the RHCE project on groundwater discharge from a fisheries perspective. The channel re-alignment above King Street directly overlaps the only 'major groundwater discharge zone' on the lower portion of RHC. As such, this channel re-alignment may have a significant influence on groundwater discharge and could have serious consequences to the existing and potential fisheries resources throughout the remainder of the watershed. A thorough investigation into these matters would be prudent to prevent risking a permanent harmful alteration.	The approval body for this work is Department of Fisheries and Oceans.
Stakeholders	The re-alignment calls for the removal of several structures noted as barriers. One of these, the concrete saddle above King St. is a relatively minor structure that no longer appears to function as a barrier to fish passage. An inspection of this structure in November 2002 revealed that recent channel adjustments (due to the collapse of high bank) have raised the water level below, reducing the drop from 60cm to something less than 20cm.	The cross-sectional profile of the King St. box culverts will be altered as part of the NCD process. See pg 129 Figure 2.7 of WRIS (2002).
Stakeholders	The channel will begin to erode, and redefine its boundaries. This will create a tremendous amount of initial sediment loading that will move downstream and dump into Windemere Basin. This loading will accelerate the filling of the Basin and translate into larger and more frequent dredging costs. Dredging in Windemere Basin last occurred in 1988, and now eleven years later is needed again. At its current level, the basin may not hold the material that will be flushed out of the newly created channel. If this happens, sediments will begin to pass through to Hamilton Harbour, further hindering the objectives of the Hamilton Harbour Remedial Action Plan.	The erosion rates of the proposed channel will be significantly lower than that of the existing channel (See WRIS (2002) pp.186-187). However there will always be a first flush of sediment through a newly opened channel. Since most of the channel will be constructed in the dry, the amount of sediment entering the stream will be minimized. From previous monitoring of restoration projects, the amount of suspended sediment associated with the "first flush" is typically less than what is observed during a 50% bank full discharge flow.
Stakeholders	Although the City contends that up to 500m of additional fish habitat will be created by a longer channel, this will be more than negated by the addition of 6 new bridges (not to mention 1 emergency bridge, 4 golf course bridges, and 4 pedestrian bridges	The NCD approached was optimized to minimize the number of bridge crossings associated with the new creek. However, as noted on pg 188 (WRIS, 2002) criteria were specified for the minimum clear span of expressway, arterial, golf cart and pedestrian bridges such that the natural function of the stream channel and adjacent flood plain would be sustained as a founding criteria of the NCD approach. The spanning criteria were established to minimize the potential for stream channel erosion associated with infrastructure of the valley.
Stakeholders	The report makes no reference to the planned re-location of Red Hill Creek within the study area. This omission compromises the report because it fails to make any reference to the impacts of this relocation project on the natural environment in close proximity to the proposed impacts resulting from the expressway project and the resulting cumulative effects	The purpose of this report is document the results of the escarpment crossing workshops with stakeholders. The impacts of the creek relocation are documented in several other technical reports.

Stakeholders	The report makes no mention of significant mammal species impacted by the proposed expressway escarpment crossing.(Southern Flying Squirrel) The presence of this population was not confirmed until the summer of 1999, several months after this report was finalized. Thus the omission is understandable but further compromises the report. It is clear that decisions reflected in this report were made prior to this confirmation and without considering the impacts on this significant species.	The report was completed before the flying squirrel was identified as a species of concern. The updated Terrestrial report addresses the flying squirrels and possible mitigation associated with the escarpment crossing. If anything, the viaduct provides a better opportunity for squirrels by having an option to cross under the expressway rather than over or on it. If there is no viaduct, the only option is run across the road. The City will also look at opportunities to create gliding platforms for the squirrels to use.
Stakeholders	The report notes the presence of significant wildlife habitat and significant species in the study area. However, it fails to examine the specific impacts of the project on these species. it provides no assurances that wildlife will be able to continue using this corridor if the escarpment expressway crossing is put in place	Refer to the Terrestrial Report for specific impacts and mitigation.
Stakeholders	Table 1 suggests that the proponent intends to install lighting along the proposed expressway, including along the viaduct. However, the impact of this lighting on nocturnal wildlife is not considered in the report.	Lighting will only be located at the ramps and at the interchange intersections.
Stakeholders	The southern flying squirrel is nationally listed as a "Species of Special Concern" (COSEWIC), being particularly sensitive to both anthropogenic and natural disturbances of the natural environment. Provincially, the Ontario Ministry of Natural Resources has designated this species with an "S3" ranking, meaning southern flying squirrels are considered rare to uncommon. An official provincial status has yet to be assigned. As a result of the 1991 Natural Areas Inventory, this species was designated as regionally "rare to uncommon" (Heagy and Ross 1995).	See Appendix 5 of the Final Terrestrial Report for a fact sheet (Status of Species) for a detailed discussion of species designations.
Stakeholders	The main conclusions of the six studies conducted by Dougan and Associates is that an apparently viable population of southern flying squirrels estimated at 34 or more individuals, currently inhabits the Red Hill Valley, and that the members of this population encounter increasing difficulties in crossing increasingly wider roads. The objectives of the first study conducted by the authors included a population viability study but this apparently was not done. It would seem to be an important requirement.	The population size for the grids sampled in the valley was estimated at a mean of 34 flying squirrels. The actual population size is likely much larger and extends outside of Red Hill Creek valley. The known distribution of southern flying squirrels in the City of Hamilton stretches along the escarpment from about Gage Ave. east to New Mountain Rd. Due to time constraints we were unable to utilize trapping grids to assess flying squirrel density at each site sampled. We also were not able to complete the distribution study for the city and surrounding areas. Consequently, it is not reasonable to conclude anything about what is "core habitat" given the present data. Only when the southern flying squirrel distribution and relative abundance are known will we able to confidently identify the flying squirrels "core" habitat. Population viability analyses (PVA), which assess the risk of population extinction in a given time period, require the use of population specific vital statistics (i.e. birth rates, death rates, etc.). The collection of these data can take several years. It is advantageous to use long-term data that reflects temporal variation in those statistics to model more realistic outcomes. It was decided that due to time and resource limitations, a PVA could not be carried out at the time of the study. Instead we focused on the immediate effects of roads on the movement of flying squirrels to investigate whether it might be possible to mitigate potential RHC Expressway impacts.
Stakeholders	It would have been helpful if the authors had provided some additional information about the gliding activities of southern flying squirrels. They note that the longest recorded glide is 75 metres. Was this from a tree to a tree? What was the vertical distance travelled? Was the glide entirely within an area of the forest or did it occur over open ground (or a road)? The studies undertaken would seem to suggest that gliding activity usually occurs within a forest and that gliding across an open space is increasingly rare as the distance across the space increases. But what is the normal preference or habit of the southern flying squirrel? Is there evidence that crossing open areas is a regular or an infrequent activity?	With the information available on Southern Flying Squirrels, it is inferred that crossing open areas is indeed an infrequent activity and crossing wide roads is also an infrequent activity.
Stakeholders	The proposed expressway is five lanes wide in the area of the escarpment, but the bridges and escarpment cut will be of a width that can accommodate seven lanes (three in each direction and one extra climbing lane). The road cut at the escarpment face will be about 80 metres wide and approximately 12 metres deep. After passing through the face of the escarpment in this cut, the road will go onto an elevated bridge (viaduct) that will be about 200 metres in length. Since	Further research is needed to determine the potential effects of landscape structure on gliding ability, however it is reasonable to assume that Southern Flying Squirrels will not cross wide spaces frequently. There is no evidence that restricted movement will necessarily lead to compromised population viability. Such inferences, however, are not unreasonable given the information in the broader "road effects" literature. Even there, there is little published data on the effects of road-restricted movements on population viability and further research into the Red Hill SFS situation could make a huge contribution to our knowledge

	there is no record of a squirrel travelling more than 75 metres in a single glide, it would seem very unlikely that squirrels will even attempt, much less succeed, a crossing at the escarpment expressway cut.	in this area. Refer to the Final Terrestrial Report for a discussion of mitigation and monitoring options.
Stakeholders	In addition, it must be recognized that southern flying squirrels can't fly. They actually glide and this motion requires that the squirrel begins a distance above the ground and the destination is necessarily a lesser distance from the ground (or actually onto the ground). The distance they are able to glide is reliant on the height of the object from which they 'take off'. For them to glide over a road will require that large trees are located on both sides of the road (if the large trees on only on one side, the squirrels won't be able to glide across in both directions). A successful crossing over the road while it is elevated on a viaduct would seem even more daunting since this structure will be some distance off the ground.	The ability of a flying squirrel to cross the road will likely be influenced by the height of take-off platforms (i.e. trees) above the road, not necessarily the elevation of the road itself. Despite the lack of information on viable crossing of roads, the Terrestrial Report suggests several options for increasing the potential for squirrels to cross the road, either over or under. It is not likely that Southern Flying Squirrels would glide over the viaduct, but at this time we do not know if they would go under the viaduct.
Stakeholders	The study also has little to say about predation of southern flying squirrels or the effect of the proposed expressway on these predators and their activity. The creation of a wide clear-cut swath in the valley for the expressway would make travel of the squirrels more difficult, if not impossible. In addition, any attempt by the squirrels to cross this gap, either over the road or under the viaduct would likely make them much more susceptible to owl predation than if they were to remain in the forest. One of the known effects of habitat fragmentation created by roads is the elimination of the normal predators of raccoons and a resulting long term increase in numbers of raccoons. Indeed, in severely fragmented habitats, raccoons become regular feeders on human garbage, gardens and other opportunistic food sources. It would have been helpful if the authors of the studies had considered the impact of the proposed expressway on predator-prey relationships involving flying squirrels.	For instance, predation rates can be compared in a continuous forest habitat versus fragmented habitat. That said, by any standard, there is viable SFS metapopulation in the highly fragmented landscape of Haldimand-Norfolk, the individuals of which (judging by genetic data) must be moving freely despite the openness of the terrain between the woodlots (most often >> the gliding distance of SFSs), and the (presumably) increased densities of raccoons. Again, the basic biology of SFSs is so little understood in this regard, that the evidence about the effects of fragmentation, generally, appears to form a large body of conflicting assertions and untested assumptions. Therefore at this time predator-prey relationships and the impact on Southern Flying Squirrels as a result of the road are not understood.
Stakeholders	Southern flying squirrels are nocturnal mammals. The expressway will not only create a large barrier in the middle of their habitat, but this road will also be lighted and create a much wider area which is never darkened, day or night. This would presumably increase the barrier effect of the expressway. It would have been helpful in understanding the potential impact of the expressway, if the authors of the study had examined the response of flying squirrels to light pollution, or had at least conducted a literature review on this matter. If the squirrels are to travel under the viaduct, they will have to cross a lighted area to get under the viaduct, then an area under the viaduct in shadow, followed by a second lighted area, and most to all of all three areas will be barren of trees.	Currently, there is no literature (that we are aware of) available on the effects of light pollution on flying squirrels. However lights are only present at on-ramps and intersections. High mast lighting is not proposed. Detailed design will address mitigation which will concentrate the light on to the road and not on to the adjacent natural environment.
Stakeholders	Southern flying squirrels are distinguished by their high-pitch calls which are believed to be used by them to indicate location, issue warnings about predators, and may also play a role in other inter-squirrel communication. The expressway, both in construction and in operation, will create a major noise impact in an environment that is currently one of the quietest in Hamilton. It would have been helpful if the authors of the studies had investigated the impact of high noise levels of southern flying squirrels, or at least had undertaken a literature review on this matter.	No current literature that we are aware of addresses the issue of noise on Southern Flying Squirrels. Refer to the noise fact sheet on impacts to mammals and birds in the Final Terrestrial Report Appendix.
Stakeholders	An additional potential threat to the health and viability of the southern flying squirrel population arises from vehicle emissions and other degradation of air quality. Since these creatures are mammals, it can be expected that they may suffer ill effects from air pollution generated by the vehicles using the expressway. Cantox (1998) warned that these impacts were so severe that human children and the elderly should be warned to avoid the valley if the expressway is constructed.	The Air Quality and Health Impact Assessment Report have been updated to more accurately discuss air quality impacts. However, further research is needed on the impact of emissions on Southern Flying Squirrels.

Stakeholders	The 200 metre viaduct is presented in the study as a potential though unproven way in which flying squirrels may be able to overcome the barrier effects of the expressway. The absence of flying squirrels in areas where such viaducts exist is presented in the report as a barrier to drawing firmer conclusions on this matter. It should be noted that vehicle movement on King Street is much less than the north-south expressway will present to the squirrels.	The lack of viaduct road sites with flying squirrel presence in their vicinity, has prevented investigation of the movement of flying squirrels below such structures. It may not be possible to find a site similar to the proposed Expressway to examine its potential impacts. For instance, the King Street viaduct differs structurally from the proposed expressway viaduct (it is not as long, and less clearing between the ground and the bottom of the deck. It is also not adjacent to the Expressway). At present, we agree that it is a reasonable inference that flying squirrels are not utilizing the existing viaduct located below King Street just west of Mt. Albion Road, since we failed to detect the squirrels in the northern of King Street yet confirmed their presence south of it in Red Hill valley.
Stakeholders	In considering the potential of the proposed viaduct as a way for flying squirrels to overcome the barrier effect of the expressway, it is worth considering the condition of the existing viaduct at King Street, and a larger one located further north at Queenston Road which was constructed at the same time. Construction of both these viaducts occurred more than a decade ago, but there is no woody vegetation whatsoever that has succeeded in colonizing the barren landscapes under these viaducts. Even grasses are absent from large areas under each viaduct. It is noteworthy that the proponent was responsible for both viaducts and has shown absolutely NO INTEREST in vegetative or other rehabilitation of the areas under and adjacent to these viaducts. Consequently, it should be assumed that the conditions under the proposed viaduct for the expressway will be similar to these condition. Since southern flying squirrels are a forest species, and showed avoidance behaviour in the studies of open areas, it might be expected that they would be unlikely to utilize the area under the proposed viaduct at the escarpment.	Since the area beneath the viaducts at King St and Queenston Road were the proposed locations of the Expressway lanes, long-term vegetation was not established. Both interchange locations were seeded following construction in 1991. The draft Landscape Management Plan proposes long-term revegetation at both sites.
Stakeholders	While it is interesting and worthy of study to determine the barrier effects of roads on southern flying squirrels, there are other likely impacts on this vulnerable species as a result of construction of the proposed Red Hill Creek Expressway. The most obvious one is loss of habitat. This must be added to the already existing barrier posed by Mt. Albion Road (including residential areas and a golf course) since the forest cover remaining between the expressway and Mt. Albion Road will be extremely narrow. When these cumulative impacts are considered, it is not difficult to conclude that the Red Hill Valley flying squirrel population will be extirpated. Unfortunately, the authors of the study did not explore this possibility, perhaps because the proponent did not direct them to do so and/or dissuaded them from doing so.	Habitat loss is undoubtedly a serious concern to the flying squirrel population. However, it is premature to conclude that flying squirrels will be extirpated from the valley as a result of habitat loss. This is a complex issue that requires further study. The proponent at no time dissuaded such enquiries and was never hesitant to entertain that a PVA that would address such issues was a reasonable approach, only long-term monitoring would determine whether extirpation occurred. That longer-term resources to collect the relevant data on vital rates were not forthcoming is another matter. This study focuses on short-term questions about the immediate and measurable effects of road widths on SFS movements. Creek realignment work does not have the same level of disturbance as the Expressway construction. As the creek construction area is much narrower and will minimize vegetation destruction impacts. In some areas a closed canopy may be able to be maintained.
Stakeholders	Southern flying squirrels exhibit a rather unusual method of winter survival. They gather together in a single tree hollow or other sheltered location and use their collective body heat to avoid hypothermia and reduce energy loss. Up to 50 squirrels have been found in a single such hibernaculum. Thus it might be expected that the entire Red Hill population may share a single such site to survive during the winter months. Despite trapping each individual squirrel in Red Hill Valley many times, the authors of the study don't report on the discovery of any nest or hibernation sites in the Red Hill Valley.	Since very little is known about how/why Southern Flying Squirrels nest, it is proposed for mitigation to clear trees but not uproot or grub the surface, in late summer/early fall in order to give the squirrels an opportunity to find hibernation locations elsewhere.
Stakeholders	If the expressway proceeds, it should be noted that southern flying squirrels have two breeding periods and that young squirrels remain in the nest for six to eight weeks. Tree removal during these two periods should obviously be avoided. In addition, removal of trees in the late fall or through the winter may result in removal or disturbance of a (perhaps the only) hibernaculum.	At this point it is not known if winter roost trees are located in the path of the Expressway. Trees within the road and creek corridor (South of King Street) will be removed outside the winter season when squirrels are unlikely to use them. The optimal time to remove potential nest sites is late summer/early fall. Artificial sites (nest boxes) have been utilized by Northern Flying Squirrels and this approach is recommended here even though the use by Southern Flying Squirrels has not been established. It should be noted however, that in the absence of evidence of the effects of damaging winter roost trees on population viability, this approach of pre-clearing of the sensitive areas and providing artificial sites would be consistent with the precautionary approach.

Stakeholders	The report is also silent on the likelihood of southern flying squirrels to nest or carry on activity in close proximity to human activity. It is known that this species is rarely observed and that it prefers forest habitats, both of which suggest that it may normally avoid human activity areas. The study was able to catch flying squirrels within 20 metres of major roads like Centennial Parkway, but it should be noted that this was accomplished using a highly aromatic bait mixture (peanut butter, beer, molasses). Would the squirrels normally be found this close to a roadway if they weren't being baited?	There is anecdotal evidence that Southern Flying Squirrels are pests in cottagers' and homeowners' attics in many parts of the province. Southern Flying Squirrels currently exist in a heavily urbanized environment. However they are nocturnal and are rarely seen by humans. Radio Telemetry work showed that Southern Flying Squirrels were observed to move across and be close to roadways, while bait was not being used. (ie: Bait does not appear to be a deciding factor).
Stakeholders	Roadkill rates have been shown to vary with road width, traffic levels and vehicle speed. The study authors note that increased mortality due to vehicular collisions can have significant detrimental demographic consequences for populations of conservation concern. Effects of roads can become manifest in wildlife populations in ways other than simple avoidance or death; roads may act as barriers to dispersal (thereby preventing recruitment to populations relying on immigrating individuals), or act as barriers to movement between adjacent natural areas.	This was acknowledged in the report. The potential impact to wildlife as a result of the roadway is well-documented in the report.
Stakeholders	The 6-lane proposed expressway would physically fragment the escarpment habitat, potentially segmenting the local squirrel population, thereby increasing the risk of local extinctions of smaller isolated populations (Dougan and Associates 2002). The report indicated that a "wide road" (such as the proposed Expressway), "could have negative impacts on the distribution of the southern flying squirrels if it limits small local populations from receiving immigrating squirrels from other areas". Given the road construction and stream re-location plans, and their adjacent impact areas, five contiguous acres of suitable habitat may become a rare commodity in Red Hill Valley.	Flying squirrel habitat spatial requirements in and around the City of Hamilton need to be further investigated. The normal range and amount of contiguous habitat required by the Southern Flying Squirrel is not known.
Stakeholders	Finally proposals are advanced for possible mitigation by building "artificial trees" near the expressway. The authors candidly admit not knowing whether such structures will be used by the squirrels, or will be useful to them. Indeed the effect may be to lure them into a fatal attempt to cross the expressway. Flying squirrels are able to manoeuvre in flight around trees and other stable objects, but it is unlikely they will have the same ability to avoid 18-wheelers hurtling down the escarpment at high speed.	The proposed use of artificial glide take-off platforms are meant to allow flying squirrels safe passage above the road and associated traffic. Only mitigation and monitoring can establish if such structures are helpful in road crossings.
Stakeholders	the report recommends utilizing the planned expressway as a way of "testing" whether or not squirrels will be able to accommodate themselves to this obstacle. Would a similar 'study' be proposed to see whether or not children were able to cope with the increased air pollution imposed on their schoolyard?	The practice of follow-up monitoring is being called upon more widely in the planning and landscape design literature, because we know that too many times (when new issues like this one about road effects on SFSs arise) opportunities to learn from past experience that could inform present decisions simply have not been seized upon. When the RHC Expressway is built, then the opportunity to study it pre-, during and post-construction on flying squirrels will be extremely valuable for future road designs or considerations.
Stakeholders	This reconstructed channel is an enormous undertaking of unprecedented proportions and the possibility of design flaws leading to channel failure is high. It appears that the authors have presented the 'extreme upside' of such an experiment, and the consequences of partial or complete failure could result in the Creek gravitating towards a further degraded state than its present condition (with the added stress of re-colonization of the aquatic community including benthic invertebrates and fish). As such, we strongly recommend the design deserves a rigorous and unbiased, out-of-province peer review by recognized experts in the field of fluvial geomorphology and NCD.	An independent peer review was requested by WRIS in 1999 of the natural channel design project by one of the most well know river restoration experts in the World. Mr. Dave Rosgen of Wildland Hydrology (Colorado) has undertaken an independent peer review of the project and the review was received by the City of Hamilton in February of 2003
General Concerns		

Stakeholders	In the first paragraph we have a prime example of circular logic. Mention is made of decisions "reinforcing the need for additional transportation capacity". First we decide to build a road, then we create a need for the road to justify our decision to build it in the first place. The section ends as it began, providing a long quotation from the 1996 Regional Transportation "Review" that is intended to justify the need for the road. What it neglects to point out is that this 1996 "Review" ASSUMED the Red Hill Valley Expressway would be built, and made no attempt whatsoever to evaluate whether it was needed.	This land use assessment is not meant to be a historical record of the Red Hill Creek Expressway project. Some historic information was provided in the initial two chapters of the report to put the report into context. The Declaration Order provided approval for a process to make design changes to the Expressway and assess the impacts of the design changes. It was never intended to be a new environmental assessment that would re-examine need for the project.
Ground & Surface Water Quantity and Quality		
Gov	On Page 30 we are unclear as to the reason behind the selection of the storm event of September 17, 1976 as being the most appropriate event for discrete simulations based on creek flow and volume response. Why the scale of a storm even 25 years ago would be considered as opposed to the scale of more recent storm events?	Over 30 years of rainfall and meteorological data was used in the analysis. The 1976 storm event was used as an indicator only- statistical analysis were used for all calculations.
Gov	Can the City advise that the stormwater management system proposed for the Red Hill Creek Valley is to be based on more recent storm events that are predicted to be more intense in the future?	Currently approved methods by MNR and HCA were applied to hydrologic calculations. These inherently take into account any trends and changes.
Gov	In that the upper reaches of the Red Hill Creek watershed are relatively non-urbanized, what are the predicted effects of sediment loading on the watershed in future now that the areas above the Escarpment come on for subdivision development, and the Regional Official Plan Amendment NO. 9 has been approved extending the urban boundary into Glanbrook?	Any effects will be minor as the majority of the watershed has been developed. The source components that would be derived from this area in the future are principally washload which will be part of the load that is substantially smaller than bedload (I.e. the grain size fraction which will be most supportive of fisheries habitat).
Gov	We had some trouble deciphering what the symbols were on Figure 1-8 on page 14. In particular, two colours (light green with cross-hatching and brown, open triangles over a yellowish-orange background) were not identified on the legend.	Light green with cross-hatching were glacio-lacustrine caly/sit. Brown with open triangles is the Halton Clay Till
Gov	Page 153: forth para, please clarify that future flows under future expected development conditions have been accounted for and what impact this will have.	That is correct. The figure references the majority of agencies / policies, however, there are specifics, and in the case of the report the NEPD Act could also be included. This figure was copied from a previous MNR document.
Gov	Erosion and sediment control measures will have to include a soil analysis to identify necessary soil amendments and seed selection to ensure a fast and complete revegetation.	Detailed Erosion and sediment plans will be proposed for Detail Design.
Gov	Table E-1 what is the impact of ultimate development on these pollution loads?	Refer to the Updated table in the Impact Assessment Design Process: Surface Water and Water Quality.
Gov	Report should clearly state whether or not private property is affected by the Regional Flood event and if the proposed Greenhill and Davis stormwater management facilities will affect private property or the ravine slope stability.	Flood units are maintained on Public lands. Slope stabilization woks will accompany detail design.
Gov	Page 30, why is volume an important determinant for this? Typically only peak flow is used.	Volume is an indication of erosion potential.
Gov	Page 31, an additional 20% pavement should probably be included? Would additional shoulders associated with this and is additional pavement equal to additional shoulder area?	This has been included.
Gov	Page 32, we recommend that the project include HEC-2 modelling of the final design in order to have an accurate record for use in future works.	This is complete and will be provided to HCA upon final design, as with new floodplain mapping.
Gov	Page 33, the 76 meter elevation is the 100 year event for Lake Ontario and the Regulatory flood for that waterbody. Hurricane Hazel is only applicable in inland waterways.	Correct, report now notes this.
Gov	Pages 38,43 identify proposed channel velocities. These should be used in the natural channel design.	This information has been provided to the stream designer for use in designing stream structure.
Gov	Page 40, it has not been statistically determined what return periods storm event Hurricane Hazel is, therefore it is misleading to indicate the range specified and present this type	Reference has been removed.

	of information. It can be stated that Hurricane Hazel exceeds any known analysis.	
Gov	Page 46, why is future imperviousness not used?	In order to conservatively assess the percentage impact of the expressway.
Gov	Page 69: Although the proposed flood plain excavation is Red Hill Marsh is not recommended as a final option for flood control purposed, we believe it still has merit for improvements to the aquatic and nearshore habitat and should be considered.	It remains an opportunity and will likely form part of a compensation plan for the QEW widening impact mitigation.
Gov	Page 71: describes an alternative for flood control that would affect Confederation Park. The report does not recommend this as a preferred option. If there is a change, we would like to be consulted.	HCA is an operator hence is a directly affected stakeholder who would certainly be advised.
Gov	Page 82: Total row first two and last two figures appear to be incorrect.	Correct, report has been edited.
Gov	Page 85: the reduction in TTS seems low given the existing creek erosion. Does this include the impact as a result of natural channel design.	It does not incorporate the reduction anticipated from creek stabilization works.
Gov	Page 86: Escarpment Facility, what is the impact of the diversion of Montgomery Creek? We are reluctant to support a diversion.	The minor diversion was incorporated and approved as part of the Montgomery Creek class EA in 1997.
Gov	Page 87: a quantity control area is being proposed along Davis Creek. Will this project include repair of eroding sections of this creek as it is identified as a high priority in the Natural Channel design report?	The Stormwater management facility final design will need to integrate the associated impacts on the stream, fish access, slope stability and terrestrial resources.
Gov	The plans must identify what monitoring and maintenance is required and who will carry out these functions as identified in the report.	The report outlines these in generic form; additional detail will be offered as part of monitoring plans for DRO and others.
Gov	Page 6, there is no reference to the Niagara Escarpment Planning and Development Act in Figure 1-3.	That is correct. The figure references the majority of agencies / policies, however, there are specifics, and in the case of the report the NEPD Act could also be included. This figure was copied from a previous MNR document.
Gov	Page 11 first paragraph, sediment was only collected for a short period by MOE and only at the Queenston Rd station.	Point taken
Gov	Page 191: second para: we are not aware that sediment is currently monitored at the Queenston Rd flow station. A monitoring program should be implemented as recommended. Who will pay for the construction and annual maintenance of the new flow monitoring station?	This will be jointly discussed between the City of Hamilton, the HRCA and Environment Canada to ensure that all requirements and needs with respect to a monitoring station are achieved.
Gov	Page 187: what is the quantity of sediment from the upper watershed that enters the system?	This question is documented on pgs. 66-76 of the WRIS (2002) report. Based upon the suspended sediment rating curve developed for the Mount Albion gauge, approximately 3,000 tonnes / year.
Gov	Page 31, erosion sensitivity of the analysis is based on the Hannon Creek subwatershed maintaining the remaining floodplain and riparian corridor. The plans for these neighbourhoods should be reviewed.	Land use issues in the Hannon Creek Sub-watershed will be dealt with through the proposed Hannon Creek Subwatershed Study.
Gov	Page 37 second last para. These comments have a bearing on the Mountain Brow Blvd Crossing/Central Mountain Stormwater Management Class Environmental Assessment.	These comments will be evaluated for their impact on Mountain Brow Blvd. Crossing as part of the Mountain Brow Blvd Crossing/Central Mountain Stormwater Management Class Environmental Assessment.
Gov	The ponds proposed on holes 11 and 14 will create water features to alter the difficulty of the golf course. These ponds must be off-line. What will the source of water be and if they are used for irrigation a Permit is required from the MOE. The creek sections through the golf course fairways, tees and greens should include a natural buffer of uncut grasses and shrubs. (Recommend a min width of 15 meters for warm water fishery)	The ponds are off-line since the creek is non-existent. If they determine that it is still an active creek bed, then we will have to reassess the pond configuration. The water source will be storm water run-off and will be "topped-up" by the irrigation system. The old creek section running through the golf course would remain the same. If they are referring to the new creek section, I was under the impression that the slopes on the creek design were also the naturalized buffer zone. If they want another 15 M over and above the slopes, then there will be a change in turf varieties chosen and the difficulty factor will increase marginally.

Gov	The use of the Regulatory Storm event (Hurricane Hazel), 100 year flood event. Thus infrastructure will be at risk of damage and lives may be placed in danger. This is contrary to Provincial Planning Policy, which takes a preventative approach to flood protection. It is recommended that the document identify what recent provincial highways were not constructed to the Regulatory event and why, and evaluate the environmental and economic impacts of constructing this road to the Regulatory event, including the cost of replacement.	Provincial Highway Standards are for the 100 year event; the Regional event is examined on terms of importance but not with the intent of remaining flood free. Flood proofing to the Regional event would substantially increase the footprint and thereby cause additional environmental impacts while decreasing available storage.
Public	Clean water and good sewer systems is very much in need and most important.	Agreed.
Stakeholders	An additional concern surrounding the proposed storm water ponds is the issue of groundwater contamination if constructed on permeable soils. Many expressway contaminants may percolate through the soil to the water table (see section on groundwater impacts) where they can migrate as contaminated groundwater and potentially be discharged into the creek	Any minor loss of passive stormwater treatment through filling of the adjacent wetland as part of the QEW works would be more than off-set by the creation of the formal SWM plan for the highway in this location, which has been designed to not only treat the QEW widening, but also a substantial portion of the existing roadway.
Stakeholders	Even with the stabilizing measures proposed, a "fresh" channel carved in the Red Hill Valley floor would soon fail given the severity and frequency of the uncontrolled flood pulses that now plague the Creek. Thus, moderating the current flow regime will be essential if any possibility of success is expected	The creek design in plan profile, longitudinal profile and cross-sections has been designed to be commensurate with the erosion characteristics of the sediments within the valley such that adverse erosion to the bed and banks of the creek do not occur . Moreover, the types and number of in-streams structures being proposed are used to further mitigate any additional erosion that may occur during the period when vegetation begins to take root along the banks of the stream and offer additional resistance to channel erosion. The frequency and duration of bankfull discharges were a key component in the stability design analysis and incorporated into the design specifically. Often is the case in urban streams, the frequency of bankfull discharge increase and thus more frequent access to the flood plain in required to dissipate additional energy caused by the change in overland flow characteristics. The new alignment of Red Hill Creek accounts for the changes in bankfull frequency and access to the flood plain to reduce stream energy.
Stakeholders	Why are rich archaeological sites like the Iroquois Longhouse Village found near Rosedale Arena not afforded immediate government protection for future generations?	The heritage policies in the Ontario Provincial Policy Statement state in the case of archaeological resources that "development and site alteration may be permitted on lands containing archaeological resources or areas of archaeological potential if significant archaeological resources have been conserved by removal and documentation or preservation on site. " The information from the site, generated through removal or archaeological excavation , is indeed being conserved for future generations. Moreover, the landscape plan, while allowing for the creek to be returned to its original channel, thereby ensuring the optimal benefit for the natural environment, will provide many opportunities to interpret this important chapter in the City's past.
Stakeholders	Storm water management ponds are proposed at various locations within the valley (Portt and Coker, 2002). However, such ponds remove only a portion of the stormwater's contaminant load; what settles out is trapped in sediments that will continually need to be removed and disposed of as hazardous material. Properly designed stormwater ponds would be expected to help reduce the high levels of contamination created by expressway runoff, but the overall impact to the RHC watershed and Hamilton Harbour will surely be a net increase in loadings of heavy metals and other pollutants.	The statement offered is true, even the best Stormwater management practices are only 70-80% effective. Because of this the City has committed to removing additional contaminants from existing sources (not the expressway) to offset any increase. This is the highest standard (ie. no net increase) and goes beyond normal Provincial requirements.
Stakeholders	In fact, such stormwater ponds will only lessen the effect of the additional area of hardened surface introduced to the watershed through the construction of the expressway. The situation will be further exacerbated through the increase in surface hardening directly related to the new and rapid urban development associated with the expressway.	The statement offered is true, even the best Stormwater management practices are only 70-80% effective. Because of this the City has committed to removing additional contaminants from existing sources (not the expressway) to offset any increase. This is the highest standard (ie. no net increase) and goes beyond normal Provincial requirements.
Stakeholders	It is also worth noting that a 30% reduction in recharge in the sensitive groundwater areas is expected as a result of the RHCE works (cited in the Draft Summary Report, 1997). The City of Hamilton has previously proposed mitigation by designing storm water infiltration facilities (basins and trenches). However, this will impact groundwater quality by introducing contaminated recharge water likely high in sodium and chloride and possibly other pollutants. It is therefore imperative that any proposed stormwater ponds do not contaminate any existing/future groundwater discharge to the	There is no groundwater connection to the stream, hence there is no impacts associated.

	Creek.	
Stakeholders	Considering the severity of these findings from the QEW and the fact that stormwater runoff from the RHCE will essentially be the same (or possibly worse due to higher traffic volumes), it is imperative that there be no possibility of untreated stormwater runoff entering RHC.	Refer to the Impact Assessment Design Report: Surface water and water quality. Co-ordinated program intends to have a net improvement in loading.
Stakeholders	WRIS are suggesting a virtual reconstruction of the entire 7km Red Hill Creek! Its time to focus on the source of the flooding problem and move to control water flow over the escarpment by protecting and enlarging the creek's flood plain/watershed on the mountain.	The creek solution proposed by WRIS reflects watershed conditions and takes into consideration the stormwater management in place on the mountain at Dartnall Road and Stonechurch Road.
Stakeholders	STREAMS: Why did it take five months for this study to be released to the public?	All of the 2002 draft reports were released at once. The stream report was released shortly after it was submitted to the Department of Fisheries and Oceans.
Stakeholders	How can a project so fundamentally different from the original, NOT be subject to another EA process?	The basic concept of a 4-6 lane road and the location of the road had already been established and approved in 1985. The changes being proposed are design changes that further reduce environmental impacts.
Stakeholders	Why are recent 'natural channel design' advances seen as important enough to 'delay' the Expressway project, while advances in modern medicine and climate change impacts are not?	The natural channel design is an integral part of the Expressway design as it influences bridge and culvert design.
Stakeholders	How can local councillors oppose a re-examination of the Expressway Project, given that this report warns of staggering 'economic costs in perpetuity' under the 'accepted' 1985 study?	Councillors are considering all of the impacts of the project in making their decision.
Stakeholders	How could Madame Justice Dawson deny Ottawa's intervention in January, without the benefit of information contained in this current study dated, June 19, 2002?	The federal court case addressed the applicability of the Canadian Environmental Assessment Act to the project. It did not need to look at the current impact assessment work to make that judgement.
Impact Assessment Design Process		
Gov	It can not be stressed enough, as recommended, that the selection of designers and contractors for this aspect of construction is critical to ensure that the realignment will be successful. A general tendering process should not be undertaken.	Agreed.
Public	How come that the citysent of Hamilton cannot "soo hom an his freands" for the increased cast of the millions of $ they hav added to the cost of this road construction.I'm all for freadom of expretion of openions, but there must be away where a small goop of peaple canat fores their will on the majority without being financaly resposible for thair action.How can we sop this nonsence?	The City encourages public input on projects to understand the issues that are important to the community and to address those issues. However, there are times when it is not possible to come to an agreement even though every effort has been made by all parties to do so. The City respects these differences of opinion.
Public	The opponents should be allowed to submit their top 100 reasons why this project should not proceed and the City of Hamilton should respond in writing to each concern to make it's case why those reason should not individually or as a hole put an end to this project. If the City can provide convincing reasons why those concerns are of little importance or inaccurate then the project would be given support by the community to proceed based on a cost benefit analysis and dependant upon the projects affordability.	The City has carried out an extensive public consultation program in which the public has expressed their concerns and interests. The City has responded to all of the questions and comments. A cost benefit analysis has also been carried out. Council has been made aware of all reports and assessments of impacts.

Stakeholders	This report is dated February 1999. It was kept hidden from the public until October 2002, a period of three years and eight months. Requesting comments from the public 44 months after the document was published would appear to mean one of two things: a) Either the report was submitted to the Niagara Escarpment Commission (NEC) long ago and consequently the comments now being solicited from the public will not be considered by the NEC which has long ago received and perhaps responded to the report; b) Or the report has not been submitted to the NEC and is now 44 months out-of-date and will have to be revised before being submitted. This would also suggest that public comments are superfluous, or at least partly a waste of time.	The report was submitted to the NEC and the recommendation subsequently approved. The contents of the report were based on government and stakeholder input. The City is asking for comments so that potentially other helpful ideas could be incorporated.
Stakeholders	Reference is made on page 4 of the report to an Escarpment Crossing Design Working Group. Such a group is not envisioned in the Exemption Order and its existence has not previously been made public. It also appears that this "working group" played a very significant role in the decisions related to the escarpment crossing design and may effectively be the 'authors' of this report (who unfortunately are not provided beyond "The Former Region of Hamilton-Wentworth", a body that no longer exists. We note that the document incorrectly states that "the same groups participated on the GAC and CSC". In fact, neither the Hamilton Region Conservation Authority nor the Niagara Escarpment Commission participated on the CSC.	The reference should be GAC or CSC.
Stakeholders	The report begins by stating its purpose and the three elements that it "documents". Unfortunately, the second of these three elements ("how the NEC have been involved") is barely mentioned. There is no mention of the fact that NEC representatives testified before the Joint Board and stated the NEC's opposition to the project. These omissions restrict the ability of the public to provide for a proper review of the document, and contribute to a generally misleading 'history' of the project and the interactions of the proponent and NEC provided in the report	The purpose of the document was to document the results of the design workshop not to document all stakeholders history of involvement in the project.
Stakeholders	The section of the report labelled "1.1 Expressway Approval" provides several examples of a misleading and sanitized 'history' provided by the report. The first entry is six years after the project was approved by municipal councils in 1979 and thus neglects to mention the opposition of the NEC to the project during that period. The "1985" section neglects to note that the "approval under the Environmental Assessment Act" granted by the Joint Board was by a 2-1 split decision and that the only representative of the Environmental Assessment Board very strongly dissented on the need for the expressway, alternatives to the expressway and alternative locations for an expressway.	It is not the intent of each technical report to review the details of the project history but rather to provide an overview.
Stakeholders	After that Exemption Order was requested, the province changed the terminology of such orders to "Declaration Order". This new term appears to be much more attractive to the proponent and consequently has been adopted. However, the fact remains that the Region did NOT request a Declaration Order. It requested an Exemption Order, and the shame of both the province in granting an exemption and the proponent in seeking an exemption should not be expunged from history. Note that the following statement in this report is thus factually wrong: "The Region subsequently filed this document in the form of a Declaration Order submission with the Ministry of the Environment for approval."	Either term refers to the same section of the EA Act. However, because the Act changed after the submission was made to the ministry, it has continued to be confusing for the public to understand.
Stakeholders	On pages 4 and 5 the report provides a description of the impact assessment process. The Exemption Order set out six components of this process. The report mentions the second, fourth and fifth components and says that steps two and four are both completed and the fifth step is nearing completion. However, no mention is made of step three which requires that "proposed changes to the approved design" be finalized.	The City is currently finalizing the design changes.

Stakeholders	Page 6 of the document refers to a decision of the Region to confer with "directly affected stakeholder groups". There is no identification of who these groups were, or how the Region decided who was "directly affected". Friends of Red Hill Valley was not notified of this selection process, nor offered an opportunity to participate in this "selected" group.	Directly affected stakeholders included the Iroquois Bruce Trail Assoc. (the trail is being relocated) , the Hamilton Conservation Authority (they led the trail development in the Valley in the mid 1990s), the Niagara Escarpment Commission (it is within their planning area) and the former City of Hamilton Parks Department (they were responsible for recreational faculties in the Valley). This group developed and evaluated alternative designs for crossing the escarpment to reduce the environmental impacts of the crossing. The preferred alternative included the construction of a viaduct. The public has had an opportunity to comment on this report through the October 2002 review.
Stakeholders	Page 36 of the Dillon report contains a categorically false statement. "With the exception of the impacts associated with the creek realignment, all of the above impacts were taken into consideration in the original environmental assessment." This is utterly false and it is certain that the authors of the report know that it is false. The evidence is overwhelming and admitted by both municipal and provincial authorities.	The purpose of this assessment is to fulfill the requirements of the Declaration Order. The Declaration Order provided approval for a process to make design changes to the Expressway and assess the impacts of the design changes. It was never intended to be a new environmental assessment that would re-examine need for the project.
	Land Uses	
Gov	Golf course: Majority of the work on the golf course will consist of grading associated with the reconfiguration of tee decks and the construction of two ponds in the former creek channel as a replacement of the creek along fairways No. 11 and 14. Pond configurations are roughly estimated and depths are not provided. More work is necessary. The City is advised that a Development Permit from the NEC will be required for the final plan involving any alterations to the golf course layout, the design and depth of the ponds, and any remedial works proposed for the existing channel.	The City does not agree that an additional permit is required and has informed the NEC of this in writing. The City will continue to meet the conditions of the original permit and work with the NEC staff.
Gov	There is no mention of whether the baseball diamonds on the west side of the Red Hill Creek valley are to be re-established anywhere within the Valley.	The draft Recreation Master Plan proposes options for replacement of playing fields.
Gov	We conclude that generally the trail experience for users will be degraded in certain areas, from what exists today.	A draft Recreation Master Plan proposes a new trail system to replace the sections of the trail that will be removed for the road and creek construction. However, the experience of a trial adjacent to a road will be different from the existing trail system.
Gov	Centennial Park throughout the document should be Confederation Park. Page 27	This has been changed.
Gov	We should be consulted on the landscape plans in the area (Confederation Park), and the Expressway project should include reconnecting the Interpretive Trail to the Breezeway. If any fish habitat compensation is required in Confederation Park, we should also be consulted as recreational and other uses of the ponds will need to be considered.	The draft Recreation Master Plan (including the trail) and the draft Landscape Management Plan are available for review. The Conservation Authority will also be advised of the fisheries habitat compensation work that is being proposed in Conservation Authority managed lands.
Gov	Page 2: The City of Stoney Creek Multi-use pathway, Pedestrian and Cycling Route Master Plan Study, June 1995 should be reviewed.	The draft Landscape Recreation Master Plan reflects the City's current trail planning in the area.
Gov	Figures 2 and 3. We suggest the existing trail and CSO pipeline symbols be changed to differentiate these two features better. Section 3 speaks to a number of facilities and structures that are not illustrated on figures and probably should be. (eg: Rennie and Brampton street landfills and on street bike paths)	These changes will be made
Gov	Figure 2: the trails through Confederation Park should be illustrated, particularly the interpretive trail from Nash Rd N to Van Wagner's Beach Road along the old rail bed. Felkers Falls Conservation Area should be shown.	These changes will be made
Gov	Figure 3: we note that the Eramosa Karst boundaries have been refined from what is illustrated.	The boundaries in the report are based on the most current information available from the City.

Gov	Page 13: Confederation Park West concept Plan (1999) - Will these trail changes and other facility changes as a result of realignment of Van Wagners Beach Road, be funded by the City as part of the RHC Expressway Project as with other trails that are affected?	The connection to the abandoned rail bed will be re-established at the Burlington Street Interchange. The area that is affected by the Burlington Street interchange realignment and the Van Wagners Beach Road realignment will be funded through the Expressway project.
Gov	Page 25: Chippewa Rail Trail should be labelled, figure 3. The design of the Red Hill Expressway should take into account the connection (Chippewa Trail & Escarpment Rail Trail) and this should be discussed in this documentation, (Page 27 under Expressway effects?)	These changes will be made
Gov	Page 15 and 32: With the relocation of the creek, the additional trail sections will be disturbed. The reinstatement of the trail should be part of the project and included in the design plans as recommended.	The trail redesign and re-establishment is documented in the draft Landscape and Recreation Master Plan
Gov	Page 35: middle of first paragraph. It is probably an overstatement to indicate that there will still remain a net gain in habitat area over what is present now'. The expressway itself will destroy the ecological corridor as noted in the table and several reports.	This was in reference to the QEW area for wetland and fisheries habitat. It will be clarified.
Gov	Page 35 and 36: the Davis Creek Subwatershed Plan and stormwater works at Albion Falls are not finished projects with defined outcomes as implied by the text. We would hope that future development 'will give consideration' to various policy documents.	This will be clarified.
Gov	Appendix A, you probably spoke with Janet Wong at this organization rather than Julie and Confirmation Park should be Confederation Park.	These changes will be made
Gov	Hole 6: should this be "there is no direct impact"? The plans in the Appendices are illegible and we are not able to review.	The table appears fine. A "typo" in our report should read "No direct impact". No appendices prepared.
Public	Any comparison of loss of economic potential in neighbourhoods along the expressway like what happened to by-passed communities between Ottawa and Montreal when the 417 was opened between them?	This road is going through an established urban area. It is expected to provide access to the commercial/industrial areas of the city rather than to act as a bypass.
Public	Where can I find info on what the land around the Linc/Red Hill junction is zoned as? If the majority is residential, I would seriously consider my support of this project. I never thought I'd say that, but we NEED industrial development in this city, not more residential.... take a look at the QEW, 401 etc.... Any help you can give me about my zoning question would be greatly appreciated.... or email addresses to folks at the city who deal with this sort of thing.	The Land Use report summarizes the land uses and approved development in this area. The report is available at all City libraries and it is on the Red Hill Valley Project website which can be accessed from the City website. The Expressway is needed to service residential, commercial and industrial lands (Glanbrook Industrial Park, Munroe International Airport.
Stakeholders	Reference is also made to the Parks Master Plan which curiously has nothing in it to PROTECT and ENHANCE existing parks or to increase the number of parks. Other municipal documents could have educated the Dillon authors that park space per person in east Hamilton is already substantially less than accepted standards before the further destruction of parkland envisioned in the expressway project	Staff are researching this matter further.
Stakeholders	In the Kings Forest area we need a route, not on roads but preferably through woodlands, to link up with the rail trail below Mountain Brow Boulevard. The suggestion that the Bruce Trail be routed "possibly along the existing channel" of the creek is obviously unsatisfactory, as it would be leading the Trail away from the escarpment!	The Bruce Trail will be reconnected in the Kings Forest area at the base of the Escarpment and will not lead away from the escarpment. A pedestrian bridge will be provided to accommodate the relocation of the creek in this area.

Stakeholders	The comment that the Bruce Trail bridge is 'no longer needed' under the new alignment of the creek is very misleading. The bridge may have to be relocated, but we still have to cross the Red Hill Creek. A bridge will be needed in a suitable place near the foot of the escarpment. A shared pedestrian/cyclist bridge at Greenhill Avenue would not be suitable for the Bruce Trail.	The Bruce Trail will be reconnected in the Kings Forest area at the base of the Escarpment and will not lead away from the escarpment. A pedestrian bridge will be provided to accommodate the relocation of the creek in this area. In addition, the Bruce Trail will be relocated to cross under the Expressway viaduct at the base of the escarpment. The bridge at Greenhill Avenue was not intended to be a Bruce Trail connection as it is a community access point for the Red Hill Valley trials.
Stakeholders	If they have decided to swallow the official myth that the Lincoln Alexander Parkway completed five years ago is "a portion" of this expressway, they might have contributed something useful by undertaking a study of the impacts of that "completed portion" on the lands adjacent to the Linc., an evaluation could have been made of the impacts of the expressway on residential land values adjacent to it and how they have changed (compared to other parts of the City) with the construction and operation of the Linc. They might have also conducted a useful study of whether or not there were health impacts recorded among the population subjected to living beside the Linc.	As noted, the focus of this land use assessment was on the north-south portion of the Red Hill Creek Expressway as per the terms of reference in the Declaration Order. The Declaration Order focuses on assessing the impacts of the design changes for the north-south section of the Expressway. As such, there was no review of the Lincoln Alexander Parkway.
Stakeholders	Reference is also made to the Red Hill Creek Watershed Plan, but no mention is made of the fact that this plan was prepared ASSUMING the construction of the Red Hill Creek Expressway.	The Red Hill Creek Watershed Action Plan did not address specific developments within the watershed, rather it established the issues that need to be addressed, goals and objectives in six theme areas. Specific actions that could be taken by stakeholders to address these issues were then identified. This information will be added to the appropriate section of the Land use Assessment Report.
Stakeholders	The report contains a great deal of material which is largely irrelevant to the expressway project. The section on upgrades to the Woodward Avenue Sewage Treatment Plan is an example. There could have been consideration of the impacts of expressway pollutants on the open air digesters of the plant, but none is provided	The information included in the report on the Woodward Avenue Sewage Treatment Plant for example, is meant to show the other development activities that are taking place within the vicinity of the Expressway. There are no open digesters at this facility.
Stakeholders	Mention is made by the Dillon authors of the Rennie and Brampton landfill sites, but curiously nothing is said about the Nash landfill site located directly in the path of the proposed expressway. However, the Dillon authors forget to mention this history and forget to even mention the toxic contents of these dumps. Instead they take the occasion to praise their own work.	The Nash landfill referenced by the reviewer is a historical fill site located on the east side of Red Hill Creek, across the creek from the closed Brampton Street Landfill. As part of the Erosion Control and Leachate Management Project for the Rennie Street and Brampton Street Landfill sites, the historic fill was excavated and transported off-site for disposal at licensed disposal facilities. As such, the referenced Nash landfill no longer exists.
Stakeholders	The Dillon authors do mention that the expressway will "overlap" some of the remedial work, but don't bother to admit that it will require removal of a leachate collection system installed earlier this year. They mention that some "waste" will have to be excavated. This excavation is likely the single most dangerous activity in the expressway construction process. Why don't the Dillon authors include these remarks in this study?	The work required at the Rennie Street location includes modification of the southern part of the leachate collection system (approximately 150 meters out of 1276 meters) installed under the Rennie Street Class Environmental Assessment. It will also require the excavation of approximately 70,000 m3 of waste and the installation of a retaining wall in the southern part of the dump site. The waste must be removed in order to provide a space for the road and is 5 % of the overall Rennie/Brampton site. The Draft Summary report Volume 2 identified the need to carry out this excavation and to install a retaining wall and a leachate collection system. That report also indicated that a site health and safety plan would be developed for the public and workers onsite. See the Contaminated Sites Impact Assessment Report for more details. It is not anticipated that evacuation of the neighbourhood would be required.
Stakeholders	The Dillon authors note that "there may be a need to expand the capacity of the trunk sewer" in Red Hill Valley. This is a very significant statement. If modifications are required to the trunk sewer line, then obviously these should be carried out AT THE SAME TIME as other construction work planned for Red Hill Valley such as the expressway and the CSO pipe. If this is not done, and expansion is deemed to be required, what's left of the valley ecosystem will be severely disrupted again. It is incumbent upon the City of Hamilton to make a final determination of the need for this sewer expansion, and/or for any repair or other work	As noted in the report, the need for any increase in capacity of the Red Hill Creek Sewer Trunk Line is being reviewed. There is no immediate need for additional infrastructure. If it is determined at some point in the future that additional capacity is required the City will have to follow the Municipal Class Environmental Assessment which includes looking at alternative locations.

	on this line, prior to any decision to begin construction work in the Red Hill Valley	
Stakeholders	The discussion on Recreation and Open Space by the Dillon authors on page 13 of their report neglects to mention the presence of a provincial Class One Wetland. It also fails to note the existence of a portion of the Red Hill Valley trail and a pedestrian bridge (currently disrupted by the remedial work associated with the area's dumps). The existence of this trail is not mentioned until the review of the "middle" section of the valley. Does this mean that these recreational facilities will not be replaced and rehabilitated?	Recognition of the VanWagner's Marsh and Red Hill Marsh as provincially significant wetlands and mention of the trails north of Barton Street (referred to as the lower section in the report) will be added to this section of the report. The omission of this information is not intended to suggest that the trail and pedestrian bridge will not be replaced. A Recreation Master Plan for the Valley is being developed and is included in the draft Landscape Management Plan for public review. It takes into consideration the existing and proposed pedestrian bridges and trails.
Stakeholders	Again in the "middle" and "upper" sections, there is only minimal reference to the homes of people located along the valley. On page 17 the number of baseball diamonds north of Greenhill Avenue is incorrectly given as four (there are five). While there is admission that these diamonds will have to be removed, and that three other diamonds south of Greenhill "will be affected" by the Greenhill CSO facility, the report doesn't tell us how many of these facilities will be replaced. The answer provided by the Dillon authors is "some" (a term usually meant to mean three or more). I believe the use of "some" is deceptive.	The City is developing a Recreation Master Plan for the Valley that will identify the number and type of recreational fields in this area. It is included as part of the draft Landscape Master Plan that is available for public review.
Stakeholders	On page 18 the Dillon authors tell us that there is a "cap" on the number of residents in Heritage Green. An honest report would have noted that this "cap" has been raised twice in the past (essentially each time it looked like it might be exceeded soon).	The information in the report reflects the current situation as provided by the City.
Stakeholders	The Dillon authors note that some of the expressway and related projects may require more private lands, but they offer no information on what these are. Similarly, we are told the trail will be relocated but exactly where remains a mystery, what will happen in the golf course is being "worked on", a master plan is being developed but is not yet available, there will be "some modification" to the landfill leachate collection system at Rennie, there may be other projects "emerging from the WINS plan", etc. Perhaps this is another example of the "creative" approach of the City to public consultation whereby incomplete reports are presented for comment, the comments are never responded to, and comment is not permitted on the final versions of the report	The details of the Red Hill Creek Expressway project are not finalized. Specifically, the location of the trail will be decided after the public review of the draft Recreation Master Plan and, the extent of modifications required to the Rennie Street Landfill leachate collection system will be developed in the detail design. As noted in Table 3, the Landscape Management Plan and the Design Report will provide additional information on these issues. The need to purchase additional land also depends on the final design of the expressway, creek and trail. Potential impacts related to the Golf Course are discussed in the Golf Course Impact Assessment Report. Work to be carried out in the Golf Course is being done in consultation with Golf Course Staff and membership. The Draft Summary Report Volume 2 identifies a number of other stakeholder groups who will be involved in further discussions through the design process.
Stakeholders	The Dillon authors admit that some of the rehabilitated and revegetated areas north of the Rennie landfill will be removed but assure us that "there will still remain a net gain in habitat area over what is present now". Since what is present now is either barren or only planted in the last few months, this claim, at least, should be within the reach of the municipality.	The Fisheries and Existing Conditions and Predicted Impact Report (C. Portt and Associates) states that "The construction of the Red Hill Creek Expressway will have major impacts upon the aquatic ecosystem of the Red Hill Creek watershed. However, as a result of careful planning and design, and the incorporation of works to mitigate historical impacts, the net result will be a healthier aquatic ecosystem than the one that currently exists." Pg. 59. The intention in the land use assessment is to suggest that even though the expressway construction will remove part of the remediated creek, this net result of a healthier aquatic habitat is still expected.

Stakeholders	There is an admission on page 35 that the expressway will "result in an increase in traffic along Greenhill Avenue". This is almost certainly true, but why is Greenhill Avenue the only street that the authors think will be affected? What will happen to traffic on King Street, Lawrence Road, Queenston Road and Barton Street -- all streets that will be fed by interchanges or other traffic structures associated with the expressway project? What will the impact of this increased traffic on Greenhill (and almost certainly on the others noted) be on the land use beside these arteries? What will it mean for the residents who "use" the adjacent lands for their homes and businesses? Why isn't such basic information included in this so-called "land use assessment"?	Chapter 4 of the land use assessment report will be revised to reflect that residents along Greenhill Avenue will have increased traffic and subsequent noise and air quality impacts as well as other disruption effects (such as increased waiting times to access driveways) associated with the new interchange. However, other areas will have less traffic as a result of road closures (Mount Albion Road, Potruff Road, Melvin Avenue). The roads that connect with the Expressway are major arterial roads with the capacity to handle additional traffic volumes.

5.0 Appendices

Appendix I: List of Released Reports

State of the Watershed Report	October 1997
Draft Summary Report Volume 1	November 1997
Draft Summary Report Volume 2	August 1998
Red Hill Creek Watershed Action Plan – First Generation Plan	October 1998
Surface Water and Stormwater Quality	1997/1998
Air Quality Assessment	1997/1998
Air Emission Inventory	1997/1998
Thermal Dynamics in the Red Hill Valley	1997/1998
Noise Assessment	1997/1998
Health Risk Assessment	1997/1998
Visual Resources	1997/1998
Groundwater	1997/1998
Fisheries	1997/1998
Terrestrial Resources	1997/1998
Cultural Heritage Resources Assessment	1997/1998
Summary Impact Assessment and Design Report	1997/1998
Kings Forest Golf Course Impact Assessment Study	October 2002
Stream Network Inventory, Fluvial Geomorphologic Assessment and Preliminary Natural Channel Design	October 2002
Inventory of Population and Assessment of Impact of Expressway on Southern Flying Squirrels	October 2002
Post-Construction Monitoring of Air Quality on the Lincoln M. Alexander Parkway	October 2002
Pre-construction Ambient Air Quality - King Street	October 2002
Niagara Escarpment Expressway Crossing Alternative Design	October 2002
Snow Drift Modeling	October 2002
Economic Assessment of Impact to Businesses at the QEW Interchange	October 2002
Land Use Assessment	October 2002
Assessment of Updated Auto and Truck Forecasts	December 2002
Traffic Forecast for Noise and Air Quality Assessment	December 2002

Appendix II: List of CSC Members

George R. Barclay	Hamilton-Halton Home Builders
Manny Bastos	Labourer's International Local 837
Tony Battaglia	Tradeport International Corporation
Marilyn Baxter	BARC/RAP
Paul Beneteau	The Bruce Trail Association
Barbara Blake	Centennial Ratepayers' Group
Mr. Ross Godsoe (replaces Karan Mechar)	Hamilton-Burlington District Real Estate Board
Rick Guidolin	Hamilton-Halton Construction Association
John Hall	Hamilton Harbour R.A.P.
Jim Harvie	Citizen's Expressway Committee
Glenn Higgins	Ministry of Transportation
Lorne Hubber	East Mountain Industrial & Business Park
John Jacina (replaced Gord Cocks)	Mount Albion Home Owners' Association
June Koppeser	Citizen's Expressway Committee
Robert Korol	Citizens For a Sustainable Community
Leo Laviolette (replaces Bruce Baillie)	HAND Association of Sewer & Watermain Contractors
Sally Leppard	Lura Consulting
Ruth Liebersbach	Hamilton & District Chamber of Commerce
Joseph Mancinelli	Labourer's International Local 837
Barry McSween	Tradeport International Corporation
Pauline Mitchell	Canadian Automobile Association
Ernie Monkley	East Mountain Industrial Park
Brian O'Donnell	Mount Albion Home Owner's Association
Fred Pizzoferrato	Centennial Ratepayers' Group
Mary Wiebe	Citizen's Expressway Committee

Appendix III: CSC Terms of Reference

COMMUNITY STAKEHOLDERS COMMITTEE

Terms of Reference

January 28, 1998

Notice to Reader

This Terms of Reference was prepared by the Terms of Reference sub-committee of the Red Hill Creek Expressway Community Stakeholders Committee and approved by the CSC by consensus on January 28, 1998. Members of this Committee are:

Burke Austin
Ruth Liebersbach
Karan Mechar

The sub-committee acknowledges the input and discussions from the CSC as a whole which substantially improved our earlier efforts.

January 29, 1998

TERMS OF REFERENCE
Community Stakeholders Committee
Red Hill Creek Expressway - North-South Section

PREAMBLE

On March 5, 1997, an Order in Council from the Provincial Government's Executive Council exempted the Regional Municipality of Hamilton-Wentworth from conducting an environmental assessment under Section 5 of the Environmental Assessment Act for proposed alignment improvements to the North-South section the Red Hill Creek Expressway, and for the detailed design and construction of an interchange connection to the Queen Elizabeth Way.

In 1985 a Joint Board approved the North-South alignment of the Red Hill Creek Expressway. The Region applied for an *Exemption Order* to Section 5 to permit it to reduce environmental impacts by improving the alignment, and to construct an interchange connection, while maintaining its construction schedule.

A three-component Impact Assessment and Design Process is under way by the Region to determine a final design for the Red Hill Creek Expressway North-South Section. The three components are: Stakeholder Consultation Program; Approvals/Permits; and, Impact Assessment and Expressway Design Changes. A four-phase Impact Assessment and Design Process (IADP) is now being implemented by the Region which includes:

- Description of the existing/future environment;
- Prediction of Net Environmental Impacts;
- Evaluation of the Proposed Design Changes in comparison to the Approved Expressway and selection of the Burlington Street and QEW interchange; and,
- Detailed design, construction and post-construction commitments.

The Region and its consultant team (The Region) is committed to implement its IADP in a fashion which integrates government agencies, community groups and the public through a process which encourages the exchange of ideas and information, clarifies positions and expectations and enables participants and the Region to work cooperatively to develop an Expressway design that reduces impacts to the Red Hill Creek watershed.

This document outlines the Terms of Reference for a Community Stakeholder Committee (CSC) including its goal, purpose, responsibilities, membership, organizational structure, operating procedures, work program, reporting procedures, and mechanisms for dispute resolution.

STATEMENT OF PARTICIPATION

WHEREAS the Region has requested that community stakeholders form a committee (CSC) to provide advice and assist it in conducting the impact assessment process outlined in the *"Red Hill Creek Expressway North-South Section Exemption Order"* submitted in May 1996 and issued on March 5, 1997; and,

WHEREAS it is understood that community stakeholders hold diverse positions relating to the advantages and/or disadvantages of constructing the Red Hill Creek Expressway in the proposed location; and,

WHEREAS community stakeholders have agreed on the desirability of involving the public and community stakeholder groups in the Impact Assessment Process; and,

WHEREAS Community Stakeholders and the Region recognize:

- THAT some community stakeholders fully support the construction of the Expressway; and,
- THAT some community stakeholders fully oppose the construction of the Expressway; and,
- THAT some community stakeholders are neutral relating to the construction of the Expressway.

THEREFORE, the Region and participating Community Stakeholders understand:

- THAT the Region values the volunteer participation of community stakeholders and the public;
- THAT as the Expressway project continues to proceed, community stakeholders will work together to make sure the Expressway is designed and constructed in the best way we can;
- *THAT* a balanced CSC membership will assist in ensuring that its advice reflects a balance among environmental, community and economic issues and costs;
- THAT the CSC will strive to provide advice and recommendations to the Region which is reflective of the expertise of all participants; and,
- THAT the Region will fully consider the CSC's advice and recommendations, and ensure that mechanisms are in place to resolve concerns in order to avoid substantive project delays and additional costs.

AND, IT IS UNDERSTOOD AND AGREED THAT stakeholder participation on the CSC may not be construed by any party to mean that participants necessarily support or oppose the Red Hill Creek Expressway Project.

1.0 GOAL AND PURPOSE OF THE COMMUNITY STAKEHOLDER COMMITTEE

1.1 Goal

- To provide a balanced, inclusive discussion and advisory forum for community members and stakeholders to pro-actively collaborate with, and provide advice and recommendations to the Regional Municipality of Hamilton-Wentworth relating to all of the effects regarding the proposed alignment and the QEW interchange for the north-south portion of the Red Hill Creek Expressway.

1.2 Purpose

To provide advice and recommendations to the Region regarding the four phases of the impact assessment process, in particular:

- the structure, membership and rules of procedure for the CSC;
- the community consultation plan and public outreach activities;
- the CSC's proposed work plan and schedule;
- review data, provide advice and recommendations regarding alignment refinements (including the visual impacts and design process for the Niagara Escarpment crossing);
- review impacts of the proposed alignment and provide advice and recommendations;
- review and evaluate alternatives and selection of preferred alternative regarding the QEW Red Hill Creek Expressway interchange; and
- to recommend advice on the Burlington Street interchange options, subject to clarification of its inclusion in Exemption order;
- mitigation measures for community and environmental impacts; and
- compensation measures (regarding aquatic habitat destruction under the Fisheries Act).

To consider any matters referred to it by the Region relating to the Watershed Planning Process and the Red Hill Creek Expressway and provide advice and recommendations as requested.

To assist in identifying and providing insight into community concerns, such that issues can be discussed and resolved.

To examine and advise on issues brought forward to it by members of the broader community (which specifically relate to our goal and purpose, and within the

context of the Expressway Impact Assessment and Design Process), including businesses, residents, local community organizations and neighbourhoods.

To review reports, studies and other documents that may be referred to it by the Region, its consultant team, or other community organizations, and provide input, advice, and recommendations to the Region.

ROLES AND RESPONSIBILITIES

2.1 Community Stakeholder Committee

The CSC will function as a multi-sectoral review and advisory body to the Region. Its role will be to review all aspects of the Impact Assessment and Design Process and provide timely advice and recommendations.

To fulfil its role, the CSC and its participants will:

- develop and follow a work program which takes into account the Region's time table, and the time and resources required for the CSC to adequately fulfil its purpose;
- determine, through discussions with the Region how and when community concerns will be addressed/incorporated/resolved as part of the project's work plan;
- take into account the work of the Watershed Planning Process including the issues and targets that could be affected by the Expressway. In the event that the Watershed Plan identifies actions that should be taken by this project, the CSC will work with the Region to develop the actions at an appropriate level of detail;
- provide advice which is reflective of a broad range of community, economic and environmental perspectives and expertise;
- ensure liaison, communication and review of the CSC's deliberations with their respective stakeholder groups, where appropriate;
- promote communications and public participation in the community and convene workshops, public meetings and/or open houses where appropriate;
- CSC meetings are advertised and open to the public, and scheduled delegations will be encouraged. Scheduled delegations will be

accommodated at the outset of each meeting for a specific time period determined by the facilitator. In the event of unscheduled delegations, the CSC will determine the length of time available subject to its agenda;

- It is the philosophy of the CSC to ensure that it is a visible committee - one which acts as a community network and one which is accessible to members of the public and community. The Region's Secretariat will act as a Clearing House for public enquiries. The CSC's Consultation Plan (attached as Appendix A) describes the mechanisms to assure this visibility; and

- direct the activities of issue/task specific sub-committees, should these be formed.

2.2 The Region of Hamilton-Wentworth and its Consultant Team

While not members of the CSC, representatives of the Region will actively collaborate and participate with CSC members in developing our advice and recommendations. In this role, these representatives will contribute technical information, as well as personal and professional perspectives and knowledge, to assist the CSC in formulating its advice and recommendations with the benefit of these contributions.

In fulfilling this role, representatives of the Region will:

- strive to provide accurate, understandable information to CSC members such that members can contribute informed advice;

- provide adequate time for CSC members to review data, reports, consultant information, or information provided by the public in order for the CSC to shape its advice in a thoughtful and deliberative fashion;

- invite appropriate study team members and/or other qualified experts, ministry personnel, and/or members of the Environmentally Significant Areas Impact Evaluation Group (ESAIEG) for CSC meetings on specific issues or for specific deliberations on components of the project;

- ensure that opportunities for CSC advice and input are provided before decisions are made;

- ensure that CSC advice and recommendations are fully considered in all decisions made by the Region as part of the Red Hill Creek Expressway Impact

Assessment and Design Process; and to the extent possible, that these decisions and recommendations mirror the advice of the CSC; and,

- provide support to the CSC in the form of neutral facilitation, meeting facilities and supplies, field trip arrangements, reimbursement of parking and transportation expenses both to and from meetings information needs, documentation of proceedings, advertising and hosting public meetings/workshops which the CSC may wish to convene.

3.0 CSC MEMBERSHIP TERMS AND CONDITIONS

For the CSC to achieve its goal and purpose, membership will be reflective of a broad range of interests in the community, including: community groups/organizations that have previously expressed an interest in the project; a balanced representation reflecting economic, environmental and community interests, which is reflective of all positions (for, against, neutral).

Terms and conditions for membership:

- membership is voluntary;
- at the outset of each meeting, members must consider if they have a direct monetary interest relating to any or all of the agenda items proposed, and if so, declare this interest for relevant agenda items;
- should new candidates for membership come forward to the Region (either directly or through the CSC) then the Region and the CSC will mutually agree on the candidate's acceptability, bearing in mind the importance of maintaining the balance. In the event that a candidate is not considered acceptable, written reasons shall be provided;
- new members are encouraged to accept and endorse the past advice and consensus positions of the CSC developed prior to their involvement;
- members' input is contributed on a *without prejudice* basis and cannot be construed to mean that the overall project is either supported or opposed; and
- members may identify one representative to act as an alternate from time to time.

4.0 ORGANIZATIONAL STRUCTURE AND OPERATING PROCEDURES

4.1 Organizational Structure

The organizational structure will consist of:

- ***the community stakeholders committee*** which will co-ordinate public and sub-committee input and offer advice and recommendations to the Region;
- ***sub-committees*** reporting to the CSC, which provide an opportunity for working sessions on areas of review. Sub-committees can be comprised of

CSC members and any additional non-voting volunteer advisors or participants that the CSC may identify;

- ***advisors*** the CSC may determine the need to invite specific, volunteer advisors to assist it in its deliberations; and

- ***the CSC will provide its advice and recommendations to the Council of the Regional Municipality of Hamilton-Wentworth*** through Mr. Chris Murray, Transportation Department.

4.2 Operating Procedures

- Meetings of the CSC will be facilitated by a neutral third party. The facilitator's responsibilities are to ensure that the business of the committee gets achieved in accordance with the committee's direction. The facilitator may provide process advice, but may not offer an opinion on the merits of CSC proposals. The facilitator does not have voting privileges.

- the CSC will strive to operate in a consensus[1] mode, where members listen to others and openly discuss their respective views and opinions; and, members will strive to narrow areas of disagreement to the best of their ability. *(Please see Appendix B)*.

- the CSC will strive to provide consensus advice to the Region which is reflective of the experience of both those supporting and those opposed to the project to the extent possible.

- Results of CSC deliberations will be accurately documented in the form of meeting records. It is incumbent on CSC members to review all draft meeting records for approval at the subsequent meeting. Additional, stand-alone consensus reports can be produced should members determine the need.

- When consensus-building techniques are not facilitating the progress of the meeting, CSC members may determine that voting procedures are desirable. Where voting is utilized, *Roberts Rules of Order* will be followed, and minority opinions will be documented in meeting records or in special reports.

[1]Consensus means "A state of mutual agreement among members of a group where all legitimate concerns of individuals have been addressed to the satisfaction of the group". Rules for Consensus - A Modern Approach to Decision Making, Steven Saint and James R. Lawson. Pfeiffer & Company, 1994.

Should a tie vote occur, this result will be communicated to the Region, along with explicit reasons for both positions.

- Taking into account the special nature of this committee, members will indicate at registration whether they are pro, con or neutral to the expressway project. Prior to votes taking place, the facilitator will ensure there is a properly balanced representation (pro, con, neutral). Should this not be the case, the CSC will determine how the question will be called (either by fax-back, telephone canvass or at the next meeting).

- CSC members may propose agenda items for review and discussion at each regular meeting.

- In the event that a member(s) is absent at a meeting, and does not agree with advice or consensus positions emerging from that meeting, their dissent may be registered in person, or by proxy to another member, at the next meeting.

- In the event of voting, non-attending members can provide their vote preferably by written proxy through another member, or the facilitator, or through their alternate member. However, in the event that the alternate does not have specific instructions in the form of a motion or proxy from the member on how to vote on a specific issue, it is incumbent on the alternate not to vote.

- Rules of procedure may be established or changed with the consent of CSC membership.

4.3 Secretariat Services

Secretariat services to the CSC will be provided by Mr. Chris Murray and his staff at the Transportation Department, Special Projects Office. These services will include:

- coordination and provision of third-party neutral facilitation of each CSC meeting. In the event that the Committee considers the facilitation services inadequate for any reason, she will be replaced with a facilitator acceptable to the Committee;

- issue resolution services, as required;

- development and production of meeting agendas, meeting records and other support materials as identified by the CSC members; and

- providing planning and organizational services for public meetings, workshops, advertising, consultation programs, technical summaries, field trips, and other such services required to support the information needs of the CSC and the public consultation component of the Region's Impact Assessment Process.

5.0 PROPOSED WORK PROGRAM

The CSC has developed a draft work program for Phases I and II of the Impact Assessment Process (attached as Appendix C). This work program will be reviewed prior to completion of Phase II when work planning for Phases III and IV will take place.

6.0 COMMUNICATIONS PROCEDURES

- CSC representative(s) and/or the facilitator or designate will report the results of CSC deliberations (advice, consensus positions) to the Region in the form of written and/or oral reports.

- The CSC may from time to time appoint a representative(s) to speak on its behalf to the media. In light of the special nature of this committee, members are to discourage the media from seeking a CSC position and are to refer the enquiry to the designated representative.

- Written meeting records from CSC forum meetings, sub-committee meetings or other reports will be drafted within 3 working days of any meeting where the facilitator and/or the Regional representatives are present.

7.0 DISPUTE RESOLUTION

- As they arise, the Region will attempt to resolve concerns with the CSC before they become issues. Concerns will be raised and discussed openly in the appropriate forum in an effort to resolve the dispute. The Region will use the principles of openness and inclusiveness in discussing concerns and developing solutions.

- If the Region and the CSC are unable to resolve the concern, which could result in substantive project delays and costs, the Region will attempt to initiate a dispute resolution approach that is acceptable to all parties;

- In the event of a dispute, the CSC's facilitator, or a third party mediator who is mutually acceptable to the parties, may be called on to resolve issues between the parties involved, and/or recommend specific issue resolution approaches or mechanisms.

- In addition, in the event of disputes or differences between CSC members and the Region (and its consultant team), CSC members (as with any member of the public) may make a deputation directly to Transportation Services Committee of Council.

- The CSC will determine, in consultation with the Region, a reasonable time frame for the resolution of disputes on a case-by-case basis but taking into account the schedule for the completion of the Impact Assessment Process.

APPENDIX A [of CSC Terms of Reference]

REPORT OF THE CONSULTATION PLAN SUB-COMMITTEE RED HILL CREEK EXPRESSWAY - IMPACT ASSESSMENT AND DESIGN PROCESS

October 27, 1997

10:30 - 12:30 p.m.

Participants:

CSC: Jim Harvie
Frank Ryan
Linda Lukasik

Facilitator: Sally Leppard
Region: Chris Murray

Absent: Sue Lewandowski

==========

1. For the CSC to fulfil its mandate, it needs to ensure that citizens who are either positively or negatively impacted by the expressway project are informed and have an opportunity to provide advice on:

   - specific connections (Melvin, Greenhill and Escarpment Crossing)
   - minor expressway refinements
   - mitigation measures (this requires that citizens be given a clear idea of the expected impacts of the expressway)

2. There are two different types of audience: adjacent residents (individual impacts and benefits) and general community (overall impacts and benefits on whole neighbourhoods and the Region as a whole).

3. Mechanisms which employ communications, outreach and consultation are recommended.

4. The CSC needs to ensure that it is visible, accessible and "it is not working behind closed doors".

MESSAGES

- people need to know that the CSC has formed, who is on it, what it does, and what its plans are;
- most people don't know what's happening so: people need to know how and where to get information
- people need an opportunity to talk about their concerns

EVENTS/ACTIVITIES

The following communications activities and events were identified for approval by the CSC at its next meeting.

COMMUNICATIONS

- Web Site: The Region has a web site, but the Red Hill Creek project is not currently a distinct module. It is suggested that the Region install a distinct module on its web site, and that events, CSC minutes, meeting notices, newsletters, briefs, correspondence, etc. are readily available. In addition, people could use it as a site to express concerns or interest in the project, request information, etc. ***The Region agreed to contact Gerry Forbes to begin the configuration of the site.***

- Newsletter: The CSC would publish and edit a newsletter which would be widely distributed (direct delivery). A distribution plan will be developed to ensure the audiences are reached. The Communications Plan Sub-Committee is acting as *ad hoc* editorial committee on an interim basis. ***It was agreed that in light of the proposed meeting schedule (see below), and time constraints, the newsletter drafting would begin, subject to review and approval by the CSC.***

- Advertisement: An ad should be placed in the Hamilton Spectator to announce the formation, purpose and membership of the CSC. Regional contact information will be published.

- News Release: A news release should be prepared to announce the formation of the CSC to obtain further exposure. It will contain similar information to the advertisement.

- Audio-Visual media: Announcements and invitations to events will be distributed prior to the event.

- Engage ethnic organizations in participation at meetings: It is important that translation services are available to participants and that the print/audio-visual material carries this notice.

CONSULTATIONS

The following events and responsibilities are recommended for approval by the CSC:

OPPORTUNITIES FOR CONSULTATION - EVENTS

EVENT	PURPOSE	TIMING	LEAD	NOTES
Connections Workshops: **Melvin and Greenhill** **Escarpment**	To obtain input with neighbours on options To obtain input from stake-holder groups on visibility issues	December December	Region - CSC observing Consultant - CSC observing	Presentation to CSC prior to workshops CSC to be consulted on agenda and participant lists
Neighbour workshops (5) **Refinements** **Mitigation**	To obtain input on refinements post-watershed plan To obtain input on mitigation post alignment decisions	December February	Region - CSC observing Region - CSC observing	CSC to assist in agenda design and locations CSC to assist in agenda design and locations
General Community Meetings To be determined	TBA	TBA	TBA	TBA

Rationale for Neighbourhood Meetings

The first set of neighbourhood workshops needs to provide the opportunity for citizens in neighbourhoods adjacent to the valley to receive detailed information and maps on the impacts that the expressway will have on their neighbourhood, in addition to discussing minor refinements. Open houses have been held, but there is clearly a need for more neighbourhood-focused, slightly more structured meetings where people have the chance to listen to Regional staff, explain what the road impacts will be, and to then ask questions and raise any concerns. These meetings need to happen on a neighbourhood basis so that they can focus in on "on the ground" concerns of citizens as thoroughly as possible. A more personalized approach will encourage residents to come out and learn about impacts and provide feedback.

FUNCTIONS

- While the CSC's role as a networking body is supported and encouraged, the sub-committee advises members not to have their telephone numbers widely published. The Region's telephone number is recommended as the central contact (Clearing House), and Chris Murray will notify the appropriate member group(s) who will in turn contact the caller. All queries should reach the CSC to enable any CSC member to contact the individual. **The Region will act as a Clearing House for enquiries.**

- At community meetings, the CSC's role will be "observer, listener and deliberator" of people's ideas. At the outset of meetings, CSC will have the opportunity to explain its role and function to participants.

- There needs to be a tracking system - when people put forward a suggestion, idea or complaint, which is forwarded to the Region, a system needs to be in place to ensure that an accountable response it provided.

GOALS AND OBJECTIVES; ADDITIONAL NOTES

The Consultation program will strive to ensure that:

- a neighbourhood-by-neighbourhood approach is fostered (ensuring that neighbourhood -specific information - such as detailed route maps and impacts, are clearly communicated)
- people who are affected are drawn into the process
- mechanisms are developed and designed to make access easy and convenient for people who are terrified of speaking in public - people are not used to making their opinions known.
- if people cannot attend meetings, the communications material will carry return coupons for people to express their concerns, ideas.

- for people attending a meeting, there needs to be enough time for them to absorb the information and advise the Region of their concerns later on.
- communicating through existing networks, e.g. Riverdale Community Council, Centennial ratepayers, Home and School associations will ensure that neighbourhoods can be involved.

APPENDIX B [of CSC Terms of Reference]

GUIDING PRINCIPLES OF CONSENSUS PROCESSES

Consensus processes are participant determined and driven - that is their very essence. No single approach will work for each situation - because of the issues involved, the respective interests and the surrounding circumstances. Experience points to certain characteristics which are fundamental to consensus - these are referred to as the guiding principles.

Principle #1 - Purpose Driven
People need a reason to participate in the process.

Principles #2 - Inclusive not Exclusive
All parties with a significant interest in the issue should be involved in the consensus process.

Principles #3 - Voluntary Participation
The parties who are affected or interested participate voluntarily.

Principles #4 - Self Design
The parties design the consensus process.

Principle #5 - Flexibility
Flexibility should be designed into the process.

Principle # 6 - Equal Opportunity
All parties must have equal access to relevant information and the opportunity to participate effectively throughout the process.

Principle #7 - Respect for Diverse Interests
Acceptance of the diverse values, interests, and knowledge of the parties involved in the consensus process is essential.

Principle #8 - Accountability
The parties are accountable both to their constituencies, and to the process that they have agreed to establish.

Principle #9 - Time Limits
Realistic deadlines are necessary throughout the process.

Principle #10 - Implementation
Commitment to implementation and effective monitoring are essential parts of any agreement.

Excerpt from BUILDING CONSENSUS FOR A SUSTAINABLE FUTURE *Guiding Principles* National Round Table on the Environment and Economy. Ottawa.

CONSENSUS PROCESS AND RULES

(Accepted as Guidance by the CSC at its meeting on November 19, 1997)

What is Consensus Decision-Making?

- *fostering unity through valuing each other's differences*
- *involves trust, respect, integrity and community*
- *based on the development of positive statements of actions the group can take proposals*
- *consensus is a state of collective agreement, which can be defined as follows:*

"A state of mutual agreement among members of a group where all legitimate concerns of individuals have been addressed to the satisfaction of the group"

Consensus Process has three stages

Stage 1: Submitted proposals are reviewed for understanding and concerns
Stage 2: The group attempts to resolve concerns
Stage 3: Closing options are examined

Stage 1: Understanding the Proposal

- *a proposal is presented in written form*
- *participants raise questions of clarification*
- *improvements/ modifications can be made*
- *legitimate concerns are presented*

First call for consensus:

- *if no concerns are presented, the facilitator calls for consensus.*

Stage 2: Resolve Concerns

- *document concerns*
- *check concerns for duplication, clarity to ensure understanding and uniqueness*
- *attempt to integrate concerns into the proposal - think cooperatively*
- *presenter can attempt to solve listed concerns by:*
  - *clarifying proposal*
  - *changing proposal*
  - *explain why proposal is not in conflict with concerns and values see if those with concerns will stand aside*

- *group members can assist the presenter resolve concerns - potentially finding a "third way".*
- *check that amended proposal incorporates concerns*

Second call for consensus:

- *if no concerns remain the group has reached consensus.*

Standing Aside - is an essential tool in consensus decision making. Members stand aside when they have concerns about a proposal, but they can live with it. Standing aside does not remove a concern from the list, these concerns are still noted with the decision of the group.

Stage 3: Closing Options

- *if concerns remain, and there are no "stand asides" there are a number of options:*
  - *thoroughly understand concern*
  - *identify if the issue is likely to be resolved*
  - *recognize differences in the members' positions*
- *conduct straw poll (an evenly divided straw poll indicates further work; if few share the unresolved concern the group can select a "majority position" with documented concerns; if few support the proposal, the presenter can withdraw).*

Determine how to proceed:

- *Conduct Voting (per Terms of Reference)*
- *refer proposal to sub-group incorporating presenter and opposer*
- *if concerns are unresolvable due to group dynamics, personality clashes - structured team building sessions can be used to develop inter-personal dynamics.*

Role of Participants

- *monitor progress of the group and raise suggestions to help bring the discussion forward*
- *openly explain why positions are held*
- *speak when a contribution can be made; listen to the contributions of others*
- *avoid monopolizing the discussion (Share the Air)*
- *recognize that diverse perspectives are valuable*
- *listen and understand another's perspective*

What to do when YOU and a FEW others share unresolved concerns:

- *stand aside and let the decision proceed*
- *register dissent on the record*
- *try to block the decision*

What to do when the PRESENTER and a FEW others do not have the support of the group:

- *withdraw the proposal*
- *negotiate changes with a smaller sub-group*
- *stand aside and let the group proceed)*

APPENDIX C [of the CSC Terms of Reference]
CSC WORK PLAN STEPS 1-3 SEPTEMBER, 1997
TO BE UPDATED ***BY OCTOBER 30, 1997***

To provide advice and input into alignment changes:

Step 1: **Receive and Review Data from each study component - (receive by first week in October, review by end October)**

1a. review reports in advance of meeting (Sept. 29 - Oct. 5)
1b. **Meeting #2**: CSC receives consultants presentations; discuss public consultation plan components; discuss Terms of Reference from Terms of Reference sub-committee.
1c. form sub-committees (please see Appendix 4 for preliminary list) of members with areas of expertise.
1d. identify where expertise gaps are (MOEE/MTO could be asked to provide advice) and identify resource people.

Step 2: **Meeting #3: Sub-committees report to CSC - end October.**

2a. Apply knowledge and get advice on costs/time frame/environment effects to understand impacts, identify what would change, and review interchange options.

Step 3: **Meeting #4: CSC Meeting to provide advice on alignment**

3a. CSC provides advice on alignment to the extent that the data and its interpretation allows.
It was agreed that participants need to understand impacts at some level in order to provide advice and input to the alignment changes. This could be provided at a high level by consultant experience and CSC participant experience. CSC participants to determine if they have enough information to provide advice on alignment issues, or whether they need more detail on certain sections.
3b. CSC reviews work plan in light of circumstances.

CSC WORK PLAN DEVELOPED TO STEP 3b. Next Steps to be discussed as follows:

Reviewing the modified alignment:

Step 4: 4a. Region develops modified alignment where possible (November)
The established alignment (as a result of minor refinements) would provide a basis for predicting impacts.
4b. **Meeting #5**: CSC reviews modified alignment and impact studies approach. Continue review of interchange options.

Providing advice and reviewing the impact assessment

Step 5: 5a. Impact assessment of alignment and evaluation of interchange options carried out
Ensure adequate review time for stakeholder groups to provide feedback and advice to CSC - minimum 6 weeks (January - March, 1998)
5b. **CSC meetings #6-10** to review results and provide advice. Continue review of interchange options and provide advice.

Providing advice and evaluating preferred connection to the QEW

Step 6: 6a. CSC meeting to evaluate the preferred interchange options
6b. Next steps - community monitoring, compensation

Appendix IV: CSC Meeting Records

MINUTES FROM MEETING #1
Community Stakeholder Committee
Red Hill Creek Expressway - Impact Assessment and Design Process
7:00 p.m. - 9:00 p.m.
Thursday, September 4, 1997
Hamilton City Hall, Room 253
Main Street East

1.0 Welcome

Chris Murray, Roads Department, Region of Hamilton-Wentworth welcomed participants to the first meeting of the Community Stakeholder Committee. The committee was convened as a result of the meeting held on July 9, 1997. The *Exemption Order* for the North-South section of the Red Hill Creek Expressway outlines a Stakeholder Consultation Program and describes the purpose and goal for the program. Mr. Murray introduced Ms. Leppard who acted as facilitator for the first meeting.

2.0 Introductions and Purpose of the Meeting

Participants introduced themselves (list attached as Appendix 1) and indicated their involvement and interest in the project to date. The purpose of the meeting is to discuss the Region's study plan, to determine which key decisions need to be made (and when), and to identify the role and function of the CSC within this context. Participants consented to the agenda (attached as Appendix 2).

3.0 Region's Timetable and Key Study Steps

Chris Murray reviewed the four phases of work outlined in *Red Hill Creek Expressway North-South Section Work Program* (attached as Appendix 3). He noted that details of the North-South section of the Expressway can be found in the *Exemption Order* produced in May 1996. Two levels of investigation are being undertaken: Watershed Planning (the broad macro level of how removal of vegetation in the Red Hill Valley links to other functions within the watershed); and, Impact Design Process - determining designs for the expressway to mitigate and/or compensate for predicted impacts.

Working backwards from the Region's target construction completion date (end 2001), allows the Region to ensure that the necessary steps fit within the specified time frame. The Region needs to obtain environmental approvals from the Federal and Provincial governments and the Canadian Environmental Assessment Process. The four phases of the Impact Design Process all require stakeholder input and are scheduled for completion by April 1998 are:

- ☐ Data Collection and Consultation Program
- ☐ Minor Expressway Refinements

- Impact Prediction and Mitigation
- Evaluation

During discussion, the following points were made by participants:

Regarding Social Impact: Mr. Plinte asked if the Region intends to conduct social impact studies. In particular he stated the need to assess social values associated with the natural features in order to gauge the impacts on social values and social development. He noted that his organization is considering how best to achieve this within the watershed planning process. Mr. Murray indicated that this is not within the scope of the project, explaining that the Region is proceeding with the scope of work covered in the Exemption Order (approved by the Province in March, 1997). Mr. Plinte asked that the Region conduct such a study.

Regarding the number of interchange options: Mr. McLean asked for clarification on the two alternatives being compared for the QEW interchange and asked whether additional options could be considered. While Mr. Murray noted that the reasons for the location of the two interchanges had been documented previously, there is an opportunity in Phases 2 and 3 of the work program to consider this point.

4.0 CSC Work Planning

Participants considered the Region's timetable and work plans and discussed their needs relating to providing advice and input to the Region. Results of the discussion are provided on the next page. During the discussion on the work planning, a number of questions were raised:

Relating to the role and influence of stakeholders: Mr. McLean asked the meeting to consider how the Region would use the CSC members' advice. It was agreed to discuss this during the development of the Terms of Reference.

Relating to water quality: Mr. Struger wanted to know how the Region proposed to reduce impacts on water quality and storm water quality, (e.g. from run-off during construction). He requested that a representative from the MOEE be in attendance during these discussions.

Relating to the approval of the Alignment: Mr. Struger noted that he was trying to understand how the Ministry could approve an alignment to the expressway before knowing the impacts and the changes necessary to minimize the impacts. Ms. Knox noted that there is a need to know the detailed impacts of the original alignment on the environment and economics. Ms. Austin noted that a Class 1 protected wetland will be impacted - there is a need to know how the quality of life will be affected.
Relating to the QEW interchange: Would the QEW be widened as a result of the interchange. Mr. Nairn (MTO) noted that this would depend upon traffic impacts on the QEW.

CSC WORK PLAN STEPS 1-3 SEPTEMBER, 1997
TO BE UPDATED ***BY OCTOBER 9, 1997***

To provide advice and input into alignment changes:

Step 1: **Receive and Review Data from each study component - (receive by first week in October, review by end October)**

1a. review reports in advance of meeting (Sept. 29 - Oct. 5)

1b. **Meeting #2**: CSC receives consultants presentations; discuss public consultation plan components; discuss Terms of Reference from Terms of Reference sub-committee.

1c. form sub-committees (please see Appendix 4 for preliminary list) of members with areas of expertise.

1d. identify where expertise gaps are (MOEE/MTO could be asked to provide advice) and identify resource people.

Step 2: **Meeting #3: Sub-committees report to CSC - end October.**

2a. Apply knowledge and get advice on costs/time frame/environment effects to understand impacts, identify what would change, and review interchange options.

Step 3: **Meeting #4: CSC Meeting to provide advice on alignment**

3a. CSC provides advice on alignment to the extent that the data and its interpretation allows.
It was agreed that participants need to understand impacts at some level in order to provide advice and input to the alignment changes. This could be provided at a high level by consultant experience and CSC participant experience. CSC participants to determine if they have enough information to provide advice on alignment issues, or whether they need more detail on certain sections.

3b. CSC reviews work plan in light of circumstances.

CSC WORK PLAN DEVELOPED TO STEP 3b. Next Steps to be discussed as follows:

Reviewing the modified alignment:

Step 4: 4a. Region develops modified alignment where possible (November)
The established alignment (as a result of minor refinements) would provide a basis for predicting impacts.

4b. **Meeting #5**: CSC reviews modified alignment and impact studies approach. Continue review of interchange options.

Providing advice and reviewing the impact assessment

Step 5: 5a. Impact assessment of alignment and evaluation of interchange options carried out

Ensure adequate review time for stakeholder groups to provide feedback and advice to CSC - minimum 6 weeks (January - March, 1998)

5b. **CSC meetings #6-10** to review results and provide advice. Continue review of interchange options and provide advice.

Providing advice and evaluating preferred connection to the QEW

Step 6: 6a. CSC meeting to evaluate the preferred interchange options

6b. Next steps - community monitoring, compensation

The Region's work plan suggests that an impact assessment will be conducted after minor alignment refinements have been made (phase III).It was noted by a number of participants that it may be difficult to provide advice on minor expressway refinements if the impact assessment is not completed until after the alignment is set. While some members expressed discomfort, generally, CSC members could consider the data in two stages: review Phase I data and provide advice and suggestions relating to the alignment (there may be obvious suggestions such as avoidance of archaeological sites for examples); and, after the alignment has been set, the Region's impact assessment would provide additional information for the CSC to provided advice on possible additional refinements.

Participants agreed to obtain as much information as possible to assist them in understanding impacts at the data review stage - by using local knowledge, by questioning the Region's consultants, and by requesting expertise from the community where there are gaps in either the consultant knowledge or within the committee.

Other discussion items have been incorporated into the proposed CSC work plan.

5.0 Information Requirements: September - November, 1997

Participants discussed the type and nature of information they would require in order to participate in advising the Region. It was agreed that the Region would discuss the following requirements with its consultants:

- a summary report, in plain language (including definitions), maps (contour maps were requested) and pictures, to communicate the results of the data collection step; *this should be provided one week in advance of the second meeting.*
- detailed data reports would be available to participants for further review should they wish to review them;
- consultant presentations at the second meeting of the CSC would assist members in understanding the findings, and provide the opportunity for CSC to question consultants.

- Field trips in Valley and to an area where a highway has been built and wetland impacts have been significantly minimized would assist the CSC in knowing "what's possible".
  It was suggested that a field trip could take place prior to the data being made available. One other could take place during the data analysis.

6.0 Developing CSC's Terms of Reference

Ms. Leppard distributed a handout on *Elements of a Terms of Reference*, and asked participants to discuss how they would like to proceed with the development of a *Terms* for the CSC.

Burke Austin, Ruth Liebersbach and Karan Mechar volunteered to work on a draft for the next meeting. The committee would consider the role of the CSC and the influence its advice could have on the Region's decisions. Membership would be considered and a dispute resolution mechanism would need to be built in with a time frame.
Mr. Murray noted that he would provide advice on how to prepare the *Terms* should this be required, and he would provide meeting space.

Ms. Leppard left the meeting in order that participants could decide whether or not a third party facilitator would be useful at future meetings.

7.0 Conclusion

Participants decided that Ms. Leppard's services would be helpful to the Committee. The facilitator's role will be described in the Terms of Reference and can be adjusted by members at any time.

Regarding the Next Meeting: Mr. Murray will confirm the consultant's work schedules regarding the completion and reporting of the data collection phase and advise members when the documents will be made available. The next meeting will be scheduled within one week of the documents being mailed to members.

Regarding the accuracy of the minutes: The minutes were prepared by Ms. Leppard with the exception of item 7.0 which were prepared by Michelle Cizmar. Errors, omissions and changes can be incorporated at the next business meeting of the CSC.

Appendix 1

Community Stakeholders Committee

Attendance for September 4, 1997
Redhill Creek Expressway
(North South Section)

Name	Affiliation
Burke Austin	Community Action Parkdale East
Bruce Ballis	HAND Association of Sewer, Watermain & Road Contractors
Paul Beneteau	Bruce Trail Association
Patricia Berkhold	Beach Strip/Woodward Community Council
Rick Guidolin	Hamilton Construction Association
Louise Knox	Hamilton Harbour RAP
June Koppeser	Citizens Expressway Committee
Ruth Liebersbach	Hamilton Chamber of Commerce
Pearl Lewandowski	Mount Albion Homeowners Association
Sue Lewandowski	Mount Albion Homeowners Association
Lynda Lukasik	W.A.T.E.R.
Don McLean	Friends of the Red Hill Valley
Karan Mechar	Metro Hamilton Real Estate Board
Ernie Monkley	Citizens Expressway Committee
Sandy Nairn	Ministry of Transportation
Fred Pizzoferrato	Centennial Parkway Ratepayers Committee
Ron Plinte	Friends of the Red Hill Valley
Frank Ryan	Hamilton Beach Preservation Committee
John Struger	Red Hill Valley Volunteers
Chris Murray	Regional Municipality of Hamilton-Wentworth
ichelle Cizmar	Regional Municipality of Hamilton-Wentworth
Sally Leppard	LURA Group

Appendix 2

DRAFT DISCUSSION GUIDE
Red Hill Creek Expressway
Community Stakeholder Committee - Business Meeting #1
Thursday, September 4, 1997
Hamilton City Hall
Room 233
7 p.m. - 9 p.m.

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The discussion guide presented below is for participants' consideration prior to the meeting. Facilitation services will be provided by Sally M. Leppard, LURA Consulting Group. Comments and ideas can be provided to Ms. Leppard prior to the meeting at (416) 863-6777.

1. **Welcome and Introductions**

2. **Purpose of the Meeting - Facilitator**
   The proposed purpose of the meeting is to discuss the Region's study plan, to determine when key decisions need to be made and when, and to identify the role and function of the CSC within this context. It is expected that a work plan and Terms of Reference for the CSC could be developed as a result of this meeting, along with a schedule of future meetings.

3. **Region's Work Plan, timetable and Key Decision Points - Presentation by the Region of Hamilton-Wentworth**
   The Region will present a concise work plan, explain the study schedule and key decision points where stakeholder input is sought.

4. **CSC Work Planning**
   Scope of community consultation process, consideration of time frames and level of effort required.

5. **Developing the CSC's Terms of Reference**
   The role, operational procedures and membership for the CSC

6. **General discussion and stakeholder perspectives on CSC progress/facilitation**

7. **Next meeting**

8. **Adjourn**

Appendix 4

INTERIM SUB COMMITTEE MEMBERSHIP LISTS

Technical Sub-Committees:

Physical-Biological: **(no sign ups)**

Socio-Economic: **Karan Mechar, Pearl Lewandowski, Sue Lewandowski, June Koppeser, Ruth Liebersbach**

Cultural: **(no sign ups)**

Site Contamination: **(no sign ups)**

Terms of Reference Sub-Committee:

Burke Austin, Karan Mechar, Ruth Liebersbach

Community Consultation Plan Sub-Committee:

Jim Harvie, Sue Lewandowski, Lynda Lukasik, Frank Ryan

DRAFT MINUTES - MEETING #2
Community Stakeholder Committee
Red Hill Creek Expressway - Impact Assessment and Design Process
7:00 p.m. - 9:00 p.m.
Thursday, October 9, 1997
Hamilton City Hall, Room 219
Main Street East, Hamilton, Ontario

1.0 Welcome, Introductions, and Agenda Review

The facilitator welcomed participants to the meeting and reviewed the agenda. It was noted that the Region has re-scheduled the presentation of baseline data pending results from the Watershed Planning process. These results are expected to inform the CSC's work. Mr. Murray noted that he would be discussing the schedule in item 5.

CSC members consented to the agenda as circulated. They introduced themselves and a list of participants is attached as Appendix A.

2.0 Declarations of Conflict of Interest

This item was waived subject to the sub-committee's presentation on the Draft Terms of Reference.

3.0 Review of Draft Meeting Minutes - September 4, 1997

A number of amendments were proposed, and are listed below:

- The title should be changed to reflect "Impact *Assessment* and Design Process".
- Change the year at the bottom of page 1 to "1998".
- Section 4.0 - CSC Work Planning, the third paragraph should be amended to read "reduce impacts on water quality and storm water quality".
- The work plan will be amended subject to the Region's discussion on the schedule in item 5.0.

The minutes were approved as amended.

Business Arising

Regarding Social Impact: As mentioned at the September 4th meeting, Mr. Plinte noted that the socio-economic impact assessment work proposed by the Expressway Impact Assessment and Design Process lacks adequate scope. He clarified that there is a need to conduct a more detailed socio-economic impact study. When asked, Mr. Nairn (MTO) advised the CSC that the MTO does not conduct social impact assessments at the level of detail deemed necessary by Mr. Plinte. Mr. Murray clarified that there is a difference between standard impacts and special impacts - which relate to character, cohesion and community stability. He added that Mr. Plinte's request may be covered off to some degree when recreational impacts are addressed (e.g. mitigation as it relates to impacts on recreational facilities).

To achieve some resolution to Mr. Plinte's concerns, it was agreed to clarify the level of detail of the Region's studies and compare it with a previous proposal submitted by Mr. Plinte for the watershed plan. The Region agreed to prepare a summary document based on the Exemption Order requirements. These documents are to be forwarded to CSC members for their consideration at the next meeting.

Ernie Monkley noted that frequently the negative impacts of the project are discussed, but not the benefits. He drew the committee's attention to the Conservation Authority's work on land in the south end where they are developing trails and wildlife habitat. He suggested that the Authority be requested to make a future presentation relating to this work for members information.

The Region is requested to consider paying CSC participants parking and public transportation expenses.

4.0 CSC Organizational Development

4.1 Draft Terms of Reference

On behalf of the Terms of Reference sub-committee, Ms. Ruth Liebersbach presented the draft Terms of Reference. Participants had a number of questions and comments resulting in changes to the document as follows:

Preamble

- the second paragraph in the *Preamble* is misleading. An amendment to delete the second sentence was proposed and accepted.
- expand the third bullet to include Burlington Street interchange.

Statement of Participation

- *Statement of Participation* 2nd bullet under "THEREFORE, the Region and participating Community Stakeholders understand:", should be amended to read: "THAT as the Expressway project continues to proceed, community stakeholders will work together to make sure the Expressway is designed and constructed in the best way we can;"

Purpose

- Section 1.2 *Purpose* - sixth bullet should be amended to read "review and evaluate alternatives and selection of preferred alternative(s) regarding the QEW and the Burlington Street interchange"
- Section 1.2 *Purpose* - seventh bullet, the phrase "during construction" should be deleted;
- Section 1.2 *Purpose* - eighth bullet should be amended to read "compensation measures (regarding aquatic habitat destruction under the Fisheries Act)"

Roles and Responsibilities - Community Stakeholder Committee

- seventh bullet should be amended to read "CSC meetings are open to the public, and scheduled delegations will be encouraged when key issues are under

discussion. Scheduled delegations will be accommodated at the outset of each meeting for a specific time period determined by the facilitator. In the event of unscheduled delegations, the CSC will determine the length of time available subject to its agenda."

- a new bullet should be added to read "It is the philosophy of the CSC to ensure that it is a visible committee - one which acts as a community network and one which is accessible to members of the public and community. The public will be encouraged to contact individual CSC members who will ensure that their issues are deliberated upon at CSC meetings."

Terms and Conditions for Membership

- relating to the proposed conflict of interest clause, members referred this back to the sub-committee. It was suggested that they take into account that all participants have an *indirect* interest, and that some may have (from time to time) a *direct* monetary interest.
- delete third bullet referring to the minimum number of hours expected from CSC members.
- fourth bullet relating to the CSC's acceptance of new members should be amended to read "Should new candidates for membership come forward to the Region (either directly or through the CSC) then the Region will make a recommendation to the CSC for their consideration".
- a seventh bullet should be added to read "Members may identify one representative to act as an alternate from time to time."

Organizational Structure and Operating Procedures

- Section 4.1, second bullet be amended to read "***sub-committees*** reporting to the CSC, which provide an opportunity for working sessions on areas of review. Sub-committees can be comprised of CSC members and any additional non-voting volunteer advisors or participants that the CSC may identify".
- Section 4.2, sixth bullet be referred to the sub-committee for reconsideration. One member raised the concern that the mechanism for ensuring balanced representation would need to be clearly understood prior to voting. Another suggested that the rules of procedure for voting could be determined prior to each vote, since voting is not expected to occur often.
- an eighth bullet be added to read "In the event of voting, non-attending members can provide their vote by proxy through another member, or the facilitator, or through their alternate member. **However, in the event that the alternate does not have specific instructions from the member on how to vote on a specific issue, it is incumbent on the alternate not to vote.**" (The wording outlined in bold will be referred to the sub-committee for further deliberation).

Reporting Procedures

- The title of this section be amended to read "Communications Procedures"

- A new, second bullet to be added to read "The CSC may from time to time appoint a representative(s) to speak on its behalf to the media. In light of the special nature of this committee, members are to discourage the media from seeking a CSC position and are to refer the enquiry to the designated representative."

It was agreed that the sub-committee would review the amendments as proposed and consider specific issues. The CSC would be forwarded a revised draft for their consideration at the next meeting.

Mr. Murray noted that he wished to send the Terms of Reference to the Regional Council's Transportation Services Committee for formal recognition. **It was agreed that it would be forwarded by the CSC through Mr. Murray as a *work in progress* for their last meeting on October 27, 1997.**

4.2 Consensus-Decision Making/Team Building Seminar

This item was deferred until the next meeting.

4.3 Developing the Community Consultation Plan

During the Terms of Reference discussions (item 3.0), CSC determined it wished to have a highly visible role which performs a networking and communications function. CSC discussed the need and methods to engage the public during the CSC's deliberations. Ms. Liebersbach noted that the public had previously provided submissions which are referenced in *"Red Hill Creek Expressway, North-South Section, Results of Public Review, Exemption Order, Appendix A, May 1996"*. **It was agreed that CSC members would review this document.**

Others noted that there would be issues arising at a local level and the CSC could benefit from community-level discussions.

It was agreed that a sub-committee meeting would be scheduled by the facilitator to prepare a Community Consultation Plan for review by the CSC at its next meeting. Members are: Frank Ryan, Sue Lewandowski, Lynda Lukasik and Jim Harvie.

5.0 CSC Work Planning

5.1 Watershed Plan Review

Ms Pam Hubbard, Transportation Division, Region of Hamilton-Wentworth provided a 10 minute presentation on the formation, progress and achievements of the Watershed Plan Process and its stakeholder involvement program. Ms. Hubbard noted that there will be a public meeting on October 20, and a gathering of stakeholder working groups on October 24. Issues, goals, targets and actions will be identified on October 24 and will be used to inform the CSC's work. CSC members are encouraged to attend the October 20 meeting. A copy of her presentation is attached as Appendix B.

5.2 Draft Summary Report Table of Contents

Mr. Murray discussed the previously distributed Table of Contents (Appendix C) for the draft summary report. He noted that its appearance would be similar to the Watershed Plan as described by Ms. Hubbard. Chapter 1 (Introduction) is complete. Chapter 2 (sections 2.1-2.3) is in development and will be completed based on the October 24 meeting which will help identify possible Expressway design refinements and mitigation/compensation opportunities.

He noted that the Environmentally Significant Areas Impact Evaluation Group (ESAIEG) members would be available to assist the CSC. A new fisheries expert would need to be identified since the ESAIEG fisheries expert is currently working for the Region. Trails expertise could be provided by CSC members (Mr. Paul Beneteau of the Bruce Trail Association and Mr. John Struger are noted experts).

The Region's consultants are completing the rest of section 2 (section 2.4). Chapter 3 will depict the current alignment including pedestrian access and the escarpment viaduct.

Mr. Murray noted that this draft summary report would be available to members in early November, and will be forwarded at least one week prior to the next meeting.

It was agreed that the CSC would review the Table of Contents and provide Mr. Murray with their comments by October 30, 1997.

5.3 Review of Region's Phase II Schedule

Mr. Murray then presented *"Proposed Schedule of Milestone Events"*, attached as Appendix D. He noted that the CSC would need to discuss the draft summary report during November/December. He noted that CSC would need to develop and utilize decision criteria/measures for determining their advice on various refinement options.

It was agreed that the CSC would review the "*Proposed Schedule of Milestone Events*" and discuss it at the next meeting. The CSC's work plan will be adjusted at that time.

6.0 Field Trip Planning

This item was referred to the Community Consultation Plan sub-committee.

7.0 Adjourn

There being no further business the meeting adjourned at 9:10 p.m. The next meeting will be convened in mid-November.

DRAFT MEETING RECORD - MEETING #3
Community Stakeholder Committee
Red Hill Creek Expressway - Impact Assessment and Design Process
7:00 p.m. - 9:00 p.m.
November 19, 1997
Lakeland Community Centre - Community Centre Hall
180 Van Wagner's Beach Road, Hamilton

1.0 Welcome, Introductions and Agenda Review

The agenda was approved as proposed. Mr. Mahoney, Concerned Citizens of Ward 5 introduced himself and indicated his interest in membership. He noted that his group is generally opposed to the expressway project, but his interest lies in ensuring that his members have input to the design as the project proceeds. He lives on Rosedale Avenue, .5km away from the alignment.

Participants to the meeting are listed in Appendix A.

Correspondence from Mr. McLean (November 12) and Mr. Nolan (October 9) relating to the Terms of Reference was circulated.

Agreed: to direct this correspondence to the Terms of Reference Sub-Committee.

2.0 Declarations of Direct Interest

There were no declarations of direct interest.

3.0 Review of Draft Meeting Record - October 9, 1997.

Few members had brought their minutes and no extra copies were available at the meeting. This item was deferred until the next business meeting. Ms. Leppard indicated that an amendment to the minutes relating to the reimbursement of parking expenses would be added. Mr. Plinte requested that bus tickets also be reimbursed.

Action: Mr. Murray agreed to forward this request to the Region and advise participants.
Action: It was also agreed that car pooling should be encouraged.

4.0 CSC Organizational Development

4.1 Report of the Terms of Reference Sub-Committee Final (Second) Draft - November 13, 1997.

Burke Austin reviewed suggested revisions to the terms of reference, as a result of input from the last CSC meeting, and a written submission from the Hamilton Construction Association. Mr. McLean questioned Mr. Nolan's status on the committee and pointed out that he is not the designated member.

The following amendments or referrals were made:

Amend: Page 3, section 1.2 Purpose, sixth bullet - amend "intersection" to read "interchange";
Amend: Page 4, section 2.1 seventh bullet - delete "when key issues are under discussion".
Amend: Page 8, section 6.0 communications procedures, third bullet - delete "72 working hours" and replace with 3 working days.
Refer: Page 7, section 4.2 Operating Procedures - fifth bullet - refer clause back to sub-committee - clause considered unworkable (in particular relating to the properly balanced representation of "community, environmental and economic). It was suggested that the sub-committee contact Louise Knox for clarification.
Refer: Correspondence from Mr. Don McLean to sub-committee.

Additional issues raised for the sub-committee to consider were:

- notification of the general public regarding CSC meetings;
- how to deal with input from individuals who are not the identified representative of organizations with the CSC.

Council Resolution: CSC members reviewed the Transportation Services' Committee response to CSC Terms of Reference (Attached as appendix B).

Action: CSC requested clarification and reasons for Council decision.

4.2 Consensus Decision Making

Ms. Leppard presented a short discussion on consensus decision making, what it means and how it works. Her presentation is attached as Appendix C.

4.3 New Member

Mr. Ed Mahoney was welcomed as a new member. Mr. McLean noted that he could not indicate his support at this time, subject to the resolution of issues relating to the CSC's terms of reference.

5.0 CSC Work Planning

5.1 Community Consultation Plan - Sub-Committee Report

Mr. Ryan presented the sub-committee's report. A draft newsletter had been prepared by members of the sub-committee, with contributions from the Terms of Reference sub-committee. (Attached as Appendix D).

Participants noted that the consultation plan needs strategies which include:

- public housing residents - these residents need to be pro-actively involved - for example, approach the Greenhill Co-op;
- many persons believe that the Region doesn't listen - the newsletter and other forms of communications need to encourage participation for these people;
- user groups (e.g. baseball, soccer clubs) in the valley need to be involved;

- in wards 4 and 5 many people have English as a second language (e.g. Italian, Croatian, Serbian, Polish)

Linda Lukasik noted that the Region had distributed 50,000+ copies of its Red Hill Creek Expressway Progress Report prior to the election. For the CSC's communications/consultation plan to be effective, CSC needs to be aware of the Region's communications plans.

Mr. Ryan clarified the role of the CSC at public workshops and events. It was agreed that the CSC would act as observers, and would describe its role at the outset of these events (taking into account that some of the membership may be directly involved - e.g. the Bruce Trail Association would be involved in the Niagara Escarpment Crossing). The advice and input heard at these events would be considered by the CSC at future meetings.

Action: ***The Region will notify the CSC prior to distributing their next Regional Progress Report (Mr. Murray noted that the Roads Department was carrying out Council's mandate to publish a Progress Report twice yearly).***

Action: ***The Consultation Plan was approved as advice to the Region.***

Action: ***The CSC referred the above-noted comments including the issue regarding translation to the sub-committee for further consideration.***

Mr. Murray thanked the Committee for its work, and noted that subject to the scope and number of neighbourhood workshops, the Plan would likely be well received by the Region.

6.0 State of the Watershed Report

Mary Ellen Scanlon presented the report to the CSC, explaining how it had been developed. She noted that the next step is to determine an action plan and to identify commitments to implement the actions.

It was pointed out that preserving the wetland in the north east area (by the treatment plan) is an important issue. Mary Ellen noted that the ESA (environmentally sensitive area) is a part of this plan.

6.1 Approach to Socio-Economic Issues

Since the CSC did not receive Mr. Plinte's proposal until two days before the meeting, Mr. Plinte requested a deferral of this item until the next business meeting. This was agreed.

7.0 Update on Region's Progress

Mr. Murray noted that the Draft Summary Report is at the printers and will be distributed to politicians at the same time as it is distributed to the CSC. After participants have had the report for two weeks, he proposed convening a seminar-style working session where the consultants would present the report and participants could ask questions of clarification to assist them with their deliberations. Government representatives would also be invited. Subsequently, the CSC could meet to discuss their response to the document.

Action: ***It was agreed to convene a seminar-style working session on December 8, from 6-9 p.m.***

8.0 Next Meeting and Agenda Planning

The escarpment viaduct workshop (being convened by the Region's consultants) will be held on **December 11.** An agenda for this meeting and an invitation list will be distributed by Mr. Murray for review by the CSC in advance of the meeting. After the seminar/working session (on December 8), the CSC would convene in January to: finalize their terms of reference, confirm the consultation plan and neighbour workshops, confirm agendas for the Melvin and Greenhill pedestrian access. CSC members will also be discussing how best to provide their input and response to the Summary Report.

The meeting adjourned at 9:05 p.m.

Notes prepared by Sally Leppard, with input from Mary Ellen Scanlon

DRAFT MEETING RECORD OF THE CSC #4
Red Hill Creek Expressway IADP - Community Stakeholder Committee
January 7, 1998
Hamilton City Hall
7:00 - 9:30 p.m.

1.0 Welcome, Introductions and Agenda Review

Ms. Leppard called the meeting to order at 7:00 p.m. Committee Members and members of the public introduced themselves. A list of participants is attached as Appendix A. The agenda for the meeting was reviewed and approved.

2.0 Correspondence

Correspondence was tabled from Ms. Wiebe and Mr. Plinte.

3.0 Declarations of Direct Interest

No declarations of direct interest were declared.

4.0 Meeting Records - October 9, November 19, 1997/Communications with Members.

4.1 Meeting Records

October 9 meeting record was approved as read. Ms. Pauline Mitchell noted that she was present at that meeting.

November 19 meeting record is approved as amended:

- Page 2: Mr. McLean noted that the second sentence, first paragraph under section 4.1 should be amended to read: "Mr. McLean questioned the status of correspondence received by the CSC from non-members."

- Page 4: Mr. Plinte noted that section 6.1 be amended to reflect that the delay in CSC members receiving Mr. Plinte's proposal was due to the Region's delay in providing his proposal to members.

Business Arising:
Ms. Leppard noted that most of the business arising from November 19 has been distributed throughout the agenda. Relating to the request for parking expenses/bus tickets, Mr. Murray noted that he will provide these and mail out parking tickets in advance. Members are encouraged to advise Chris if they require bus tickets.

4.2 Communications with Members

Ms. Leppard noted that 15 members had replied to the fax requesting members' communications requirements. Members needs for disc versions of documents, binders and communications methods are being addressed.

5.0 CSC Work Planning

5.1 Report from the Consultation Plan Sub-Committee

Mr. Harvie presented the sub-committee's latest advice to the CSC. It included:

- Translation for members of the public whose first language is not English should be available through translators at neighbourhood meetings:
- A list of ethnic organizations, as well as language distribution information and lists of neighbourhood groups, schools, ball parks, etc. is being developed by the Region with input from Frank Ryan (ethnic organizations to be obtained from Ald. Chad Collins).
- Six recommended locations for neighbourhood meetings, including: Mount Albion Neighbourhood (Elizabeth Bagshaw School); King/Queenston (Glendale High School); Queenston-Barton (St. Bernard's School); Rosedale Neighbourhood (Rosedale Arena); King/Queenston Neighbourhood (Churchill High School); and Parkdale Neighbourhood (Woodward Avenue Public School).
- Advertisements, and additional publicity (through the newsletter distribution) for the neighbourhood meetings are advised, along with personal contact.

Jim requested CSC amend the approved CSC consultation plan and forward the advice to the Region.

Discussion:

- Translators will charge a fee for services.
- A concern was expressed that printed information will not appeal to citizens with another first language other than English - oral translations may be preferred. *It was noted that the ethnic organizations would be contacted for advice on how to get information out and encourage participation.*
- A concern was expressed on placement of advertisements and notice of meetings. Who would be contacted? *Mr. Murray explained that the distribution would be by mail to people within a certain distance of the alignment. It was agreed that on all communications, footnotes in multiple languages would indicate how citizens could obtain more information.*
- CHML may give exposure and notice (it is providing notice of the January 19 meeting).
- RAP experience is that staffed booths in shopping malls work well at getting information out.
- Consider having meetings delivered by community organizations - "This is a more effective way of drawing people out.
- Need to work carefully on what is presented to people - CSC can assist Region in designing format of meetings. People may be more interested in mitigation (*Lynda Lukasik explained that there needs to be two stages of neighbourhood meetings - the first to get information out on what is being proposed, and the second to get input, comments on mitigation).*

- Mr. Hunt (non-member) suggested that Ancaster residents and others would be interested - do not limit distribution to people in the valley. Mr. Hunt also suggested that school-aged citizens be invited to write reports about what should be done.

Action: The public consultation sub-committee's report will be incorporated into the public consultation plan, and forwarded as advice to the Region.

5.2 Region's Response to Public Consultation Plan forwarded to the Region on November 19.

Mr. Murray noted that the Region's response is as follows:

- the web-site is being set up with a contact name for people to obtain information and send in comments;
- CSC's newsletter can be forwarded as soon as it is completed;
- Region would like to announce the CSC's formation as quickly as possible through an advertisement/news release;
- Region would like to provide public with schedule of events/meetings; and
- Feedback from the CSC on the "language barrier" issue is appreciated.

Action: The facilitator will distribute the up-dated text of the CSC newsletter to members by Wednesday, January 15.

Organizations wishing to submit articles to reflect the "con" side **must** be submitted to the facilitator's office by January 12.

5.2 Response to DSR - Volume I.

CSC members deliberated on the best methods of responding to the DSR - Volume I which was distributed in late November and presented at a meeting on December 8. A draft summary and detailed notes (prepared by the facilitator) from that meeting were distributed. Mr. Murray noted that the Region had not reviewed the drafts. Mr. Plinte and Mr. McLean both advised that there had been serious problems with the meeting on December 8 - first, that members of the public had been excluded, second that members of council were excluded, and thirdly, too much information was presented. Mr. Plinte referred to his correspondence requesting that another meeting be held for the public, council and the CSC.

To assist the CSC with its discussion, Mr. Murray distributed a schedule of proposed events for the completion of the project (Attached as Appendix xx).

Discussion:

- Relating to the neighbourhood meetings proposed for late January/early February, the Region clarified that it would not be distributing 20,000 copies of the DSR.
- CSC meetings on specific subject areas would assist the CSC in understanding the detailed information.
- Ms. Austin noted agreement with a meeting to be held on the Melvin pedestrian access -due to the schools in this area.

- Members suggested a number of options for organizing the CSC's response to the DSR. These are:
  - organize geographically and each "area" would consider all issues
  - organize on an issue-by-issue basis to ensure accommodation of cross-cutting and linkage issues;
  - organize by issue group, around the three segments of the December 8 presentation (Human Settlement, Natural Conditions, Alignment options)
- Two participants felt that commenting on the Background Conditions portion of the DSR only could be achieved by the end of January.
- A number of members expressed serious concern about the time constraints for participation - in particular, the time required for the CSC's response to the DSR Vol. I, (the material is considered very detailed and complex. For the public and CSC members to digest the information, hear from the consultants and provide responses a number of meetings will need to be held). These members and some others identified serious concern with regards to the timetable for input and response to impacts and mitigation (noting that member organizations would need at least six weeks to review and report back to CSC with advice). Others indicated that they could not support the suggestion of more time, if the overall project schedule would be effected. *The Region noted that extending the proposed response date (January 30, 1998) by one month would effect the schedule and that the Region would need to advise the CSC on its deliberations regarding this request.*

Action regarding the review process:
It was generally agreed that the CSC would:
- meet as a committee of the whole to benefit from consultants' advice on the background conditions and suggestions made in the DSR;
- divide into three general "geographic" groups to consider issues affecting each specific area, and report back to the CSC; and,
- provide its advice to the Region.

Action regarding the time constraints issue:
The concern of some members relating to serious time constraints for the review of the DSR and input/response to impacts would be forwarded by the facilitator to the Region for
response. It was suggested that the review of the DSR be completed by **the end of February** instead of the end of January, and that an additional month be provided for input
and review to the impacts. The Region agreed to advise the CSC of its response within 7 days.

6.0 Socio-Economic impact assessment - Mr. Plinte

Due to the time (9:00 p.m.) Mr. Plinte reluctantly suggested that the item be deferred to the next meeting. A critique of the Region's position by Friends was distributed at the meeting (attachment xxx).

Action: The CSC discussion on socio-economic impacts would be addressed at the start of the next CSC meeting.

7.0 New Members

Professor Korol (Citizens' For Sustainable Development) and Mr. Jack Lee (Kings Forest Orienteering) were accepted by the Region for membership. Ms. Judy Kloosterman (Riverdale Community) attended the meeting and is considering whether to request a membership to the CSC.

8.0 Terms of Reference Sub-Committee Report

Karen Mechar presented the sub-committee's proposals for final changes to the TOR. Mr. McLean raised a number of concerns.

It was agreed that the following concerns would be referred back to the CSC Sub-Committee:

- re-insert the word "recommendations" which was deleted as a result of Council's amendments;
- serious outstanding concerns regarding membership still remain since there was no acceptance of the recruitment of neutrals (all 10 members replying to the TOR sub-committee's request had indicated opposition to recruitment of neutrals); in addition, the mechanism for approving new members (through the Region) was not agreed to (L. Knox);
- objection to the inclusion of the Burlington Street Interchange (Mr. McLean noted that there could be a court challenge on this issue, since it was not included in the Exemption Order); and,
- TOR needs to be explicit that CSC meetings will be advertised and open to the public.

The Terms of Reference were approved with the exception of the referred issues. No new issues will be considered by the CSC.

Ms. Leppard distributed the Council resolution indicating the changes which were made and indicated that the reason for the changes had not been communicated to her. Ms Lukasik requested the Region provide the reason why the word "recommendations" was removed. Mr. Murray indicated that in his discussions with staff who attended the TSC meeting where the motion was initially passed, that it needed to be made clear that Council will be making the final decision.

9.0 Next Meeting and Agenda

The next meeting will be held on January 28, 1998 at Lakeland Community Centre (to be confirmed). Its focus will be on CSC review of the DSR. Members were requested to bring comments and questions with them to that meeting.

The meeting adjourned at 9:30 p.m.
Report prepared by S. Leppard.
January 12, 1998

MEETING RECORD OF THE CSC #5
Red Hill Creek Expressway IADP - Community Stakeholder Committee
January 28, 1998
Lakeland Community Centre
6:30 - 9:00 p.m.

1.0 Welcome, Introduction and Agenda Review

Ms. Leppard called the meeting to order at 6:30 p.m. Members of the public introduced themselves. A list of registered participants is attached as Appendix A. The agenda for the meeting was reviewed and approved. No delegations from the public were received. Thank you to Mr. Ken Williams, from the East Hamilton Optimist Club, who provided the acoustic equipment for the meeting.

2.0 Presentation on Socio-Economic Assessment - Mr. Plinte

Mr. Plinte showed a video on the Red Hill Valley rehabilitation project conducted with the Hamilton Region Conservation Authority and talked about the broad array of social values which are associated with natural areas. He informed the group that social scientists have identified many categories of these social values including:

- recreation
- aesthetic/scenic
- educational
- existence
- therapeutic
- spiritual
- character building
- bequest
- option
- scientific
- tourism
- ecological functioning
- natural heritage

Mr. Plinte suggested that the Region conduct a cost-benefit analysis which compares the social value of retaining "naturalness" versus the economic benefit of building the expressway. To do this the Region must have some understanding of how the public currently values the area.

Discussion:

- Mr. Mahoney commented that in the Rosedale community especially, people are concerned that the expressway will have a negative social and economic impact. They currently use the valley for cultural and recreational activities and are concerned about:
  - potential decline of property values
  - a decline in air quality
  - increase in noise
  - the current placement of the pedestrian bridge.

People want to feel that they have a sense of control over these issues, and would like to see continuous monitoring of air quality rather than just six months of monitoring.

- Ms. Lukasik agreed with the need for a social impact assessment, and stressed the need to evaluate based on context. For example there is no old growth in the valley, but the valley still means as much to the community as if there were old growth present.

Option 1:

- Professor Korol pointed out that the Region did commit to Vision 20/20 on sustainable development, and suggested that the Vision 20/20 review team examine the project to ensure that it meets Vision 20/20.

- Ms. Knox noted that the proposal's features are positive and asked Mr. Plinte to clarify the differences between the Region's proposal and The Friends of Redhill proposal for a socio-economic impact assessment.

- Mr. Plinte noted that the Region's proposal for a socio-economic impact assessment fails to acknowledge the whole diverse set of social values that people have for the area. The Region's proposal also focuses specifically on the QEW interchange area, and does not consider the economic role the valley plays in attracting tourism..

- Mr. McLean felt that the people who live along the edge of the valley, the severely economically disadvantaged (24-35% of the population there are below the poverty line), have not been brought into the IADP process and no attempts have been made to gather these people's comments regarding the impacts they feel the expressway will have on them. He asked "what about the kids who are mostly unsupervised and live along the edge? They have no money to participate in structured recreation programs." In his opinion these people will be among the most impacted by the expressway. Ms. Leppard noted *that the Community Consultation sub-committee is looking into finding a conduit for these people's participation.*

- Mr. Murray clarified that there will not be a social values survey conducted as part of the socio-economic impact assessment because that is beyond the scope of the Exemption Order. He reminded the CSC that prior to submission of the Exemption Order there was public input and although there is not the precise data you would get from doing a social values survey which Mr. Plinte suggests, the Region does have a sense of the value people place on this resource.

Option 2:

- Ms. Knox asked if the Region would accept the results if another agency conducted a social values survey. Mr. Murray responded that he would if the survey was done within the time frame of the IADP.

- Mr. Plinte then commented that it would not be possible to conduct such a survey within the IADP time frame because the survey should be done over the course of the four seasons.

Option 3:

- Ms. Berkhold suggested a questionnaire could be put in the CSC newsletter.

- Ms.Mitchell asked whether the ultimate purpose of the survey was for determination of mitigation measures or to approve or disapprove the construction of the expressway. Mr. Plinte suggested that the survey could be used as part of a cost-benefit analysis, to determine what the impacts of the expressway will be.

- Ms. Leppard reiterated that the Region had advised the CSC that the Exemption Order does not require this level of study to be undertaken.

- Mr. Ryan expressed to the CSC that he has first hand knowledge of what impacts an expressway can have on a community. He told the CSC that when an expressway was built in his neighborhood 75% of the businesses moved, and 30% of the residents left the area.

- Mr. Plinte reminded the group that this proposal had been through the watershed planning process which should be informing the IADP.

- Ms.Hubbard stated that the Watershed Planning process thought a social values survey would be useful, but that it has not yet been resolved as to who should undertake this plus the other 100 actions identified in the Watershed Plan.

- Ms. Leppard summed up the discussion to this point by presenting the options generated by the group for further consideration:
    - refer the socio-economic assessment to Vision 20/20 for review
    - look for partners to fund a social values survey
    - add a questionnaire as part of the CSC newsletter

3.0 Working Sessions

Ms. Leppard explained that there would be three working groups, one for the QEW section of the expressway, one for the section from the QEW to Greenhill and one for the section from Greenhill to Mud Street.

Mr. McLean expressed concern re: splitting the discussions according to three geographical areas. Ms. Leppard reiterated that a consensus decision was reached at the last CSC meeting and by the Community Consultation sub-committee to proceed this way.

Ms.Leppard informed each working group that the purpose of the session was to identify issues, gaps, errors and omissions in the DSR (see workbook Appendix B). The results could then be used to determine the issues needing to be addressed.

4.0 Plenary Reports of the Working Sessions

QEW

Natural Setting - Consensus Items

- no information on the effect of lake levels on groundwater and in relation to the wetland recharge and discharge
- page 16 of the DSR states that there is a suspected inability for fish to get into the marsh because the creek is too low, however the working group felt that perhaps its not the creek that is too low but the marsh that is too high because its been silted in
- two contaminated sites (Nash and Brampton) are identified in the text but not on the map - who will remediate? When? How much money? What impact will there be on the environment?
- need to identify options to move the creek away from the Ottawa Street dump and the Brampton Street dump
- need to identify options to keep wildlife off the road (especially turtles in the spring), and to increase the size of wetlands
- need to identify options to take runoff from the road away from the wetland
- DSR does not identify opportunities to fix current problems

Natural Setting - Non-Consensus Items

- not all options that are protective of the wetland are mentioned e.g. underpass under QEW
- how can the Region get approval to build a road through a Class 1 wetland?
- need to identify current impacts of bypass of Woodward to STP (Sierra Club estimates 5 billion litres/year raw sewage) gap in information on current traffic flow specifically for Woodward Ave and for the area in general

Human Settlement - Non-consensus Items

- gap in systematic or quantified information on how people value the natural resources of the valley

General Question
- what is the budget and how is it allocated for the project?

QEW to Greenhill

Air Quality - Consensus Items
- need continuous monitoring of air quality, community based if possible
- need to identify how traffic volumes will impact air quality

Visual Resources - Consensus Items
- why is there no visual assessment below the Escarpment?
- can a reduced assessment be done below the Escarpment?

Water Quality - Consensus Items
- is it possible to retrofit the Greenhill water reservoir now?
- will sewer system overload with runoff etc.?
- will sewers for businesses flow into the creek?

Surface Water - Consensus Items
- is the Provincial policy on collection of runoff be followed?
- will compounds in stormwater collection ponds impact on wildlife?
- how will construction affect floodplains? - need for studies

Private/ Public Property - Consensus Items
- will there be expropriation mitigation?
- where will sound walls be places?
- will there be tax relief?
- loss of recreational green space in the north end of the valley

Streams - Consensus Items
- will hiking trails flood with additional runoff?
- what is the expected frequency and severity of streams flooding?

Sound/ Noise - Consensus Items
- where will sound walls be physically placed? - on road or lip of valley?

Birds - Consensus Items
- will there be compensation for loss of terrestrial habitat?

Fish/ Wildlife - Consensus Items
- to mitigate alteration of the North-South wildlife corridor could a continuous wildlife link be established on the west side?

Landuse Infrastructure - Consensus Items

- are there studies on impacts to Emergency vehicle response times?
- what will the traffic patterns be moving from highway 20 to the expressway
- how will equipment be moved during the construction phase - what impacts will there be on the landscape and access to the valley?
- how was placement of the pedestrian bridge at Greenhill decided?

Greenhill to Mud Street

Groundwater - Consensus Items

- no identification of areas of groundwater disturbance and lack of quantification
- groundwater recharge areas not adequately defined
- will increase in hard surfaces have a negative impact on flows?

Groundwater - Non-consensus Items

- is the Fisheries Act being violated?

Terrestrial - Consensus Items

- how will road envelope (cutting and filling) affect forests and water flows?
- page 9 pine forests not shown
- p14 second paragraph, what resources are rare?

Human Settlement - Consensus Items

- need to identify at least areas of artifacts which may be impacted by the expressway
- pedestrian and bike trails not clearly delineated
- road cut is only 10 meters from Bagshaw School property

5.0 CSC Meeting Planning

The following meeting plan was proposed by Ms. Leppard and accepted by the group:

1. Ms. Leppard would document the issues/gaps/errors and distribute them within three days. Any additional issues/gaps/errors could then be forwarded to LURA. A consolidated list would be generated for the next CSC meeting on February 11th, and discussed in full. In addition, the consultants would respond to information needs and gaps prior to the next meeting.
2. At the next CSC meeting members would review the issues/gaps/omissions/errors and the linkages between the three geographic sections. Preliminary advice would be prepared on the DSR Vol.1
3. Also at the next meeting the CSC would develop preliminary advice on an "evaluation framework"

The group decided that the following issue tables were needed:

- air quality
- soil contamination
- water
- terrestrial
- creek bioengineering
- traffic impacts

The Community Consultation sub-committee agreed to consider how to establish these tables.

6.0 CSC Business

6.1 Socio-Economic Assessment

It was agreed that :

- the newsletter would not generate the level of detail required
- a request to review the proposal, as outlined in the minutes, would be sent to the Vision 20/20 Review Team
- the CSC requests the Region to cover the costs of conducting a socio-economic assessment as outlined in the minutes

Action: The facilitator will forward the above referenced consensus to the appropriate party

6.2 Review of Draft Meeting Record for January 7, 1998

Deferred to the next meeting.

6.3 Review of Correspondence

Correspondence was tabled from Ms. Wiebe, Mr.Plinte, Mr. McLean, Mr.Konkle, Ms. Austin, and the Region. (Attached as Appendix C)

Mr. Plinte's and Mr. McLean's January 23rd correspondence had been referred to the Community Consultation sub-committee. Ms. Wiebe's correspondence has been acted upon. Mr. Konkle's article was not accepted for this newsletter but may be included in subsequent issues. Ms. Austin's letter was received for information. Mr. McLean's January 19th email regarding publicity of meeting was dealt with by the Community Consultation sub-committee which will be developing an advertising/media/communications plan. Mr.McLean's January 22nd email has been forwarded to the Region for their response.

6.4 Updates from Terms of Reference and Community Consultation Sub-committee Meetings

The January 23 Community Consultation Sub-committee Report was agreed to (see Appendix D).

Action: The report will be forwarded to the Region with the recommendation that an effort is made to communicate the IADP to ethnic groups.

The January 23 Terms of Reference meeting report was approved as read (see Appendix D). Mr.McLean clarified his request for the "do nothing" alternative to mean that impacts should be measured using baseline/existing conditions.

7.0 Next Meeting

The next CSC meeting will be held on Wednesday February 11th , 1998 at Lakeland Community Center from 7:00 to 9:30 p.m. It will focus on consolidating issues regarding the DSR, and developing an evaluation framework.

The three public neighborhood meetings will take place on February 16th, 18th and 19th. Times and locations to be confirmed.

The meeting adjourned at 10:00 p.m.

Report prepared by S. Leppard with Pam Hubbard
January 30, 1998

Appendix A
(revised)
COMMUNITY STAKEHOLDERS COMMITTEE
Attendance for January 28, 1998
Redhill Creek Expressway
(North-South Section)

Name	Affiliation
Burke Austin	Community Action Parkdale East
Bruce Baillie	Community Action Parkdale East
George Barclay	Hamilton-Halton Home Builders Association
Patricia Berkhold	Beach Strip/Woodward Community Council
Jim Harvie	Citizen's Expressway Committee
Louise Knox	Hamilton Harbour RAP
Robert Korol	Citizens for a Sustainable Community
Jack Lee	Hamilton King's Foresters Orienteering
Ruth Liebersbach	Hamilton and District Chamber of Commerce
Lynda Lukasik	W.A.T.E.R
Barry MacSween	Tradeport International Corporation
Ed Mahoney	Concerned Citizens of Ward 5
Don McLean	Friends of Red Hill Valley
Pauline Mitchell	CAA South Central
Brian O'Donnell	Mount Albion Home Owner's Association
Ron Plinte	Friends of Red Hill Valley
Keith Rodgers	BARC / RAP
Frank Ryan	Hamilton Beach Preservation Committee
Pam Hubbard	Regional Municipality of Hamilton-Wentworth
Chris Murray	Regional Municipality of Hamilton-Wentworth
Sally Leppard	LURA Group
Sandy Naim	Ministry of Transportation
Carolyn Pettitt	LURA Group
<u>Members of the Public</u>	
Darcy Baker	Hamilton Region Conservation Authority
Nancy Haigh	Rosedale Neighbourhood Parks Committee
Gwynneth Hawes-Cook	No affiliation given
Chuck Hostonsky	ESAIEG, University of Waterloo
C. Howard	East Hamilton Optimist Club
Ross Hunt	No affiliation given
June Koppeser	No affiliation given
Lorraine Rivers	Hamilton King's Foresters Orienteering
William Simpson	Lakeland Family Recreation Centre
Gord Taylor	Community Action Parkdale East

MEETING RECORD OF THE CSC #6
Red Hill Creek Expressway IADP - Community Stakeholder Committee
February 11, 1998
Lakeland Community Centre
7:00 - 9:30 p.m.

1.0 Welcome, Introduction, and Agenda Review

Ms. Leppard called the meeting to order at 7:05 p.m. She reviewed the operating procedures and explained the role of the CSC to the members of the public who were present. A list of registered participants is attached as Appendix A. The agenda for the meeting was reviewed and additional items were added by Mr. Lee and Mr. Murray. No delegations from the public were received, and there were no declarations of direct interest from members of the CSC.

2.0 CSC Business Items

2.1 Review of Meeting Records - January 7th and January 28th

The meeting record from January 7, 1998 was approved with the addition of Mr. O'Donnell to the attendance list (Appendix A).

The meeting record from January 28, 1998 was approved as amended:

- Page 1: Mr. Plinte noted that the second sentence under section 2.0 should read "He informed the group that social scientists have identified many categories of these social values including: recreation, aesthetic/scenic, educational, existence, therapeutic, spiritual, bequest, option, scientific, tourism, ecological functioning, natural heritage, and character-building"
- Page 3: Mr. McLean asked that his discussion comment under Option 3 be deleted as he did not remember making this suggestion
- Page 4: Ms Austin noted that the sentence in parenthethis from the third bullet under section 4.0 QEW Natural Setting - Non-Consensus Items, should read "Sierra Club estimates 5 billion litres/year raw sewage"
- Page 7: Second bullet under section 6.1 should read "a request to review the proposal, as outlined in the minutes, would be sent to the Vision 20/20 Review Team"
- Page 7: Third bullet under section 6.1 should read "the CSC requests the Region to cover the costs of conducting a socio-economic assessment as outlined in the minutes"

2.2 Correspondence

Correspondence was tabled by Ms Austin, Ms Lukasik, Mr. Plinte and Mr. McLean (see Appendix B)

Ms Austin's correspondence requested that a list of consultants be made available with contact numbers. Mr. Murray provided a list of consultants but not direct contact numbers since he is to be the conduit for information exchange between the CSC and the consultants. Mr. Murray explained that this is for management and budgetary purposes. Ms Austin added that she would like to direct the following question to Dale Turvey, Commissioner of Environmental Services: How are consultants hired? Is it their role to please their client or search for facts?

Ms Lukasik's correspondence was forwarded to the Community Consultation sub-committee for consideration and her suggestions accepted by the Region.

Mr. Plinte's correspondence regarding duplication in mailouts was noted and MsLeppard stated that appendicies for minutes would only be mailed to those people who did not attend the meeting and therefore did not pick them up. Mr. McLean suggested that a numbering system for appendicies and handouts also be developed.

Mr. McLean's correspondence outlined his comments on the DSR and was distributed to the CSC as a brief.

2.3 Membership Request

Ms Leppard reported that a request for CSC membership had been received by Nancy Haigh representing the Rosedale Neighbourhood Parks Committee. Ms Haigh's application had been forwarded to the Terms of Reference Sub-Committee who could not reach a consensus recommendation.

Discussion:

- Ms Liebersbach stated that she felt that the interests of the organization Ms Haigh represented were already being represented by Mr. Mahoney and that the CSC was more than half way through its mandate. She suggested that perhaps Ms. Haigh could be an alternate for Mr. Mahoney.

- Mr. McLean commented that the two organizations were distinct, and that he did not feel that Ms. Haigh's membership should be denied because Mr. Mahoney was already a member of the CSC

- Mr. Harvie noted that the credibility of the CSC may be hurt if Ms Haigh's membership was rejected.

- Mr. Ryan commented that the CSC is supposed to represent the people of the Region, so he did not feel comfortable rejecting any membership application made to the CSC.

It was agreed that the CSC accept Ms Haigh's membership application as long as she is able to keep up with the information and time requirements.

2.4 Language Issue

Mr. Lee requested that the CSC avoid the use of jargon, technical terms, and acronyms. He noted that any member of the public who walks into a CSC meeting should be able to understand what is being said.

Mr. Lee also offered to guide field trips around the valley so that people could better interpret the present situation of the area. Mr. Lee requested that this offer be advertised at the upcoming neighbourhood meetings.

2.5 Business Arising

2.5.1 Community Consultation Sub-Committee Update

Ms Lukasik presented a report on the Community Consultation sub-committee meeting which was held on February 9 (see Appendix C). Ms Lukasik noted that the sub-committee recommends that six issue tables be convened and seeks advice on whether to convene one all-day session to cover the six issue tables, or three x 2 issue sessions within a short period of time (e.g. Wednesday, Saturday, Wednesday).

Discussion:

- Members agreed with Professor Korol's suggestion that an issue table be convened for noise/traffic rather than just traffic.

- Ms Lukasik preferred 3 sessions so that the information received would be spread out and therefore easier to digest.

- Ms Mitchell noted that the public would have greater opportunity to attend the sessions if they were spread out over three sessions rather than just one.

- Mr. McLean asked for clarification on the purpose of the first round of issue tables. Mr. Harvie responded that the purpose was for the CSC and the public to ask questions of the consultants. Ms. Lukasik added that this first phase would help prepare CSC members for the impact prediction and mitigation phase. Ms Leppard noted that this was an interactive knowledge gaining process for CSC members so that they can give better advice to the Region not only on the DSR but on impact predictions and mitigation measures.

- Ms Liebersbach suggested that question sheets be passed out at the sessions so people could also write their questions down.

- Mr. McLean asked at what point the CSC would be advising the Region. Ms Leppard said that she hoped the CSC would have its advice on the DSR Section 2 ready by the end of February.

- Mr. McLean noted that we should recognize that the issues may change for round two.

It was agreed that the issues tables approach was acceptable, but that the timeframe would be determined by the Community Consultation sub-committee. Suggestions and questions to shape the issues tables would be welcomed by the sub-committee.

2.5.2 Neighbourhood Meetings

The Community Consultation sub-committee recommended that a member of the CSC attend the neighbourhood meetings and describe the role of the CSC. Mr. Lee volunteered for Bagshaw, Mr. Harvie volunteered for Glendale, and Ms Austin volunteered for Woodward.

Action: Ms Leppard will prepare the presentation for those members who volunteered to attend the meetings.

Discussion:

- Ms Austin asked if a flyer was being prepared to advertise the neighbourhood meetings. Mr. Murray said that Ms Austin could prepare a flyer, as long as the Region's logo was not used.

- Ms Lukasik noted that the format of the meetings will be similar to that of the meetings on the Burlington street interchange. The Region will make a presentation and questions will follow. There will also be a speaker registration.

- It was agreed that CSC members are there to listen to the public and encourage the public to contact them with their concerns so that CSC members can represent their interests. This role will be explained in the presentation made by the CSC volunteer at the beginning of the meeting.

- Mr. McLean asked if the meetings would present an overview of the whole expressway or be geographically specific. Mr. Murray noted that the presentations will focus on the expressway designs of the immediate area where the meeting is being held. Anyone who is really interested in the whole expressway can contact the Region to obtain a copy of the DSR or for further information.

- Mr. McLean expressed concern that the public might think that all the meetings are going to have the same content and that they can simply attend the meeting which is most convenient for them.

- Ms Lukasik suggested that the flyers sent out be specific to each area so people will know that the meetings are going to be geographically based. Mr. Murray added that a newspaper advertisement explained that the meetings are going to have a particular geographical focus.

- Ms Leppard requested that the Region forward a copy of its presentations to members of the Community Consultation sub-committee and Mr. McLean.

ACTION: Region to forward a copy of the neighbourhood meeting presentations to the Community Consultation Sub-committee and Mr. McLean.

2.5.3 Mall Display

Mr. Murray noted that members of the CSC were welcome to attend the mall display at Eastgate to be held from February 12 to 15. The Region had signed a contract with the mall owner stipulating that no confrontational situations would arise from the display.

3.0 Working Session # 2 - DSR

3.1 Identification of Additions to the Issues Matrix on the DSR Vol.1 Section 2

Participants reviewed the consolidated issues matrix. Additions received since the last CSC meeting are denoted in the matrix by italics with the exception of Mr. McLean's (see Appendix D).

The following additions were identified by the CSC:

Natural Setting - Maps

QEW

- on page 43 none of the numbers are legible so the section is useless
- page 48 shows one cut, but on page 66 there is rationale provided for 2 cuts

General

- Red Hill Trail inaccurately depicted
- no delineation of the Bruce Trail
- no vegetation cover shown on maps

Natural Setting - Water Quality

QEW

- bullet should read "5 billion litres" not 0.5 billion

Human Settlement - Maps

- vegetation/tree cover missing
- Red Hill Trail inaccurate

Human Settlement - Private/Public Property

-bullets under QEW to Greenhill should also be listed under QEW and Greenhill to Mud

Human Settlement - Land Use and Infrastructure

General

- Niagara Escarpment zones not shown on maps

Human Settlement - Cultural Heritage

Greenhill to Mud

- why is there disparity between the number of archeological sites identified in 1990 and the number of sites which is said to exist now?
- not all historical sites have been identified
- major archeological study has not been referred to

Human Settlement - Known and Potential Contamination Sources

QEW to Greenhill

- closed landfill at King and Pottruff not on map, needs to be identified. If it no longer a site why not?

Human Settlement - Air Quality

QEW to Greenhill

- add to first bullet "station should be at floor of valley"

General

- 1989 study by RWDI not referred to
- the Kipling air monitoring station has been shut down
- no mention of CO_2 and monoxides being tested as part of air quality monitoring
- besides "field testing" is there a technical report on air quality in the Region's library?

Human Settlement - Sound/Noise

General

- bullet under QEW to Greenhill should also be under QEW and Greenhill to Mud
- what technology exists regarding sound walls? what are the options?
- is there data available for different spots? is there a baseline study?
- page 41 states that there will be "site specific assessments once the expressway alignment has been set" does this not beg the question? do we not need data first before the alignment is set?

3.2 Discussion re: Preparation of Preliminary Advice to the Region on DSR

Ms Leppard asked the CSC to review the Region's response matrix to those issues/gaps/errors which were identified on January 28 (Appendix E). Those issues/gaps/errors which the group feels have been adequately responded to will then be crossed of the list at the next CSC meeting. A consolidated list of issues/gaps/errors with the DSR will be distributed before the next meeting. It will include comments from the upcoming neighbourhood meetings, any further additions received, as well as the items contained in Mr. McLean's submission.

ACTION: Ms Leppard to prepare and distribute a consolidated list of issues before the next CSC meeting.

Discussion:

- Mr. McLean asked if the objective is to make sure that the DSR is complete or to make sure that the necessary information to satisfy the issues/concerns raised exists somewhere. Mr. Murray responded that the DSR is meant to be a summary document but that an appendix of reference documents could be included.

3.3 Discussion of an Evaluation Framework for Impact Assessment

Mr. Murray explained that before impact prediction can take place, the Region needs input from the CSC on developing a set of impact evaluation criteria. Mr. Murray explained that the evaluation criteria used by the Region is based on categories, factors, and indicators. For example, for noise - Human Settlement is the category, noise is the factor, and change in noise decibels is an indicator. Mr. Murray noted that there are two categories: human settlement and natural setting. These categories are then sub-sected into factors. He also noted that there could be several indicators for a given evaluation criterion. For example, for terrestrial habitat - Natural Setting is the category, terrestrial resources is the factor, and trees lost is one possible indicator.

Discussion:

- Ms Lukasik asked if there could be qualitative indicators. Mr. Murray responded that if there was no baseline data for the indicator then it would be not be possible to assess the impacts. For example no baseline data exists for property values, or the value of recreational use of the valley. If it can not be measured then we can not predict impacts. Mr. Mahoney suggested that there may be studies for other areas which could be incorporated as baseline data for property values for the Red Hill area.

- Ms Leppard asked when the Region might be able to produce a list of evaluation criteria for the CSC to consider. Mr. Murray said that it would be possible to make the list in a couple of weeks and that he would provide rationale for why certain indicators are appropriate. For instance in some cases the use of certain indicators has been legislated.

- Professor Korol asked if the CSC is going to suggest how to weigh the indicators, and how social values were going to be assessed. Mr. Murray

stated that dealing with social values was beyond the scope of the IADP and would not be considered.

- Mr. McLean expressed concern that the CSC was being asked to do a lot and that it was not exactly clear what work they are supposed to be doing. Ms Leppard said she would put together a flow diagram, showing the upcoming work requested by the Region.

ACTION: Ms Leppard to prepare a CSC work flow diagram.

3.4 Update from Mr. Murray

Mr. Murray announced that the Region is in the process of forming a Landscape Management and Restoration Advisory Group. CSC members are welcome to participate and should call Pam Hubbard for more information. The group will be looking at nursery stock, plant rescue, and other issues. Government agencies will be participating in the group. The group's first formal meeting is this week.

Mr. Murray also announced that a bore hole project to obtain information which will inform the natural channel design. Mr. Murray explained that he is working with consultants to ensure that only minimal damage will result, and to determine what kind of equipment is going to be used for the project. A number of questions were raised.

ACTION: Mr. Murray will develop an information sheet for CSC members which describes the project.

4.0 Next Meeting

The next CSC meeting will be held on Wednesday March 4th , 1998 at Lakeland Community Center from 7:00 to 9:30 p.m. It will focus on a review of the Region's response matrix and examination of a consolidated list of issues regarding the DSR. The consolidated list will include all additions received as well as a roll up of information from the upcoming neighbourhood meetings.

The meeting adjourned at 9:30 p.m.

Report prepared by S. Leppard and C. Pettitt
February 13, 1998

Appendix A

COMMUNITY STAKEHOLDERS COMMITTEE
Attendance for February 11, 1998
Redhill Creek Expressway
(North-South Section)

Name	Affiliation
Burke Austin	Community Action Parkdale East
Paul Beneteau	Bruce Trail Association
Patricia Berkhold	Beach Strip/Woodward Community Council
Rick Guidolin	Hamilton Construction Association
Jim Harvie	Citizen's Expressway Committee
Robert Korol	Citizens for a Sustainable Community
Jack Lee	Hamilton King's Foresters Orienteering
Ruth Liebersbach	Hamilton and District Chamber of Commerce
Lynda Lukasik	W.A.T.E.R
Barry MacSween	Tradeport International Corporation
Ed Mahoney	Concerned Citizens of Ward 5
Don McLean	Friends of Red Hill Valley
Pauline Mitchell	CAA South Central
Brian O'Donnell	Mount Albion Home Owner's Association
Fred Pizzoferrato	Centennial Parkway Ratepayers' Group
Frank Ryan	Hamilton Beach Preservation Committee
Chris Murray	Regional Municipality of Hamilton-Wentworth
Sally Leppard	LURA Group
Carolyn Pettitt	LURA Group
Members of the Public	
Vince Georgian	No affiliation given
Gloria Howard	East Hamilton Optimists
Ross Hunt	No affiliation given
Scott Konkle	Hamilton Region Conservation Authority
Corey Lewis	The Wetland Specialists
Tim Owen	No affiliation given
Sheri Ross	The Wetland Specialists

DRAFT MEETING RECORD OF THE CSC #7
Red Hill Creek Expressway IADP - Community Stakeholder Committee
March 4, 1998
Lakeland Community Centre
7:00 - 9:30 p.m.

1.0 Welcome, Introduction, and Agenda Review

Ms Leppard called the meeting to order at 7:05 p.m. She reviewed the operating procedures and explained the role of the CSC to members of the public who were present. A list of registered participants is attached as Appendix A. The agenda for the meeting was reviewed and no additional items were added. One member of the public indicated that he would like to give his input on the design alternatives. Ms Marian Pacey indicated that she would be sitting in for Mr. Ryan who was unable to attend the meeting. Ms Pacey also indicated that Hamilton Beach Preservation had decided to change its position from neutral to con. No delegations from the public were received and there were no declarations of direct interest from members of the CSC.

2.0 CSC Business Items

2.1 Review of Meeting Records - February 11th

The meeting record from February 11, 1998 was approved as amended:

- Page 6: under Human Settlement - Known and Potential Contamination Sources, QEW to Greenhill the closed landfill is located at King and Potruff, not King and Potter.

Ms Lukasik noted that the flyers referred to on page 5 in item 2.5.2 were not distributed. Ms Austin had tried to coordinate this.

2.2 Correspondence

Correspondence was tabled by Ms Lukasik and Mr. McLean regarding the CSC presentation at the neighbourhood meetings (see Appendix B). Their correspondence had already been forwarded to the Community Consultation Sub-committee and the CSC presenters. Correspondence from Ms Lukasik regarding dates for the issue table sessions was also tabled and discussed later in the meeting.

2.3 Business Arising

Report on the Neighbourhood Meetings

Ms Hubbard thanked the CSC for their input and participation in the neighbourhood meetings. Ms. Hubbard reported that approximately 100 members of the public attended the first neighbourhood meeting at Elizabeth Bagshaw School, that approximately 60 members of the public attended the

second neighbourhood meeting at Glendale Secondary School, and that approximately 130 people attended the third neighbourhood meeting at Woodward Public School. Ms Hubbard noted that at all three neighbourhood meetings there were two main issues raised:

- people are still concerned about the need for, the costs of, and the location of the expressway
- air quality and health impacts are major concerns.

Discussion:

- Ms Lukasik noted that she had attended all three neighbourhood meetings and felt that Ms Hubbard's report was accurate, but added that the public also wanted the air quality modeling to be reviewed. Ms Lukasik further commented that there was a call for due process.

- Mr. Monkley noted that misinformation was being handed out at the neighbourhood meetings so it was difficult for people to accurately consider the material which was presented by the Region .

Ms Lukasik expressed concern regarding how the input from the neighbourhood meetings was going to be incorporated into the CSC mandate. Ms. Lukasik put forward the following recommendation:

that the CSC recommend to Regional Council that the CSC, or an appropriately reconstitued committee, be given the mandate to address public demands to justify the need, cost, and location of the proposed North-South expressway.

- Mr. Harvie agreed that need, cost and location were a concern at the public meetings, but that these issues had been decided. He added that even though approximately 300 people attended the neighbourhood meetings, a great many did not attend. He noted that the CSC can not assume that the viewpoint of those who did not attend was represented by those that did. The CSC should not consider need, cost and location issues but rather examine the impacts of design alternatives.

- Mr. McLean commented that he felt the CSC's role is to make sure that messages from the public get passed on to the Region. He felt that the issues of cost, need and location should be examined by the CSC. He felt the reputation of Friends of the Red Hill Valley was being compromised by his participation in the IADP.

- Mr. Plinte commented that if the concerns of the public were going to be discounted by the CSC then what was the point of having a CSC.

- Mr. Barclay commented that the mandate of the CSC does not include a review of cost, need for, or location of the expressway.

- Ms Leppard stated that the Terms of Reference outlines the CSC's mandate and there is a process for amending it.

- Mr. Harvie commented that he did not think the CSC should ignore the public input received at the neighbourhood meetings, but that the CSC can only deal directly with the input that pertains to their mandate.

- Ms Hubbard noted that all the input received at public meetings is forwarded to Regional council.

Ms Leppard asked CSC members to comment on how they felt about Ms Lukasik's recommendation. Members were split on the issue. A suggestion was made that the issue be deferred and included as an agenda item of the next CSC meeting. It was also suggested that the CSC begin forwarding all public meeting summaries to Regional council.

As an interim measure it was agreed :

THAT the neighbourhood meeting summary, subject to review, be forwarded to Regional council for their consideration; and,

THAT CSC members will review the neighbourhood meeting summary so that errors can be corrected and a synopsis with recommendations to Council can be prepared for consideration at the next meeting.

Given that the issue of expanding the CSC mandate had not been identified as an agenda item for this meeting, and given that there had already been an hour of discussion on the topic, in the interests of time Ms Leppard deferred further discussion of the recommendation to expand the CSC mandate to the agenda of the next CSC meeting. Several CSC members felt it was unacceptable that the CSC could not represent the public opinion received at the neighbourhood meetings, and left the meeting.

The CSC decided that copies of the CSC meeting materials should continue to be forwarded to those who left the meeting.

CSC Workplan and Schedule

Ms. Leppard reviewed the workplan and schedule (Appendix C). There were no comments or suggestions made.

Dates for Issue Table Sessions

Based on the responses received from CSC members regarding priority and possible dates for the issue table sessions the following tentative dates were established:

- water and creek bio-engineering — Saturday March 14
- soil and terrestrial — Monday March 23

- air quality and noise/traffic Saturday March 28

Mr. Murray will review these dates with the consultants and advise the CSC of the confirmed dates for the issue table sessions. Mr. Murray noted that he would like to see the issue tables completed before April because the Region will be presenting to the CSC the impacts of the design alternatives in early April.

3.0 Working Session

3.1 Changes to the Consolidated Matrix of Issues/Gaps/Errors re the DSR Volume 1

The following changes to the matrix (Appendix D) were requested:

- Page 19 - QEW to Greenhill, the landfill is located at King and Potruff not "Potter"
- Page 28 - second bullet in General section should read King, Queenston, and Barton streets not "Queen"

Discussion:

- Ms Mitchell suggested that the matrix should differentiate between those comments which came from the public meetings and those which came from the CSC
- Mr. O'Donnell suggested that a caveat explaining the source of the comments be added to the matrix
- Mr. Harvie noted that some of the comments in the matrix do not address the DSR so they should be separated out.

It was agreed that:

- **the public and CSC comments be separated, and**
- **the two resulting documents be forwarded to the Region as advice from the CSC and public on the DSR volume 1, and advice from the public regarding impact concerns.**

3.2 Consideration of Design Alternatives

Ms Leppard asked CSC members for their comments on the design alternatives for the Burlington/QEW interchange, the relocation of the Red Hill Creek, and the viaduct crossing. Mr. Murray reminded the CSC that in April there will be a presentation on the impacts associated with each of the alternative designs.

Burlington/QEW interchange

- Mr. Nairn noted that the public comments noted on page 27 of the consolidated matrix are being considered by the Ministry of Transportation.

- Professor Korol expressed concern how the interchange would impact pedestrians and cyclists.

- Mr. Monkley suggested that there should be two bridges constructed so that the beach would not be as affected by the interchange. Mr. Murray noted that the Ministry of Transportation's first priority is safety, but that the option of building two bridges is being considered.

- Ms Berkhold pointed out that the Community Centre floods from time to time and this should be considered when selecting the final design.

- Professor Korol asked how much money would be spent on mitigation. The Ministry of Transportation would be covering mitigation costs.

- Mr. O'Donnell asked if construction of the Perimeter Road would affect any of the design options. Ms Hubbard said she would investigate this issue.

Creek Natural Channelization

Ms Hubbard explained that the creek is very unstable and that the Watershed Planning Process, though it did not specifically recommend realigning the creek did recommend that natural channelization techniques be used to stabilize the creek. Mr. Murray noted that the creek will be moved to the area within the gray band shown on pages 77, 78, and 79 of the DSR. The original bio-engineering proposal is shown in Chapter 3 of the DSR. Ms Hubbard explained that the natural channel design approach means that the creek will be lifted up and realigned west of the expressway.

- Mr. Monkley commented that the reason for two culverts under the CNR tracks was due to the movement of the creek as a result of erosion.

- A member of the public commented that she had not been informed about the fact that the creek might be realigned and she felt that the public needed to be notified about this proposed design option. Mr. Barclay asked why the public did not know about the option to realign the creek. Mr. Murray noted that the public had access to this information and had been informed about the neighbourhood meetings. These meetings were advertised in the newspapers, and through the distribution of 21,000 CSC newsletters. Mr. Murray also noted that if people were unable to attend the neighbourhood meetings they could have called him, his phone number was provided on all the advertisements.

- Mr. Barclay asked how a natural channel could be "constructed". Ms Hubbard replied that bio-engineering involves reinforcing a creek with vegetation at strategic points so that its present position is maintained. However, given the severe instability of the Red Hill Creek, especially

north of the golf course, bio-engineering would not be successful. The creek needs to be moved so that it can flow more naturally. Ms Hubbard pointed out that the creek will not be channelized it will be constructed with meanders.

- Mr. Monkley commented that Dartnall Road is a good example of what can be done without hardening the creek.

- Professor Korol expressed concern that the gray band did not seem to meander as much as the creek presently does. He also asked how fisheries would be affected if the creek was realigned. Mr. Murray responded that by recreating the stream and allowing the creek to flood naturally there may actually be positive impacts on the fishery.

- Professor Korol pointed out that there would be impacts on terrestrial resources if the creek is realigned. Ms Hubbard pointed out that there are impacts on terrestrial resources now as a result of flows.

- Mr. Monkley asked where the closest house would be to the creek if it was realigned. Mr. Murray said that he would look into it and advise the CSC.

- A member of the public commented that the public should be notified that **new** items are going to be discussed at public meetings.

Viaduct Crossing

Mr. Murray noted that the viaduct would be designed so that it provided wildlife with an east-west migration route, and so that it is accessible to trail users. The issue is how to accommodate both uses of the viaduct. The length and height of the viaduct are currently being considered, as is the question of how the Bruce Trail will be accommodated by the viaduct.

- A member of the public asked what the elevation of the viaduct would be. Ms Hubbard responded that the viaduct would be approximately 13.5 metres high, 30 metres wide, and could be 60 to 100 metres long.

- Mr. Harvie asked if the CSC could see a model of the viaduct. Ms Hubbard responded that more information was needed on the design considerations before a computer model could be generated.

- Professor Korol asked if one viaduct would be enough. Ms Hubbard responded that there really is only one location in this area that is suitable to put a viaduct in.

3.3 Review of Impact Evaluation Criteria Matrix

Mr. Murray presented the CSC with a table of factors and indicators which will form the basis of the impact evaluation criteria matrix. This matrix will be

completed next week and distributed to CSC members. Comments on the matrix are needed by March 18th so that the impact assessment of the design alternatives can proceed.

4.0 CSC Meeting Planning

Ms Leppard reminded the CSC that there will be three sets of issue table sessions held over the next two to three weeks, and that the Region will be completing its impact assessment on the design alternatives by the beginning of April.

The next CSC meeting will be held on Thursday April 2, 1998 at the Lakeland Community Centre from 7:00 to 9:30 p.m.. It will focus on Ms Lukasik's recommendation and a review of the issue table sessions. A subsequent CSC meeting will be held on Thursday April 16, 1998 at the Lakeland Community Centre from 7:00 to 9:30 p.m. so that the Region can present its report on impacts.

It was agreed that:

A meeting of the community consultation sub-committee would be convened to consider the release of impact information and how best to involve the public, before the next meeting.

The meeting adjourned at 9:40 p.m.

Report prepared by S.Leppard and C. Pettitt

March 5, 1998

Appendix A
COMMUNITY STAKEHOLDERS COMMITTEE
Attendance for March 4, 1998
Redhill Creek Expressway
(North-South Section)

Name	Affiliation
Bruce Baillie	HAND Association
George Barclay	Hamilton-Halton Home Builders Association
Paul Beneteau	Bruce Trail Association
Patricia Berkhold	Beach Strip/Woodward Community Council
Jim Bucko	Centennial Ratepayers' Group
Rick Guidolin	Hamilton Construction Association
Nancy Haigh	Rosedale Neighbourhood Parks Committee
Jim Harvie	Citizen's Expressway Committee
Lorne Hubber	East Mountain Industrial Park
June Koppeser	Citizen's Expressway Committee
Robert Korol	Citizens for a Sustainable Community
Jack Lee	Hamilton King's Foresters Orienteering
Lynda Lukasik	W.A.T.E.R
Barry MacSween	Tradeport International Corporation
Ed Mahoney	Concerned Citizens of Ward 5
Don McLean	Friends of Red Hill Valley
Ernie Monkley	East Mountain Industrial Park
Pauline Mitchell	CAA South Central
Brian O'Donnell	Mount Albion Home Owner's Association
Marian Pacey	Hamilton Beach Preservation Committee
Fred Pizzoferrato	Centennial Ratepayers' Group
Ron Plinte	Friends of Red Hill Valley
Pam Hubbard	Regional Municipality of Hamilton-Wentworth
Chris Murray	Regional Municipality of Hamilton-Wentworth
Sally Leppard	LURA Group
Sandy Nairn	Ministry of Transportation
Carolyn Pettitt	LURA Group
Members of the Public	
L. Anderson	No affiliation given
Gord Cocks	Mount Albion Home Owner's Association
Rick Cuvay	No affiliation given
Gloria Howard	Optimist Club of East Hamilton
Marg Lacey	No affiliation given
Peter Marko	No affiliation given
Joe Menegan	No affiliation given
Daniel Randazza	LIUNA
Lorraine Rivers	Hamilton King's Foresters Orienteering
Pat Richardson	No_affiliation_given

MEETING RECORD OF THE CSC #8
Red Hill Creek Expressway IADP - Community Stakeholder Committee
April 16, 1998
Lakeland Community Centre
7:00 - 9:30 p.m.

1.0 Welcome, Introduction, and Agenda Review

Ms. Leppard called the meeting to order at 7:05 p.m. She reviewed the operating procedures and explained the role of the CSC to the members of the public who were present. A list of registered participants is attached as Appendix A. The agenda for the meeting was reviewed and no additional items were added. No delegations from the public were received, and there were no declarations of direct interest from members of the CSC.

2.0 CSC Business Items

2.1 Review of Draft Meeting Record – March 4th

The meeting record from March 4, 1998 was approved as read (see Appendix B).

Ms Leppard noted that a minor change was made to the draft neighbourhood meeting summaries, but that the change was simply to clarify the meaning of one particular sentence and did not change the content of the summaries in any way.

Mr. Murray noted that construction of the Perimeter Road would not affect any of the design options.

Mr. Murray also noted that the closest house to the realigned creek would be located at 404 Queenston Road. The creek would run approximately 20-30 metres from the house. Mr. Monkley noted that he had visited a house near the Lincoln Alexander Parkway which was the same approximate distance from the creek as the house located at 404 Queenston Road would be after the creek realignment. Mr. Monkley did not anticipate that the proximity of the creek would create any problems.

2.2 Review of Joint Community Consultation and Terms of Reference Sub-committee Meeting – March 25th

Ms Mechar presented a report on the March 25, 1998 sub-committee meeting (Appendix C). The sub-committees discussed the upcoming release of DSR Volume 2 and agreed that open houses followed by public meetings would best ensure that people receive information about the predicted impacts and proposed mitigation measures.

The sub-committees also discussed the formal resignations which had been received from Lynda Lukasik, Burke Austin and Jack Lee. The sub-committee members felt that since only three resignations were received and continued effort is to be made to encourage these people back, there may still be a sufficient balance of perspectives represented on the CSC, although an attempt should be made to replace the expertise which has been lost.

The Terms of Refernce Sub-committee recommended that Clarence Howard's membership application for the East Hamilton Optimist Club should be accepted. In particular, Mr. Howard brings to the table interests in the Burlington Street – QEW interchange.

2.3 Business Arising

Ms Leppard informed the CSC that a letter (see Appendix D) had been sent to the Regional Chair on April 16th which indicated that the following groups would be resigning from the CSC:

Burke Austin and Gord Taylor	Community Action Parkdale East (CAPE)
Ed Mahoney	Concerned Citizens of Ward 5
Don McLean and Ron Plinte	Friends of Red Hill Valley
Frank Ryan and Marion Pacey	Hamilton Beach Preservation Committee
Brian McHattie	Hamilton Naturalists Club
Jack Lee	Kings Forest Orienteering Club
John Struger	Red Hill Valley Volunteers
Lynda Lukasik	Watershed Action Towards Environmental Responsibility

Mr. O'Donnell commented that he felt this letter contained several errors. The letter states that the members resigned because the recommendation to expand the CSC mandate was "blocked from proceeding" at the March 4th meeting. Mr. O'Donnell stated that the recommendation was not blocked, but rather deferred. Mr. O'Donnell also felt that the letter's request for "a full Environmental Assessment" , should have been expressed as a request for "another full Environmental Assessment" since one had already been conducted.

2.3.1 Recommendation Regarding Expansion of the CSC Mandate

At the March 4th CSC meeting the following recommendation was put forth: The CSC recommends to Regional Council that the CSC, or an appropriately reconstituted committee, be given the mandate to address public demands to justify the need, cost, and location of the proposed North-South expressway.

Although the CSC member who put forth the recommendation has since resigned, the CSC decided to discuss the recommendation.

Discussion:

- Ms Mechar commented that she felt the CSC should stick to its' original mandate and that if the Region feels that the need, cost, and location of

the Expressway need to be examined then another committee should be constructed to look at these issues.

- Mr. Battaglia stated that he felt the CSC should simply forward the summaries of the public meetings to the Region for their consideration. . Ms Leppard and Mr. Murray noted that this had been done via the "Report to the Region of Hamitlon-Wentworth: CSC Input on the Draft Summary Report Volume 1, and Public Input on Issues, Impacts, and Concerns" and a staff report. Mr. Battaglia also expressed regret that several members of the CSC have chosen to resign over this issue

- Mr. Harvie commented that the CSC should focus on the job it had been given by the Region. He stated that Council has already decided to build the expressway, the role of the CSC is to ensure that it is built in the best possible way.

- Mr. O'Donnell also stated that he felt the CSC should not broaden its' horizon but stick to the task at hand.

- Professor Korol suggested that perhaps the Vision 2020 Review Team would be the most appropriate body to examine the issues of need, cost and location of the expressway given that their mandate is to review the Region's progress towards sustainable development, and that sustainable transportation is included in this mandate.

- Mr. Murray stated that the Region has already looked at the issues of need, cost and location, and Council does not feel that these issues need to be re-examined. Mr. Murray also informed the CSC that their request that the "socio-economic assessment proposal, as outlined in the January 28th minutes, be sent to the Vision 20/20 Review Team" had not been acted upon by Council because the Region was satisfied with the results of the Users Survey, which had already been conducted, and did not feel that a socio-economic assessment was necessary.

- Professor Korol expressed concern over the fact that the Vision 2020 Review Team has had little involvement with the Red Hill Creek Expressway project. He explained that in January of 1992 Regional Council approved the Vision 2020 Task Force document dealing with Sustainable Transportation. Five years later a new committee, the Vision 2020 Review Team, was formed by Council to determine what progress had been made towards the goals outlined in the Vision 2020 Task Force Document. Professor Korol suggested that it would therefore be appropriate for the Review Team to review the Red Hill Creek Expressway Project in order to determine if the project is sustainable. He noted that the original Task Force was not allowed to discuss the Red Hill Creek Expressway, and that the Review Team is to be disbanded at the end of

June, so this may be one of the last chances to have the project reviewed by Vision 2020.

- Ms Mitchell suggested that in light of the letter that was sent to the Regional Chair by several members of the CSC regarding their resignation (April 16th 1998), the Committee should write its own letter to the Chair informing him of the procedure that was followed on March 4th regarding Ms Lukasik's recommendation. Ms Mitchell further suggested that the CSC make another request to the Region that the Vision 2020 Review Team be involved in reviewing the expressway project.

- Mr. Harvie commented that from his observations of the neighbourhood meetings it appears that the Region needs to improve upon its public relations.

The following recommendation was then put forward and agreed upon by the CSC with one dissenter (Mr. Guidolin):

The CSC recommends that the Region consider forwarding, if they so desire, the information from the public meetings[1], and the impact predictions from the Region's consultants and technical staff, to the Vision 2020 Review Team for their assessment and advice.

1. **Based on the information from the public meetings which was forwarded to the CSC, it appears that the Region could do a better job at informing the public,** and on its' public relations.

Ms Blake suggested that at future CSC meetings a flip chart be used to help the CSC formulate the wording of its' recommendations.

2.3.2 Correspondence

Correspondence was received from Jack Lee, Burke Austin, and Lynda Lukasik [verbal] indicating their resignation from the CSC; the Citizen's Expressway Committee relayed their comments on the neighbourhood meetings; and Barbara Blake expressed suggestions for upcoming public and CSC meetings (Appendix E).

2.4 Application for CSC Membership

- Clarence Howard: East Hamilton Optimist Club (neutral)

Ms Mechar reiterated that the Terms of Reference sub-committee had recommended Mr. Howard's application for membership be approved because he would bring expertise regarding the QEW Burlington interchange to the committee.

Mr. O'Donnell noted that he approved Mr. Howard's application for CSC membership, because he felt that Mr. Howard would be able to replace some of the expertise which had been lost from the CSC due to the recent resignations.

The CSC agreed to accept Mr. Howard's application for membership. Mr. Howard will be notified by the Region of his acceptance on the committee.

2.5 Response from the Region on the "CSC Input on the DSR Volume 1 and Public Input on Issues, Impacts, and Concerns" Report

Mr. Murray explained that the Region is preparing a response matrix to the Report which will be published as part of the final Summary Report Volume 1. Mr. Murray agreed to forward the CSC a copy of the response matrix to the CSC prior to publication of the Summary Report.

2.6 Forwarding of Draft Neighbourhood Meeting Summaries to the Region

Ms Leppard noted that a copy of the draft neighbourhood meeting summaries was contained in the "Report to the Region of Hamilton-Wentworth: CSC Input on the DSR Volume 1 and Public Input on Issues, Impacts, and Concerns", which was forwarded to Council as part of staff recommendation report.

The CSC felt that the neighbourhood meeting summaries had been adequately dealt with in light of the recommendation to forward the summaries to the Vision 2020 Review Team, which had just been agreed to.

2.7 Review of Issue Table Sessions

Draft summaries of the Issue Table Sessions were distributed to the CSC (Appendix F). The committee is to review the summaries and forward their comments regarding any errors or omissions to the facilitator's office so that they may be corrected and forwarded to the Transportation Services Committee.

Professor Korol and several other members of the committee who attended the sessions commended the Region's consultants on their presentations.

Mr. Harvie asked what would be done with the video tape of the sessions. Mr. Murray responded that the video will be put in local libraries along with the Summary Report Volume 1 once it is published. Ms Leppard also noted that a member of the public had suggested that the Region arrange for the video to been shown on television. Mr. Battaglia commented that showing the video on television would be a good way for the Region to enhance its' public relations.

Ms Leppard thanked the members of the Community Consultation sub-committee for their input on the format of the issue table sessions.

3.0 CSC Meeting Planning

3.1 Update on CSC Requests

Mr. Murray updated the CSC on the Council's response to the committee's request that "the Region cover the costs of conducting a socio-economic assessment as outlined in the January 28th meeting record". Mr. Murray stated that the Region has decided not to cover the costs of conducting a socio-economic assessment because they are satisfied with the results obtained from a User Survey which was previously completed.

3.2 Release of DSR Volume 2

Mr. Murray informed the CSC that the DSR Volume 2 on predicted impacts will be presented to Council on May 8th. Ms Knox requested that the CSC be given a copy of the impact predictions on the same day as Council.

Ms Leppard noted that the Terms of Reference and Community Consultation sub-committees agreed that a series of open houses followed by public meetings be held within 10 days after the release of DSR Volume 2. The committees also agreed that those directly affected by the expressway would receive notification the day after the release of DSR Volume 2, if possible, via a one page add in the newspaper which summarized the potential impacts.

Mr. Murray explained that after the impact presentation to Council, there would be a media briefing to convey, in a general sense, what the predicted impacts are. A media package will be distributed which will list the dates, times and locations of the open houses/public meetings. Mr. Murray stated that while a one page ad may not be placed, changes would be made in the location and wording of the ads.

Ms Knox asked whether or not the staff would be making a recommendation to the Transportation Services Committee (TSC) and Council based on the impact prediction information. Mr. Murray replied that it would be presented to TSC as an information item and that the TSC would not be making any design recommendations until the completion of the consultation process in July when Regional staff will present a recommendation to the TSC.

Professor Korol recommended to the Region that the consultants who presented at the recent issue table sessions attend the impact prediction open houses/public meetings.

3.3 Review of Impact Evaluation Criteria

Mr. Murray indicated that he would continue to receive comments from CSC members on the impact evaluation criteria until noon on Monday April 20th.

3.4 Creek Realignment

Mr. Murray informed the CSC that the Department of Fisheries and Oceans has indicated to the Region that they would support the natural channel design approach, and would not accept options which involved hardening of the channel. Therefore the natural channel design will be the only option presented in the DSR Volume 2, and the only option for which impacts will be predicted. Previously, a comparison between the two had been anticipated, but is no longer necessary.

A member of the public asked Mr. Murray when the Region will seek all the necessary approvals from the Department of Fisheries and Oceans. Mr. Murray responded that before the approvals can be sought, the final design of the creek realignment needs to be decided upon and the mitigation or compensation measures selected. Mr. Murray said he expected to have this information in July.

3.5 Burlington Street Interchange Design Options

Mr. Murray informed the CSC that based on recent modeling, the only option for the Burlington Street interchange which will meet the Ministry of Transportation's peak evening traffic standards in the year 2021, is option C. Options A and B, which affect the Lakeland Pool, and Hutch's respectively, are not considered viable. Therefore option C will be the preferred option presented in the DSR volume 2, and the only option for which impacts will be predicted. Mr. Murray clarified that the Region did not want to present the community with design options that it would not be prepared to build. However, as per the Exemption Order, option C will still be compared, in the DSR Volume 2, to the 1989 MTO design.

Discussion:

- Professor Korol asked Mr. Murray to clarify what the MTO's standards were based on. Mr. Murray stated that the standards were based on traffic volume and geometry.

- Ms Liebersbach asked if wetland expansion would be included as a mitigation measure for this option. Mr. Murray indicated that it would be.

3.6 Next Meetings

The DSR Volume 2 is expected to be presented to Council on May 8th. This is a public meeting and anyone from the CSC is welcome to attend.

Open houses/public meetings regarding the DSR Volume 2 will take place the week of May 18th and May 25th .

Mr. Murray will be having discussion between May 11th and May 18th with those stakeholders who will be directly impacted by the expressway so that their concerns can be dealt with parallel to the public meetings.

In addition Mr. Murray will be meeting with government agencies to discuss any concerns or issues they have regarding the predicted impacts of the expressway.

The next CSC meeting will be held on Thursday, June 4th at which time the CSC will discuss the input received from the public meetings, as well as from the Region's meetings with affected stakeholders and government agencies.

The meeting adjourned at 9:30 p.m.

Report prepared by S. Leppard with Carolyn Pettitt
April 18, 1998

Appendix A

COMMUNITY STAKEHOLDERS COMMITTEE
Attendance for April 16, 1998
Redhill Creek Expressway
(North-South Section)

Name	Affiliation
Tony Battaglia	Tradeport International Corporation
Paul Beneteau	Bruce Trail Association
Patricia Berkhold	Beach Strip/Woodward Community Council
Barbara Blake	Centennial Ratepayers' Group
Rick Guidolin	Hamilton Construction Association
Jim Harvie	Citizen's Expressway Committee
Louise Knox	Hamilton Harbour R.A.P.
June Koppeser	Citizen's Expressway Committee
Robert Korol	Citizens for a Sustainable Community
Ruth Liebersbach	Hamilton and District Chamber of Commerce
Karan Mechar	Hamilton-Burlington District Real Estate Board
Pauline Mitchell	CAA South Central
Ernie Monkley	East Mountain Industrial Park
Brian O'Donnell	Mount Albion Home Owner's Association
Mary Wiebe	Citizen's Expressway Committee
Chris Murray	Regional Municipality of Hamilton-Wentworth
Sally Leppard	LURA Group
Sandy Nairn	Ministry of Transportation
Carolyn Pettitt	LURA Group

Members of the Public	
Allan Avery	no affiliation given
Paul Blake	no affiliation given
Ross Hunt	no affiliation given
George Koppeser	no affiliation given
Lynda Lukasik	W.A.T.E.R.
Don McLean	Friends of Red Hill Valley
Gerry McNair	no affiliation given

MEETING RECORD OF THE CSC #9
Red Hill Creek Expressway IADP - Community Stakeholder Committee
June 24, 1998
Lakeland Community Centre
7:00 - 9:30 p.m.

1.0 Welcome, Introduction, and Agenda Review

Ms Leppard called the meeting to order at 7:05 p.m. She reviewed the operating procedures and explained the role of the CSC to members of the public who were present. Ms. Leppard informed the CSC that Mr. Patrick Chetman would be replacing Ms. Patricia Berkhold as the representative for the Beachstrip Woodward Community Council. Ms. Leppard also extended a welcome to the newest member of the CSC, Ms. Gloria Howard, who represents the Optimist Club of East Hamilton Inc. A list of registered participants is attached as Appendix A. The agenda for the meeting was reviewed and no additional items were added. No delegations from the public were received and there were no declarations of direct interest from members of the CSC.

2.0 CSC Business Items

2.1 Correspondence

Correspondence was tabled by Mr. Rodgers, Ms Wiebe, Ms. Haigh and Mr. McLean (see Appendix B). Mr. Korol noted that he felt it would be valuable for the CSC to take Mr. Rodgers' correspondence under advisement as they review the Draft Summary Report Volume 2. Ms. Leppard informed the CSC that LURA would be preparing a corporate response to Mr. McLean's June 23 correspondence.

2.2 Announcements

The following announcements were made:

- Ms. Patricia Berkhold will soon be moving to British Columbia. Ms. Leppard noted that Ms. Berkhold had been an active member of the CSC and that she had played an integral role in arranging the CSC meeting facilities. It was agreed that a letter of gratitude would be sent to Ms. Berkhold from the facilitator's office on behalf of the CSC.
- Mr. O'Donnel has recently been married. CSC members congratulated Mr. O'Donnel and extended their best wishes.
- Ms. Liebersbach and her husband recently celebrated their 20th wedding anniversary. Ms. Leppard presented Ms. Liebersbach with a card signed by the CSC members.

2.3 Review of Meeting Records - April 16th

The meeting record from April 16, 1998 was approved with the following amendments:

- Page 1, section 2.1 should read that "Mr. Monkely had visited a house near the Lincoln Alexander Parkway which was the same approximate distance from the creek as the house located at 404 Queenston Road". Mr. Monkely did not visit the house at 404 Queenston Road.

- Ms. Blake noted that page 6, section 3.2, second paragraph, second line should read "open houses" not "open housed".

Ms. Leppard noted that appendices to the meeting records are included with the mailed version of the meeting records.

2.4 Business Arising

April 22 and 28 Terms of Reference sub-committee meetings

Ms. Leppard noted that it had come to the attention of the Terms of Reference sub-committee that the Vision 2020 Review Team had discussed the Red Hill Creek Expressway project, considered public concerns, and stated a position on the project in it's Preliminary Progress Report. The terms of reference sub-committee therefore met twice to consider how this new information would affect the following recommendation which was made at the April 16th CSC meeting:

The CSC recommends that the Region consider forwarding, if they so desire, the information from the public meetings[1], and the impact predictions from the Region's consultants and technical staff, to the Vision 2020 Review Team for their assessment and advice.

1. Based on the information from the public meetings which was forwarded to the CSC, it appears that the Region could do a better job at informing the public and on it's public relations.

The Terms of Reference sub-committee decided that in light of the fact that the Vision 2020 Review Team had heard similar public concerns regarding the need, cost, and location of the expressway, there would be little point in forwarding the April 16th recommendation to Council and sought further direction from the CSC.

Discussion:

- Professor Korol stated that he felt the Preliminary Report published by the Vision 2020 Review Team did not allow the Review Team to adequately review the Red Hill Creek Expressway in terms of the three legs of sustainable development. The April 16th recommendation may have given the Vision 2020 Review Team this opportunity, had Council agreed to it. Mr. Murray responded that he had already brought forward to Council for their consideration, the public concerns regarding need,

cost and location, but that Council had decided to proceed with the project as planned.

- Mr. Murray stated that Ms. Haigh is a member of both Vision 2020 and the CSC and that she may have already brought forth the public's concerns heard by the CSC to the Vision 2020 Review Team for their consideration.

- Professor Korol stated that it would have been useful for the Vision 2020 Review Team to review the project based on the three legs of sustainable development because a model for evaluation could have been developed for other communities to use in the future.

It was decided that the recommendation would remain on record, but that no action would be taken.

3.0 Project Status Report

Release of DSR Volume 2

Mr. Murray informed the CSC that the project is on schedule and that once the outstanding government approvals have been obtained, construction on the Expressway will begin.

Mr. Murray noted that the Executive Summary of the DSR Volume 2 has been distributed to CSC members and that the Draft Summary Report Volume 2 would be released at the end of June. Mr. Murray will distribute DSR volume 2 to CSC members along with any technical reports they wished to review. The CSC will have 10 weeks to review the documents and to offer their suggests and advice to the Region. Mr. Murray indicated that he hoped that a final report could be presented to the Transportation Services Committee (TSC) this fall.

Mr. Murray reminded those present that the whole basis for the CSC is to provide an opportunity for groups to understand what the consequences of the expressway are and offer suggestions about what can be done to mitigate the negative impacts. He therefore urged the CSC to scrutinize the Draft Summary Report Volume 2 and to offer ideas and advice.

Neighbourhood Meetings

In total 623 people attended the neighbourhood open houses/public meetings held on June 15, 17, and 18th. 169 comment sheets were completed by members of the public and submitted to the Region. Based on the comment sheets and the questions raised during the public meetings, it is clear that people are concerned about pedestrian access to the valley, trails, recreational parks, wildlife and landscape issues, air quality, and noise.

Upcoming Public Consultation

Mr. Murray indicated that a series of meetings with affected parties and interested members of the public will take place over the next few months. These meetings will focus on:

- the design of noise barriers
- parks
- relocation of trails
- landscaping and restoration

Discussion:

- Mr. Harvie asked whether or not the names of those who had attended the public meetings held to date were going to be put into a data base. Mr. Murray responded that a summer student, who was entering the names in a data base, would be checking for duplication so that an accurate attendance numbers could be generated. Mr. Harvie suggested that this would give the CSC an indication of the effectiveness of different communication strategies. Ms. Leppard added that it would also give the CSC a better indication of the geographical distribution of attendees.

- Mr. Harvie asked whether the Draft Summary report will be presenting gross impacts or net impacts. Mr. Murray responded that the impacts are gross impacts and that until the detailed designs of the expressway have been determined it will not be possible to predict the net impacts.

- Professor Korol expressed his concern with the 15% commercial vehicle volume, 7.5% heavy truck traffic, estimate which was used in the air quality models. Professor Korol stated that he had taken a count of trucks using the 401 and 403. Of 100 vehicles on the 403, 24 were heavy trucks and on average 42% of vehicles on the 401 were commercial vehicles. Professor Korol felt that it would be more realistic to assume 35% commercial traffic volume and 15% heavy truck traffic. Mr. Murray responded that before conducting a sensitivity study which assumed a higher truck traffic volume, it would have to be determined how realistic this scenario would be. Mr. Murray urged Professor Korol to forward his suggestion to the Region in writing.

- Professor Korol noted that trucks generate a lot of PM^{10} and stir up a great deal of dust. Mr. Murray responded that the air consultant, David Chadder, considered emissions from cars differently from trucks. This information will be available in his technical reports.

- Professor Korol expressed concern that the public was not aware of how much of a noise increase is going to occur. People are told that there will be a 20dba increase in noise, but they don't understand that this is the equivalent of 100 lawn mowers, as opposed to one, operating 200 meters from you. Mr. Murray noted that the Region has been up front about this issue and has explained in the DSR Volume 2 that there will be a significant increase in noise levels.

- Ms. Blake noted that the speed limit of the expressway will be 90 km/hour, while the limit on the 403 and QEW is 100 km/hour. She therefore felt that through trucks would continue to use the 403 and the QEW because they are faster routes. Ms. Blake also noted that the dust and emissions created by the expressway would stay in the valley having limited effect on the homes of the area because they are located up on the lip of the valley. Ms. Blake also pointed out that trucks produce the most noise when they have to stop and changes gears, which they do when they drive on Highway 20.

- Ms. Liebersbach noted that the rail industry is expected to take away 15% of the truck traffic once feeder lines to the Montreal - Windsor rail corridor are completed. She asked whether this had been factored into the consultants' studies. Mr. Murray responded that he was not sure if this was taken into consideration, but that truck traffic volume could be affected by the location of rail feeder routes. Mr. Murray asked Ms. Liebersbach to submit her evidence in writing to the Region for their consideration.

- Ms. Mitchell asked whether or not the residents along the East - West section of the highway had been asked for their feedback regarding noise and the placement of noise walls. She suggested that these residents may have valuable ideas and comments which could be useful in the design and construction of the North-South section.

- Ms. Mitchell asked whether information regarding the destination of truck traffic could be obtained from Canada Customs. Mr. Murray responded that the Ministry of Transportation has already provided data regarding truck traffic volumes along the 403 and QEW and that the Region is confident that these numbers are accurate.

- Mr. O'Donnel asked whether PM^{10} was only generated by expressways. Mr. Murray clarified that PM^{10} is produced by cars, trucks, and different forms of land use, but not strictly by expressways.

- Mr. O'Donnel noted that trucks are currently driving on Highway 20 only 5 meters away from the houses, creating black dust which affects people's health. He asked whether it would not make more sense to move the trucks to an expressway which is further away from people, such as one in the valley.

- Mr. Monkley asked whether or not any studies have been conducted to determine what improvements in air quality have been generated because of the opening of the East-West section of the expressway. Mr. Murray responded that a study had been conducted to predict the overall

air quality in the Region 20 years after the completion of the entire expressway not just the East -West section.

- Mr. Pizzoferrato noted that less pollution and PM^{10} is generated by flowing traffic.

- Professor Korol expressed concern that building the North -South section of the expressway may lead to urban sprawl, unwanted development, and the death of the downtown area. Professor Korol referred to a study conducted by a professor at the University of New Brunswick who found that noise complaints were not based solely on LEQ levels but also on something as simple as a muffler not working properly. Professor Korol asked Mr. Murray, to pass the study on to Mr. Vandermark at the Region.

- Mr. Chetman asked whether the number of areas along the expressway where trucks would have to gear up and down had been calculated. Mr. Murray responded that this information would be available in DSR Volume 2.

- Mr. Battaglia noted that aircrafts are flown in places where they have the least impact on the least number of people. He felt the Red Hill Creek Expressway would be similar in that it would provide the least impact to the least number of people. Mr. Battaglia stated that the expressway would not create urban sprawl because the area was already developed. He also reminded the CSC that the East-West section and the North-South section are not two different highways, but simply two different sections of the same highway. Mr. Murray noted that the sections would probably have the same name, but that as yet there is no legal name for the North-South section.

- Ms. Wiebe noted that the expressway is needed so that people living on the mountain can get to work. She stated that she did not think the expressway would cause the downtown area to degenerate. She also pointed out that the even though residents living on Centennial Parkway, as well as King, Main, Mount Albion, Kennelworth, Barton, Cannon, Upper James, Upper Ottawa, Upper Wentworth, Upper Wellington and Wellington Streets, are not members of the CSC they still need to be represented at the table.

- Professor Korol asked whether the Escarpment trail which ends at Upper Kennelworth could be connected to the Caledonia trail. Mr. Murray suggested that Professor Korol and the Region should discuss the possibility.

4.0 CSC Organization and Planning

Ms. Leppard reviewed the progress that the CSC had made to date (see Appendix C) and several members of the CSC commented that they had not realized how much they had accomplished up to this point.

5.0 Next Steps

The CSC agreed to forward their comments on DSR Volume 2 to either Mr. Murray at the Region or to the Facilitator's Office by no later than September 1. A consolidated list of suggestions and concerns will be generated and responses prepared in time for the next CSC meeting on September 17th. Mr. Murray noted that CSC members could forward their suggestions thoughout the 10 week review period, and that the consultants would be available throughout the summer to answer any questions they might have.

Mr. Murray also noted that the questions and comments raised by the government agencies reviewing DSR Volume 2 would also be presented to the CSC along with the Region's responses at the end of the Review period.

The next CSC meeting will be held on Thursday September 17, at City Hall. Mr. Murray will arrange for parking permits.

The meeting adjourned at 9:05 p.m.
Report prepared by S. Leppard and C. Pettitt
June 26, 1998

Appendix A

COMMUNITY STAKEHOLDERS COMMITTEE
Attendance for June 24, 1998
Redhill Creek Expressway
(North-South Section)

Name	Affiliation
Bruce Baillie	HAND Ass. of Sewer & Watermain Contractors
Tony Battaglia	Tradeport International Corporation
Barbara Blake	Centennial Ratepayers' Group
Patrick Chetman	Beach Strip/Woodward Community Council
Gord Cocks	Mount Albion Home Owners' Association
Rick Guidolin	Hamilton Construction Association
Jim Harvie	Citizen's Expressway Committee
Gloria Howard	Optimist Club of East Hamilton Inc.
June Koppeser	Citizen's Expressway Committee
Robert Korol	Citizens for a Sustainable Community
Ruth Liebersbach	Hamilton and District Chamber of Commerce
Pauline Mitchell	CAA South Central
Ernie Monkley	East Mountain Industrial Park
Brian O'Donnell	Mount Albion Home Owner's Association
Fred Pizzoferrato	Centennial Ratepayers' Group
Mary Wiebe	Citizen's Expressway Committee
Chris Murray	Regional Municipality of Hamilton-Wentworth
Sally Leppard	LURA Group
Carolyn Pettitt	LURA Group
Members of the Public	
Jim Buchko	no affiliation given
L. Buchko	no affiliation given
Stan Czajka	no affiliation given
Lynda Lukasik	W.A.T.E.R.
Paul Nilb	no affiliation given
Len Sebenski	no affiliation given

Appendix B – Correspondence
Not Available

Appendix C
CSC's Progress to Date

Areas for Input:

As outlined in the Exemption Order - Figure 3, the 6 phases of the IADP which required stakeholder input were:

1. **Review Consultation Program**
   - minimum 1 round of committee meetings and community newsletter/media advertisements

2. **Description of the Existing and Future Environment**
   - **minimum 2 rounds of committee meetings and community newsletters/media advertisements**

3. **Proposed Changes to the Approved Design**
   - minimum 2 rounds of committee meetings, 3 public meetings and community newsletter/media advertisements

4. **Prediction of Net Environmental Impacts**
   - minimum 2 rounds of committee meetings, 3 public meetings and community newsletter/media advertisements

5. **Evaluation of Proposed Changes**
   - minimum 3 rounds of committee meetings, 3 public meetings and community newsletter/media advertisements

6. **Detailed Design, Construction and Monitoring**
   - minimum 2 rounds of committee meetings and community community newsletter/media advertisements

The key components for CSC input within these phases included:

- data collection,
- Expressway impact assessment,
- proposed Expressway design changes,
- impact mitigation and compensation plans, and
- the consultation program itself.

Input to Date:

To date the CSC has given input and advice on 4 of the phases listed above:

Review Consultation Program

- Community Consultation Sub-committee was formed, to date they have met 5 times
- Creation of a CSC newsletter which was distributed to the public
- Formulation of a *Community Consultation Plan* which was forwarded as advice to the Region
- Provided recommendations on the number, and format of neighbourhood meetings and issue table sessions

Description of the Existing and Future Environment

- 3 working sessions were conducted to review the data collected on existing and future conditions (DSR Volume 1)
- The working sessions resulted in the "Report to the Region of Hamilton-Wentworth: CSC Input on the Draft Summary Report Volume 1, and Public Input on Issues, Impacts, and Concerns" which was forwarded to the Region as advice
- 3 neighbourhood meetings were held in February regarding DSR Volume 1

Proposed Changes to Approved Design

- A Visual Impact Assessment workshop was held on December 11th
- A public meeting on the Burlington Street/QEW interchange options was held on January 19th
- On March 4th CSC considered design alternatives related to the Burlington/QEW interchange, creek realignment, and the viaduct crossing
- 3 issue table sessions were held in April to which in part informed the public about proposed design changes

Prediction of Net Environmental Impacts

- Following a series of 3 issue table session which informed both the public and the CSC on how impacts are predicted, the CSC provided comments on the Impact Evaluation Criteria which was submitted to the Region on April 20th as advice
- 3 neighbourhood meetings/open houses were held in June regarding DSR Volume 2

Evaluation of Proposed Expressway Design Changes

-

Detailed Design, Construction and Monitoring

- CSC will review DSR Volume 2

MEETING RECORD #10

Red Hill Creek Expressway IADP – Community Stakeholder Committee
September 24, 1998
Hamilton City Hall, Room 233
7:00 – 9:30 p.m.
Changes which were made to the Draft Record are shown in bold italics

1.0 Welcome, Introductions, and Agenda Review

Ms Leppard called the meeting to order at 7:00 p.m. She reviewed the operating procedures and explained the role of the CSC to members of the public who were present. The agenda for the meeting was reviewed and no additional items were added. No delegations from the public were received and there were no declarations of direct interest from members of the CSC. A list of registered participants is attached as Appendix A.

2.0 CSC Business Items

2.1 Announcements

Ms Leppard informed the CSC that Ms Lynda Lukasik had recently been elected as President of the Bay Area Restoration Council (BARC) replacing Mr. Keith Rodgers. Ms Leppard noted that BARC has not yet decided who will act as their representative on the CSC but that in the interim the organization would be represented by Marilyn Baxter.

2.2 Correspondence

Correspondence was tabled by Ms Lukasik (a former member of the CSC), Professor Korol, Mr. Barclay, and Ms Wiebe (see Appendix B). Ms Leppard noted that she had received communication from Mr. Don McLean, a former member of the CSC, inquiring as to whether members of the public would be able to access information from the technical experts at the September CSC meeting. Mr. McLean also inquired as to what role the public would play in the CSC working session. Ms Leppard indicated that she had informed Mr. McLean that the consultants would not be present at the September CSC meeting because it was a working meeting for the CSC to consider the Draft Summary Report Volume 2. Chris Murray commented that he would be contacting Mr. McLean to ensure that any technical questions he had were addressed. With regards to Mr. McLean's second inquiry, Ms Leppard noted that a teleconference had been convened with the Terms of Reference and Community Consultation sub-committees on September 17th to discuss the issue. Ms Leppard noted that Mr. Harvie would be giving a report on the teleconference later in the meeting.

2.3 Review of Meeting Records

2.3.1 June 24th CSC Meeting

The meeting record from June 24, 1998 was approved with the following amendments:

- Ms Blake noted that "its'" on page 2, section 2.4, fourth line should be spelt "it's".
- Mr. Murray noted that page 4, under "Upcoming Public Consultation" should state that a series of meetings with affected parties and interested members of the public will take place over the next "few" months, not two months.
- Ms Blake noted that page 4, first point under "Discussion", third line should read " a summer student *who* was entering..."
- Professor Korol noted that page 5 first line should read "using the 401 and 403. Of 100 vehicles on the 403, 24 were heavy trucks. On average 42% of vehicles on the 401 were commercial vehicles. Professor Korol felt that ....."
- Mr. Murray noted that page 5, second point of discussion, third line "and turbulence" should be stricken.
- Mr. Murray noted that page 5, fourth point of discussion should read "Mr. Murray responded that he was not sure if this was taken into consideration, but that truck traffic volume could be affected by the location of rail feeder routes. Mr. Murray asked Ms Liebersbach to submit her evidence in writing to the Region for their consideration."
- Mr. Murray noted that page 6, second point of discussion should read "Mr. Murray clarified that PM10 is produced by cars, trucks, and different forms of land use, but not strictly by expressways."
- Ms Wiebe noted that page 6, third point of discussion should read "Mr. O'Donnel noted that trucks are currently driving on Highway 20 only 5 meters away from the houses, creating black dust which affects people's health. He asked whether it would not make more sense to move the trucks to an expressway which is further away from people, such as one in the valley."
- Ms Wiebe noted that page 7, first point of discussion Centennial Parkway, Cannon, King, Main, Mount Albion, Kenilworth, Barton, Upper Ottawa, Upper Wellington, and Wellington should be added to the list of streets mentioned.
- Mr. Murray noted that page 7, section 5, should be changed to reflect that the questions and comments raised by the government agencies reviewing DSR Volume 2 will be presented to the CSC along with the Region's responses at the end of the review period.

2.3.2 *September 17th Joint Terms of Reference and Community Consultation Sub-Committee Teleconference*

Mr. Harvie reviewed the September 17th draft meeting record (see Appendix C). He noted that the sub-committees felt that it may be necessary to hold a "public input session" in order to give the public an opportunity to provide input on the

DSR Volume 2, and to give the CSC an opportunity to obtain input and advice form the community on areas where the CSC may lack expertise. If such a public meeting was to be held, the sub-committees felt that it would be best for the CSC to host the meeting rather than the Region. Mr. Harvie stated that the sub-committees also felt that the September 24th CSC meeting should be a working session, not a public input session.

Discussion:

- Ms Blake inquired as to whether the sub-committee members felt that a public input session may be necessary because they had assumed that several members of the public would be attending the September 24th CSC meeting hoping to give their input on the DSR Volume 2. Ms Leppard noted that the subcommittees had met to consider Mr. McLean's question regarding the role of the public in the September 24th working session.

- Ms Liebersbach, a member of the Terms of Reference sub-committee, noted that there was a possibility that delegations would attend the September 24th CSC meeting in order to give their input on the DSR Volume 2. The sub-committees felt that there would not be sufficient time to hear from these delegations and still conduct the working session for CSC members. It was therefore suggested that a "public input session" be held so that delegations could give their input. However, Ms Liebersbach noted that because there were no delegations present perhaps a public input session was not necessary.

- Mr. Barclay stated that perhaps the public thought there would be another opportunity for them to give their input so they did not attend tonight's meeting. He asked whether delegations were aware that they could speak at tonight's meeting. Ms Leppard responded that tonight's CSC meeting was advertised in the same way that other CSC meetings have been advertised in the past. Delegations were not explicitly solicited but the meeting was described as being open to the public.

- Ms Wiebe commented ***that CSC meetings have always been open to delegations, who, if they were not on the agenda, could address the CSC at the end of each meeting, provided time allowed.*** Ms Leppard clarified that the CSC's rules of procedure specify that delegations speak to the CSC or give their input at the end of discussion periods. She noted that Mr. McLean had inquired as to whether the public could participate in the working session. Given the lack of time available for the September 24th working session the sub-committees decided that it would be better to hold a public input session rather than invite the public to participate directly in the working session.

- Professor Korol inquired as to whether the construction schedule would be jeopardized if a public input session was held. Mr. Murray responded that the

preliminary design needs to be completed as soon as possible so that the detailed design phase can continue to proceed.

- Professor Korol stated that in his opinion the RWDI air quality model had serious limitations. He expressed concern that the assumptions of the model be addressed prior to proceeding with the next phase of the work schedule. Mr. Murray responded that the methodology for the air quality study had been established two years ago and had been approved by the responsible government agencies. Mr. Murray encouraged Professor Korol to submit his concerns in writing to the Region as input on the DSR Volume 2. Professor Korol clarified that it was not just the methodology he had concerns with, but also the assumed traffic mix of the air quality model. Mr. Murray assured Professor Korol that the Ministry of the Environment would respond to this issue if they felt that the assumed traffic mix, or other aspects of the study were inappropriate.

- Ms Wiebe noted that ***the October 19th deadline for input on the DSR Volume 2 has been well advertised with little response to the Region from the public. If the demand warrants it, the Region should make a decision regarding holding a further public meeting.*** Mr. Murray noted that if the public does make a request for the Region to hold additional public meetings then the kind of meetings that are desired should be clearly indicated.

- Ms Liebersbach inquired as to how much input on DSR Volume 2 had been received by the Region to date. Mr. Murray responded that very few calls/letters have been received.

- Ms Leppard noted that the Region has stated that it will answer specific questions raised by members of the public, though answers may or may not be provided in a public meeting forum.

2.4 Business Arising

Mr. Harvie inquired as to whether the summer student had finished entering the names of those who had attended public meetings into the data base. Mr. Murray responded that the student had finished the data entry and it was found that 600 to 650 different people had attended the various public meetings.

Mr. Barclay asked Chris Murray to respond to his August 18th correspondence regarding the opening remarks of the DSR Volume 2. The "Focused on Design and Construction" commentary on the first page of the document states that "The East end of Hamilton still lacks the roadway capacity needed to meet future (year 2020) peak-hour traffic demands across the Niagara Escarpment in the northbound and southbound direction". Mr. Barclay contested that the East end of Hamilton still lacks the roadway capacity needed to meet *present* traffic

demands. Mr. Murray agreed with Mr. Barclay's comment and noted that the sentence would be changed in the final document.

Mr. Rodgers reviewed the key points of his correspondence from May 14th, 1998. He noted that he had submitted the correspondence before the DSR Volume 2 had been released and while he was still representing BARC on the CSC. Mr. Rodgers stressed that the harbour has a carrying capacity – meaning that it can only handle so much and still maintain an ecological function. Mr. Rodgers was concerned that in particular the salt/sodium levels in the harbour are becoming quite high and are having an effect on the biological functions of the harbour. Mr. Rodgers stated that mitigation measures, in addition to those actions identified in the Remedial Action Plan, have to be implemented so that the carrying capacity of the harbour is not exceeded.

Mr. Rodgers also explained to the CSC that the sediment trap in Windermere Basin, which was constructed in 1987, is designed to collect sediment that would otherwise enter the harbour. However, the Basin is now full and sediment is going straight through the trap into the harbour. Mr. Rodgers noted that this was a concern because some of the sediment which enters the harbour contains PCB's. While Mr. Rodgers recognized that cleaning out Windermere Basin was an expensive undertaking – estimated at $5 million, he suggested that the Region consider it as a mitigation option. Ms Leppard noted that this suggestion would be documented in the proceeding working session.

Professor Korol noted that Mr. Rodgers' correspondence notes that the Red Hill Creek Expressway project has lacked an integrated community planning approach. Professor Korol asked whether there were examples of communities in Ontario which have utilized this planning approach. Mr. Murray responded that an integrated land use and infrastructure approach has been used in Ottawa Carleton to select a preferred land use, transportation, and sewer and water development plan. Mr. Barclay noted that in his opinion the Region's official plan achieves the objectives of integrated community planning to some extent given that it has population density, and land use components. Mr. Murray clarified that integrated planning involves generating and evaluating land use and infrastructure scenarios. This allows for the selection of a development strategy that best meets the needs of the community.

Professor Korol asked Mr. Murray if he had a response to his July 7th correspondence regarding how the predicted 7.5% volume of heavy truck traffic on the Expressway was arrived at. Mr. Murray indicated that he did not have any information in addition to what had been provided previously. Professor Korol asked whether there was going to be an effort to address concerns regarding a lack of information on how the truck traffic assumptions were made. Mr. Murray replied that an EMME II, a model used to forecast future traffic patterns, was used by the Region to predict truck traffic volumes. He noted that information related to the Expressway is contained in the 1996 Regional Transportation

Review. At this point the Region would need to see evidence suggesting that the truck traffic numbers should be adjusted before it would conduct sensitivity studies.

3.0 Working Session

The following comments on the DSR Volume 2 – predicted impacts and mitigation options - were tabled by members of the CSC.

Initial Reactions to the Overall Impacts the Expressway will have on the Community:

- Need clarification on the sources of information.
- Road salt impacts not addressed.
- How will spills be dealt with?
- Air and noise impacts are serious.
- If the volume of heavy trucks is more than 7.5% of the total traffic volume then the air and noise impacts are going to be even worse.
- How were water quality improvements predicted?
- It is hard to determine what the net impacts of the Expressway will be because the construction of the CSO is included in the project definition. What are the impacts of the Expressway itself?
- The Expressway is needed to lessen present, not future, traffic congestion.
- Contaminated sites will be cleaned up.
- It is positive that a hiking trail will be permanently established.
- There is a need to look at the regional impacts of the Expressway not just local impacts.
- Local residents will be negatively impacted but there will be regional improvements.
- Impacts to residents in the valley will not be nearly as great as the current impacts to residents on Upper James, Upper Wentworth, Upper Ottawa, Upper Wellington, Wellington, Main, King, Cannon, Mount Albion, Barton and Kenilworth streets, as well as those residents on Centennial Parkway.
- The impacts are clearly laid out in the DSR Volume 2.
- Positive impacts should be elaborated on.
- The DSR Volume 2 should tell the public how they can get involved in the detail design phase.
- How can people access information on the underlying assumptions of the models, especially the air and noise models. For instance, was turbulence, the geographic shape of the valley, meteorological information, the removal of vegetation etc. taken into account in the air quality model. More information on the studies needs to be made available.

	Gaps, Omissions or Areas Requiring Clarification in the Impact Predictions	Additional mitigation options
Air Quality	• There is no mention of summer temperatures under "indicators". • What monitoring will take place, and what will be done with the data – future mitigation? • Is a 300-400% level of conservativeness (safety margin) normal? • The 404 is not an appropriate model on which to base Expressway truck mix predictions. • There is no mention of the health impacts. • ***A sensitivity analysis is needed because an increase in truck traffic volumes will impact air quality.*** • ***Negative air quality impact in the valley will be offset by a much greater positive air quality impact in the whole Region.***	• Replant more than 2000 trees. • What mitigation can be done to prevent maximum TSP concentrations from exceeding the MOE interim AAQC of 120 ug/m3 at 125 out of 150 receptor sites at least 13% of the time? • Mitigation is needed if the objectives of the project are to be achieved. • ***What mitigation can be done to prevent maximum PM_{10} concentrations from exceeding the MOE interim AAQC of 50 ug/m3 at 127 out of 150 receptor sites at least 13% of the time?***
Noise	• Have any noise studies been conducted along the 401 and QEW which could be reviewed for comparative purposes? • A sensitivity analysis is needed because an increase in truck traffic volumes will impact noise levels. • What kind of noise will result from construction activities, for example clearing and blasting? • Will blasting impact house foundations? • Has a study of current noise levels been conducted on: Upper James, Upper Wentworth, Upper Ottawa, Upper Wellington, Wellington, Main, King, Cannon, Mount Albion, Barton, and Kenilworth streets, or Centennial Parkway ***where***	• Mitigation should be generous. Sound walls should be built even if they decrease the noise impacts only slightly, or just block residents' view of the Expressway.

	residents are currently living much closer to traffic than any home on the proposed Expressway? • What is the feasibility of providing mitigation to residents?	
	Gaps, Omissions or Areas Requiring Clarification in the Impact Predictions	**Additional mitigation options**
Cultural Heritage	• It ***should be emphasized that in other areas of the Region, as well as the whole Niagara peninsula, the same type of artifacts have been found for many years with little or no concern as to their value or disposition.*** • Where will the artifacts be moved to and how can they be accessed? • Will the pump house be directly impacted, or will the ambiance of the area just be affected?	• Save the pump house if possible. • Edges of streams are sensitive and important in terms of cultural heritage.
Contaminated Sites	• Will all contaminated properties be accessible for clean up? • What concentrations of contaminants will be removed? • Have the sites been characterized? • What volume of contaminated material will be removed, and where will it be sent? • Clean up of contaminated sites will benefit the residents in the Rennie Street area.	
Visual Resources – Niagara Escarpment	• Has relocation of the hydro tower been considered? • Fewer road cuts will mean less impact to the Niagara Escarpment. • ***Revised plan has lanes closer together which results in less negative impact on both the visual and actual cut through the escarpment.***	• Plant as many trees as possible and establish a maintenance program. • Visual aesthetics should have a lower priority than other resource considerations such as the creation of a wildlife corridor.
Transportation	• Disagree that the Expressway will be able to adequately	

	accommodate predicted 2020 traffic volumes. Development on the mountain and the increasing trend toward truck transportation has not been considered. • A four-lane highway may not be sufficient to handle future traffic volumes. • Clarify what areas of the Region will experience a decline in traffic congestion, and how much alleviation there will be.	
	Gaps, Omissions or Areas Requiring Clarification in the Impact Predictions	**Additional mitigation options**
Existing/ Future Land Use and Infrastructure	• Will impacted residents be contacted to address relocation issues? This should be clarified. • Is there a proviso for property owners who wish to have their property bought out?	• Establish a bike trail at Kenilworth that connects with the Caledonia trail. • The Region should meet with the School Board to discuss the possibility of utilizing school property to replace lost facilities.
Fisheries	*(Ms Knox noted that the Hamilton Harbour Remedial Action Plan will not be submitting its' comments until the Federal screening report has been reviewed).*	
Groundwater	• The term "recharge" should be defined for readers of the DSR Volume 2. • Were CSO tank discharges considered in the statement "Contaminated recharge water which infiltrates into the groundwater system may not meet Provincial Water Quality objectives (PWQCs) where the water discharges"? • Will ground water recharge be impacted?	
Surface Water	• How many regional storms are expected? • What impact will road salt and spills have to the structure of the harbour? • What is the impact on the harbour?	• Constructing ponds, such as the one at the end of Dartnall Road, could help mitigate spills. • Region should investigate alternative stormwater management options such as

		a downspout disconnection by-law. • Anti-icing instead of de-icing techniques should be utilized to reduce the amount of road salt used on the Expressway. • Region should investigate the purchase of more efficient salting trucks and equipment. • Emergency response measures for spills need to be developed for all highways in the Region. • The Region should investigate the possibility of restricting certain traffic on the Expressway in order to reduce the risk of spills.
	Gaps, Omissions or Areas Requiring Clarification in the Impact Predictions	**Additional mitigation options**
Water Quality	• Will water quality improve with the clean up of contaminated sites?	• Windermere Basin and other sediment ponds should be cleaned out. • The location of snow dumps, which contain a large amount of road salt, should be investigated.
Vegetation and Wildlife Habitat	• How many hectares/acres of habitat enhancement or creation will there be? • Where and how will the rare bird species be relocated, and how will it's habitat be recreated?	• It should be noted that a number of wildlife corridors still exist.

General Comments:

- Stop signs, or right angle turns should be located at the end of the off ramps in order to help slow the traffic exiting the Expressway.

Discussion:

- ***Ms Wiebe asked why CSC members had not been contacted by the Federal Department of Fisheries and Oceans but R.A.P. had? Ms***

Wiebe stated that she felt all CSC members should be contacted for their input.

- Professor Korol asked when will the final document would be released? Mr. Murray responded that the DSR volume 1 and 2 including comments and responses to all concerns and suggestions would be rolled into one document which should be finalized by the end of the year.

- Ms Liebersbach asked whether there would be a comment period on the final document. Mr. Murray noted that the document will be publicly released but there will not be a formal comment period.

- Ms Knox asked whether comments on the DSR Volume 2 could be submitted after October 19th. Mr. Murray responded that the Region will not preclude any submission that has merit, but strongly encouraged members to submit their comments by October 19th even if they are conditional upon the review of additional documents.

- Ms Knox requested that the Region forward the Federal screening reports to the Hamilton Harbour RAP for their consideration as soon as the reports have been submitted. Mr. Murray noted that the Region will distribute the comments from the government agencies to the CSC as soon as possible after they are received.

- Professor Korol asked whether the final document would include more detail? Mr. Murray responded that the technical reports will be referred to in the final draft.

During the working session Mr. McLean, a member of the public, became upset and verbally attacked the CSC using profane language. Mr. Barclay put forward a motion to exclude Mr. McLean from future CSC meetings on the grounds that his comments were out of order and that he used inappropriate language. The motion was passed unanimously with one abstention from Professor Korol.

4.0 CSC Meeting Planning

The members of the CSC felt that at this point they had completed their obligations outlined in the Terms of Reference and that future meetings of the CSC were not required. It was agreed that the facilitator's office would prepare the meeting record for the September 24th meeting within 5 working days and then distribute it to the CSC for their comments. Edits would then be completed as necessary and the set of comments and suggestions from the working session would be forwarded to the Region as the CSC's advice and recommendations on DSR Volume 2.

5.0 Meeting Adjourns

Ms Leppard thanked the members of the CSC for their diligence and wished them luck in their future pursuits. Mr. Murray also thanked the members of the CSC for their effort and input.

The adjourned at 9:35 p.m.

Report prepared by S. Leppard and C. Pettitt
September 29th, 1998.

Appendix A

COMMUNITY STAKEHOLDERS COMMITTEE
Attendance for September 24, 1998
Redhill Creek Expressway
(North-South Section)

Name	Affiliation
George Barclay	Hamilton-Halton Home Builders
Marilyn Baxter	Bay Area Restoration Council
Barbara Blake	Centennial Ratepayers' Group
Gord Cocks	Mount Albion Home Owners' Association
Jim Harvie	Citizen's Expressway Committee
Louise Knox	Hamilton Harbour Remedial Action Plan
June Koppeser	Citizen's Expressway Committee
Robert Korol	Citizens for a Sustainable Community
Ruth Liebersbach	Hamilton and District Chamber of Commerce
Ernie Monkley	East Mountain Industrial Park
Brian O'Donnell	Mount Albion Home Owner's Association
Fred Pizzoferrato	Centennial Ratepayers' Group
Keith Rodgers	Bay Area Restoration Council
Mary Wiebe	Citizen's Expressway Committee
Pam Hubbard	Regional Municipality of Hamilton-Wentworth
Sally Leppard	LURA Group
Chris Murray	Regional Municipality of Hamilton-Wentworth
Carolyn Pettitt	LURA Group
Members of the Public	
Kris Heaton	HIA-CAP, Environmental Task Force City Hall
Don McLean	Friends of Red Hill Valley
Sandra Rogers	no affiliation given

Appendix V: Government Letters Draft Summary Report Volume 1

Appendix VI: Government Letters Draft Summary Report Volume 2

Appendix VII: Stakeholder Letters Draft Summary Report Volume 2

Appendix VIII: Public Letters Draft Summary Report Volume 2

Appendix IX: Letters Draft Technical Reports

Appendix V: Government Letters Draft Summary Report Volume 1

Ontario

Ministry of Transportation

Ministère des Transports

PLANNING & ENVIRONMENTAL OFFICE
Central Region
3rd Floor, Atrium Tower
1201 Wilson Avenue
Downsview, Ontario
M3M 1J8

Fax. 416 235-4940
Tel. 416 235-5547

Date: December 5, 1997

Destination Fax Number	8-1-905-546-2385
Pages (including coversheet)	3

TO: Chris Murray, Hamilton-Wentworth Region, Special Projects Office

FROM:

J.A (Sandy) Nairn
Planning, Engineering & Construction
Planning & Environmental Office
Central Region

COMMENTS:

Chris, please find attached comments from our office on the IADP Draft Summary report.

If you have any questions please give me a call.

12d

memorandum

Ontario

97 12 05

To: Mr. Chris Murray
Environmental Planner

From: J.A. (Sandy) Nairn, Environmental Planner
Planning & Environmental Office, Central Region
5th Floor, Atrium Tower

Tel: (416) 235-5547
Fax:(416)325-8070

Re: RHCE IADP Draft Summary Report Comments

Chris, please find the following comments we have regarding the IADP Draft Summary Report.

1) page 2, the address for the SPO has floor spelt with an extra "o";

2) page 4, under the Phase 3 heading in the table, first line, reference is made to "area natural" is this intended to be "natural areas"?;

3) page 12, Map 5, the fish identified in the vicinity of Confederation Park should be shown inside a body of water or stream, the visual effect of this is to have fish on land;

4) page 15, Key Legislation and Policy, bullet six regarding Provincial Wetland Policy, this policy does not apply to infrastructure under the EA Act, perhaps this should be deleted;

5) page 17, Key Legislation and Policy, third bullet point, is it necessary to state the objective of creating a net gain of fish habitat, vs. emphasizing "no net loss";

6) page 22, the last three bullet points do not appear to "fit" into the "What is Known" section;

7) page 65, under Comparison, the note in the last paragraph should be changed to reflect the connection of the work at QEW/Burlington Street with QEW/RHCE by indicating that "...modifications at Burlington Street are required to maintain traffic operations and safety when the QEW/RHCE

interchange is open to traffic";

8) page 67, Section 4.3, the Summary of Watershed Issues and Options is given although the Expressway Related Actions are not provided perhaps implying that all the issues will be dealt with under the Expressway.

If you would like to discuss any of these points, please give me a ring.

Regards,

J.A. (Sandy) Nairn
Environmental Planner

cc: S. Jacobs
C. Mitton-Wilkie

F:\DATA\WP\SANDY\RHCE\COM_IACF.WPD

Environment Canada / Environnement Canada
Environmental Policy, Planning, and Assessment Division
Great Lakes and Corporate Affairs Branch
Environment Canada, Ontario Region
867 Lakeshore Road, P.O. Box 5050
Burlington, Ontario L7R 4A6

Our File / *Notre reference*
B-95-84
Your File / *Votre reference*
70.80.03.3

December 5, 1997

Mr. Chris Murray
Regional Transportation Department
Regional Municipality of Hamilton-Wentworth
25 Main Street West, Suite 1000
Hamilton, Ontario L8P 1H1

Dear Mr. Murray,

Re: Red Hill Creek Expressway - North-South Section Impact Assessment and Design Process, draft Summary Report Vol. 1, Nov. 1997

Environment Canada, Ontario Region's (DOE-OR's) Environmental Assessment Coordinating Committee (EACC) has reviewed the document: Red Hill Creek Expressway North-South Section Impact Assessment and Design Process, draft Summary Report Vol. 1, Nov. 1997. We wish to provide clarification and correction to the statements made under Key Legislation and Policy for Terrestrial Resources (pg. 15) as follows:

First bullet item is incorrect - the provisions for issuing permits under the Migratory Birds Convention Act (MBCA) which are included under the Canadian Environment Assessment Act (CEAA) Law List Regulation do not apply to this project, therefore Environment Canada would not be triggering CEAA on this basis.

Second bullet item should be revised - Migratory Birds Convention Act - must be complied with if migratory bird nesting activity (i.e. nests, eggs, fledglings) are adversely impacted during the nesting or breeding season.

We will not be able to provide technical comments pertinent to areas of our departmental mandate (i.e. migratory bird habitat and water issues) by your requested date of Dec. 8, but will provide comments at a later date.

Please contact the undersigned if you wish to discuss the above comments.

Yours sincerely,

M. A. Shaw
Environmental Assessment Projects Officer Ph.(905)336-4957 Fax(905)336-8901

cc.
W. Bien - Chairman, Environmental Assessment Coordinating Committee (EACC)
R. Dobos - Secretariat, EACC
M. Shiomi - Environment Canada, ECB
E. Debruyn - Fisheries and Oceans Canada, FHM

Canada

MS/ms

76d

FAX COVER

Message:

Date : 12/5/97

Preliminary Environment Canada comments on draft IA Report.
Please note that we will not be attending the Dec. 8 meeting.

To: Chris Murray

Company : Region of Hamilton-Wentworth

Fax Number : 9-546-2385

From : Michael A. Shaw

Company : Environment Canada, OR, GLCA/EPPAC (Burlington)

Fax Number : (905)336-8901

Pages including this cover page: 2

Subject : Red Hill Creek Expressway N-S

WinFax PRO Cover Page

Hamilton Region Conservation Authority

December 8, 1997 Red Hill Creek Expressway

Regional Transportation Department
Regional Municipality of Hamilton-Wentworth
25 Main Street West, Suite 1000
Hamilton, Ontario L8P 1H1

Attention: Chris Murray

Dear C. Murray:

Re: **Draft Summary Report, Volume 1, November 1997**
Red Hill Creek Expressway, North-South Section
Impact Assessment and Design Process

HRCA staff have reviewed the this draft report and note that the proposed alternatives for the Burlington Street interchange all greatly impact the Van Wagner's Marsh, a provincially designated Class One wetland and/or Confederation Park. Some years ago, the MTO presented a draft interchange proposal for the Red Hill Creek Expressway and Burlington Street. That proposal also had similar impacts on the marsh and Confederation Park and the Full Authority objected to its implementation. Given the alternatives presented, the same objections will likely be raised by the Full Authority particularly as the Burlington Street interchange alterations have been lumped into the exemption order. In the new year, a staff report regarding this matter will be presented to our Water Management & Environmental Impact Advisory Board and subsequently to our February Full Authority meeting.

HRCA staff have the following specific comments regarding the text of the report:

a) Page 12. Map 5 Indicates fish habitat in the centre of Confederation Park as being within the Red Hill Marsh/Van Wagner's Ponds. This is apparently an error - while connected by a drainage channel the ponds within Confederation Park are isolated from the marsh by road crossings and weirs.

The section of Nash Road between Confederation drive and Van Wagner's Beach Road was redesignated with new municipal addresses as Van Wagner's Beach Road in 1994.

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P.O. Box 7099, 838 Mineral Springs Road, Ancaster, Ontario L9G 3L3 • (905) 525-2181 or 648-4427 • Office Fax 648-4622 • Shop Fax 525-2214

78 A

b) Page 14. Terrestrial Resources. There is an apparent contradiction when, after listing resources which are "rare and vulnerable" and quite extensive and complex communities and various environmentally sensitive designations the report goes on to say :

> "Past land uses, surrounding urbanization, and infrastructure in the valley ... have degraded habitats and reduced the ability of the corridor to maintain its biological diversity and ecosystem function."

Based on the available inventory data, it would appear that the valley has maintained considerable diversity and function despite past and present abuses.

c) Page 15. Key Legislation and Policy Section should include the mention of two additional items. The Fisheries Act can be interpreted to include necessary terrestrial habitat adjacent to the creek. The Fill and Construction Regulation of the HRCA also includes activities on land which may cause the pollution of water.

d) Page 18. Surface Water. The definition of the 100 year flood is incorrect. It is correctly defined as a flood which has a 1% probability of occurring or being exceeded in any given year.

e) Page 20. Water Quality. The report states that "the source of high coliforms under low flow is currently unknown." Data exists which indicates that storm sewer outfalls are flowing during dry weather and contributing high coliform readings. This at least suggests that illegal or improper connections to storm sewers are a contributing source.

f) Page 22. Streams. There are several meaningless statements at the end of this section -this is likely an editing/typographical error.

g) Page 49. Drawing 3A. The existing and proposed profiles are mislabelled. The chainages are difficult to read due to type size and copy quality- will the viaduct extend from 22+800 to 23+300?

h) Page 52. Drawing 5/5A. Has a viaduct been considered for the section of road between 25+000 and 25+300? This would leave a large section of valley floor and creek unaffected by the road base preserving floodplain storage and terrestrial resources.
How will pedestrian access to the valley be achieved at Greenhill Ave. - a sidewalk on the ramp?

...3

i) Page 56. Drawing 7/7A. It is difficult to imagine how a naturalized channel can be constructed to replace the existing concrete channel given the interchange footprint.

j) Page 58. Drawing 8/8A. How will pedestrian access across the valley be achieved at Melvin Ave. - pedestrian bridge?

k) Page 64. TRUMPET A - Burlington Street Interchange. It is unclear in the report as to why this interchange needs alterations. The ramp configuration shown in green at Centennial Parkway indicates all traffic movements from and to the Red Hill Expressway are possible and this configuration has a minimal impact on the park.

None of the following proposed alterations to the Burlington Street interchange are acceptable to HRCA staff.

"A" Loop Illustrated in red, the road pattern would probably result in the closure of Hutch's and put Van Wagner's Beach Road almost onto the beach. Over 50% of the parking lot at that location would be lost and the park width severely reduced impacting the user's experience. The park would effectively be severed into two pieces isolating the Go-Kart site and displacing the Breezeway. Also sources of existing and future revenue generating operations would be lost to the HRCA as identified in the Master Plan.

"B" Loop Illustrated in blue, the road pattern would result in the closure and demolition of Lakeland Pool and Community Centre and put Van Wagner's Beach Road almost onto the beach. While the pool's financial viability is once again in question, the Community Centre is currently viable and operated by the Optimist Club. About 20% of the parking lot would be lost and the park width severely reduced impacting the user's experience. The park would effectively be severed into two pieces isolating the Go-Kart site and displacing the Breezeway. Also sources of existing and future revenue generating operations would be lost to the HRCA as identified in the Master Plan.

...4

"East Collector" Illustrated in green, this road pattern would involve relocation of Van Wagner's Road northward by about 15 m . The QEW Toronto-bound off-ramp to Burlington Street, if constructed on fill, would impact a portion of Van Wagner's Marsh - a Provincially designated Class One Wetland. The impact on the park and marsh could be greatly reduced if the ramp was constructed as a viaduct on piers. The marsh function could remain and even be extended around the piers and Van Wagner's Road could run closer to the ramp alignment. Failure to build the ramp as a viaduct would likely result in some parking losses and potential relocation of a parking lot entrance. Park user experience would be affected regardless as traffic volumes are moved closer to the beach.

TRUMPET "B" This configuration requires extensive fill in Van Wagner's Marsh. It will also likely impact Baranga's parking lot, and, depending upon elevation, the ramp running past Lang's Foods may severely impact the Confederation Park Main Office and Works Yard. The impacts to the wetland and park are unacceptable.

l) Page 80 Stream. It is noted that currently the road alignment would require 16 crossings of the creek, 550 metres of creek relocation and increase in structural cover of the creek from 340 m to 1170 m. Design adjustments will be made in an effort to reduce these impacts. Will relocation of the creek to permit the road alignment impact significant terrestrial resources? The impacts considered should include construction access as even temporary access roads will require clearing and grubbing.

Please contact Tony Horvat, P.Eng., (extension 138) at this office if you have any questions regarding this matter.

Yours Truly,

B. Scott Konkle, O.A.L.A.
Director of Watershed Planning & Engineering.

TH/

MEMORANDUM

REGIONAL ENVIRONMENT DEPARTMENT
STRATEGIC PLANNING DIVISION

Date: December 8, 1997

To: Chris Murray

From: Bill Pearce

Re: **Red Hill Creek Expressway, North South Section - Impact Assessment & Design**

Further to your circulation of the above document, following are this Division's questions, observations and comments:

1. Air Quality

   The discussion of air quality focuses on the additional emissions due to transportation and road dust. It could also discuss the impact on air quality of the loss of vegetation in the valley. Vegetation is a natural sponge for air borne pollutants. The valley will lose some of its current capacity to absorb pollutants through the change in land use and construction of the Expressway. Tree plantings in the Valley will help to replace this loss, especially if attention is paid to species selection. Plantings around the Expressway will absorb the pollutants generated by traffic and road dust.

2. Erosion and "Natural Channel Design"

   The already severe erosion in the Red Hill Valley may be made worse by the construction of the Expressway. The amount of vegetation removal and soil infilling and movement during construction will likely result in the potential for severe erosion impacts. How will this be dealt with during Expressway construction? The "natural channel design" proposed has a predominantly straight, smooth outline (not characteristic of the meandering habit of the present Red Hill Creek) which may increase water velocities and exacerbate erosion. Have the consultants on this project drawn from the experiences of other areas which have attempted natural channel design? Does the stream remain where it is "built"? Has this "natural channel" as shown on the maps been designed to fit with the geology, soils, physiography of the area?

3. Have the possible impacts of the Expressway construction to migrating birds been

considered? How will these impacts be mitigated? Fish and mammal movement is considered, but not bird movement.

4. The report refers to "Minor Design Changes" which could reduce impacts of the Expressway. The use of the term "minor" for relocating sections of the creek may not be appropriate.

5. Even with the use of footprint reductions as a design modification to reduce impacts on adjacent natural habitats, the effects of construction will likely change drainage, elevation, and natural topography so much that adjacent dry meadow, escarpment, and marsh habitats will also be significantly altered. It appears that the existing habitat in the valley will be largely replaced with a completely new ecosystem.

6. In context to points two to five above, management of the Expressway construction to minimize environmental damage, is imperative. The purpose of the Impact Assessment and Design Report is to demonstrate how this can be achieved. It is therefore critical that actual construction is undertaken in such a way to demonstrate environmental responsibility and that methods to achieve this objective are documented before construction commences.

cc Jim Thoms
Leo Gohier
Guy Paparella
Peter Dunn
Rosemary Foulds
Cathy Plosz

THE REGION OF HAMILTON-WENTWORTH

MEMORANDUM

DEC 12

****

TO: Chris Murray, Env. Planner II
Predesign and Special Projects Div.
Regional Transportation Department

YOUR FILE

FROM: Léo Gohier, Director
Water and Wastewater Division
Regional Environment Department

OUR FILE: 5.8
PHONE: (905) 546-4254

SUBJECT: **Red Hill Creek Expressway, N/S Section Impact Assessment and Design Process - Draft Summary Report Vol. 1**

DATE: 10 December 1997

As requested at our meeting on 3 December 1997, I provide the following general comments:

Chapter 2 (Surface Water):

In the section entitled "What is Known" there are a number of statements that may require wordsmithing:

Only storm sewers empty directly into Red Hill Creek. Combined sewers only overflow under significant rain events.

Is there considerable infrastructure that is regularly affected by major flooding, such as the Queen Elizabeth Way, or is this a rare occurrence?

Have you done some modelling that shows that the entire Valley will be flooded under a 100-year storm event or is this statement meant figuratively?

Creeks are really nothing more than open storm sewers when it rains. The rapid rates of flows are then expected during storm events, so I'm not sure that this would qualify as a public safety concern.

The storm water management strategies that you mention must be developed to an acceptable standard:

Cont'd. . . .

Red Hill Creek Expressway, N/S Section
Impact Assessment and Design Process
- Draft Summary Report Vol. 1

Cont'd. . . .

- Are these required at the moment in order to protect infrastructure and private property, or will they be required as a result of the construction of the Expressway and related storm sewers?

Under the section known as "Condition: Water Quality" there are certain comments that could be restated in light of the ongoing efforts that the Region is putting forth as part of a water quality program, whether it be the implementation of the Pollution Control Plan or the optimization of the Woodward Avenue wastewater treatment facility:

- Reference to the Woodward Avenue sewage treatment plant effluent being a source of pollutants is a bit misleading. This plant operates below its Certificate of Approval requirements, and there are ongoing expenditures of over $5 million a year (on average) to improve the performance of this facility. The reference that the proposed CSO abatement remediation works may impact on other resources within the Valley may be counter-productive to what we are trying to do. We are in the process of wrapping up our Environmental Assessment on this project, and these impacts will be mitigated.

We are working actively with RAP (Remedial Action Plan) and BAIT (Bay Area Implementation Team) as well as with BARC (Bay Area Restoration Council) in terms of the water quality in the Harbour. These groups are also involved in a number of other initiatives in terms of the Bay, Cootes Paradise, and various streams. As noted previously, we are also in the process of completing the Environmental Assessment for the construction of CSO structures along the Red Hill Creek. Therefore, we would not want to jeopardize these projects and in that sense want to ensure that your lists (of what is known) are expressed in light of other activities. I do understand however the difficulty sometimes in achieving this, considering this report is in bullet form.

I have also requested a copy of the State of the Watershed Report, dated October 1997, as well as all background documents.

In conclusion, there is no question that there is a need to develop a detailed storm water management policy within the Region, since we are responsible under the Regional Act for the operation and maintenance of storm sewers within the City of Hamilton. Unfortunately, storm water is complicated by the fact that it is (except for the above-noted exception) the responsibility

Cont'd. . . .

Red Hill Creek Expressway, N/S Section
Impact Assessment and Design Process
- Draft Summary Report Vol. 1

Cont'd. . . .

of the area municipalities. In this case, there are at least three municipalities impacting on Red Hill Creek, in addition to this being a rural as well as an urban creek which in and of itself presents unique challenges.

I remain at your disposal should additional discussion be required, and I look forward to receiving the requested documents.

LG:em
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cc: J. D. Thoms
Commissioner
Regional Environment Department

PLANNING AND DEVELOPMENT DEPARTMENT
City of
HAMILTON
71 Main Street West, Hamilton, Ontario L8N 3T4 (905) 546-4221 Fax (905) 546-4202 TDD-546-2448

1997 December 15

TRA-LINC

Mr. J. van der Mark
Director
Special Projects Office
Region of Hamilton-Wentworth.
ATTN.: **Chris Murray**

Dear Mr. van der Mark:

RE: Red Hill Creek Expressway North-South Section - Draft Summary Report

Thank you for the opportunity to review this document. In general we found the document to be well done, complete, and of assistance to us in preparing comments from the City of Hamilton Planning and Development Department. The following are our specific comments.

1. As indicated in our meeting with the Parks Staff Committee, the items identified as possible actions from the watershed plan (Chapter 4.3) are broad and cover a wide-range of choices. What is not explicitly stated is that these are possible solutions and that there has been no firm commitment from any level of government agency to implement any of these solutions. It is also not clear which of these options, if any, can be implemented as part of the Expressway construction. Our preference would be to have statements in the document that explicitly indicate that this section contains options from the watershed plan only, none of which have received a firm commitment for implementation.

2. The Official Plan for the City of Hamilton contains policies that address noise generated by the Expressway. The residential communities adjacent to the north-south portion of the Expressway are complete and new residential construction is not anticipated adjacent to the corridor. Noise mitigation for these homes becomes critical, particularly since the Expressway will be a new source of noise introduced into existing communities. The noise policies of the Official Plan must be addressed; in addition, we would prefer that the issue of noise and noise mitigation be reviewed in this document.

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3. This Department recently completed an updated neighbourhood plan for the Albion Falls Neighbourhood (north of Stone Church Road; Pritchard Road and Arbour Road areas). During our work on this neighbourhood plan, information was presented regarding the septic systems in the area. In particular, it appears that the septic systems in this area are older and have a higher than average failure rate. This may be one source of contaminants identified as part of the Contaminants section of the report.

We have also noted certain comments within the document related to technical or grammatical errors. A marked copy of the report is attached to this letter.

Should you require clarification on this, please contact Mary Lou Tanner at x4148.

Yours truly,

V. J. Abraham, M.C.I.P., R.P.P.
Director of Planning and Development

MLT/

cc: J.G. Pavelka, P.Eng.
Chief Administrative Officer

Ministry
of the
Environment

119 King Street West
12th Floor
Hamilton ON L8P 4Y7

Ministère
de
l'Environnement

119 rue King ouest
12e étage
Hamilton ON L8P 4Y7

Ontario

January 29, 1998

Pamela Hubbard
Regional Transportation Dept.
Roads Division
Regional Municipality of Hamilton/Wentworth
25 Main St. W., Suite 1000
Hamilton, ON L8P 1H1

Dear Pamela:

Re: Red Hill Creek Expressway, Draft Summary Report Vol.1

We have reviewed the subject document's Section 2.3 - Air Quality and suggest the following changes.

Under Key Legislation and Policy's final sentence, the AAQC (actually an interim standard) is for *PM10* (24 hour). Mention could be made of the other AAQCs for toxics which will be monitored by adding "as well as several organic parameters which will be monitored".

The map and table depicting our monitoring station needs revisions (attached). Station 29105 (B) was terminated in 1996, and 29087 (H) was terminated in 1995. Station 29009 (E) is misplaced too far north on the map. Station 29561 Vansitmart/Strathearn measuring PM10 continuously has been running for about a year and had over a year of data previously as well. Two continuous Beach Strip stations measuring many parameters could be shown as they lie close to the proposed interchange there.

Yours truly,

Frank Dobroff
Air Quality Analyst

Attach.

FD/ms
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FD-29R

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ion: Air Quality

cus: Changes in vehicle related emissions

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by researchers from McMaster University and the regional, provincial and federal government and addresses the overall state of air quality in the Hamilton Harbour watershed. The Region is investigating ways it can promote improved air quality. Staff working on the Expressway project will be seeking advice from within the Region and community participants.

Key Legislation and Policy

- Environmental Protection Act, Regulation 337 - there are no regulatory standards for roadway emissions; however, during the environmental assessment (EA) process, the MOEE typically assesses the impact of a proposed roadway undertaking by comparing predicted pollutant levels from the undertaking to ambient air quality criteria (AAQCs). The AAQCs are desirable levels, specified under Regulation 337 of the Environmental Protection Act. There are AAQC values for CO (1-hour), NO2 (1-hour), and PM_{10} (24-hour) as well as several organic parameters which will be measured

Key sources of information:

1. Rowan Williams Davies Irwin (RWDI) field monitoring work
2. Ministry of Environment and Energy, Air Quality Data
3. The Report of the Hamilton-Wentworth Air Quality Initiative (1997).

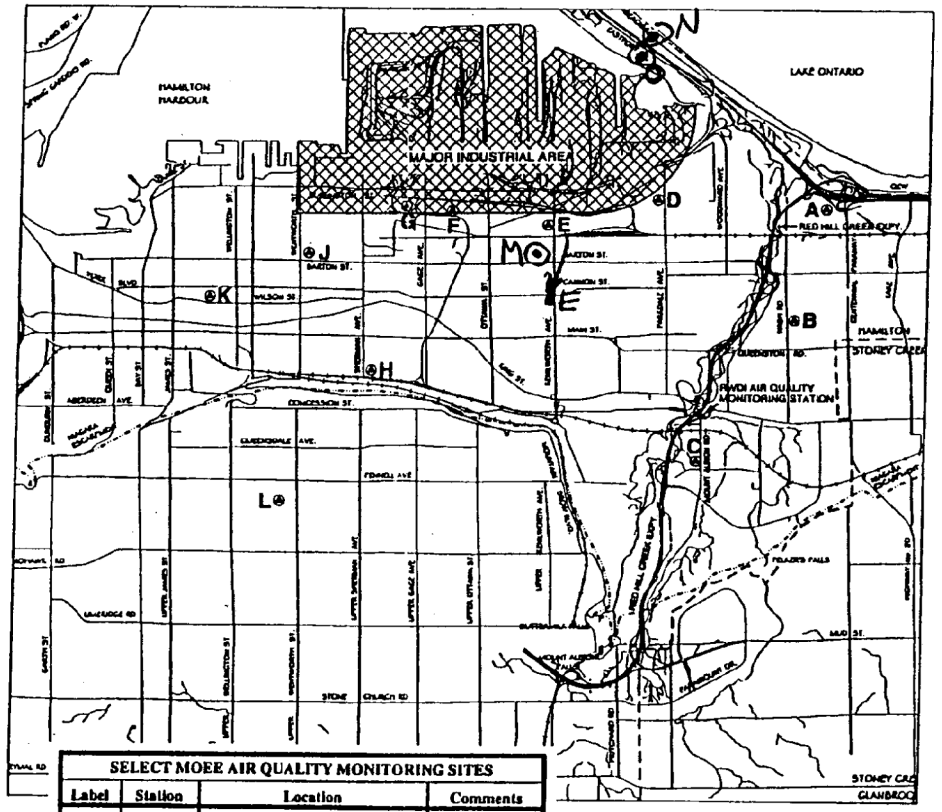
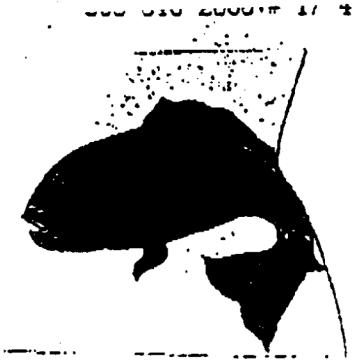


Figure A

SELECT MOEE AIR QUALITY MONITORING SITES			
Label	Station	Location	Comments
A	29143	Keefer Ct.	TSP Only
B	29105	Nash Rd/Keatley Dr.	
C	29135	Albright Rd/Mt. Albion Rd.	TSP Only
D	29119	Morley/Parkdale	TSP Only
E	29009	Kenilworth	TSP Only
F	29113	Gertrude/Depew	TSP Only
G	29011	Burlington/Leeds	TSP Only
H	29087	405 Cumberland Ave.	TSP Only
J	29025	Barton/Wentworth	TSP Only
K	29000	Elgin/Kelly St.	
L	29114	Vickers Rd/East 18th St.	

M 29561 Homeside (Vanstone/Strathearn)
N 29112 Reed Blvd
O 29547 Pier 25



RAPIFAX

TO: PAMELA HUBBARD

SERVICE AND BRANCH: REG. MUN. OF HAMILTON-WENTWORTH

CITY: HAMILTON

FAX #: (905) 546-2385

NUMBER OF PAGES: 3 pages(s) to follow ORIGINAL BY MAIL

REMARKS:

FROM: Ed DeBruyn

SERVICE:

FISHERIES AND HABITAT MANAGEMENT
BAYFIELD INSTITUTE
867 LAKESHORE RD., P.O. BOX 5050
BURLINGTON, ONTARIO, CANADA
L7R 4A6

DATE: Feb. 2/98

TELEPHONE/FAX:

(905) 336-4873 - JOAN EDWARDS
(905) 336-4819 - RAPIFAX

92d

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*

Our file *Notre référence*
5250-387

25 January 1998

Regional Municipality of Hamilton-Wentworth
Regional Transportation Department
Roads Division
25 Main Street, West, Suite 1000
Hamilton, Ontario
L8P 1H1

Attention: Pamela Hubbard, Environmental Planner

Dear Ms Hubbard;

Re: Red Hill Creek Expressway - North-South Section: Volume 1, November, 1997

Based on information contained in the *Draft Summary Report: Red Hill Creek Expressway- North-South Section: Volume 1, November, 1997* recently provided to this office and subsequent discussions with your office, the noted proposal may have harmful impacts on fish and fish habitat in both Red Hill Creek and Marsh and in Van Wagners Marsh adjacent to Hamilton Harbour. I expect that once additional studies are completed by your office, the nature and extent of the impacts to fish and fish habitat which would result from implementing the options selected may be better defined. Influent streams and associated wetlands are important habitats of the fisheries resources of Hamilton Harbour as well as Lake Ontario. Decisions related to the aquatic habitats potentially impacted by the selected option must be done in the context of other initiatives within the Hamilton Harbour RAP area.

As you are aware, the harmful alteration, disruption and destruction of fish habitat is prohibited under Section 35(1) of the *Fisheries Act*. Section 35(2) provides for the Minister of Fisheries and Oceans Canada(DFO) to authorize the harmful alteration, disruption and destruction of fish habitat. In order to achieve the 'No Net Loss of productive capacity of fish habitat' guiding principal of the *Policy for the Management of Fish Habitat*(DFO-1986), no such authorizations are issued unless the habitat losses are compensated. Furthermore, no such authorizations

are issued where the compensation proposed by the proponent is determined, through review, to be unacceptable or inadequate to achieve no net loss or, the loss of the subject habitat is considered unacceptable.

You should also be aware that Section 35(2) of the *Fisheries Act* is included in the list of laws that trigger the *Canadian Environmental Assessment Act* (CEAA). This means that upon application to DFO for an authorization pursuant to Section 35(2) of the *Fisheries Act*, DFO becomes a *Responsible Authority* under CEAA and is therefore required to conduct a screening of the impact of the project, as prescribed by CEAA, before such Authorization can be issued. While DFO has not yet received a *Fisheries Act* authorization request from the Region of Hamilton-Wentworth for the proposed works, Section 11 (1) of CEAA recommends that a review should be initiated by the *Responsible Authority* as early as possible in the planning stages. Typically, the scope of a CEAA review is limited to the impact of a project on areas of federal responsibility. These generally include: native interests, navigable waters, migratory birds and transboundary waters, in addition to fish habitat.

I suggest that DFO meet with the Region in the near future to clarify and address questions which may be related to the *Fisheries Act* authorization process, the *Policy for the Management of Fish Habitat* and CEAA screening process. Similarly, we wish to clarify what components are being undertaken by the Region and what components are being undertaken by the Ministry of Transportation of Ontario and matters related to exemptions or completed reports under provincial environmental legislation. You have already proposed a February 11, 1998 meeting for all government agencies to provide comments to the Draft report. I am unable to ensure that DFO's comments on the draft report can be completed by that date but a representative will attend.

While some of the above matters can be addressed with DFO at that meeting, there will be additional matters for discussion related to the CEAA process, public concern, scope of project and the federal environmental screening relationship to provincial environmental processes. Therefore, I suggest a separate meeting with

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DFO staff and representatives of the CEAA Agency which could be convened after the February 11, 1998 meeting.

Please contact the undersigned to discuss arranging such a meeting and for identifying appropriate participants at (905) 336-6436 or FAX (905) 336-4819.

Edwin R. DeBruyn
Fisheries and Habitat Management - Ontario Area
Fisheries and Oceans Canada

cc: Terry Cooke, Regional Chair, Hamilton-Wentworth
Fred Leach, MTO
Guy Riverin, CEAA, Hull
Bill Bien, DOE, EACC
Michaela Huard, Rob Stevens, Steve Burgess, DFO, Ottawa
Jeff Stein, DFO, Wpg.
Ken Brant, CCG, Sarnia
Vic Gillman, DFO, CCIW
Drew Cherry, OMNR, Cambridge

Ministry
of the
Environment

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Ministère
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l'Environnement

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Hamilton ON L8P 4Y7

Ontario

February 11, 1998

MEMORANDUM

TO: Ann Dykes
Approvals and Planning Unit

FROM: Tracey Kooiman
Water Resources Unit

RE: **Red Hill Creek Expressway North-South Section**

I have reviewed the *Draft Summary Report Volume 1 Red Hill Creek Expressway North-South Section Impact Assessment and Design Process* (Region of Hamilton-Wentworth and Ministry of Transportation, November 1997) from the perspective of conformance with surface water Policy, Procedures and Guidelines.

The report outlines the proposed horizontal and vertical alignment of the north-south section of the Red Hill Creek Expressway. It identifies the potential impacts arising from the proposal by defining current conditions within the Red Hill Creek watershed. This report essentially establishes the benchmark from which the impacts of the expressway on the natural environment will be determined. These current conditions will also influence the determination of what appropriate mitigation/compensation measures will be required to offset/limit the predicted impacts. The report acknowledges the need to incorporate the goals and objectives of the Red Hill Creek Watershed Plan into the expressway design process. This is particularly important with respect to the proposed realignment of sections of the Red Hill Creek channel. This realignment must be designed and constructed on the basis of fluvial geomorphological principles in order to ensure a stable, naturalized channel which will limit erosional and depositional impacts on the natural environment. An engineered hardened channel is to be avoided. The effects of the realignment with respect to the correction of erosion/sedimentation problems must be evaluated both locally and within the context of the watershed plan.

From an editorial note, the Key Legislation and Policy outlined in Section 2.3 identifies the *Lakes and Rivers Improvement Act* as establishing the regulatory requirement for a Certificate of Approval for a storm water management facility and the *Ontario Water Resources* Act as addressing temporary or permanent diversions in a watercourse. The requirements of these two regulations have been cited in reverse.

Wed

In general, the *Draft Summary Report* provides a good definition of background conditions and identifies the major areas of potential impact arising from this proposed section of the expressway. A more detailed technical review will be provided upon the submission of the impact assessment document.

T. Kooiman

cc: A. McLarty- Group Leader, Surface Water
file: O 06 34 -

Appendix VI: Government Letters Draft Summary Report Volume 2

Ministry of the Environment
Ministère de l'Environnement

119 King Street West
12th Floor
Hamilton ON L8P 4Y7

119 rue King ouest
12e étage
Hamilton ON L8P 4Y7

Ontario

August 7, 1998

Pamela Hubbard
Environmental Planner
Regional Municipality of Hamilton-Wentworth
Regional Transportation Department
Roads Division, 25 Main St. W
Hamilton ON L8P 1H1

Dear Pamela,

Re: Red Hill Creek Expressway - RDWI Air Quality Assessment Report

Our ministry has completed the review of the Air Quality Assessment Draft report conducted by RDWI. The review of the modelling aspects was conducted by Dr. Rob Bloxam from our Environmental Monitoring & Reporting Branch. A copy of the this memo has been forwarded to RDWI to allow them some time to review these comments prior to our meeting.

Main Concerns/Questions:

1) Emission Rates for PM_{10}:

On page 22 (Table 12) of the report, emission rates for PM_{10} are presented. The report indicates that these emission rates were calculated using the US-EPA PART 5 model. On page 30 of the report, the authors indicate that a silt loading of 0.5 g/m^2 was used in the calculations (**Note**: This isn't listed on Table 11 which gives the PART 5 input parameters used). The report indicates that this is a conservative silt loading recommended by US-EPA for expressways. The authors have not referenced the source of this data, but it is probably from Section 13.2.1 (November, 1997 update) of the US-EPA emission factor document, AP-42. (**Note:** I am referenced as the MOE contact who recommended using EPA data in the absence of local silt content information).

In AP-42, EPA has recommended (if local data is not available) using 0.5 g/m^2 for worst case conditions (after road salt application or in areas with significant dirt track out) for roads with average daily traffic above 5000 vehicles. However, for limited access roadways (i.e., expressways) they recommended a worst case silt loading of 0.2 g/m^2. Clearly, without local information any value used is only an estimate. The worst case value used in this report might be more applicable to the expressway ramps and connecting roadways with a lower value of 0.2 g/m^2 more appropriate for most of the expressway. The expressway links near the QEW could be affected by dirt track out from industries and have a higher silt loading.

Even with a silt loading of 0.5 g/m^2, I don't understand how an emission rate as high as 13.41 g/(vehicle mile travelled) was calculated for PM_{10}. (**Note**: Primary tailpipe emissions are in the 0.1 g/VMT range). Using the emission equation for paved roads in AP-42, I calculate a PM_{10} road dust emission rate of about 2.7 g/VMT.

2) Use of Ambient Air TSP/PM_{10} Ratio:

In the report, the observed ambient air ratio of TSP to PM_{10} was used to scale the PM_{10} model results to give the impact on TSP concentrations. This methodology assumes that vehicle related emissions dominate both the TSP and PM_{10} concentrations. Away from industrial sources, fugitive dust from roads probably is the dominant source of TSP, but the fine fraction of PM_{10} (i.e., $PM_{2.5}$) includes a significant portion of secondary aerosols as well as contributions from combustion sources other than vehicles.

3) Ozone Limiting Method:

The Ozone Limiting method can only be used when a comparison is being made with a NO_2 ambient air criterion (i.e., it isn't used for cases where comparison with the NO_x standard is required). The calculation must take into account the fraction of the emissions which could occur as NO_2.

On pages 28 and 29, the calculations assumed that10% of the NO_x emissions occurred as NO_2. However, on page 7 it was stated that 10% to 30% of automobile emissions could be as NO_2. If the higher percentages can occur for some traffic flow conditions, these need to be considered in the calculations of maximum likely hour average NO_2 concentrations.

Other Comments/Questions:

- The wind rose as it's presented must be directions blowing towards, rather than from. This was confirmed with Mr. Chadder of RDWI and the required correction will corrected in the final report.
- Vehicle Fleet Mix (Table 10): Is the vehicle mix determined from local data, or is it from files already in MOBIL5C? The percentage of heavy duty gasoline vehicles seems high.
- Sulphur Content of Fuels: The sulphur content of on-road diesel is regulated to be 500 ppm or less.
- Concentration Variations Across Receptors: There are some significant variations in concentrations predicted for receptors that are close to one another and are similar distances from the expressway. Is this due to the exact location of the road links? For example, receptor 142 appears to be located on the link section 68-69.
- Conservatism of Models (page 30-31): Conservatism in air quality assessments is often due to assumptions about emissions, background concentrations and initial release characteristics, rather than conservatism in the numerical model alone. In this study, the PM_{10} emission rate used could be the main cause of the high values predicted. The location of roadway links relative to receptors could also affect model results.
- HWY 404 Study: The two way traffic volumes on HWY 404 were found to be about 15,000 during the peak PM rush hour.

- Some years ago, the ministry had conducted particulate (TSP) monitoring along the Conestoga Parkway. Traffic volume on the Conestoga would be comparable to the anticipated volume on the Red Hill Creek Expressway. Measured TSP values along the Conestoga Parkway were much lower then modelling estimates indicated for the Red Hill Creek Expressway.

- On page 27, the NOX half-hour point of impingement standard of .25 ppm was exceeded.

I would suggest that the silt loading emission rate be confirmed and the model re-calculated based on the above information.

We should have a meeting once some of these issues are addressed. I would suggest that Dr. Bloxam also attend.

I have not yet received comments back on the noise assessment report. I will forward them to you as soon as I receive them. Should you have any further questions, please don't hesitate to call me 905-521-7705.

Thank you.

Yours truly,

Neil Buonocore
Supervisor Air, Pesticides & Environmental Planning
Ministry of the Environment

cc: David S. Chadder, RWDI
Anne Dykes, MOE

NB/en

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Ontario

August 27, 1998

Ms Pamela Hubbard
Environmental Planner
Regional Municipality of Hamilton-Wentworth
Regional Transportation Department
Roads Division, 25 Main St. W
Hamilton ON L8P 1H1

Dear Pamela:

Re: Red Hill Creek Expressway
RWDI - Traffic Noise Impact Assessment Study

Our ministry has completed the review of the Traffic Noise Impact Assessment Study report conducted by RWDI. The review was conducted by Mr. R. Krawczyniuk from our Approvals Branch. A copy of this letter, along with the attachment has been forwarded RWDI for review.

Should you have any questions, please contact Mr. Krawczyniuk at 1-416-314-8302.

Yours truly,

Neil Buonocore
Supervisor, Air, Pesticides, & Environmental Planning
Technical Support Section
West Central Region

cc: David S. Chadder RWDI
Anne Dykes (MOE)

NB/en

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APPROVALS BRANCH

TEL (416) 314-8302
FAX (416) 314-8452

August 25, 1998

MEMORANDUM

TO: N. Buonocore
Supervisor, Air Pesticide and Environmental Planning
Hamilton Regional Office

FROM: R. Krawczyniuk
Project Analyst, Acoustics
Air and Noise Section

RE: RED HILL CREEK EXPRESSWAY: NORTH-SOUTH SECTION
ENVIRONMENTAL ASSESSMENT EXEMPTION ORDER
CITY OF HAMILTON
OUR FILE: EA-0018-98

This office has completed its review of the draft documents pertinent to noise which were submitted by the proponent(the Regional Municipality of Hamilton Wentworth) in compliance with their commitment on the planning process to be followed for the Red Hill Creek Expressway : North- South Section. This section of roadway was approved by a Joint Board in 1985 and is presently subject to an Exemption Order.

The documents referred to consist of: (a) the *Impact Assessment and Design Process, Draft Summary Report, Volume 2,* dated July 1998 and *(b)* the technical Report entitled *Traffic Noise Impact Assessment* prepared by Rowan Williams Davies & Irwin Inc. and dated June 12, 1998.

At the outset , it should be noted that the first document contains very little information on the potential noise impacts which will be generated by the Expressway other than the fact that the sound levels at certain locations along the Expressway are expected to increase by up to 20 dB (about four times as load) and that where feasible noise barriers will be constructed in order to reduce these significant impacts. If constructed, the noise barriers are expected to decrease the sound levels by 5 to 10 dB (about half as loud as the unmitigated levels).

...2/

A comprehensive analysis of the potential increases in the sound levels along the Expressway as well as of the potential for mitigation of these increases can be found in the *Traffic Noise Impact Assessment* Report. However, the Report contains numerous deficiencies both in its technical quality and in the completeness of the information contained therein.

To obtain an acceptable document, the following issues should be addressed in the final version of the Report and the Report should be resubmitted for review by our office.

1. Of major concern is the uncertainty with regard to the actual increases in sound levels which will occur as a result of the Expressway. More specifically, our concerns stem from the fact that the "existing ambient sound levels" used in determining the impacts were obtained through measurement. Our concern with this approach is : (a) that it is uncertain if the measured sound levels are truly representative of the existing yearly average 24 hour traffic sound levels, (b) that it would appear that transient noise sources such as railway noise (see Page 10) and aircraft noise may have been included in the measurement of the ambient levels. As you are probably aware, our Ministry's position is to exclude all transient transportation noise sources when determining the ambient, and (c) that according to Appendix C some measurements were conducted under extremely windy conditions thus raising the possibility that "wind-induced sound levels" would contribute significantly to the observed sound levels from road traffic. We refer to readings such as those taken at Site 1on April 3, 1997; Site 6 on August 15,1997 and Site 11 on October 4, 1997 as well as the fact that the measurements should have been made bearing in mind Table 102-3 (wind induced sound levels) of our Ministry's Technical Publication NPC- 102.

   It is precisely for the reasons indicated above, that prediction techniques are considered by our Ministry as being the preferred method of determining existing traffic sound levels. Predictions should be made using our Ministry's computerized Traffic Noise Prediction Program (STAMSON ∀) based on AADT Traffic Volumes or if unavailable on observed traffic counts representative of traffic flows over a yearly period.

   Pending a re-assessment of the existing ambient sound levels based on prediction techniques (or proper measurements), the existing ambient traffic sound levels and thus the increases in sound levels will remain in doubt.

2. In addition to the methodology used in determining the increases in traffic sound levels we are uncertain of the *extent* of the traffic noise impacts which will be generated by the Expressway. Specifically, we refer to Table 5.2.1 which lists only the *receiver segments closest to the Expressway* which will be subject to increases in sound levels. To obtain an accurate indication of the actual impacts which will be generated by the roadway, the Table should list for each segment the number of *noise sensitive locations* which will

...3/

be impacted. By *noise sensitive locations* we refer not only to homes (year round/ seasonal) but also to other sensitive locations such as schools, places of worship, hospitals, nursing homes, motels, camp grounds, etc. All segments which will be impacted by the Expressway not only those closest to the roadway should also be listed. To simplify the Table for the segments further from the first row of receivers only those segments impacted by increases in sound levels of greater than 5 dB need be indicated. For Draft Approved Residential Developments, their locations , the anticipated impacts and the method of addressing these impacts, i.e. party responsible for mitigation, the control measures which will be used and the effectiveness of these measures should be indicated in Section 5.2 of the Report.

3. Section 5.2 should refer the reader to an Appendix containing sample calculations of the anticipated noise impacts (with/without mitigation) or at least to a reference as to where these calculations could be found. This information is essential in order to trace the validity of the assumptions used in determining these impacts.

4. Section 5.2 should briefly indicate the indirect noise impacts the Expressway may have on the local community. We refer specifically to an indication of the anticipated increases/decreases in the traffic sound levels along the major roadways leading to/from the Expressway, i.e. Mud Street, Geenhill Avenue, King Street, Queenston Road and Barton Street.

5. With regard to mitigation, we note in Section 6.3 that typical noise barriers along the property lines will have a limiting height of 3 metres while those along the Expressway right-of-way will have a limiting height of 4 metres. However, we note that at several locations along the Expressway 2 metre high barriers are being proposed along the property line and 3 metre high barriers along the right-of-way. Reasons (technical/acoustic) why these shorter barriers are being proposed should be indicated . Furthermore, in many of the Subsections to Section 6.3 we note the statement that" higher barriers render diminished improvements in attenuation and become difficult to construct and maintain." The statement should be elaborated on in Section 6.3. A typical scenario could be used and where possible quantitative data should be provided in order to better substantiate the claim.

In addition to the revision and re-submission of the Traffic Noise Impact Assessment Report, we recommend that the proposed Report containing the protocol for traffic noise monitoring of the constructed Expressway as well as the Construction Code of Practice to minimize the noise/vibration generated during the construction of the roadway (see Section 1, Page 2) also be submitted for review by our office.

...4/

With regard to the operational impacts generated by the Expressway, the Report should also include a brief discussion of the procedures which will be followed during complaint investigation and with regard to compliance reporting. In the discussion of the construction impacts , the Report should also elaborate on: (a) the measures which will be taken to reduce the noise/vibration impacts which will be generated by pile driving and blasting operations (refer to Page 26 of the Draft Summary Report, Volume 2) and (b) the procedures which will be followed with regard to the monitoring of the noise/vibration levels, the investigation of complaints and compliance with the commitments made in the Report.

We trust that our comments will be of assistance to the proponent in preparing the Final Reports.

Should there be any questions, please contact the undersigned.

R. Krawczyniuk, M.Sc.

RK/rk

cc: G. Higgins, EA Branch
V. Schroter

PLANNING AND DEVELOPMENT DEPARTMENT
City of HAMILTON
71 Main Street West, Hamilton, Ontario, L8P 4Y5
Tel. (905) 546-4221 / Fax (905) 546-4202

1998 October 15

Pam Hubbard
Environmental Manager
Special Projects Office
Region of Hamilton-Wentworth
10th fl, 25 Main Street West
Hamilton, Ontario
L8P 1H1

Dear Ms. Hubbard:

Re: Redhill Creek Expressway Impact Assessment and Design Process (IADP) Draft Vol. 2

The following are the City of Hamilton Planning and Development Department staff comments respecting the above-noted report. The comments of the City of Hamilton Real Estate Division have also been incorporated into this submission.

Local Air Quality

The City of Hamilton Official Plan includes policies on pollution, including C.4.3, which states: "No development will be permitted unless it is of a standard that will conform with the current policies of the Provincial Government regarding air, noise and water pollution". The IADP report states that the predictions are likely conservative. However, predictions do exceed acceptable concentrations of respirable dust (PM_{10}) and total suspended particulate (TSP). The following are concerns respecting local air quality.

- Air quality reductions may necessitate the relocation of the Glencastle soccer fields. Acceptable alternative open space sites are not easily found in established neighbourhoods. An investigation of alternatives is being undertaken jointly by the City and Region. It may be necessary to purchase non-open space land at market value for replacement. In this event the City should be compensated at the market value of replacement lands and/or for any development work.

- The full impacts of the predicted reductions in air quality for PM_{10} and TSP have not been fully explained.

  For example, the report refers to a 200 m limit of general impact. This may impact areas other than Glencastle park, such as existing residential (e.g. homes backing onto the freeway), institutional (e.g. school sites) and recreational uses (e.g. parks) abutting the freeway. Impact Maps 2A and 2B do not identify the extent of areas affected by below standard air quality. Perhaps these maps should illustrate the 200 m limit. Furthermore, with respect to net impacts, the report states that PM_{10} and TSP will be higher relative to existing levels. Does this mean that, even after mitigation, these concentrations will be below provincial standards?

  Furthermore, the Report does not consider the potential human health effects. The Draft report Possible Human Health Effects From Exposure to Predicted Increases in Respirable Particulate Matter (PM) Due to the Red Hill Valley Expressway, June 11, 1998, does provide conclusions (pg. 32 – 34) regarding potential health impacts. It is noted that these conclusions are not discussed as part of the impact assessment, and the above referenced report is not included as an Information Source.

- A multi-use concept is proposed for the valley lands abutting the expressway. The valley will serve as a major transportation corridor, as well as an open space area. Pedestrian access is provided at certain locations, existing trails will be enhanced and new trails will be established. In some cases, the trials are located very close to the freeway. It appears from the predications provided that air quality may go below provincial standards at some of the trail locations. The continued use of the valley for open space and recreational uses is beneficial to the community. However, the report does not address, the relationship between the air quality predications and the proposed and existing trail systems, and potential impacts to users. Furthermore, should mitigation measures be investigated, such as the posting of signs (e.g. warnings of air quality or to persons with respiratory problems), be investigated?

Noise

We understand, the provincial objective for outdoor sound levels is the higher of 55 dBA (24 hour average) or the existing ambient (background). In addition, MTO and MOE protocol call for mitigation if noise is increased by 5 or more dB. The City of Hamilton Official Plan contains policies on noise and vibration. In particular, Policy C.9.6 states that: "Council will co-operate and encourage the Ministry of Transportation to achieve the objective of 55 dBA where an inter-regional highway is proposed to be built or expanded through, or adjacent to, a designated residential area". The following are concerns respecting noise:

- The report indicates specific areas where mitigation measures will be necessary will not be identified until the detail design stage. At this time, the Region will "attempt to achieve levels as close to, or lower than the objective level as is technically, economically and administratively feasible." The reports also states that net impacts (after mitigation) may still include increases of up to 11 dBA.

  Noise mitigation is a critical issue, since development along the corridor is existing and a new source of noise is being introduced. Furthermore, noise barriers may be difficult to accommodate due to the level of development and proximity to the valley. It is recognized that a certain level of detailed design is likely required to ascertain mitigation requirements and the feasibility of constructing noise barriers. However, sensitive areas where noise levels will exceed 55 dBA as a result of the freeway should be identified as soon as possible, to ensure mitigation can be appropriately addressed. If some areas cannot be mitigated using barriers they should be identified.

- Project mitigation mapping in the report identifies general areas for "noise wall studies", although not all sensitive land uses abutting the expressway are included. The report should clarify that these areas will not experience noise increases which warrant mitigation.

- As stated previously, a multi-use concept is proposed for the valley lands abutting the expressway. The valley will serve as a major transportation corridor, as well as an open space area, and in some cases, the trails are located very close to the freeway. Noise levels may interfere with the enjoyment, or reduce the quality of, these outdoor recreational areas. The continued use of the valley for open space and recreational uses is beneficial to the community. However, the report does not address the potential impact of the noise level predications and the proposed and existing trail systems.

Existing and Future Land Use and Infrastructure

This section of the report investigates recreational, open space, residential and industrial land uses, which will be permanently or temporarily displaced to allow for the expressway. On October 2, 1998, the Special Projects Office met with City staff and Council members from affected wards, to further discuss impacts on parks and open space.

- The City will continue to work with the Region to address the following concerns respecting impacts on city park lands:

  Glencastle Park – As stated previously air quality reductions may necessitate the relocation of the Glencastle soccer fields. Expressway embankments may also affect use of this park. An alternative location will have to be found for this facility. One possibility is to share or co-ordinate a site with one of the school boards.

  Rosedale Park – Realignment of the creek may result in displacement of 1 to 3 baseball diamonds. There may be options to relocate the ball fields to other locations within the existing park. However, this may necessitate the loss of vegetation

Kings Forest Golf Club - Realignment of the creek may result in displacement of 2 tees. We understand the Culture and Recreation Department will comment on this issue, once more information becomes available.

Leaside Park – Approximately one half of the park will be required for the new Burlington Street interchange ramp. The remaining land is not viable for a park. Furthermore, it appears potential sites for a replacement park is limited. The Planning and Development Department has begun the process of preparing Plans for the Parkview Neighbourhoods. Alternative locations will be fully investigated during the Neighbourhood Plan process. In addition, the Regional Special Projects office will re-examine, with the Ministry of Transportation, the need for the Woodward Avenue ramp, which necessitates the loss of the park.

Globe Park – The report states that stormwater and fishery wildlife habitat works might require the displacement of one baseball diamond. However, we understand floodplain excavation will not be required and the park will not be affected. The Report should be updated accordingly.

- Acceptable alternative open space sites are not easily found in established neighbourhoods. If it becomes necessary to purchase non-open space land for replacement, the City should be compensated at the market value of replacement lands.

- Areas where the re-alignment of the Creek encroaches onto City owned lands, outside of lands previously transferred to the Region, should be identified. If realignment work is to take place on City lands is the Region going to indemnify the City in perpetuity from any resulting liabilities (e.g. flooding)? Also who is responsible for long term maintenance if there are problems (e.g. erosion). It should be stated if construction activities may need to encroach onto City owned lands. Details, requirements and easements for City owned lands for realignment and construction should be addressed.

The comments of the City of Hamilton Departments of Public Works and Traffic, Culture and Recreation should also be considered respecting City parks and recreational uses.

Further to the above, we understand these staff comments will be considered in finalizing the IADP Report and the final Report will be circulated for further comment from the City. Once we have reviewed the final IADP report, we will take a recommendation report to City Council and provide you with formal City of Hamilton comments.

TOTAL P.03

If you have any questions regarding this matter please call Christine Lee-Morrison at extension 4280.

Yours Truly,

Victor Abraham, RPP, MCIP
Director of Planning and Development

Cc Doug Lychak
Joe Pavelka
Werner Plessl
Bob Chrystian
Kevin Nutley
Dave Cowan
David Powers
Hart Solomon

Ministry of Transportation
Ministère des Transport

Ontario

Planning & Environmental Office
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Ms. Pam Hubbard
Environmental Manager
Region of Hamilton Wentworth
Transportation Department
Special Projects Office
25 Main Street West
Hamilton, Ontario
L8P 1H1

October 16, 1998

Dear Ms. Hubbard:

Re: " Draft Summary Report Vol. 2, 1998, Red Hill Creek Expressway North-South Section - Impact Assessment and Design Process"

MTO staff of the Central Region Transportation Planning & Environmental Office have reviewed the above draft.

Our understanding is that under the approvals in place for this project the Region of Hamilton-Wentworth, (RHW), will remain the proponent for all work, including improvements to the QEW associated with the RHCE. MTO will provide significant technical assistance during detail design and construction for work in the QEW corridor. The majority of our comments therefore relate to obtaining clarification regarding the background to and the intent of commitments to mitigation made during your study and their implications to future design and construction.

You had requested that we: **"... Please review the report with respect to how the preliminary design, impact assessment and mitigation affect your agency's mandate...", and "...Please advise us if there any issues to be resolved that have not been identified to date by your agency...".**

We have compared the July 1998 **Vol. 2 DSR , "Draft Impact Assessment and Design Process"** currently under review to the June **"Executive Summary"**. It appears that the first twelve pages are exactly the same as are the five maps at the end of each report. The only difference between the reports appears to be the 41 pages in DSR Vol. 2, of which 30 are tables that briefly summarize in columns: "Impact without Mitigation","Mitigation" and "Net Impact" for various factors. As only portions of approximately15 pages relate directly to MTO 's interests in the QEW Corridor MTO, staff concentrated their effort on these pages and on the technical support documents we subsequently

received.

Sandy Nairn had previously commented on the June 1998 **"Executive Summary"**, (letter to Chris Murray, July 21, 1998). Several of his comments were not addressed in the preparation of Vol. 2, which as noted appears to duplicate sections of the June document. The following are Sandy's comments that did not appear to be addressed.

- Page 1, first bullet under 1998 Expressway Design, should the limits be identified here;

- Page 4, first paragraph, add "via interchanges" before "...at Mud Street, Greenhill Avenue...";

- Page 4, the paragraph after the bullet points, change the beginning of the sentence to "The MTO will design, construct and fund..." and the end of the sentence to "...the continued safe and effective traffic operation of this provincial freeway" (this aligns closer to the wording in the Exemption Order, see page 30).

General comments regarding our review of Draft DSR Vol 2:

Specialty staff in our office are currently working with your office, its consultants and several committees and technical groups to address specific technical issues and mitigation measures associated with factors such as drainage, stormwater management, landscape planning, noise, archaeology and fisheries. These discussions have resulting in findings and recommendations more detailed and conclusive than the general concepts found in Draft DSR Vol. 2. We suggest that either draft DSR Vol. 2 be finalized to reflect these discussions or at a minimum draft DSR Vol. 2 be reviewed to ensure there are no conflicts or contradictions with recent recommendations and commitments.

The above comment raised a general question regarding documentation. As noted above Page 14 indicates that:

> - the Region is currently working with government agencies and community stakeholders to establish mitigation/compensation strategies that will minimize project impacts; and,
>
> - is generating information that will satisfy remaining government approvals.

DSR Vol. 2 then states that the project:

> - **"...is now entering into the detail design and construction phase of this process. During detail design, preliminary design and mitigation/compensation strategies will be translated into detailed plans for construction and remaining government approvals will be obtained...".**

Please advise as to how these more detailed mitigation/compensation strategies and the negotiations with government agencies currently underway will be documented to ensure accurate transfer to the detailed design phase? (I am assuming you do not intend to update Vol. 2 DSR to include this recent work).

We understand that you will be requesting as part of this review that all government agencies sign off on

the preliminary design including agreements in principle from DFO. If possible could we receive copies of the agency sign-offs and any concerns or conditions they have that would effect the detail design of the QEW section.

A recurring comment relates to the degree to which impacts will be specified and mitigation measures will be defined at the outset of detail design. There is also a related uncertainty regarding the expectations of other stakeholders and the level to which their concerns will be resolved prior to detail design. Ideally detail design should be an implementation phase. Fore the most part questions/issues regarding the type and degree of impacts, alternative mitigation measures and the scope and limitations on selected mitigation measures should be resolved with stakeholders during preliminary design. If it is expected that detail design will need to be carried out expeditiously due to a tight schedule every effort should be made to ensure as few uncertainties and issues as possible are carried forward from preliminary design.

With regard to Draft DSR Vol. 2:

A minor point: The mitigation map for the QEW Section, Map 3B does not include in its legend the dotted line for trails which it shows, (based on looking at other maps).

On page 15 it indicates "... the Ministry of Transportation will be taking on the detail design and construction associated with the QEW...". I understand from Fred Leech, Manager of the Planning and Environmental Office, MTO, Central Region that the role of MTO at design and construction is still under discussion therefore it may be premature to make any statement in DSR Vol. 2 regarding future responsibilities.

Has the feasibility of the general stormwater management measures in section 2.4 been confirmed? Can the final version of DSR Vol. 2 be more definitive. The last two paragraphs indicate the location of stormwater quality ponds, indicate they create wetlands and indicate that they are "...designed to settle sediment before water is discharged to the creek...". Based on recent more detailed investigations has it been confirmed that those commitments can be met as worded? If not we suggest these paragraphs **and other paragraphs in this report which state conceptual commitments** be reworded to indicate "if feasible"? If not the perception of stakeholders may be that each can and will be done. If these general statements are not substantiated or at least qualified as "if feasible" it may put the detail design phase in the difficult position of having to determine the feasibility of each concept before initiating the detail design and defending any variance from the DSR Vol. 2 commitments, (in effect reconducting preliminary design).

On page 20, (and in other locations), there are dates given for construction and road openings. Do these dates need to be updated?

On page 21, **(and in other locations),** for the purposes of your assessment there are assumptions regarding the areas adjacent to the roadways that will be impacted. In this example 5 meters from the top or bottom of side slopes. These assumptions should be qualified to indicate there will be exceptions otherwise stakeholders may view these as firm restrictions that detail designers and construction may not be able to adhere to.

On pages 40 and 41 there is no "indicator" specifically for fisheries habitat. Given that the Federal

Fisheries Act focus is on habitat it is difficult to determine from this summary the future work requirements associated with ensuring adherence to that legislation. Fisheries impacts and associated mitigation and approval requirements should be resolved before entering into detail design. Also there is an indicator for stream length but no indicator for the significance of the realignments that maintain that length. This appears to imply that realignment is not an issue as all realignments will be better fish habitat than the existing alignment. Is this the correct interpretation? If so has this been substantiated as being feasible and accepted by DFO and other regulatory agencies as a premise for entering detail design during your recent meetings with them? If not is it planned that detail design will do the investigations, assessments and negotiations satisfy all concerns?

As a side note, Map 1 shows no watercourse realignment south of Nash Road. Is that correct?

On page 41 under "Impact" for fisheries for the QEW section, all statements appear to be condition changes, (e.g. pier removal, 0.5 ha of wetland removed). Have the actual impacts of these changes to fisheries been determined? If so could this be addressed by either updating DSR Vol.2 to include the more detailed information/requirements resulting from recent work with MNR and DFO or by the preparation of a document that "bridges" the information gap between DSR Vol.2, recent work and the initiation of detail design?

Specific technical data will be needed by detail design. If it is presently available could it be referenced in DSR Vol. 2. This should occur at other locations as well when general statements are made. A good example is page 41 of Vol. 2 under "Significance". It states:

> "...Red Hill Creek provides habitat for several fish species, including some species which spawn in the creek but inhabit Hamilton Harbour and/or Lake Ontario at other times. Although most of these species are neither sport or commercial fishes, they are an important component of the Red Hill Creek ecosystem...".

For detailed design to expeditiously implement mitigation measures to address the general impacts identified in DSR Vol. 2 to "fish species" and their role as "an important component of the Red Hill Creek ecosystem", detail design will need to be know the species involved, their location, the relationship of the creek to their habitat requirements, and their role as "an important component of the ecosystem". Presumably the "Significance" statement in DSR Vol. 2 was based on information collected during preliminary design by the "Information Source" noted on page 41: "C. Portt and Associates, Preliminary Design - Expressway and Creek"and therefore the additional details needed by detail design are in that document. If that is not the case other references should be provided, (or related work in currently underway to obtain the information identified).

Page 44 and 45 "Surface Water". As noted earlier Mr. Ram Dharamdial of our office is working with your group and your consultants. His comments through that process should be reflected, where appropriate, in DSR Vol. 2. Please advise us of any comments of Mr. Dharamdial that cannot be addressed.

Our Landscape Planner, Mr. Sam Ng is now a member of your Landscape and Restoration Advisory Group, (as it relates to the QEW section). His comments at those meetings should be reflected in DSR Vol. 2 where appropriate. Please advise us of any comments of Mr. NG that cannot be addressed.

The information in DSR Vol. 2 for Vegetation and Wildlife Habitat, pages 50 and 51 is very general as to impacts and mitigation. Hopefully the support document noted, "Dougan and Associates, Red Hill Creek Expressway Terrestrial Resources Technical Report, (Draft) June 1998" has most of the specific information that will be needed to expedite the detail design process. If not the LRAG in its current work should strive to complete and document the information required to ensure that the detail design phase is essentially an **implementation phase** rather than a more time consuming **investigation, impact assessment, issues resolution, and implementation phase.**

On page 51 of Vegetation impacts it indicates:

> - "...Mitigation options are being considered which could potentially offset several key impacts, particularly the loss of terrestrial and wetland habitats. These will be subject to physical feasibility, stakeholder acceptance and budgetary commitments...".

As previously noted as much of the above as possible, should be investigated and resolved during preliminary design if detail design will be under a tight schedule. I gather that the intent of technical meetings you are presently having for various factors is to address many of these questions. Again, a comprehensive "bridging" documentation of your current work would be of considerable assistance to the detail designers.

With regard to Archaeology Mr. Gary Warrick, Regional Archaeologist provided the following comments.

Archaeology, built heritage and cultural landscape impacts and proposed mitigation for each are summarized in tables in Chapter 3 (pp. 28-29). The data reported in the tables corresponds to data provided in the "Summary Report of the Cultural Heritage Resource Assessment" (July 1998), produced by Archaeological Services Inc. and Unterman McPhail Cuming Associates (in association with Historical Research Limited). I have only one recommended correction to the tables. As I pointed out in a letter to Dr. Ron Williamson of Archaeological Services Inc. (March 9, 1998), the Remnant Track (Cultural Landscape Unit 2 - Red Hill Creek Valley Road) will not be directly impacted by proposed construction. Consequently, no archaeological work is recommended for this cultural landscape feature. I agree that a protective barrier fence should be erected during construction to prevent off right-of-way impacts during construction. However, this is deemed to be sufficient mitigative measures for such a feature. Archaeological investigation is not required as well.

I also reviewed the "Summary Report of the Cultural Heritage Resource Assessment" and found that none of my recommended changes (noted in my letter to Dr. Williamson of March 9, 1998) were incorporated into the Summary Report.

Given the commitment made by the Regional Municipality of Hamilton-Wentworth to consult with the MTO archaeologist "where excavation occurs on Ministry of Transportation (MTO) land" (page 54 of IADP Draft Summary Report Vol. 2), it will be appreciated if Mr. Warrick is kept advised of such activities and if Mr. Warrick can be advised of any of his comments that cannot be addressed. This will help to justify MTO expenditures associated with archaeological.

Ms. Cynthia Mitton-Wilkie our Environmental Planner-Fisheries and Wetlands, has provided the following comments. In addition Ms. Mitton-Wilkie is meeting with yourself and DFO. Discussions and agreements

made during those meetings should be reflected in the final DSR as appropriate.

Pages 40-41: The impact assessment for fisheries assumes that the natural channel design component of the stream realignment is part of the highway impacts and not mitigation. However, in my experience the impact to the watercourse (i.e. length of watercourse requiring realignment) is considered the impact while the enhanced new stream channel is considered mitigation/compensation, with the net impact being an increase in habitat or length of stream. Perhaps the table for fisheries should be rewritten separating the impact of the work from the mitigation that is integrated into the design.

Perhaps the mitigation section for the removal of area in Van Wagner's Pond should state that the enhancement work to be conducted will be determined in consultation with DFO.

Pages 46-47: The table for water quality states that the net impact to water quality during construction cannot be entirely mitigated. Although this may be case in the event of extraordinary rain events, this statement violates section 36 of the Fisheries Act which states that "no person shall deposit or permit the deposit of a deleterious substance of any type in water frequented by fish". Sediment is considered by case law a deleterious substance. Therefore, perhaps statements indicating that sediment will enter watercourses during construction should be re-written.

Pages 50-51: The impacts to Ecosystem Function section state that the design will result in high-level impacts to areas of significant wildlife and plant species. If I recall correctly, this is a very small area of significant habitat. Therefore, perhaps the size of the significant area to be impacted should be mentioned in this section.

The impacts to Ecosystem Function section states that the impacts cannot be mitigated. However, I thought that wetland enhancement/creation was possible in Van Wagner's marsh that would partially compensate for the loss, is this no longer the case? In addition, have these impacts been discussed with MNR yet?

Page 54: I thought that MTO had volunteered to partner in restoration work in Van Wagner's/Red Hill Marshes. Therefore, shouldn't MTO be mentioned in the table as a Group/Individual/Agency that will be consulted during development of the restoration plans for this area?

Map 2B: On page 50, the report states that 0.5 ha of Provincially Significant wetland will be impacted; but Impact Map 2B states that < 1.1 ha will be impacted. Perhaps the same terminology should be used throughout the document.

I have also read the Region's letter to DFO regarding Authorization under the Fisheries Act. This letter refers to numerous documents, of which I do not have a copy. I am particularly interested in # 1, 16 and 17.

Can the Region of Hamilton Wentworth provide copies of the documents noted above to Ms. Mitton-Wilkie?

Attached are memos containing comments from Mr. Chris Blaney our Senior Environmental Planner - Acoustics regarding Noise and Ms. Diane Ivanauskus, Senior Waste Management & Transportation Environmental Planner regarding Contaminated Sites.

Mr. Steve Jacobs, MTO Senior Project Engineer assigned to represent engineering interests of MTO for your

project provided the following comments.

- Page 15, are the median dimensions shown in figure 2.1 correct?

- Page 16, first paragraph should indicate "capital construction costs".

- Page 16, under MTO responsibility, 1st paragraph should be QEW *improvements*. Under MTO investigations it should be "after detailed *traffic* assessment."

- Figure 2.2 - should preferred scheme be added?

- Pages 35, "Transportation":

  - 1st paragraph should read: "....accommodate *the 2021* volume *projection* of up to...".
  - Should comment on auxillary lanes and impact of interchange traffic;
  - Note under Mitigation for traffic operations high accident rates and change tight radius to constantly decreasing radius.

Finally, there were a few loose ends that were identified by Sandy Nairn when he left the ministry and this project. Could you advise if these were resolved.

- Apparently a "wetland restoration plan" was to done by the preliminary design landscape planning firm with input from Jim Duggan who is an ecologist. Is this being pursued through the LRAG.

- J.Dougan & Associates and C. Portt and Associates were to quantify more exact impacts to PSWs - Red Hill Wetland (South side of QEW) and Van Wagner's Ponds (North side of QEW) associated with alternative C1 and proposed mitigation. Has this been completed?

- The Preferred alternative C1 impacts Red Hill Marsh (south of QEW) and Van Wagner's Ponds (north of QEW) by < 1 ha. Key bird staging habitat is removed by new larger radi E-S ramp at Burlington Street- Pam Hubbard was to solicit MNR input on this and set up a meeting that Cindy would attend. Has this occurred? Also Sandy Nairn advised that DFO requested a letter as to why only one alternative and how they got from photomosaic alt "C" to 1:2,000 alt. "C1" at QEW. Has that been sent and their concern addressed?

- RHW has Dillon Consultants doing a study design to check for soil contaminates where the ballparks are. Has this work been completed and documented?

- Pam Hubbard and Chris Murray indicated that RHW will obtain DFO agreement in principle regarding locations where fisheries Authorizations and Compensation are required before turnover to detail design. It was also indicated that as the proponent RHW will be required to submit the formal application for fisheries Authorization during detail design even though MTO is carrying out Detail Design. Were these requirements addressed/resolved at the October 16, 1998 meeting at CCIW? Minutes of that meeting will be appreciated.?

- We understand that Fisheries will trigger CEAA and that DFO will be the Lead Agency. DFO has hired Diane Dalmond to coordinate the CEAA Review, prepare the scope of study, and prepare the CEAA document, (Screening Report). Please keep us advised of progress.

- In past discussion the question of MTO and the Hamilton- Wentworth Region obligations regarding Design and Construction Reports associated with past approvals/exemptions was raised. Has it been determined who will prepare and submit the reports?

- Sandy Nairn previously noted that the Region should ensure there are no conflicts re: the MTO approved EA & Conditions of Approval for QEW and work RHW is carrying out . It is my understanding that the Municipal Exemption Order allows RHW to modify MTO's approved plan. I.e. MTO is not the proponent of these modifications. RHW is. Please confirm.

If you have any questions regarding our offices comments please let me know.

Sincerely,

Patrick Reynolds
Transportation Planning & Environmental Assessment Coordinator
Planning & Environmental Office
MTO, Central Region.

c.c.: Roger Hanmer
Peter Shaver
F. Leech
R.Dharamdial
S. Jacobs
C. Mitton- Wilkie
G. Warrick
C. Blaney
D. Ivanauskus.

including the Reg. Municipality of Hamilton- Wentworth. This study investigated (through boreholing, trenching and sampling/chemical analysis), the environmental conditions on the east and west side of the Red Hill Creek and the north side of the QEW in relation to three proposed locations of the QEW I/C with Red Hill Creek Expressway (see attached Figures 5 & 6 from the Conestoga Rovers and Assoc. Report).

Results indicated that wastes had been deposited and burned to the east of Red Hill Creek. Wastes identified included barrels, concrete and asphalt construction debris, fill materials, ash from burning household refuse, auto parts, foundry sand, household refuse (see attached Figure 6 from the Conestoga Rovers and Assoc. Report). Although chemical analysis of soil samples did not find the wastes sampled to be hazardous, the sample from trench T 12 had concentrations of cadmium and lead which would require the waste to be classified as a registerable solid waste (solid non –hazardous commercial waste), which requires generator registration under EPA Reg. 347.

This and other relevant information should be included in the Dillon Report and evaluated with respect to the current Red Hill study. For example, here is a significant potential implication of the findings in the Conestoga Report that has not been taken into account by Dillon or the Region.

> Under EPA Part V Section 46 - no use shall be made of land that has been used for the disposal of waste within a 25 year period from the year such land ceased to be so used unless the approval of the Minister (of Environment) for the proposed use has been given. Obtaining the minister's signature for a Sect. 46 approval can sometimes be a complicated and lengthy process. Therefore, it should be determined whether or not Sect. 46 applies to the land in question. If it applies and if the land is to be used for construction or mitigation purposes, then a strategy for obtaining such approval or for removing all deposited waste material should be developed.

If you have any questions or require additional information, please give me a call.

Diane Ivanauskas
Senior Waste Management and
Transportation Planner

Attachment

cc: S. Jacobs B. Jones

File C:\c-diane-files\WASTE\LANDMGMT\redhill\phase1.doc

178

BRAMPTON STREET LANDFILL SITE INVESTIGATION FINAL REPORT MOUNTAIN EAST-WEST AND NORTH-SOUTH TRANSPORTATION CORRIDOR

Ministry of Transportation

APRIL 1990

REF. NO. 2451(4)

CONESTOGA-ROVERS & ASSOCIATES

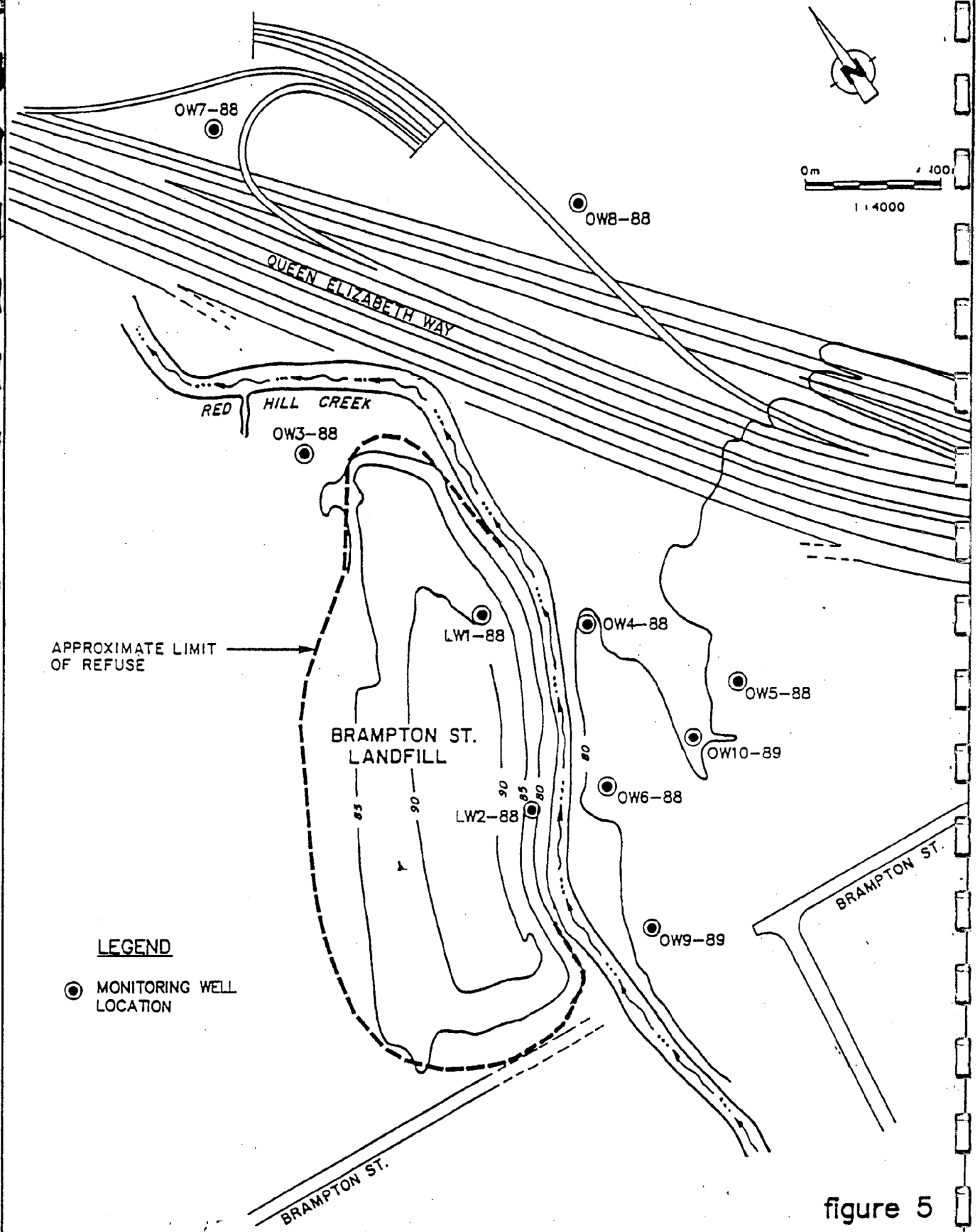


figure 5

MONITORING WELL LOCATIONS
BRAMPTON STREET LANDFILL SITE
Ministry of Transportaion

CRA

2451-11/04/90-4-0

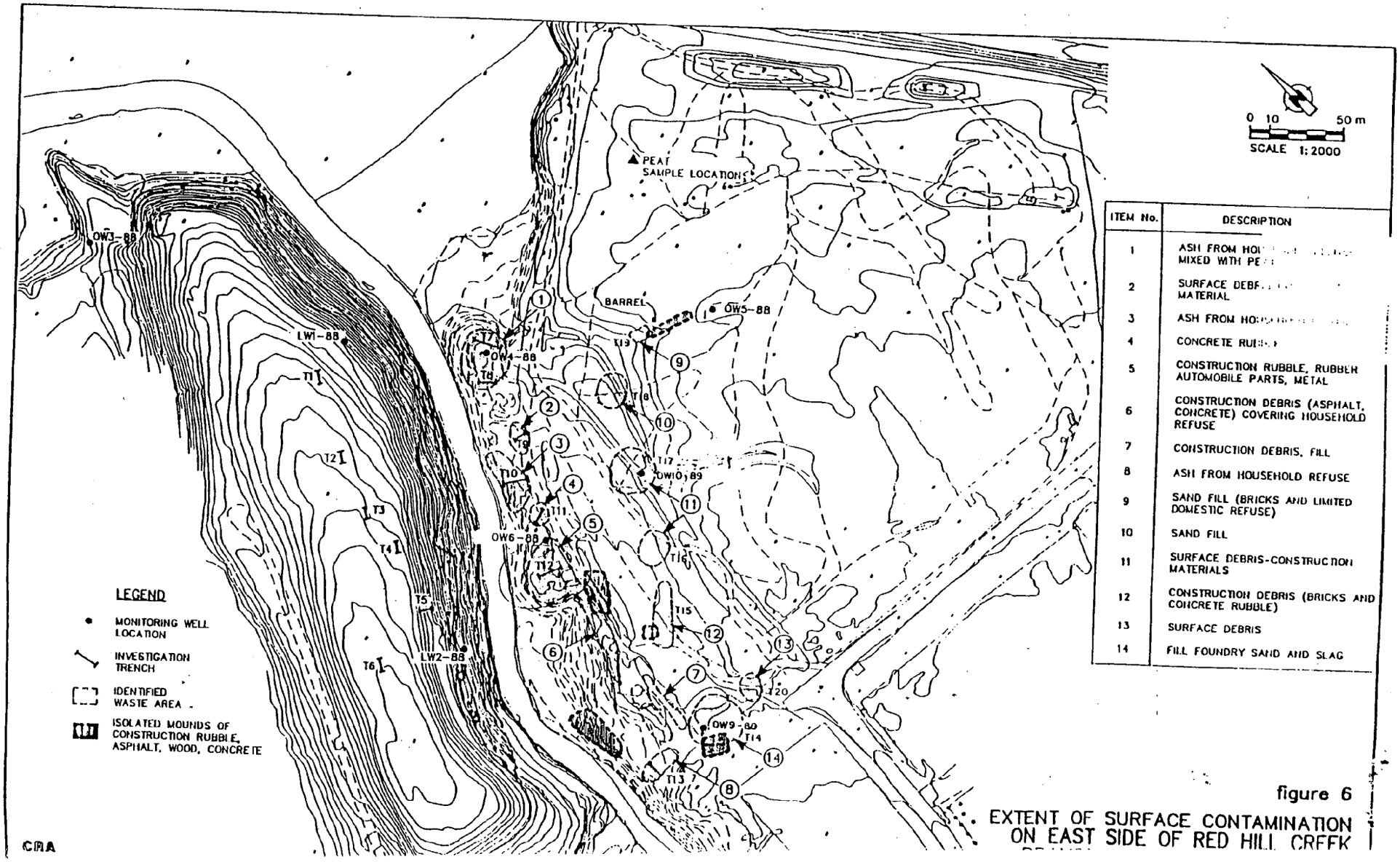


figure 6

EXTENT OF SURFACE CONTAMINATION ON EAST SIDE OF RED HILL CREEK

THE REGIONAL MUNICIPALITY OF HAMILTON-WENTWORTH

Regional Environment Department
Strategic Planning Division
35 King Street East
Hamilton, ON L8N 4A9

Phone: (905) 546-4348
Fax: (905) 546-4364

October 19, 1998

File No.:

Chris Murray
Environmental Planner
Special Projects Office
10th Floor, 25 Main Street West
Hamilton, Ontario.
L8P 1H1

Dear Mr. Murray:

Thank-you for sending over a copy of DSR Volume 2, "Impact Assessment and Design Process" for our review. I have circulated the report to staff in Strategic Planning and their comments are compiled below.

The report is very well laid-out, understandable, and states possible impacts from the Expressway in a clear, straightforward manner. The report covers impacts and mitigation measures in detail, providing the reader with a clear idea of the character of the valley after the expressway is built.

Some specific comments:

Regional Air Quality

Under Impacts (without mitigation):
The information about the Hamilton-Wentworth Air Quality Initiative (HAQI) is accurately described in the DSR. It is especially important that the limitations of the study were included.

Mitigation:
It could be noted that further improvements to air quality would occur if transit use increased. While this may not be related to the expressway, it was part of the study and would certainly help mitigate the overall increase in emissions that are expected from vehicle use in the next 20 years. It also helps to set the modelling study done for HAQI in context.

Net Impact:
Could the sentence be modified to say that there will be a positive impact on air quality from auto emissions?

Local Air Quality

Impact (without mitigation):
Does this section say that the findings for PM_{10} and TSP are high in comparison with the Highway 404 findings? If it does, could the wording be changed to say this more simply?

In general, the DSR was clearly written. However, there are some sections of the report that contained sentences that were difficult to understand. For example, on page 29, under impact to Built Heritage Sites, a sentence reads, "Attrition of the effected built heritage feature by disruption of its setting and the net impact, although adverse, is considered minimal." On page 32, one sentence under impacts to Lower Escarpment Slope reads, "From intermittent panoramic views of the Expressway as experienced by Bruce Trail users throughout the Escarpment and valley area".

Under "Visual Resource – Niagara Escarpment", we support the proposed mitigation measures to reduce the visual and noise impacts of the expressway by planting fast-growing native vegetation, reducing cuts to the escarpment, and retaining existing vegetation as much as possible.

We commend the Special Projects Office for choosing to take a long-term approach to stream realignment by using natural channel design. Although it is more effort and expense up front, it will result in a more natural, stable stream and will save maintenance costs in the long term.

Under "Vegetation and Wildlife Habitat", (page 50) there is no number given for the number of uncommon species in Hamilton-Wentworth (Impact to significant species).

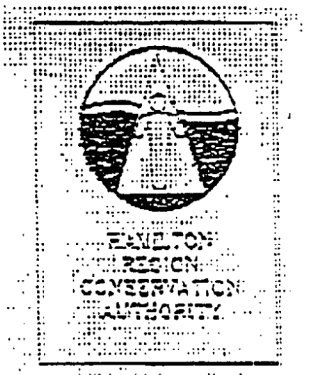
The report contained different values of how much wetland habitat (Van Wagner's Marsh) was to be lost. The Impact Map – QEW section (Map 2B) states that less than 1.1 hectares of wetland will be lost, but on page 50, the loss of wetland habitat is estimated to be 0.5 hectares and on page 3 (executive summary) the number is 0.6 hectares.

Otherwise, the report appears to be thorough in its examination of expressway impacts. If you have any questions about these comments, please call me at 546-4348.

Yours truly,

Cathy Plosz,
Policy Analyst.

Cc Leo Gohier
Bill Pearce
Rosemary Foulds
Pam Hubbard



Fax Transmittal Sheet
Fax Number (905)648-4622
email: hrca1@interlynx.net

TO: Pam Hubbard

FROM: Scott Peck
Phone: (905)648-4427, ext.132

FIRM: Region of Hamilton-Wentworth

DATE: October 20, 1998

CITY/PROV: Hamilton, Ontario

FAX NUMBER: 546-2305

Total number of pages including this one 13.

Message:

Response to Red Hill Creek Expressway,
Draft Summary Report, Volume 2, July 1998.

Hamilton Region Conservation Authority

October 20, 1998

Region of Hamilton-Wentworth
Transportation Department, Roads Division
Special Projects Office
25 Main Street West, Suite 1000
Hamilton, ON
L8P 1H1

Attention: Pamela Hubbard, Environmental Manager

Dear Ms. Hubbard:

Re: Red Hill Creek Expressway - Draft Summary Report, Volume 2, July 1998

The staff of the Hamilton Region Conservation Authority appreciates the opportunity to comment on the above noted report and associated technical reports.

PREAMBLE:

The HRCA is on record as being opposed to the Region's C2 Transportation Corridor proposal for the North-South section of the Red Hill Creek Expressway for reasons that it jeopardizes the three environmental principles of valley continuity, creek continuity, and natural area size. ***Therefore, these staff comments should not, in any way, be construed as a change in HRCA policy, but rather as staff observations on how the current design may be improved upon in case, in the end, it is decided to proceed with the project.***

Our review of Volume 2 and the associated technical reports follows the various factors listed in Chapter 3. Generally, the impacts predicted are presented in a factual manner with realistic measures proposed as mitigation. There are definite improvements to the proposed

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highway design compared to the Cabinet approved design of 1987. The following are HRCA staff improvements, and suggestions with respect to design, mitigation, our permitting process and environmental management.

THE IMPORTANCE OF MITIGATING MEASURES:

HRCA staff recognizes the financial restraints that are necessary to control the spending of tax dollars on this large highway project. The concern does arise, however, that mitigative efforts, some of which are not finalized, might be compromised because of a lack of funding at the outset or that, because of unforeseen circumstances, contingency funding escalates, resulting in the same problem. The on-going design evolution of the Escarpment crossing and creek rehabilitation are examples. Therefore it is recommended that design parameters be changed to reduce highway construction costs, thus permitting the implementation of mitigative measures. For example, to facilitate a "land bridge" at the Escarpment brow as well as a visually and environmentally effective viaduct (bridge), money could be saved by deciding upon an ultimate 4-lane highway (i.e. two northbound and two southbound lanes) and reducing the design speed to 80 km per hour. Regardless of the changes made to reallocate funds toward mitigative measures, the point we wish to underscore is that the amelioration of the negative impacts of the highway on the Red Hill Creek valley system can not be compromised.

FACTORS:

The report outlines several "factors" that potentially will experience change. The "factors" listed below are of a particular concern to HRCA staff and staff comments are made accordingly. In several instances, no mitigative measures will be effective short of not

proceeding with the project. In other cases, additional mitigative measures may lesson the impact of the proposed highway.

Air Quality

In light of the findings of the Hamilton-Wentworth Air Quality Initiative, air quality is a very serious concern. Health studies have connected air quality, particularly inhalable and respirable particulates, ground level ozone and sulphur dioxide with premature mortality and hospital admissions. The control of these pollutants needs to be focused on industry and transportation. Despite mitigation measures, the proposed highway will increase TSP (Total Suspended Particulates) and PM10 (suspended particles less than 10 microns in diameter which are small enough to be inhaled into the lungs) levels. Mitigation during and after construction will partly control fugitive dust and the "greening" of the Red Hill Creek valley will help in calming winds, filtering particles, and producing oxygen to augment the air. However, these mitigating measures will not offset increasing air pollution problems and as an example will further decrease the quality of experience for patrons of Confederation Park, which is managed by the HRCA for the Region.

Noise

Increases to noise levels as a result of the completed highway are inevitable. Volume 2 suggests noise attenuating barriers will be installed where feasible but because of topography, space, and a multitude of other factors they may not be practical. Therefore, the possibility of utilizing architectural/landscape noise attenuating solutions close to existing buildings and outdoor spaces should be investigated. For example, the use of triple

glazed windows, special facade cladding, and decorative attenuating walls close to the noise recipient have historically been utilized to abate noise.

Cultural Heritage

There is definite merit in the conservation of archaeological resources, and built structures and landscapes. This conservation perpetuates a tangible record of the civic past revitalizing civic pride and beautifying the urban environment. Therefore, cultural heritage features that have been compromised by past human intervention should not be "written off". Extant features should be conserved and enhanced with rehabilitation works and/or interpretive displays. For example, why are the heritage radial line bridge abutments just south of King Street being removed?

Contaminated Sites

HRCA staff fully support the leachate collection system which is proposed to be installed for the entire Rennie Street landfill. Road construction, particularly at the northern (i.e. QEW) end of the project may uncover unmapped contaminants. Should this occur, staff recommend that the needed money be spent to remove/treat the full extent of the contaminated site.

Visual Resources

A task force of agencies, consultants, and Regional staff has met with the aim of improving on mitigative proposals for the roadway crossing of the Niagara Escarpment. As noted earlier, a "land bridge" was presented as an option at the Escarpment brow to maintain a portion of the visual and ecological integrity of this important geological/biological feature.

An extensive viaduct would also soften the dramatic visual impact the Escarpment crossing will have on the talus/scree slopes and sand scarps of the upper Red Hill Creek valley.

To reiterate a point made at the outset of this letter, measures that will alleviate highway construction impacts should not be "short changed". The "landscape rehabilitation plan" could play a large role in mitigating visual impact. The valley will never be restored to its former glory once the highway is built but the planting of native trees, shrubs, and herbaceous material to enhance remnant plant communities and create new plant communities will be a "plus" even beyond aesthetics.

Transportation

It is noted within the Draft Summary Report that the road may be expanded to 6 lanes if needed in the future beyond the year 2021. We understand that removals, earthworks, and infrastructure associated with the ultimate 6 lanes will be built at the initial stages of construction. As alluded to above, monies could be reallocated from highway construction to mitigative efforts if this North-South section of the Red Hill Expressway is designed/constructed as an ultimate 4-lane facility. This potential savings in construction costs coupled with a slower design/posted speed and other changes for a safe and efficient roadway could potentially render extra funds available for remediation. This concept should be explored seriously.

Existing/Future Land Use and Infrastructure

The valley section between Mud Street and Brampton Street will be significantly impacted even with mitigation. The changes necessary to trails, sports fields, and the open space

ambience of the valley will be a major loss for local residents and valley visitors. The impact of the proposed highway on trail links outside the official study area are also very serious. For example, the existing route for pedestrians and bikes to cross the East-West Expressway, from the HRCA-owned Chippawa Rail Trail, into the Red Hill Creek Valley follows Pritchard Road which is too far out of the way to be functional. An overpass to accommodate local and visiting hikers/cyclists is needed. Although the costs are substantial, empirical case studies have concluded that recreational trails can add millions of dollars to the local economy in primary and secondary spending which translates into employment for local residents. The economic benefits of the Bruce Trail is an excellent example.

The same type of degradation from the proposed highway will result at the north end of the project. Confederation Park is of particular concern to HRCA staff and we suggest there will be significant impacts to this already narrow, linear waterfront open space that provides the City of Hamilton with its only significant public access to Lake Ontario. Because of the encroachment of the Burlington Street interchange, Van Wagners Beach Road will be relocated to the north necessitating the reworking of vehicular access to Hutch's Restaurant, the loss of parking spaces and vegetation, reduced air quality, increased noise, decreased viewscape, a degradation of Park atmosphere, and potentially a negative effect on business in general in the west end of the Park and particularly Hutch's.

With regard to Confederation Park, the Region has agreed to work with HRCA staff to develop detailed design for the west end affected by the proposed construction. This

cooperative effort has the potential to maximize mitigative efforts to maintain some of the Park's appeal and continue its role as an integral section of the famous Crombie Waterfront Trail.

HRCA staff understand that improvements to existing trail networks and open space functions will be conducted by the City of Hamilton with funding they received from the sale of land for the expressway. This work should include, for example, the Red Hill Creek pedestrian bridge near Brampton Street which is affected by the expressway design and the Van Wagners Marsh interpretive trail. It is encouraging to note that a strong pedestrian/cyclist connection will be implemented across the QEW to the Waterfront Trail along Woodward Avenue.

Fisheries

The Department of Fisheries and Oceans will assess the impacts of the proposed works and make recommendations to the Region with respect to fisheries habitat. Unfortunately, the Red Hill Creek has been abused historically as much of its developed watershed has seen its creek systems piped and approximately 2300 metres of its main stream hardened with various instream channelization and erosion protection works. These actions have helped to degrade water quality and destroy aquatic habitat.

The proposed construction of the highway will further degrade existing watercourses. Therefore every reasonable effort must be made to improve existing problem areas (e.g. replace concrete channels with natural bio-engineering methods) and avoid the creation of

new problem areas. To accelerate the redevelopment of the creek/buffer landscape, large planting stock should be utilized.

At the QEW end of the project detailed design should attempt to minimize the loss of wetlands. With the opportunity to enhance existing fish habitat in the area, a net gain should be realized with the creation of compensating wetland.

Groundwater

Unfortunately a high groundwater table and unsuitable soil over much of the watershed preclude most infiltration facilities with the exception of grass lined swales. It will be important to separate swale infiltration from groundwater discharge points to allow for surface and/or subsurface "curing" of contaminants. With a limited avenue to foster ground water recharge combined with the increased area of soil impermeability, HRCA staff request further rationalization of the conclusion that net groundwater impacts will be insignificant.

Surface Water

HRCA staff understand that the existing Dartnall Road/Linc flood control facility reduces 100 year flow rates throughout the Red Hill Creek channel below the Escarpment. The reduction ranges from 8.5 percent at the Windermere Basin to 30 percent immediately downstream of the Dartnall Road interchange. This facility, along with other existing and planned control facilities above the escarpment, will be capable of maintaining the future 50 and 100 year flows to existing levels including the increases caused by the construction of the North-South Expressway.

The addition of two more flood control facilities is proposed at Greenhill Avenue and at Mount Albion Road. These facilities will provide protection for the expressway up to the 100 year flow rate and decrease the probability of flooding at the QEW. HRCA staff have some concerns about ponding water at these locations and the potential impact on the stability of adjacent ravine slopes. The potential for slope failure due to the saturation of the toe of slope at these locations should be investigated.

Water Quality

HRCA staff commend the consulting team and the Region for acknowledging the importance of implementing the highest degree of treatment possible in order to protect and restore the Red Hill Creek and Hamilton Harbour water quality. We concur with the need to use the MOEE Level 1 Protection Criteria as the minimum design standard for all stormwater runoff control facilities.

Even though sediment and erosion control should be well designed and maintained during construction, 100 percent of sediments cannot be contained. It is for this reason that we suggest the Windermere Basin be dredged. It was designed as a sediment trap and it is now full. It would be prudent to dredge same prior to the construction start.

Staff note that cadmium and lead are not assessed in the technical report dealing with "surface and stormwater quality". Both of these metals are toxic to freshwater life, are known to be currently at high levels in the Red Hill Creek and are found in highway runoff. For monitoring purposes, it is important to have data for these two metals.

Volume 2 includes the CSO valley pipe storage facility as part of the mitigation measures to reduce water quality effects on the creek. The positive effects of the CSO should be separated from the impacts of the expressway in order to accurately assess the expressway's impact on the creek.

Vegetation and Wildlife Habitat

"The overall functions and integrity of the valley ecosystem will change during and following construction". This quote from the Volume 2 document applies to the entire project area and relates to the negative disruption the proposed expressway "footprint" will impose. The importance of the landscape rehabilitation plan is reiterated in light of the foregoing quote. It also reinforces the need to implement significant mitigative measures in the vicinity of the Escarpment crossing where corridor function loss is great. As noted earlier, a "land bridge" and extensive viaduct will compensate to a degree.

The technical report on "terrestrial resources" notes that "migratory use will probably continue based on available information for similar disturbed migration routes associated with major geomorphic features in the Great Lakes region". HRCA staff request additional detail on what other areas are being compared to the Red Hill valley and whether the migratory species being considered are diurnal migrants following the Escarpment or nocturnal migrants, not following the Escarpment, using the valley as a stopover, feeding and resting area. We would conjecture that nocturnal migrants will not continue to use the impacted areas of the valley. Diurnal migrants will continue to fly over as they follow the Escarpment.

IMPLEMENTATION:

The HRCA administers Ontario Regulation 151/90, the Fill, Construction, and Alteration to Waterways regulation governing riverine systems including the Red Hill Creek. A permit(s) will be required for works within the regulated area which includes the Niagara Escarpment and the floodplain valleys of the Creek and its tributaries. We have been informed that the project will be tendered for ~~two~~ 3 types of works; (1) expressway/CSO construction, and (2) landscape rehabilitation. 3) stream realign For permitting purposes, we would prefer to issue individual permits for each separate contract that is let. This thinking is based on the assumption that the overall project will be divided into several (say, five) individual contracts which will be let over the 4 year construction period. Details should be discussed once a construction schedule is articulated.

An environmental management plan will be developed to facilitate proper construction practices. HRCA staff would like to be involved in this process. Items in this plan should include plant community preservation, safe and ecologically sound storage of materials, the pre-stressing of affected plant communities where possible, construction timing within/near sensitive ecosystems, and sediment and erosion control/maintenance. Financial "strings" should be attached to these items to ensure timely compliance. Liquidated damages clauses in the contract or letters of credit are examples of controls that we would suggest.

Regularly scheduled construction status meetings are common with any project of this size. HRCA staff would like to be involved in this monitoring of the work.

FINAL REMARKS:

HRCA staff would like to review the detailed design drawings of all works as early as possible to finalize our permit (O. Reg. 151/90) requirements and for environmental design input. We would also like to emphasize the importance of high quality mitigative measures to compensate for the net negative environmental and recreational impact that the proposed project will generate.

Please call the undersigned at extension 130 if questions/comments arise.

Yours sincerely,

B. Scott Konkle, O.A.L.A.
Director of Watershed Planning and Engineering

BSK/lh

c.c. Members of Water Management and Environmental Impact Advisory Board

Ministry of Citizenship, Culture and Recreation
Ministère des Affaires civiques, de la Culture et des Loisirs

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Cultural Programs Branch
Archaeology & Heritage Planning
55 Centre Street, London, Ontario N6J 1T4
(519) 675-7742; Fax: 675-7777

October 22, 1998

To: Pamela Hubbard
Region of Hamilton-Wentworth
Transportation Dept., Special Projects
25 Main St. West
Hamilton, Ontario L8P 1H1

RE: Red Hill Creek Expressway, Draft Summary Report 2

I have reviewed the above-mentioned summary report. As you noted in your covering letter of August 20th, I have also been in contact with the archaeological consultant, and am familiar with the progress of archaeological conservation efforts related to this project.

The proposed strategy for dealing with cultural heritage concerns is supported by this Ministry. The efforts to preserve built heritage features and minimise alterations to cultural heritage landscapes are particularly notable and the Region is to be commended for these efforts. Obviously, the archaeological investigations will need to be reported, and these reports will be reviewed by this Ministry to ensure they comply with provincial standards, as is acknowledged in the summary.

Given the above, our Ministry would have no comments or revisions to recommend for the draft report.

I trust that this information is of assistance. Should you wish to discuss this further, please do not hesitate to contact me.

Sincerely,

Neal Ferris
Regional Archaeologist/Heritage Planner
Southwestern Ontario

Ministry of Natural Resources
Ministère des Richesses naturelles
Ontario

1 Stone Road West
Guelph, Ontario
N1G 4Y2

Telephone: (519) 826-4912
Facsimile: (519) 826-4929

October 22, 1998

Ms. Pamela Hubbard
Regional Municipality of Hamilton-Wentworth
Regional Transportation Department
Roads Division, Special Projects Office
25 Main Street West, Suite 1000
Hamilton, ON L8P 1H1

Dear Ms. Hubbard:

SUBJECT: Comments on Red Hill Creek Expressway North South Section
Draft Summary Report Volume 2 - July 2, 1998
Impact Assessment and Design Process

Ministry staff have completed their review of the Draft Summary Report (July 2, 1998) which describes the impact assessment and design process for the North-South Section of the Red Hill Creek Expressway. As you know, Ministry staff are also providing input to the Department of Fisheries and Oceans (DFO) in their screening of this project under the Canadian Environmental Assessment Act (CEAA). We offer the following comments with the understanding that the MNR may provide additional comments and advice on this project as part of our involvement with the DFO screening process.

General Comments:

1. MNR supports the use of natural channel design methods for the relocation of Red Hill Creek. However, from the information prepared to date, we continue to have reservations about the ultimate geomorphological stability of the relocated channel.

2. The MNR supports the Region's efforts to address the impacts associated with the Combine Sewer Overflow Pipe (CSO) as discussed in Section 2.5. However, we suggest that this problem would have required some action on the part of the Region whether or the not the expressway is constructed. The construction of the expressway simply offers an opportunity to address this outstanding problem.

3. The Draft Summary Report deals with fish migration issues at Queenston Road and upstream of King Street. There is also a concrete structure downstream of the concrete saddle at King Street that was not mentioned in the report. This structure should also be removed.

4. The QEW/Burlington Street options are intended to minimize the loss of provincially significant wetland. The report indicates that there will be loss of approximately 0.5 hectares of wetland. It should be remembered that wetlands are also fish habitat. The loss of the wetland needs to be examined in light of mitigation/compensation requirements related to fish habitat. This issue requires additional assessment in the next phase of the project.

Specific Comments:

1. Page 21 - Direct/indirect Impacts: We disagree with the assumption that all indirect impacts to vegetation and wildlife will be restricted to within 50 metres of the road surface. The expressway will fragment the valley and will undoubtedly impact some ecosystem functions beyond the 50 metre setback.

2. Page 40 - Impact to Fish Migration: As mentioned under point 2 above, the King Street concrete structure should be removed to maximize fish migration potential.

3. Page 41 - QEW/Burlington Street Interchange: Mitigation proposed for fish habitat may not be desirable from a wetland functions perspective or for the management of specific species guilds. For example, some wildlife species thrive in this wetland because fish predators do not have access to the marsh. Removal of the pier at Burlington Street should be assessed as to its effects on sensitive wildlife species present in the marsh (whether there is presently a connection or not). More detailed information is required to assess impacts at this location.

4. Page 42 - Impacts on Groundwater: The linkage between groundwater and fish habitat remains a concern particularly in areas where the shallow groundwater systems maintain wetland areas and creek baseflows. The Region should also examine the implications of the proposed compensation measures on these groundwater contributions. More detailed information is required here to assess impacts. We would also suggest that the Region provide documentation in support of the conclusion that the anticipated 30% reduction in infiltration will not adversely effect the creek or the wetlands.

5. Pages 48 to 50 - Impacts on Vegetation and Wildlife: Clearly, the construction of the expressway will result in significant negative impacts on vegetation and wildlife in the valley. We have several comments on this section:

   a) As discussed earlier, we believe that some indirect impacts will extend beyond the 50 metre setback used in the impact assessment.

   b) Special regard should be given to areas in the valley that contain high concentrations of breeding bird species. The Region should investigate the utility of sound barriers along areas with important breeding habitats. This would be particularly important in the upper valley (Mud St. to King St.) as virtually all the potential breeding habitat in the lower valley will be lost or severely degraded.

   c) Where possible, new slopes along the expressway should be revegetated using native prairie vegetation species. Native shrubs should also be encourage to create edge for breeding birds.

   d) Salt barriers should be installed along the new expressway adjacent to natural woodland areas, especially where the road is elevated with steep banks.

6. Pages 48 to 50 - Impact to Significant Species: The proposed plan to relocate 7 rare species requires more detailed assessment and planning. Where feasible, efforts to salvage regionally rare species in the impact area should be coordinated with other restoration projects in the Hamilton-Wentworth area. The Region could consider contacting local groups such as the Hamilton-Wentworth Stewardship Council and the Hamilton Naturalists Club to see if these groups would be interested in undertaking some of the rescue projects.

Monitoring Requirements:

1. Permanent sample plots should be established for vegetation monitoring in high quality woodland areas adjacent to the expressway to monitor changes in species composition, increases in non-native flora, declines in species diversity and the presence of significant species identified in the biological inventory.

2. Permanent monitoring sites should also be established to assess changes in wildlife and fisheries communities/populations.

3. Serious thought should go into establishing the monitoring program. The monitoring program must be designed to answer specific questions related to this project. For instance, the following issues need to be addressed in the monitoring plan:

    - identify the specific questions that need to be answered through the monitoring program;
    - identify suitable sample stations or plot locations (e.g., fish sampling stations at locations where the channels has not been moved, where it has been moved, and above and below existing barriers);
    - identify the parameters/species/indicators that should be sampled to answer the research questions;
    - identify appropriate sampling times and frequency;
    - determine appropriate sampling techniques, statistical analysis methods and presentation standards;
    - ensure that sufficient baseline data is available to compare pre-construction conditions with post-construction conditions;

Please contact me if you have any questions or require clarification regarding these comments.

Yours Sincerely,

David N. Cooper
District Planner
Guelph District

cc: Mr. Joad Durst, MNR Niagara Area Office
Ms. Anne Yagi, MNR Niagara Area Office
Mr. Donald Kirk, MNR Guelph District
Mr. Edwin DeBruyn, DFO Fisheries and Habitat Management

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November 16, 1998

Ms Pamela Hubbard
Environmental Planner
Regional Municipality of Hamilton Wentworth
Regional Transportation Department, Roads Division
25 Main St. W
Hamilton, Ontario
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Dear Pamela:

Re: Cantox Environmental - Draft Report June 11,1998 "Possible human health effects from exposure to predicted increase in respirable particulate matter(PM) due to the Red Hill Valley expressway"

Cantox Environment was retained by the Regional Municipality of Hamilton Wentworth to prepare a draft report June 11, 1998 *"Possible human health effects from exposure to predicted increase in respirable particulate matter (PM) due to the red hill valley expressway"*.

The Cantox report wasn't a requirement of the Draft Summary Report, Vol.2, July 1998, "Impact Assessment and Design Process of the Red Hill Creek Expressway North-South section". A condition of the order requires community input on the construction details of the project. As a result of several public meeting held early this year (February ,1998), where the public expressed health related concerns with the possible increased levels of emissions from the expressway, the Regional Municipality of Hamilton Wentworth retained Cantox Environmental to conduct a health study to address these concerns.

The purpose of this document is to provide a background and context in which to judge the health impact of estimated increased levels of respirable mater on human health for various individuals who may use the Red Hill valley Expressway for recreational purposes or as place of work once the expressway is completed.

A preliminary meeting was held on Friday October 16, 1998 with the Regional Municipality of Hamilton Wentworth, Cantox Environmental and Ministry staff. Several comments were prepared by Bryan Leece, Ministry of the Environment, Standard Development Branch and discussed:

- the exposure scenarios used in the assessment do not include one for residents who live immediately bordering the lower section of the roadway. The current assessment seems to focus on the southern section of the proposed road corridor between King Street and the and the Escarpment. It has not considered effects on the local residents who live between King and Barton Street in houses which will back directly onto the proposed roadway. Exposure to these people, some of whom have lived in their houses for over 30 years will have continuous exposure, much greater than those examined in the current assessment. The modeling report upon which this assessment is based should include such exposure analysis.

- the inhalation parameters used to assess daily intakes are extremely high. The report uses values of 36 and 46.5 m3/day for adults females and female children aged 5 respectively. These are 3 to 5 fold higher than would normally be used. The values in the report are not referenced . If this is indeed valid then a rationale should be provide.

Several other recommendations were discussed and agreed upon. Firstly, since this assessment of postulating scenario and calculating total dosages of particulate matter is unique, it is important that the Ministry, Cantox and Regional Municipality of Hamilton Wentworth agree that this assessment accurately reflects the potential health impact of respirable particulate matter and other gaseous pollutants from the expressway. The Ministry of Environment , Standards Development Branch has completed the review of the approach and methodology used by Cantox Environmental in the assessment of potential health impacts due to the Red Hill Valley Expressway.

Secondly, emissions estimates were prepared based on model developed by the consulting engineering group of Rowan Williams Davies and Irwin (RWDI) for the Regional Municipality of Hamilton Wentworth. The draft report "**Air Quality Assessment** " was reviewed by the Ministry of Environment, Environmental Monitoring and Reporting Branch and comments forwarded to the Regional Municipality of Hamilton Wentworth. Several adjustments to the modeling data was required by RWDI. Revised emissions estimates particularly, respirable particulates must be included in the Cantox report. Once the Cantox Environmental incorporates the revised emissions estimates the ministry along with the regional Health department will then review the report and provide comments with respect to health issues.

The following comments on the Cantox Methodology used in the assessment of the potential Health impacts due to the expressway was prepared by Akos Szakolcai of our Standard Development Branch.

1) In a generic fashion, Cantox appear to have proceeded in the following manner to assess the potential health impacts of the Red Hill Valley Expressway:

   a) Developed a few exposure scenarios (and **omitted some important ones** - more on this later) - park workers, children playing soccer, adolescents running/biking on the upper trails, etc.;

b) Used the '10 ug/m3 increment' approach which Sverre Vedal of UBC developed in a report to B.C. Environment. Using the maximum modelled concentration (which I understand will change/go down) of 205 ug/m3, they calculate the number of increments (205/10=20.5); for a specific endpoint (e.g. respiratory hospitalization) 20.5 is multiplied by the % increase in a certain health effect, determined from the epidemiological literature to be associated with a 10 ug/m3 increase in PM10 (i.e., 0.8 % for respiratory hospitalization); thus 20.5 x 0.8; finally this percentage is multiplied by a 'prorating' ratio (# of hrs. exposed in a scenario)/(# of hrs. per year); this gives a final percentage, say of 2.9% for a park worker, 2.9 % over baseline (i.e., Hamilton-based health statistics);

c) In the final step (i.e. in Tables 2-8) they apply these percentages to the Hamilton baseline statistics/100,000 people (column 2 of these Tables) to calculate the estimated increases for each scenario per 100,000 population (column 4).

2) The following are some of my comments and concerns:

c) I foresee some problems with the final step in 1c. The number of people (e.g., park workers, children playing soccer, adolescents running or biking along trails) would very likely be much less than 100,000. Thus, the fourth column of these tables gives a mistaken impression of significant impacts for these scenarios.

A rough conservative estimate of the number of people involved in these scenarios, followed by prorating the baseline incidence to the number of people involved, would I think provide a more reasonable picture FOR THESE PARTICULAR SCENARIOS.

b) On the other side of the coin, to be reasonable, some exposure scenarios (a point that was flagged by others who commented) - people living 24 hrs/day 365 days per year in the 'impact zone' of the expressway - should be included. Even though concentrations fall off rapidly with distance from the expressway due to dispersion, there will be an increase in concentrations for fine particles over a broad area where people live. This scenario would likely respresent a much larger number of people with an essentially year-around (annual) increase in exposure (not just some limited hours per year as in the existing scenarios). Hence the main impacts would likely occur in this generally exposed population.

An additional point can be made here. I have not seen the RWDI modelling report but have seen the comments and concerns expressed by Drs. Brian McCarry and David Pengelly regarding the fact that ***increased truck traffic*** and the emission increase associated with this, was not addressed appropriately as input to the atmospheric models. This of course is necessary to obtain a realistic health impact estimate due to the expressway, since this would affect both the Cantox proposed scenarios (referred to in point 1a) and the general population impact scenario suggested in point 2b.

c) The health effect assessment includes only respirable particulate matter. Other transportation emitted pollutants like carbon monoxide, nitrogen oxides and sulphur dioxide are also important. In a recent assessment of a highway expansion in Toronto, some of these pollutants were included and their impacts compared to Ministry standards. This would be a basic first and necessary step.

In addition, it is important to recognize the recent work of R. Burnett (commented on by Dr. B. McCarry and hence will not be repeated here) and therefore the possible inclusion of health effects (premature mortality and hospital admissions) in the assessment, due to the gaseous pollutants, carbon monoxide, nitrogen oxides and sulphur dioxide. It should be noted though that Health Canada is treating the most recent work of R. Burnett as still in the research stage rather than as a firm basis of public health policy. However, expressways have a long lifetime and therefore prudence would dictate some preliminary assessment of these pollutants.

This type of assessment (postulating scenarios and calculating total dosages etc.) is quite common with toxic air pollutants. However, this is one of the first applications that I have seen applied to PM, coupling an exposure scenario analysis with a prorated increment approach. Considering the change of venue required and other than the missed scenarios, and the other comments above the generic approach developed by Cantox seemed reasonable.

At this point, I am suggesting that a meeting be arranged with yourself (RMHW) Planning and Health departments, Cantox Environmental and MOE Regional and Standard Development Branch . A tentative date for this meeting should be scheduled the first week of December.

Should you have any questions, please don't hesitate to call me at 1-906-521-7705.

Thank You.

Neil Buonocore
Supervisor- Air, Pesticides and Environmental Planning
West Central Region

cc: Anne Dykes
Frank Dobroff

(4)

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November 16, 1998

Ms Pamela Hubbard
Environmental Planner
Regional Municipality of Hamilton Wentworth
Regional Transportation Department, Roads Division
25 Main St. W
Hamilton, Ontario
L8P 1H1

Dear Pamela:

Re: Comments on the Draft Report "Vehicle Air Emissions Inventory, North-South section of Red Hill Creek Expressway" - by Rowan Williams Davies & Irwin Inc.

Our ministry has completed the review the Vehicle Air Emissions inventory report. The following comments have been prepared by Simon Wong of the Environmental Monitoring and Reporting Branch

The two emission rates tables at the end showed the MOBILE 5C results from RWDI's worst case assumption and MOE's base case assumption. It can be shown that the results from RWDI on gasoline vehicles/trucks are higher than the MOE results for all three pollutants. Since we do not know the exact parameters RWDI used for the worst case scenario, we can only provide the following comment base on the two emissions rate tables and the tables 3 and 4 of the report..

i) Since RWDI's scenario is to assess emissions on the highways, the vehicle refueling loss MOBILE 5C HC/VOC should not be included in the emission rates. It was not mentioned in the reported.

ii) Since MOE has lower emission rates than RWDI for CO and NO_X (gasoline only), the trip emissions in MOE base case would be lower than the RWDI's values in tables 3 and 4 of the draft report. However, as the percent difference between the RWDI's and MOE's emissions rates are similar in both speeds. Therefore, the percentage change in emissions showed in table 3 and 4 (last row of tables) would be closed to MOE's base case estimation.

iii) As for HC, MOE emissions rates are lower than RWDI and more significant in the 90 km/hr speed. The MOE base case estimation would result in even lower trip emission in high speed, thus larger percentage change in HC emissions (i.e. larger emission reductions) for LDGV and LDGT when compared with values showed in tables 3 and 4 of the report.

Table A. Table 2: Predicted Vehicle Emission Rates - extracted from RWDI Draft Report on Vehicle Air Emissions Inventory for Red Hill Creek Expressway.

Pollutant	Speed (km/hr)	Emissions (g/vehicle/km)			
		Gas Car (LDGV)	Light Duty Gas Truck (LDGT)	Light Duty Diesel Truck (LDDT)	Heavy Duty Diesel Truck (HDDV)
HC	45	1.11	1.55	0.32	0.99
	90	0.75	1.11	0.19	0.59
CO	45	12.33	16.88	0.68	4.87
	90	6.25	9.58	0.48	3.47
NOx	45	0.93	1.16	0.66	3.86
	90	1.20	1.53	0.93	5.37

Table B. Emission rates estimated from the MOBILE 5C base case scenario by MOE.

Pollutant	Speed (km/hr)	Emissions (g/vehicle/km)			
		Gas Car (LDGV)	Light Duty Gas Truck (LDGT)	Light Duty Diesel Truck (LDDT)	Heavy Duty Diesel Truck (HDDV)
HC (with refuelling loss)	45	1.06	1.37	0.31	0.98
	90	0.73	0.99	0.19	0.59
HC (without refuelling loss)	45	0.93	1.21	0.31	0.98
	90	0.60	0.82	0.19	0.59
CO	45	10.41	13.71	0.67	4.78
	90	5.22	7.71	0.48	3.45
NOx	45	0.82	1.01	0.66	3.85
	90	1.05	1.16	0.91	5.31

Should you have questions please don't hesitate to me at 1-905-521-7705.

Thank You.

Neil Buonocore
Supervisor- Air, Pesticides and Environmental Planning
West Central Region

(5)

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November 16, 1998

Ms Pamela Hubbard
Environmental Planner
Regional Municipality of Hamilton Wentworth
Regional Transportation Department, Roads Division
25 Main St. W
Hamilton, Ontario
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Dear Pamela:

Re: Comments on the Draft Report "Thermal Dynamics Impact Assessment", North-South section of Red Hill Creek Expressway" - by Rowan Williams Davies & Irwin Inc.

The Thermal Dynamics Impact Assessment report prepared by RWDI. is difficult for this ministry to comment on since we have little experience in doing this type of analysis. There are no standards or benchmarks to compare results to. We have had some internal discussions with a ministry meteorologist in providing some response to this report.

We could not verify the typical fuel thermal content of 36 MJ/L given on page 6 under 3.2-Modeling Assumptions. Which of their references has this?

Also in these assumptions, worst case conditions are outlined and indicate a vehicle speed of 90 km/hr. It is better to assume that a traffic jam of stop and go would truly be worst case. Two modeling scenarios were done as given on page 10 using MOE meteorological data from two similar type weather days, Apr 16/95 and July 30/94.

The report looked at two scenarios, Summer Daytime and Spring or Autumn Nighttime using those two dates. Only the nighttime one was during an inversion but when traffic is light. Both of these scenarios indicated negligible thermodynamic impacts of the roadway.

Perhaps a lake based all-day type of inversion scenario would have been better to look at. Will this road with say a traffic jam, induce or intensify a lake breeze inversion? There are two possible worst case situations which could arise.

1) During an inversion occurring simultaneously with a traffic jam, the road becomes a very hot

line source. This leads to rising/falling air currents which could cause fumigations of pollutants from the polluted boundary layer.

2) Under similar circumstances, during light southerly winds, the hot line source could split the main cell and could possibly induce a lake breeze inversion. This could cause high pollution across the city due to the drawing in of industrial/automotive emissions. Modelling could perhaps determine the frequency of this. The location of the road in the east end near the lake, near the existing industrial heat island and next to the escarpment suggests that there is a possibility for this. We could suggest a few dates from the meteorological data base to select for this task.

Should you have any questions, please don't hesitate to call me at 1-905-521-7705

Thank you,

Neil Buonocore
Supervisor- Air, Pesticides and Environmental Planning
West Central Region

cc: Frank Dobroff
Anne Dykes

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November 16, 1998

Ms Pamela Hubbard
Environmental Planner
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Dear Pamela:

Re: Red Hill Creek Expressway North South Section - Draft Summary Report Volume 2, July 1998

The Ministry of the Environment, West Central Region , Technical Support Water Unit, has completed their review of the Red Hill Creek Expressway North South section, Draft Summary Report, Vol.2, July 1998 (Impact Assessment and Design Process). The following comments were prepared by Jamie Connelly, a groundwater hydrogeologist, and the attached comments provided by Tracey Boyd, from the Ministry's Water Resources unit. Please review the comments and address the outstanding issues as noted in the attached reviews.

HYDROGEOLOGICAL REVIEW.

The Draft Summary Report and the Existing Hydrogeological Conditions, Draft Technical Report from the perspective of groundwater impacts.

Generally, I agree with the Draft Technical Report that Best Management Practices for stormwater infiltration should be applied in order to maintain groundwater recharge and to provide for subsurface attenuation of contaminants that might be present in the recharge water.

Main concern with the documentation is that the Draft Summary Report makes statements that seem to go beyond the assessment and conclusions of the Draft Technical Report relating to:

a) a 30% reduction in recharge in the sensitive groundwater areas;

b) the lack of impact on Redhill Creek of the 30% reduction in recharge; and

2.14.5

c) meeting PWQOs in the discharging groundwater after mitigation.

I didn't see anything in the Draft Technical Report that quantified the reduction in recharge or established that this reduction would not impact on Redhill Creek. Nor did I see anything that established that the discharging groundwater will meet PWQOs.

In the context of the proposal, the conceptual assessment of impacts contained in the Draft Technical Report is adequate. However, the Draft Summary Report should not represent the findings of the Draft Technical Report as being more quantitative than they actually are. The Draft Summary Report should be revised accordingly.

Please review the comments and if necessary , a meeting can be arranged to discuss this further.

Thank You.

Neil Buonocore
Supervisor- Air, Pesticides and Environmental Planning
West Central Region

cc: Anne Dykes

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November 17, 1998

Ms Pamela Hubbard
Environmental Planner
Regional Municipality of Hamilton Wentworth
Regional Transportation Department, Roads Division
25 Main St. W
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L8P 1H1

Dear Pamela:

Re: Red Hill Creek Expressway North South Section - Draft Summary Report Volume 2, July 1998

Our Ministry has completed the review of the Red Hill Creek Expressway North South section, Draft Summary Report, Vol.2, July 1998 (Impact Assessment and Design Process). The only outstanding review at this time is the Draft Cantox Human Health effects report.

Mr. John Percy from our District Office has also sent correspondence to you outlining the outstanding issues on the Rennie Street Landfill site in September, 1998.

We may have a follow-up meeting once some of these issues are addressed. Should you have any questions or concerns at this time please contact me at 905-521-7705 or Anne Dykes at 905-521-7719.

Thank You.

Neil Buonocore
Supervisor- Air, Pesticides and Environmental Planning
West Central Region

CC: Anne Dykes

Hamilton Region Conservation Authority

December 18, 1998

Region of Hamilton-Wentworth
Transportation Operations, Roads Division
Special Projects Office
77 James Street North, Suite 320
Hamilton, ON
L8R 2K3

Attention: Pamela Hubbard, Environmental Manager

Dear Ms. Hubbard:

Re: Red Hill Creek Expressway - Draft Summary Report, Volume 2, July 1998

Further to our October 20th letter regarding the above captioned report, HRCA staff would like to bring one other point to your attention. Confederation Park is an 83 hectare waterfront open space that attracts approximately 600,000 people annually to a battery of active/passive recreational uses, restaurants, and a campground. The waterpark alone is visited by about 100,000 people every summer.

Unfortunately, the North-South Expressway design does not accommodate direct access into Confederation Park for potential patrons travelling northerly along the Red Hill Expressway toward the QEW/Expressway Interchange. At this interchange vehicles can only proceed onto the QEW toward Niagara Falls or in the opposite direction toward Toronto. For those people with Confederation Park as their destination, their most direct route would involve exiting at the Barton Street Interchange which is 2 kilometres from the Park.

Conservation Authority staff request that the Region investigate design options that would improve the above noted access problem into Confederation Park for those travelling northbound on the proposed Expressway.

Sincerely,

B. Scott Konkle, O.A.L.A.
Director of Watershed Planning and Engineering

BSK/lh

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Ministry of the Environment
119 King Street West
12th Floor
Hamilton ON L8P 4Y7

Ministère de l'Environnement
119 rue King ouest
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Hamilton ON L8P 4Y7

Ontario

October 7, 1998

MEMORANDUM

TO: Neil Buonocore
APEP Supervisor

FROM: Tracey Boyd
Water Resources Unit

RE: **Red Hill Creek Expressway North-South Section**

I have reviewed the July 1998 Regional Municipality of Hamilton-Wentworth/Ministry of Transportation document *Red Hill Creek Expressway North-South Section Impact assessment and Design Process Draft Summary Report Volume 2.* It should be noted that as a result of impacts on the Red Hill Creek and Van Wagner's Marsh, the Region requires authorization under the Fisheries Act 35(2) prior to proceeding with construction. The Department of Fisheries and Oceans (DFO) is required to conduct a screening under the Canadian Environmental Assessment Act (CEAA). While the requirements under this legislation are as stringent, if not more stringent than those of the Ministry of the Environment, it should be noted that this project must ultimately conform with federal legislative requirements.

The report outlines the proposed alignment of the north-south section of the expressway, identifies the environmental impacts associated with this alignment and suggests mitigative measures for these impacts. The report is divided into four general topics:

1. A description of the expressway and related infrastructure;
2. A description of the proposed re-alignment of Red Hill Creek;
3. A description of stormwater management practices for the proposal and
4. A description of the Red Hill Combined Sewer Overflow pipe.

It should be noted that this summary document refers to several technical supporting documents which were not provided.

9

With respect to item1, the alignment of the roadway and related design considerations will only be considered with respect to their potential impacts to water resources. The alignment currently proposed reduces the number of stream crossing from 14 to 8. This reduction is partially achieved through the naturalization and relocation of a 5 km section of the creek channel.

With respect to the re-alignment of the Red Hill Creek, the documentation for the proposed alignment was limited. The potential implications for erosion (particularly in the areas identified in the Watershed Management Plan as currently having significant erosional problems), sediment loadings and associated contaminant transport as well as potential loss of oxbow habitat etc., were not detailed. The current alignment also impacts Van Wagner's Marsh. While fluvial geomorphological investigations have been conducted with the respect to the current conditions and problems associated with the existing channel alignment, studies have not been finalized assessing the benefits/impacts of the proposed realignment. This work must be completed to the satisfaction of the Ministry of Natural Resources and the Federal Department of Fisheries and Oceans.

With respect to stormwater management (SWM), a series of 23 wetland areas, wet ponds and grassed swales are proposed in the summary document. The supporting documentation for the storm water management facilities detail only 8 SWM facilities. It is therefore difficult to interpret the SWM system, since it is unclear as to what exactly is proposed. The stormwater management ponds were indicated as having exceptionally large storage volumes of up to hundreds of thousands of cubic metres. For example, the Dartnall Road facility was indicated as having a storage capacity of 500,000 m^3. This would require a 10 hectare pond with a depth of 5 metres, which is not the actual current size of this facility.

The data presented in the supporting documentation for the SWM system include the reductions in contaminant loadings associated with Combined Sewer Overflow (CSO) storage facilities. These facilities were approved under a separate EA. Thus, the net change to water quality resulting from the expressway itself was not determined. The appropriateness of jointly evaluating these structures is not clear.

SWM pond performances were indicated in terms of per cent reduction in loadings, but an assessment of loadings relative to changes in-stream contaminant concentrations versus PWQO was not provided. The primary focus of contaminant loadings was associated with suspended solids. Quality considerations associated with infiltration were not adequately addressed in terms of possible contact with contaminated sites or with site-specific conditions (e.g. potential naturally increased salinity of ground water discharge on some areas of the escarpment).

With respect to The Combined Sewer Overflow Pipe, this project has already been approved through a separate Class Environmental Assessment and will not be re-evaluated in the context of the expressway. However, as previously indicated, clarification is needed as to the suitability of associating reductions in contaminants derived from the installation of this structure with the mitigative measures of the expressway.

The report also identifies a variety of potential impacts arising from the construction/operation of the expressway. Among these are the need to excavate the closed Rennie Street landfill site and to further investigate four other potentially contaminated sites within the expressway alignment. While this work will be subject to site specific requirements, consideration should also be given contaminated/potentially contaminated areas contiguous to the proposed road alignment. The impact of construction, changes in permeability and drainage features to other known contaminated and potentially contaminated sites should also be evaluated with respect to either s. 27 or s. 46 EPA approval requirements, depending on site-specific characteristics.

In summary, insufficient or un-interpretable data was presented in the impact assessment. In order to finalize the impact assessment, a fluvial geomorphological assessment of the proposed re-alignment must be completed to the satisfaction of MNR/DFO; an assessment of all potential loadings relative to changes in-stream contaminant concentrations versus PWQO must be presented for the SWM facilities, pending clarification on the number of facilities and the applicability of including the CSO storage facility in the expressway impact assessment.

Tracey Boyd
file: O 06 RE 34-02

Appendix VII: Stakeholder Letters Draft Summary Report Volume 2

BAY AREA RESTORATION COUNCIL
OF HAMILTON-WENTWORTH AND HALTON REGIONS INC.

Room B130F, Life Sciences Building, McMaster University, Hamilton, Ontario L8S 4K1
Telephone (905) 525-9140 Ext. 27405 Fax (905) 522-6066

9-2-3

Date: May 14, 1998

To: Community Stakeholder Committee
c/o S. Leppard, LURA

Cc: L. Knox, Coordinator, Hamilton Harbour Remedial Action Plan (RAP)
C. Murray, Hamilton-Wentworth Region
Bay Area Restoration Council Board of Directors

From: G. K. Rodgers
Bay Area Restoration Council

Re: Submission - Impact Assessment and Design Process for the Red Hill Creek Expressway - North-South Section

The concerns of Bay Area Restoration Council and the Hamilton Harbour RAP have been documented in earlier submission. Now that the details are becoming better known, we seek assurance that certain impacts are addressed.

Those of us who see the Hamilton Harbour - its quality and its natural biological system - as a reflection of the quality of life and environment in the whole watershed, are concerned that planning for development of roads, industry, residential and infrastructure could take place in a way which is not sustainable (in the sense that the natural systems that serve us as a resource are compromised), and may not necessarily aid in the restoration of the Harbour. Some of us are quite pessimistic.

The Board of the Bay Area Restoration Council is on record as opposing the construction of the north-South section of the Expressway in the Red Hill Valley.

There are many issues concerned with expressway development such as noise and air quality, allocation of park space and exclusion of species of plants, birds and other biota that are difficult to deal within the face of the expressway construction and operation. However, our special focus in the Hamilton Harbour RAP is the aquatic system of the Harbour. As such, we wish to address the impacts of the expressway, as follows:

1. Water Quality in the Red Hill Creek, as it impacts upon the contribution of water pollutants discharged to the Harbour. These concerns are reflected in the loadings of suspended solids, nutrients and toxic substances discharged into the Harbour.

2. Erosion and Water Flows in so far as the storm hydro graphs peak quickly and higher with increased impermeable surfaces in the watershed.

3. Renovation and maintenance of the water quality, bottom type, base flow and stream gradient in the Creek such that the aquatic life of the Harbour that utilizes (or potentially uses) the Creek in their necessary life cycles can do so.

4. Renovation of Existing Wetlands in the Watershed (especially the Red Hill Marsh and the Van Wagner's Marsh) and, if some of this marsh is lost, replacement of that marsh with suitable habitat to compensate.

As general comments, we note that drainage from highways is contaminated with materials that have been alleviated, largely by industry, in the Harbour at considerable cost. Negating those advances is counterproductive. Is there some way that expressway runoff can be controlled and/or treated so as to minimize its impact on the Creek and associated wetlands as well as on the Harbour?

A major corollary to the question of expressway runoff is the fact that highways are impermeable surfaces and runoff is immediate. There are ways that detention basins could be used to alleviate the flood peak in the Creek.

The expressway and subsequent upland development will exacerbate this problem. Could there be a program established to reduce peak flows in the lower valley? Apparently this is one of the factors causing major disruption of Creek habitat for aquatic biota, quite apart from flooding problems.

Another connection to this issue is erosion. We need documented measures to alleviate potential erosion losses during construction and means to trap sediment before it gets to the Harbour

Windermere Basin was designed as a sediment trap. It is now full, so that it cannot serve as any protection for the Harbour until it is dredged again. Perhaps it would be worthwhile to clear it out in advance of expressway construction and then again after the vegetation has settled in following the completion of the construction.

Finally, it would be worthwhile to prevent any drainage from the expressway dropping directly into or near the water courses.

Further, the wetlands should not be subject to highway drainage both because of the 'choking' effects of sediment and the contaminants in the drainage water.

The renovation of the existing wetlands is suggested in the Biological Inventory and should be included in the mitigation program.

It is understood that DFO will be consulted on a suitable replacement habitat if there is any incursion into the existing wetlands, and their recommendations approved and actioned. We want to review this as well.

DFO should also be consulted on the ideas inherent in the proposed alteration of the course of the Creek in the lower reaches. Straightening of the Creek (as already done North of Barton St) seems to make more difficult fish access and less suitable habitats, as well as steepening the stream gradient.

The RAP calls for major reduction of discharge from CSO's and improvements at the WWTP on

Woodward Avenue. These are essential and are being addressed, partly in conjunction with the expressway. Some of the expressway drainage can be addressed in these facilities.

However, the RAP, in addition to addressing CSO's and WWTP's, calls for major reductions (30%) in the suspended sediment loads to the Harbour from Creeks, including Red Hill Creek. If this can be achieved in the context of mitigation of the impact of the expressway, this would go some considerable distance in convincing us that such development can be sustainable from the point of view of the Harbour.

Certainly attention to these issues and independent monitoring of the construction work and the quality of the Creek and its wetlands could go a long way to satisfying our concerns.

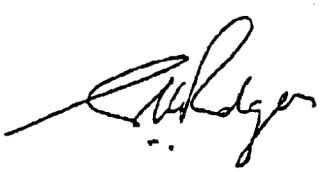
We also wish to be clear on a basic principle that some suggest be compromised. The Remedial Action Plan calls for:

- restoration and enhancement of the existing habitat for fish and wildlife,
- reduction of flows from CSO's (90 - 90% is probably practical)
- major improvements in the quality of effluent of the Woodward Avenue WWTP (see the RAP report for targets)
- and a 30% reduction of suspended sediment loads to the Harbour (over and above the suspended sediment loads introduced into the Creek from CSO's and the WWTP)

These improvements are recommended in the RAP irrespective of the road construction, because of the existing degraded condition of the Creek. We ask that <u>all</u> the potential impacts on the watershed from the expressway and future development in the water shed be mitigated directly or by compensory work. There should be no tradeoff between the remediation work recommended in the RAP and the mitigation work for the road. The simple reason for this is that the Harbour only "sees" the total loading of contaminants reflecting its limited capacity to "process" waste materials. In other words, we look at loadings from the Creek as "net to the Harbour" - not "net to the expressway project."

Finally, in reviewing the issues surrounding all the debate about the expressway through the Red Hill Valley, it would appear that the process has lacked integrated community planning - a costly, time-consuming consultation to coordinate the simultaneous examination of the expressway, official plan, water infrastructure, social, economic/development and environmental issues. Vision 2020 goes some way toward this - but not to the point of concrete resolution of apparent or real conflicts. Since the decision to build the expressway arose before such planning was current, (it has been tried only recently in a couple of places in Ontario), perhaps this explains the situation. We do recommend serious consideration of such planning for the Region in light of urban sprawl, downtown renewal and related issues.

As expressed by a BARC past president in his 1996 submission to the Region regarding the Red Hill Creek Expressway: it is our "advice that to get it right the first time will be the most frugal strategy".



REPORTS REVIEWED

1. Red Hill Creek Expressway - North/South Section - Exemption Order - May 1996 (HH1169 - BARC)

2. Red Hill Creek Expressway - North/South Section - Proposed Assessment Process - Feb. 1996 (HH 1036 - BARC)

3. Chemical Form and Availability of Trace Metals in the Southeastern Part of Hamilton Harbour - G. McIsaac et al. 1992 (HH 619)

4. Biological Inventory of the Red Hill Valley - 1995 (HNC/HRCA) April 1996 (HH 1170)

5. Red Hill Creek Expressway - North/South Section - Proposed Assessment Process - Consultation Report - April 1996 (on hand)

6. Red Hill Creek Watershed - Towards a State of the Watershed Report (on hand - BARC)

7. Red Hill Creek Expressway - North/South Section: Impact Assessment and Design Process - Nov. 1997 (on hand - CSC)

8. Red Hill Creek Watershed Planning - State of the Watershed Report - Oct. 1997 (on hand - BARC)

SUGGESTED FURTHER READING

(A) Crombie Recommendations for the North-South Section of the Red Hill Creek Expressway

(B) Literature associated with expressway demolition in the U.S.A.

G. K. Rodgers

May 14, 1998

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Mr. Chris Murray,
Special Projects Office,
The Regional Municipality of Hamilton-Wentw
10th Floor, 25 Main Street West,
Hamilton, Ontario
L8P 1H1

July 7, 1998

Re: Impact Assessment for Red Hill Creek Expressway Project

Dear Chris,

As I promised at the last meeting of CSC (June 24th), I am writing to express my concerns about some of the assumptions underlying the *Impact Study*. I have not yet received the DSR Volume 2 Report, but did want to put in writing those issues which I believe need attention as soon as possible.

A first major item is that of the ***truck mix*** assumed. Based on what has been presented to us, there is no real basis for selecting a 7.5% figure for heavy duty vehicles and an equivalent value for light truck vehicles. To use a mix based on Hwy 404 traffic is not appropriate, if that is indeed the case. Because the impacts of noise and air pollution are so sensitive to the truck numbers we are likely to face when the expressway is fully utilized, I strongly recommend that the Region request a sensitivity analysis be done. Just from my counts on the 401 (not a scientific study) , the number of vehicles with more than 4 wheels varied between 38% to 47% when I did 4 random sampling of groups of 100. This occurred on Tuesday, June 16th between 5:30 and 6 p.m. for west-bound traffic west of London.
I appreciate that such a high figure may not materialize on the RHCE. On the other hand, it might. And so, we need to know a "worst case" scenario outcome. My suggestion is to obtain ramp and highway section data from MTO for two time periods (2 to 5 years apart) for the traffic flows from west of Mohawk Rd. to just east of Hwy 20. If MTO does not have the necessary information to give a reasonable estimate of annual daily flows (trucks and total vehicles), it would not be unreasonable to request that automatic counters be stationed having pressure sensing devices, to give current figures. I have spoken to Wilf Skeete at MTO already, and he promised to send me data for east and southbound traffic. I will give him until next week before reminding him, if necessary.

If we establish that truck volumes are increasing, year to year, it would be appropriate to extrapolate in some fashion for future truck volume percentages. This would be reasonable, based on the fact that rail lines and feeders are closing, and warehousing is being phased out and replaced with goods inventoried in trucks, or, more responsive demands by manufacturers to consumer demands, the jargon being "just-in-time-delivery". I am also aware of plans to improve the bridge crossing from Detroit to Windsor, and the fact that globalization will result in more efficient procedures for truckers at border points - all of which will result in higher volumes than at present. Do we know whether MTO has done a study of future traffic demands on the our major highways taking these factors into account?

I would like to point out that PM10 and sulphate represent major constituents of truck fuel exhaust gases. As the HAQI report on Human Health Risk Assessment points out, these two constituents are profoundly implicated in air pollution-related hospital admissions and premature deaths (p.43). Since I haven't seen the detailed report by RWDI on the assumptions underlying the expected air pollution burdens from traffic on the RHCE, I can only surmise that:

1) particulates and diesel gas emissions are likely on the low side - when the worst case scenario of traffic congestion on the Expressway is accounted for. (The engineers who conceived of the express plus collector lanes on the 401 on the top of Toronto did not foresee

the consequences of traffic "gridlock" on that highway - much as those involved in this study seem to be oblivious to such a scenario in H-W).

2) it seems inconceivable that the modelling used by RWDI could have come to conclusion that PM10 and other dust particles could exceed Ontario guidelines by the *same* 13%. Did they assume that there are no air currents generated by vehicles, or from climatic conditions in arriving at this result? There is no doubt that the light particles tend to stay in suspension for a far greater time, and hence are much more hazardous to the breathing public!
3) noise from the expressway will increase if the truck mix goes up. As Professor Innis points out in the paper which I passed on to you - it is the single, loud, at-night event, during the summer, which is most annoying and disturbing of one's sleep. With the 4% grade on the expressway, regular, but non-periodic events caused by malfunctioning mufflers, air brakes, or gearing down operations will be especially bothersome! On top of that, of course, is the fact that a 20 dBA increase in sound translates as a 100+ increase is sound energy! The report should describe this increase as "profound" (or equivalent) rather than significant - to denote the true consequences. This brings up the matter of suggesting a neighbourhood meeting where the sound increases are demonstrated in an auditorium setting (for lack of a better venue). Let's allow the public to put on the right descriptor!

I would also like to confirm my interest in getting together with you and John Vandermark to discuss the matter of bicycle access from the south end of the valley across the combined expressway to connect up with the Caledonia Trail. I will be available during limited times for us to meet - but based on your comment that John will return from holidays on the 15th of July, is either a 10 a.m. or 4 p.m. meeting time on that date possible?

Sincerely,

Bob Korol

cc Sally Leppard

70.80.03.2

Citizens for a Sustainable Community

of Hamilton-Wentworth

c/o Department of Civil Engineering,
McMaster University,
Hamilton, Ontario L8S 4L7
Tel. 905 - 525-9140, ext. 24847

Mr. Chris Murray,
Special Projects Office,
The Regional Municipality of Hamilton-Wentworth,
10th Floor, 25 Main St.,
Hamilton, Ontario
L8P 1H1

October 19, 1998

Re: DSR Volume 2 - Redhill Creek Expressway

Dear Chris,

As I indicated to you on the evening of our last CSC meeting (Sept. 24th), I would attempt to put down some thoughts about the assumptions on which the Summary Report is based. In the intervening period, I have given more thought to the process we followed and will comment on how effective (or not) the effort to embrace the public has been.

Let me deal with the latter issue first. I attended two public meeting and read the comments made by many well meaning and concerned citizens who took part in the process of trying both to inform and receive feedback. Despite some heated remarks by both pro and anti-expressway forces, I believe that we learned how strongly people feel about the issue. After all of the effort that went into the process, I felt that the public's input was largely ignored! And as a member of CSC, that aspect was a major disappointment. The majority of the people who took the time to come out and have their opinions heard were obviously opposed to the expressway. Furthermore, the frustrations felt by many of my fellow CSC members resulted in a large number of resignations by anti-expressway representatives. I realize that you and other staff from the Region were not responsible for what happened - however, the situation made me feel uncomfortable at times because of the preponderance of pro- expressway individuals on CSC. And the result was

not as satisfying as it could have been, had the terms of reference been broader.

Citizens for a Sustainable Community has worked in partnership with the Region in promoting sustainability for several years now. Indeed, we undertook to identify worthy persons and organizations who have taken important steps towards making our Region more sustainable; this has been effected through the Awards Sub-Committee of the Steering Committee of Sustainable Community Day. It is ironic that, on the one hand, the Region wants public input to make it a better community for all; but, on the other, it largely ignores the views of a constituency that upholds the very tenets of sustainability that the Region claims to support! Balanced decision-making is supposed to place equal emphasis on economic, environmental and social/health aspects. The DSR (vol.2) is woefully deficient in addressing the latter. It excludes the health study report by Cantox, and failed to embrace the consequences to the many citizens of low socio-economic state in the east end of Hamilton who are going to be seriously affected by the highway and its construction! But, perhaps even more troubling is the effect the expressway will have on the children of this part of the Region. First of all, the Redhill Valley offers wonderful educational opportunities for studying the natural environment. Such experiences will be lost because the highway, its construction, its structures and the noise and air pollution from traffic will combine to degrade what is left of the valley to make it unsuitable. And for those who go to schools in the vicinity of the expressway, there are no mitigation strategies mentioned to address the potential respiratory health effects of children playing in school yards or undergoing some vigorous activity that is part of the curriculum. Several of the Conclusions from the Cantox report are scary! (And these are based on very unconservative estimates of air pollutants about which I will say more).

I am personally not very familiar with the schools which are likely to be affected by the expressway, but a fellow citizen, Murray Lumley is. Before going on holidays at the end of September, he provided me with a list of public and catholic schools which are ordered of closest proximity to the expressway. For you information, I am sending you Murray's assessment of noise and air quality impact related to school children as an appendix to my brief.

Cantox says in its report "some children taking vigorous exercise (soccer) for 2 evenings a week at the fields located in the Red Hill Valley would show evidence of increased respiratory irritation that could prevent them from participating. Children with asthma would have an increased likelihood for respiratory irritability." They even make mention of the "slightly greater risk" for children who walk to school, play in a school yard, or pass over the highway! And most damning perhaps is the reference made to the "young" and "elderly". "If the predicted levels of PM10 based on the RWDI model are accurate, they should be encouraged to limit their exposures, and not frequent the Red Hill Valley once the expressway has been completed."

• In discussions which we had with RWDI personnel, it became very clear that their air pollution and noise models were inadequate. Anton Davies, one of the partners of the firm made the point (during a HAQI meeting) that a new "Models 3" program which is a year away for implementation, would be able to make much better predictions than the one that was used for Red Hill. The valley's shape and orientation will have a profound effect on air quality; the meteorological data that were used are totally inadequate in terms of length of time of monitoring and domain covered; meanwhile, the impact of removing large areas of vegetation including woodlots of 40,000 plus trees is vitally important, with no attempt having been made to factor in that influence and to relate air pollution levels to increased temperatures during the summertime. Ozone levels are bound to become even worse under such circumstances. I need to repeat the point I made at either the last or prior meeting of CSC that much of the documentation that would give information about the assumptions underlying the numbers generated is lacking. How can the public be expected to determine whether, for example, it is reasonable to get results about PM_{10} that match those for heavier dust particles? The report indicates that the former small fraction particles will exceed Ontario guidelines by the same 13% of the time. But does this make sense considering the fact that small dust particles will not readily settle out and will indeed remain airborne due to traffic turbulence? It sounds as if RWDI simply assumed still air conditions when running their mathematical model! That assumption is not acceptable since PM_{10} are known to be so dangerous to health!

Then, there is the issue of ***truck mix***. Where did the 7.5% figure for heavy duty trucks come from? As I have stated several times (as have

others), account must be made of the short-cut for trucks which will use the RHCE as a by-pass route. This will inflate the truck percentage by a factor of 2 or 3. Add to that the NAFTA Highway projections. At a Sarnia, Ontario Conference held last month, on the "NAFTA Superhighways", a consultant in land use and transportation, Dr. Norman Pearson of London, Ontario projects a doubling of trucks on our major highways in the next five years. Our Transportation Minister, Mr. Tony Clement, is all for it. He believes that Ontario needs to provide first class highways to allow our businesses to compete. If such a scenario were to occur (and the polls suggest this as a very real possibility), we may be looking at staggering numbers of trucks on the RHCE (as well as the Linc, of course). It is for such reasons that I called upon the Region, through you, to ask RWDI to revise the truck numbers and input these into the models for air pollution and noise. Can you give us some assurance that this will be done? (Of course I would like to see the Models 3 program used if that becomes possible in the near term).

The Cantox report has a section in its report entitled "7.2 A Discussion of Major Uncertainties", in which it identifies a raft of uncertainties and assumptions underlying the numbers generated by RWDI. The tone of the discussion in that section can very reasonably be interpreted as inferring a much worse case scenario had the model inputs been more accurately known. And bear in mind that the RWDI model did not consider many of the air pollutants known to be harmful - PAHs, ozone, metals, VOCs etc. Mitigating PM by doing the odd bit of wet sweeping and flushing will do virtually nothing, in my view, to protect the lungs of our citizens!

In the area of noise pollution, I can only repeat what I have said on other occasions, niz. that the people who live near the expressway will exist under conditions akin to a living Hell! (Sorry for the strong words - but when you are used to one car having it's engine idle on the street, it may not be annoying. Make it 100+ engines and the noise level rises by 20 dB - a value that is predicted in the DSR '98). Noise barriers will help somewhat - but do our Council Fathers who have to approve monies for mitigating realize that the cost is about $ 200/foot? Note that 1 million dollars will not go very far if minimum mitigation is done!

Further to the noise issue. I passed on a paper by Professor Dave Innis from the University of New Brunswick to you, to be passed on to John that states that it is single loud noise events that affect sleep most seriously. This

situation happens when a trucker puts on squeaking or air activated brakes, or is caused by malfunctioning mufflers etc. Innis does not believe that the dBA measure is sufficient to capture traffic annoyance. The Innis' study is based on house-to-house surveys after a major route was upgraded and which then attracted more truck traffic.

Chris - as I was preparing material for this brief, I remembered our conversation about the possibility of instituting tolls for trucks. On reflection, it is clear that the worst consequences of the expressway remain in place. And so, my suggestion on the financial side would be somewhat different from the notion of user pay via tolls. I'm of the view, and my organization agrees, that with the horrific effects of downloading and fair market value assessment on businesses and home-owners in H-W, the Regional government should lobby the Harris government for permission to shift the $20,000,000 promised for the '98 installment of the RHCE to the property tax side. Perhaps the Ontario government would agree to a deal that reduces its commitment for an ill-advised roadway, by shelving the project. If, and only if, there is no other option than to build a road, that possibility would still remain. However, as Vision 2020 has always said, it is preferable to use HSR, bikes and foot-power to get around. My suggestion is to comply with those recommendations. The Region will be making a major contribution as a model community according to the Agenda 21 program to saving the world! (And from my several trips to China as a delegate of CSCE - I mean it! People of the third world have an enormous amount of respect for those who wish to help, without expecting to make a buck in return).

I trust that you will do your best to make our points known to those who will ultimately make the decision about the project. If there is anything further that we can help with, please let me know.

Sincerely,

Bob Korol, Co-Chair

185b

70.80.03·2

APPENDIX - A BRIEF BY MURRAY LUMLEY LINKING AIR POLLUTION AND NOISE IMPACTS FROM AN OPERATING RED HILL CREEK EXPRESSWAY FACILITY

To contact Mr. Lumley directly:
178 Orchard Drive,
Ancaster, Ont.
L9G 1Z9

Telephone: 648-1507
e-mail: mlumley@hwcn.org

RESPONSE TO IMPACT ASSESSMENT AND DESIGN PROCESS FOR THE RED HILL CREEK EXPRESSWAY NORTH-SOUTH SECTION AS IT APPLIES TO AIR QUALITY AND TRAFFIC NOISE IMPACT, WITH PARTICULAR ATTENTION TO SCHOOL CHILDREN

Introduction:
It is my intent to use the Draft Summary Report, Vol. 2, July 1998 plus the two accompanying documents: Air Quality Assessment (June 23, 1998) and Traffic Noise Impact Assessment (June 12,1998) published by Rowan Williams Davies and Irwin Inc. Consulting Engineers (RWDI) to show that the construction and use of the proposed Red Hill Creek Expressway, North-South Section would be detrimental to the health and well being of children who already live, play and go to school in the vicinity of the proposed expressway. I have also used maps of the locations of schools given to me by the two present local school boards - the Hamilton-Wentworth District School board and the Hamilton-Wentworth Roman Catholic Separate School Board plus MapArt's City Plan of Hamilton.

Since I am not an engineer or a professional related to studies of this kind my ability to judge the meaning and worth of data presented by the engineers is very limited. Therefore I will rely primarily upon the conclusions drawn and published in the three booklets mentioned.

My desire and credentials for making comment come from my experience and interest in environmental education and the realization of environmental impacts upon children. I was for five months the acting Consultant of Environment and Outdoor Education for the former Hamilton Board of Education. My responsibilies included the promotion of Environmental education in all of the public schools which included recycling and waste audits as well as the promotion and coordination of an outdoor educational experience for all of the Board's students at one of two Outdoor classroom facilities operated by the Board. Additionally I met with representatives of local environmental organizations who wished to have inputs into environmental education. These included organizations such as Laidlaw, Bay Area Restoration Council (BARC), a local coalition of Environmental groups, the Regional Planning Department, Vision 2020 and Hamilton Naturalists Club.

1. I intend first of all to list schools by school board that are in the vicinity of the proposed North-South Expressway because these are locations where children spend their daytime hours, both inside and outside their school buildings. School locations also give a general sense of the locations where the children reside in their homes when they are not at school.

A. Hamilton-Wentworth District Schools in the vicinity of the proposed North-South Expressway (in rough order of closest proximity to the proposed expressway):

Elizabeth Bagshaw School- 350 Albright Road
Red Hill School - 300 Albright Road
Rosedale School - 25 Erindale Avenue
Hillsdale School - 40 Eastwood Street
Hillcrest School - 460 Melvin Avenue
Roxborough Park School - 20 Reid Avenue North
Sir Wilfrid Laurier School - 70 Albright Road
Sir Winston Churchill Secondary School - 1715 Main Street East
Glendale Secondary School - 145 Rainbow Drive
Glenbrae School - 50 Secord Drive
Glen Echo School - 140 Glen Echo Drive
Parkdale School - 139 Parkdale Avenue North
Viscount Montgomery School - 1525 Lucerne Avenue
Woodward School - 575 Woodward Avenue
Sir Isaac brock School - 130 Greenford Drive

B. Hamilton-Wentworth Roman Catholic Separate Schools in the vicinity of the proposed North-South Expressway (in rough order of closest proximity to the proposed expressway):

St. Luke School - 345 Albright Road
St. Helen School - 785 Brittania Avenue
St. Bernard School - 101 Nash Road North
St. Christopher School - 50 Greenhill Avenue
Bishop Ryan High School - 50 Albright Road
St. Anthony of Padua School - 12 Ambrose Avenue
St. David School - 95 Owen Place
St. Eugene School - 120 Parkdale Avenue South

The preceding lists of schools and their surrounding communities are not the only ones that may be affected by reduced air quality brought about by the proposed North-South Expressway since there are additional schools from both school boards that exist both east and west of the ones I have listed. The children in the schools (and communities) in the lists are the ones most likely to suffer from the increased traffic noise caused by the proposed expressway.

2. Factor: Air Quality - The following comments are based upon Impact Statements both with and without mitigation contained in Red Hill Creek Expressway North-South Section, Impact Assessment and Design Process, Draft Summary Report, Volume 2, July, 1998, Chapter 3, pages 24 and 25 and Draft Air Quality Assessment, North-South Section, Red Hill Creek Expressway, Hamilton, Ontario by RWDI, June 23, 1998, pages 37, 38 and 39.

Impacts of carbon monoxide (CO) and Nitogen dioxide (NO_2) are described in the Draft Summary Report, page 24 as being below the MOE (Ministry of Environment) - AAQC (Ambient Air Quality Criteria as defined by the Ontario Ministry of the Environment) limits.

However some quotes from the Draft Summary Report, page 24 referring to an increase of airborne particles produced by cars, trucks and particularly diesel trucks and buses on the proposed expressway are:

"Expressway construction and the introduction of vehicle traffic within the valley will change existing air quality conditions."

"Respirable dust (Particulate Matter as PM10 - inhalable particulate matter; airborne particles of aerodynamic diameter less than 10 microns) - maximum predicted 24 hour PM10 concentrations will exceed the MOE - interim AAQC of 50 ug/m3 (micrograms per cubic metre; a unit of concentration) at 127 out of 150 receptor locations at least 13% of the time. Locations likely to receive the highest levels include: 600 metres north of Queenston Road on the west side of the Expressway and edge of the creek (predicted concentration = 249 ppm (parts per million) and the Glencastle soccer fields (predicted concentration = 205 ppm)."

"Total suspended Particulate (TSP - total suspended particulates; airborne particulate matter that is generally small - less than about 44 microns in diameter - enough so as not to be greatly affected by gravitational forces) maximum predicted 24 hour TSP concentrations are predicted to exceed the MOE interim AAQC of 120 ug/m3 at 125 out of 150 receptor locations at least 13% of the time. Locations likely to receive the highest levels include: 600 metres north of Queenston Road on the west side of the Expressway and at the edge of the creek (predicted concentration = 599 ug/m3), and the Glencastle soccer fields (predicted concentration = 491 ppm)."

"In general, excesses of the MOE criteria for PM10 and TSP occur within a 200 metre limit (east and west) of the Expressway."

"Air quality impacts incurred during construction cannot be readily predicted.

I leave it to others to discuss the research data on the effects of breathing PM10 and TSP upon human health and principally upon children, but my understanding is that these suspended particles which are produced by the internal combustion engine and especially the diesel engine when once inhaled into the lungs, remain there for life. Other informal research by concerned citizens on the numbers of diesel vehicle that may use the proposed North-South Expressway indicates a volume of traffic far higher than that predicted by the Region with a resultant far higher volume of these suspended particles that children and adults from the listed schools and communities will be exposed to. Also over the next few years according to news reports from a recent NAFTA Highway conference held in western Ontario, the transport truck traffic is predicted to increase enormously. This increase in diesel truck traffic on the proposed North-South Expressway as well as all other expressways in the Region will render present predictions on air quality to be completely inadequate.

Mitigation of some of the effects of increase of suspended particles produced from traffic are discussed on page 25 of the Draft Summary.

Even though several methods for reducing particulate emissions from roadways are suggested, the comment is made that "Relative to existing levels, ambient levels of particulate matter (TSP and PM10) in the valley will be higher after the road is constructed. Although measures can be taken to reduce levels of particulates, small particulates are difficult to reduce."

Also in the Draft Air Quality Assessment report by RWDI page ~~38~~ 22 it is stated that "--it is recommended that wind screens be considered to reduce the impact from dust. Although barriers have been found in other studies not to be entirely effective for PM10,----." "Trees will also be helpful in reducing the transport of suspended roadway dust outside of the valley." It should be mentioned here that in the Draft Summary, page 5 it states, "the estimated number of trees removed (i.e., trees with trunk diameters greater than 5 centimeters) is approximately 40,000. Earlier estimates by community sources quote 47,000 ---. Nonetheless, both estimates are effective at highlighting the extent of tree loss in the valley " Therefore the very thing that could mitigate the impact of dust (and most other pollutants) from traffic will be removed from the neighbourhoods defined by the school locations.

Continuing the quote from RWDI page 38 - "Consideration should be given to re-locating the Glen Castle playing fields. Finally, public sports events should be discouraged especially during rush-hour traffic periods." Page 39 of this RWDI report also adds to the Glen Castle playing fields - " --- vicinity of the Glen Castle playing fields and perhaps the trail area on the west side of the RHCE (Red Hill Creek Expressway) between Barton Street and Queenston Road where the air quality assessment indicated that predicted air quality levels would be highest."

The above conclusions based on the data presented by the consultants of RWDI seem to be a powerfully negative inditement against the building of this proposed expressway for reasons of potentially negative health impacts caused by bad air quality, on the children and adults of the neighbourhoods of the schools listed in this report.

3. Factor: Noise - The following comments are based upon Impact Statements both with and without mitigation contained in Red Hill Creek Expressway North-South Section, Impact Assessment and Design Process, Draft Summary Report, Volume 2, July, 1998, Chapter 3, pages 26 and 27 and Draft Noise Impact Assessment, Red Hill Creek Expressway. North-South Section, Hamilton, Ontario by RWDI, June 12, 1998, pages 15 - 21

Some technical definitions of environmental noise are required here and these are contained in the RWDI document, appendix A, page 1 and in the Draft Summary, page 27.

a. Noise: Unwanted sound.

b. Ambient or Background Noise: The ambient noise from all sources other than the sound of interest (i.e. sound other than that being measured).

c. dB - Decibel: A logarithmic measure of sound pressure level.

d. dBA - Decibel, A-Weighted: A logarithmic measure of sound pressure level, using a frequency weighting that mimics the response of the human ear. The resultant sound pressure level is therefore representative of the subjective response of the human ear. For example a dBA of 5 is perceptible to the human ear while a dBA of 10 is twice as loud as the 5 reading. The Draft Summary, page 27 states that: ">10 dB or more is considered significant on an increasing basis and is perceived as a doubling of sound exposure per 10 dB increase.

e. Energy Equivalent Sound Level (Leq): An energy-average sound level taken over a specified period of time. It represents the average sound level encountered for the period.

In the Draft Summary Report, page 26 is stated: "the introduction of vehicle traffic within the valley will change existing sound exposure levels both during and after construction."

The following are quotes from the Draft Summary Report, page 26:

"**Changes** in sound levels as a result of Expressway operation will range from 0 to 20 dB in noise sensitive areas (i.e., residences including townhouses and apartments with ground level outdoor living space, hospitals and nursing homes for the aged, provided they have outdoor living space for patients)."

"Mitigation (of noise) could involve the installation of noise barriers, typically as high as 3 to 4 metres."

"**Changes** in sound levels as a result of the Expressway and **after mitigation (if determined feasible)** will range from 0 to 11dB in noise sensitive areas."

"The MTO/MOE (Ministry of Transport, Ontario and Ministry of the Environment, Ontario) objective for outdoor sound levels is the higher of Leq (24 hours) 55 dBA or the existing ambient.

"Changes in sound levels will occur during construction for a period of approximately 3 years (depending on staging). Possible noise sources include earth moving and clearing, blasting (in the Escarpment area) and rock crushing equipment (located in the Mud Street interchange area)."

"The Region will conduct a pre-blast survey of residential units in close proximity to the blast areas. Monitoring of blast vibration levels will also be carried out. Sirens are usually used to give notice prior to blasting."

"Construction will result in increased noise-levels between the hours of 7:00 am and 11:00 pm for approximately three years (at varying locations and times, depending on staging of construction)."

The following are quotes from the Draft Summary Report, page 27:

"**Existing** sound exposure levels at receptors near the QEW are high for noise sensitive areas in an urban environment and range from 69 to 72 dB."

"During detail design, the Region/MTO will investigate the feasibility of installing noise barriers in the Nash road North area."

The following are quotes from the RWDI Draft Traffic Noise Impact Assessment document, page 15:

"In general, significant impacts are predicted along much of the expressway rout. Unmitigated sound exposures resulting from the operation of the RHCE will be higher than the provincial objectives of 55dBA at most receivers. Measured ambient sound exposures ranges from 47 dBA to 62 dBA, depending on location. Sound exposures of up to 68 dBA resulting from the operation of the RHCE are predicted at some receivers. Unmitigated **changes** in predicted sound exposure range from 0 to 20 dB."

"Most of the potential high-impact areas (i.e., areas with impacts greater than 5 dB) occur in the mid-section of the expressway section, in the area around and between Greenhill Avenue and Queenston Road intersections, due to a combination of lower existing ambient sound exposures due to level topography and reduced screening from topographical features. Ambient sound exposures at receivers to the north are higher (greater than the provincial 55 dBA objective), due to the increased influence of noise from the QEW, industrial activity and other existing noise sources."

An example of a school and its programs that will be highly impacted is Elizabeth Bagshaw School. This is currently an elementary school of the Hamilton-Wentworth District (Public) Board, but additionally it houses the Red Valley Outdoor Resource Centre from which the Board runs one of its Outdoor Education programs which is available to all students and teachers in the system.

Examination of RWDI Draft Traffic Noise Impact Assessment document, and map Figure 5.6 or the Draft Summary Report Impact Map 2A or Mitigation Map 3A (at the back of this document) all indicate that the proposed expressway construction is immediately behind the school building. As a result of the recognition of the closeness of the proposed expressway to the school, the consultants have indicated a high noise impact of up to >15 dB increase due to highway use and have therefore recommended construction of a noise wall immediately to the ~~east~~ west of the school to mitigate the noise of traffic.

One must conclude that the presence of this proposed expressway destroys the environment of this school for all inhabitants (children and staff) and renders useless this site as an Outdoor Resource Centre for the children of the Public School Board. I have seen no mention of this impact in the documents produced by the Region. Surely this kind of impact must be taken into account which must include discussions with representatives of the Public School Board.

There are many other areas and therefore locations near schools mentioned along the proposed expressway that require noise walls. These can be seen in the maps that have been mentioned plus the set of maps contained in the RWDI Draft Traffic Noise Impact Assessment document and labelled figures 5.1 to 5.8. These maps indicate the necessity for noise walls along most of the proposed expressway, both east and west of the expressway and even part way up streets near the expressway such as Greenhill Avenue and Albright Road.

Another alarming realization comes from the reading of the RWDI Draft Traffic Noise Impact Assessment document, the first page, named the Executive Summary. I quote from the second paragraph: "Future sound exposures at Noise Sensitive Areas, resulting from the operation of the expressway, were modelled using methods approved by the Ministry of the Environment (MOE) and Ministry of Transportation (MTO), **based on information provided by the Regional Municipality of Hamilton-Wentworth.**

Road Traffic Data is described in the RWDI Draft Traffic Noise Impact Assessment document on page 14, section 5.1.3 and it states: "future traffic predictions for the design Year 2012 were not available. As a conservatism, road traffic data in the form of Annual Average Daily Traffic (AADT) volume predictions and percent truck breakdowns were provided by the Regional Municipality of Hamilton-Wentworth, for the Year 2021 (Vision 2021 data). This data is summarized in Table 5.1.1 in the Tables section of the document.

This data table is not likely accurate for truck traffic with its low percentages of from 0% to a high of 7% for the reasons that were stated earlier in this report - (Other informal research by concerned citizens on the numbers of diesel trucks that may use the proposed North-South Expressway indicates a volume of traffic far higher than that predicted by the Region. Also over the next few years according to news reports from a recent NAFTA Highway conference held in western Ontario, the transport truck traffic is predicted to increase enormously. This increase in diesel truck traffic on the proposed North-south Expressway as well as all other expressways in the Region will render present predictions of noise to be completely inadequate.)

4. Additional Items: When examining the documents and maps that present some of the impacts of the proposed north-south expressway upon the health and well being of children and adults that must reside in the vicinity of this expressway it is hard to avoid other related impacts upon people of this area. For example, the neighbourhoods known as Red Hill, Rosedale, Vincent, Corman, Glenview, Kentley, McQueston, Nashdale, and Parkview East are highly impacted both by poor air quality and by increased noise. I see little in the Impacts Documents related to the people in these neighbourhoods. Why is their health and well being not considered in the impacts, other than the noise barriers that may be erected?

It is also noticeable that significant amounts of clean, quiet recreational land will be lost to children and adults if the north-south expressway is built in the Red Hill Valley. The Glencastle Park soccer fields have already been mentioned, but maps show other parks within the Red Hill Valley that will be drastically changed or lost to the people of these communities - loss of 40,000+ trees, removal of ball diamonds near Rosedale, loss of baseball diamond at Globe Park, loss of major sections of Red Hill Valley Park and King's Forest Park including loss of trails, loss of some of Confederation Park including trail discontinuation and changes to the King's Forest Golf course. This list is not meant to be complete but is given to illustrate the significant losses to the health and well being of children and adults in the neighbourhoods that lie along the Red Hill Valley where this expressway is proposed.

5. Conclusions: The conclusions to me are inescapable. For the health and well being of the children who attend the schools listed previously and who live in the communities near the Red Hill Valley and for the adults who care for these children and who also enjoy the relatively clean air and low noise, this expressway should not be constructed in or near the Red Hill Valley of the Hamilton-Wentworth Region.

Report submitted by Murray D. Lumley, September 27, 1998
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October 19, 1998

Terry Cooke, Regional Chair
and Members of Regional Council
Attention: Robert Prowse, Regional Clerk
Regional Municipality of Hamilton-Wentworth
P.O. Box 910
119 King Street West
Hamilton, Ontario
L8N 3V9

Dear Mr. Cooke and Members of Regional Council:

RE: Red Hill Creek Expressway Impact Assessment and Design Process

The Coalition on the Niagara Escarpment (CONE) is writing to respond to the request for public comment on documents prepared by consultants to the Region as part of the Impact Assessment and Design Process (IADP) for the Red Hill Creek Expressway.

CONE is an umbrella organization with 16 member groups, including the Bruce Trail Association, the Federation of Ontario Naturalists, the Canadian Environmental Law Association, the Sierra Club of Eastern Canada and many locally-based groups along the Escarpment. We were formed in 1978 and have worked consistently for the protection of the Escarpment and its many values to Ontario society. We monitor development up and down the Escarpment, in coordination with local community organizations. We are involved in educational activities to heighten public understanding and appreciation of the Escarpment. In 1995, CONE received the Lieutenant Governor of Ontario's conservation award.

Earlier this year, CONE copied you on a letter we wrote (dated February 25, 1998) to the federal Minister of Fisheries and Oceans and the federal Minister of the Environment outlining our concerns about the proposed expressway. In this letter, we will comment on the expressway in the context of the documentation that forms part of the IADP.

We are deeply concerned about this major, highly environmentally intrusive infrastructure project, half of which is located within the Niagara Escarpment Plan Area. Even more significant is that, of the portion of the expressway within the Plan

Area, *all is located within either the Escarpment Natural Area or the Escarpment Protection Area -- the two most environmentally sensitive land use designations in the Plan*. The Plan Area is so highly developed in the Hamilton-Wentworth and Niagara portions of the Escarpment that it becomes particularly important to retain those natural, undeveloped areas that still survive. These areas are needed not only as habitat for flora and fauna (for example, the migratory birds which use the Red Hill Valley in great numbers) but as a recreational area for east-end Hamilton residents, for whom the Red Hill Valley is the only natural area of significant size available for hiking, nature appreciation and other outdoor activities. It would be a real credit to the Hamilton-Wentworth regional government if it were to decide that protection of the Escarpment were to take precedence over construction of an expressway for which the need has, in our view, not been adequately established.

We are cognizant of the fact that in 1985, the Joint Board approved the expressway. However, two points must be made in this regard:

(1) That approval is now 13 years old and circumstances have changed. Many features of the expressway that are being proposed for "self-approval" by the Region through the IADP were not part of the 1985 EA approval; they will not be assessed through a real, proper environmental assessment process (including need for and alternatives to the project), but rather, only in fulfillment of the EA exemption order granted by the current government in 1997.

(2) To our understanding, the Niagara Escarpment Commission, as the implementing authority for the Niagara Escarpment Plan, continues to be involved in the process more by virtue of the approvals imposed by the 1985 Joint Board decision than for any other reason.

We understand that other environmental and community organizations will be commenting in detail on the environmental impacts of the expressway, many of which, not incidentally, are freely acknowledged by your own consultants in the reports we have reviewed. We wish to focus on the Niagara Escarpment aspects only, although, of course, all impacts on the valley environment as a whole necessarily affect that portion within the Niagara Escarpment Plan Area.

We note that the permitted uses for the Escarpment Natural Area designation in the Niagara Escarpment Plan include "essential transportation and utility facilities." However, Appendix 2 to the Plan defines "essential" as "that which is deemed necessary to the public interest after all alternatives have been considered." It is CONE's position that the Region has utterly failed to prove that this expressway is necessary to the public interest and has utterly failed, in the past decade, to canvass seriously the many practical alternatives to the expressway, at least one of which was proposed as recently as 1994 by David Crombie in his report to the Premier of Ontario.

Given that, in CONE's view, the Red Hill Creek Expressway does not meet the requirements of the Niagara Escarpment Plan, we are hard-pressed to comment on the IADP documents at all. Furthermore, we also question the Region's commitment to the

provisions of the *Niagara Escarpment Planning and Development Act*, which underpins the Niagara Escarpment Plan. In particular, we cannot find that the Region has met the following objectives found in section 8 of the Act:

- to protect unique ecologic and historic areas
- to maintain and enhance the quality and character of natural streams and water supplies
- to provide adequate opportunities for outdoor recreation

The impacts of the proposed expressway on the Niagara Escarpment -- which is accorded special status not only by virtue of its provincially-legislated land use plan but also through the UNESCO World Biosphere Reserve designation -- have been scoped down, by the EA exemption order and the IADP, to the visual impacts that the highway may have on views of the Escarpment and on views from the Escarpment. Gross visual impacts must be evaluated for what they really are -- an indication of innumerable, much more significant negative ecological impacts.

It is therefore with hesitation that we comment at all on the report titled *Visual Assessment -- Escarpment Crossing: Baseline Inventory and Impact Prediction (Draft)*, dated June 30, 1998 by Hough Woodland Naylor Dance Leinster in association with Ontario Hydro. We can only point to some of the statements in the report to indicate that your own consultants believe that negative impacts of the expressway simply cannot be mitigated:

"The cumulative impacts of these escarpment alterations [rock cut 70 metres wide and 15 metres high, raised roadway at base of escarpment, exposed hydro tower on escarpment brow] are predicted to be extremely high. No amount of side slope re-grading or new vegetation cover will reduce this degree of impact both in the longer views and in the short-distance vantage areas.... The rock cut to create the escarpment crossing creates a significant scar in the escarpment brow that cannot be mitigated with planting buffers. The proposed location of the expressway in this crossing eliminates a scenic promontory and associated vegetation that cannot be replaced on-site or within the valley." (pages 25-26)

In summary, the Coalition on the Niagara Escarpment believes that the proposed Red Hill Creek Expressway will cause irreparable harm to the Niagara Escarpment in the Hamilton area. The Region's insistence on forging ahead with this ill-conceived project reflects very poorly on the Regional government and any commitments it professes to have made towards protecting the Niagara Escarpment, as called for in the *Niagara Escarpment Planning and Development Act* and the Niagara Escarpment Plan. We can only remind you that the 1985 Joint Board decision and the 1997 EA exemption order simply allow you to proceed with this project; they do not require you to do so. On the one hand, we hold out some hope that the federal environmental assessment process

will cause federal approvals to be refused and for the expressway proposal to finally die an overdue death. On the other hand, it would be far preferable for the Region simply to abandon the proposed project voluntarily. CONE would be the first to congratulate you if you were to do so.

We trust that we have made our positions clear and hope that you will contact us if you require any clarification.

Sincerely,

Jim Molnar

Dr. Jim Molnar
President

c.c. Chris Murray, Special Projects Office, Hamilton-Wentworth Region
Deborah Ramsay, Niagara Escarpment Commission
The Hon. Sheila Copps, MP (Hamilton East)
Dominic Agostino, MPP (Hamilton East)

FEDERATION OF
Ontario Naturalists
Ontario's voice for nature since 1931

October 19, 1998

Terry Cooke, Regional Chair
and Members of Regional Council
c/o Robert Prowse, Regional Clerk
Regional Municipality of Hamilton-Wentworth
P.O. Box 910
Hamilton, Ontario
L8N 3V9

Dear Mr. Cooke and Members of Regional Council:

**RE: Red Hill Creek Expressway, North-South Section:
Impact Assessment and Design Process**

This letter serves as the response of the Federation of Ontario Naturalists (FON) to documents produced for the Regional Municipality of Hamilton-Wentworth as part of the Impact Assessment and Design Process (IADP) for the Red Hill Creek Expressway, North-South Section.

The FON, founded in 1931, is a province-wide conservation organization with 15,000 individual members and 90 member associations/clubs. Over the past 67 years, the FON has worked consistently for protection of natural areas, sound management of natural resources, and conservation of significant species of wild flora and fauna. We also offer a comprehensive educational program on nature and conservation.

Introductory Comments

The FON's fundamental concerns with this highway project were expressed in a summary manner in letters dated March 12, 1998 and October 2, 1998 to the Honourable David Anderson, federal Minister of Fisheries and Oceans; both letters were copied to you. In the current submission, we will expand on those earlier comments in the context of the IADP.

In the FON's opinion, the Impact Assessment and Design Process, given the circumstances under which it is being carried out, is not a true assessment of the environmental impacts of the proposed highway. The original environmental assessment for the highway received initial provincial approval by the Joint Board (in

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spite of a lengthy dissenting opinion) a full 13 years ago. Circumstances have changed since then, including lowered traffic projections, increased scientific knowledge about the ecological importance of the Red Hill Valley, and additions to the project that were never contemplated or not included in the original approval (e.g., construction of a combined sewer overflow facility, construction of the expressway's interchange with the QEW, reconstruction of the QEW/Burlington Street interchange, re-alignment of Red Hill Creek, building of stormwater ponds).

These changed circumstances should be examined in a *bona fide* environmental assessment process. Since the IADP is proceeding pursuant to an exemption order from the Province under the *Environmental Assessment Act*, it excludes the very basic features of a true EA, by definition as an exempted process. Those key features include the need for the highway, the alternatives to the highway, alternative locations for the highway, and a conclusion about whether or not the project should or should not proceed with the changes introduced since the 1985 approval. Need and alternatives have been entirely scoped out of the IADP and the Region had clearly decided to proceed with the project long before the IADP even began. Unfortunately, then, the IADP is reduced to an unsuccessful attempt to "mitigate the unmitigable" -- to reduce the multitude of major and, in some cases, irreversible, negative environmental impacts of the highway. These are impacts which, in many cases, your own consultants clearly acknowledge cannot be adequately mitigated or cannot be mitigated at all.

Loss of the Red Hill Valley as East Hamilton's Largest Natural Area

It is natural areas that make cities liveable; these areas are especially important to residents who cannot afford to leave the city to experience the natural world. The other urban portions of the Regional Municipality of Hamilton-Wentworth are relatively well-endowed with natural areas that enrich the Region's biodiversity and provide opportunities for nature appreciation and low-impact recreational activities. By contrast, the only natural area of significant size in eastern Hamilton is the Red Hill Valley, underscoring the necessity to ensure that the proposed highway is truly needed and that no viable alternatives to it exist. Since the Joint Board's dissenting opinion strongly questioned the need and since in 1994, David Crombie reported to the Premier of Ontario on sound alternatives to meet expected traffic demands, we can only conclude that the loss of eastern Hamilton's largest natural area cannot be justified on any grounds.

We are compelled to quote from the Region's Official Plan, which speaks to this very issue:

> "Opportunities to experience nature should not be taken away from future generations either through our decisions/actions or by neglecting our responsibilities for protecting, preserving and enhancing the natural features that exist in this Region. We are obliged to protect the natural features upon which we rely for enjoyment, relaxation, education, and for provision of the basic components to sustain life. To fulfill this obligation, the Region, through

policies in this Plan, as well as other actions and programs, is committed to the long-term protection of the natural environment." (Part C, Section 1, Hamilton-Wentworth Official Plan)

Our ecological concerns about losing the Red Hill Valley are supported in the IADP's *Draft Summary Report, Vol. 2 (July 1998)*:

> "Impacts to ecosystem functions (e.g., core areas and wildlife corridors) along the Niagara Escarpment and along the Red Hill Valley will be high (i.e., *cannot be mitigated* [our emphasis]) regardless of changes made during detail design and construction. This is due to the permanent loss of vegetation and wildlife habitats within the study area and the severance of a primary wildlife corridor that connects the Lake Ontario shoreline to the Niagara Escarpment and beyond." (pages 5-6)

High-Level Ecological Impacts of the Proposed Expressway

The FON concurs with the findings of the *Terrestrial Resources Technical Report (Draft)* of June 29, 1998, which includes the following:

> "High-level impacts will occur throughout the Red Hill Creek Valley system including the re-entrant section into the Niagara Escarpment. This is due to removal of significant habitats (Carolinian floodplain and slope forests, dry meadows and wetlands) and loss of critical linkages along the affected primary and secondary linkage corridors (i.e., Red Hill Creek Valley, Niagara Escarpment and David Creek Valley). High-level impacts will also be sustained by the provincially significant Van Wagner's March wetlands including the loss of wetland area and removal of habitat utilized by significant plant and wildlife species.... High-level impacts include the removal or significant disturbance of natural areas resulting in the net loss of ecological functions that cannot be mitigated within the study area." (pages 15, 6)

The same report notes that "the calculation of overall net habitat loss [losses persisting after mitigation has been fully applied] (Indicator A) cannot be finalized until mitigation plans are completed, approved and successfully implemented." (page 13) This is a sobering indication that the ecological impacts of the proposed highway will not be known conclusively until after-the-fact.

While the FON will leave to other organizations a detailed analysis of the *Terrestrial Resources Technical Report (Draft)*, we wish to point out that nowhere in the report is it acknowledged that at least 95 percent of the expressway corridor is identified as Environmentally Significant Areas (ESAs) in the Regional Official Plan -- Red Hill Valley (ESA 52), Hamilton Escarpment (ESA 47) and Van Wagner's Ponds (ESA 50). We are left to question how meaningful an ESA designation will be given the unmitigable, high-level ecological impacts that are forecast throughout the report,

including destruction of 37.8 hectares of natural woodland forest, 37.1 hectares of successional areas and 2.8 hectares of wetland.

We would not fault Hamilton-Wentworth residents for wondering how useful an ESA designation in the Regional Official Plan is when the designation can effectively be disregarded when it becomes inconvenient. That the proponent of the ESA-destroying project is the regional government itself, author of the Official Plan, makes the practical value of an ESA designation disturbingly small. Since we are aware of clause 4.3.1.17 of Part C of the Official Plan, which effectively exempts the expressway from all the policies in the plan, we must quote the portion of the plan related to ESAs, as a form of "reply" to that exemption:

> "Land use changes in or adjacent to Environmental Significant Areas will only be permitted where, in addition to meeting other policies in this Plan, such development: (i) will not adversely affect, degrade or destroy any of the qualities which served as the basis for the area's designation; (ii) will not cause any significant impacts upon water quality and quantity; and (iii) will not adversely affect the implementation of any resource protection policies or plans." (Part C, section 1.1, subsection 1.1.2(a), Hamilton-Wentworth Official Plan)

With 43 significant (regionally uncommon or rare) plant species, one vulnerable bird species (least bittern), one regionally rare bird species (Carolina wren), and a vulnerable mammal species (southern flying squirrel), the study area deserves more protection than any highway could ever afford it.

Fisheries

The FON takes issue with the statement on page 41 of the *Draft Summary Report, Vol. 2* that "the natural design [of the creek channel after re-alignment] is seen as a positive alteration which will result in a net gain in fish productive capacity." This seems to suggest that the expressway will bring about a net gain in fisheries when, in fact, those gains could be achieved in their own right, without expressway construction. *The Biological Inventory of the Red Hill Valley* (Hamilton Naturalists' Club, 1996) lists 17 practical recommendations for improving water quality and habitat quality in Red Hill Creek *completely separate from construction of an expressway.*

The Red Hill Valley as a Migratory Bird Corridor

We are concerned that the IADP seems to give scanty attention to the Red Hill Valley as a critical migratory bird corridor. In the *Terrestrial Resources Technical Report (Draft)*, the following statement is unsubstantiated: "There will be significant loss of available natural habitat and increased mortality for migratory birds and other wildlife, but migratory use will probably continue based on available information for similar disturbed migration routes associated with major geomorphic features in the Great Lakes region." (page 16) Even if the report provided a reference for this statement, there is no doubt that the "migratory use" would be substantially reduced as, no doubt,

it has been in other "similar disturbed migration routes." The cumulative effect on migratory birds of the degradation of more and more migratory corridors must not be dismissed.

Attention must be drawn to the "Assessment of the Avifauna of the Red Hill Valley" in *The Biological Inventory of the Red Hill Valley*, which places the importance of the valley for migratory birds in a broader, regional context. The biological inventory notes that the Red Hill Valley seems to be particularly important to spring migrants, with 25 percent fewer birds and 15 percent fewer bird species found in fall than in spring (the total number of species observed being 177). The biological inventory proposes a theory that may support the special regional importance of the valley to migratory birds:

> "Migrating land birds, especially those that move by day, try to minimize their time spent over large expanses of open water. Many birds migrating north into Ontario in the spring are blocked by Lakes Erie and Ontario and are forced westwards between the two along the Niagara Peninsula .... The only major east-west trending corridor of natural habitat left in the northern part of the peninsula lies along the Niagara Escarpment. Spring migrants could be expected to follow this corridor to the east end of Hamilton city limits and the head of the Red Hill Valley, which stands out as an oasis of natural habitat in a heavily developed area....
>
> "...the small woodlots of the Mount Albion Conservation Area could serve as a migrant 'trap,' attracting migrants pouring along the escarpment or crossing the gauntlet of barren land to the south. At this point the re-entrant creek topography naturally directs the birds north in their preferred springtime direction where fortunately a combination of forest, shrubland, grassland and creekbed habitats awaits them in King's Forest Park. From there they are funnelled north along the valley floor finding forage and shelter along the way.... From the creek mouth it is only a short flight across the apex of Lake Ontario at Hamilton Harbour to the larger natural areas of Grindstone Creek, Sassafras Woods and the Royal Botanical Gardens grounds on the other side.... These areas are connected to the now north-south trending escarpment natural corridor.... Having taken the 'mini-migration' corridor offered by the Red Hill Creek Valley, these birds neatly avoid much of the inhospitable terrain of urbanized Hamilton." (page 140)

Niagara Escarpment

As indicated above, the FON questions the Region's commitment to its Official Plan policies to protect Environmental Significant Areas in light of the Red Hill Creek Expressway proposal. Similarly, we question the Region's commitment to the purpose and objectives of both the *Niagara Escarpment Planning and Development Act* and the Niagara Escarpment Plan in light of the Region's consistent, long-term support for the

highway project. Approximately one-half of the highway corridor lies within the Niagara Escarpment Plan Area.

While there was provincial Joint Board approval for the expressway in 1985, it must be reiterated that the Niagara Escarpment Commission, as the provincial agency which implements the Niagara Escarpment Plan, has never supported the expressway project and continues to provide input only in the context of the approvals imposed by the Joint Board decision.

It is in light of the above preliminary comments that we submit that visual impacts of the proposed expressway on the Escarpment environment as viewed from nearby locations hardly constitute the most significant ecological impacts of the project. Those high-level impacts, which affect the entire expressway corridor, were discussed earlier. Yet the impacts of the project on the Niagara Escarpment -- recognized as especially significant by both a provincial land use plan and the UNESCO World Biosphere Reserve designation -- have been scoped down, by the EA exemption order and the IADP, to the visual effects of the highway.

The FON therefore finds it difficult to discuss impacts of the expressway on the Niagara Escarpment solely with reference to the report titled *Visual Assessment -- Escarpment Crossing: Baseline Inventory and Impact Prediction (Draft)* (June 30, 1998) by Hough Woodland Naylor Dance Leinster (in association with Ontario Hydro). Nevertheless, we are drawn to the following conclusions of that report:

> "The Escarpment face serves as a green ribbon framing a regenerated scenic valley, and is highly sensitive to visual alterations." (page 14)
>
> "The expressway will create a physical barrier by bisecting the valley and separating land uses and points of interest. Alterations to human/wildlife movement routes and altering both drainage and vegetation will result in changes in the adjacent landscape that will cause visual impact." (page 24)
>
> "The cumulative impacts of these escarpment alterations [rock cut 70 metres wide and 15 metres high, raised roadway at base of escarpment, exposed hydro tower on escarpment brow] are predicted to be extremely high. No amount of side slope re-grading or new vegetation cover will reduce this degree of impact both in the longer views and in the short-distance vantage areas." (page 25)
>
> "The rock cut to create the Escarpment crossing creates a significant scar in the Escarpment brow that *cannot be mitigated with planting buffers* [our emphasis]. The proposed location of the expressway in this crossing eliminates a scenic promontory and associated vegetation that cannot be replaced on-site or within the valley." (page 26)

Conclusion

For the above-noted reasons, the Federation of Ontario Naturalists concludes that the Red Hill Creek Expressway will have major and unacceptable impacts on the ecological features and functions of the Red Hill Valley. We cannot support any of the mitigation measures proposed in the Region's consultants' reports because so many of the ecological impacts, by the consultants' own admissions, simply cannot be adequately mitigated. The Region has yet to provide sufficient data supporting the need for the expressway and has yet to examine in sufficient detail the alternative road improvements that could meet projected traffic demands. Therefore, we remain opposed to construction and operation of the Red Hill Creek Expressway.

Sincerely,

Stephan Fuller
Executive Director

c.c. Chris Murray, Special Projects Office, Hamilton-Wentworth Region
Edwin DeBruyn, Department of Fisheries and Oceans (Canada)
Hamilton Naturalists' Club
Friends of Red Hill Valley
The Hon. Sheila Copps, MP (Hamilton East)
Dominic Agostino, MPP (Hamilton East)
Marilyn Churley, MPP (Riverdale)
George Zegarac, Environmental Assessment Branch, Ministry of the Environment (Ontario)

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October 19, 1998 Submission of Friends of Red Hill Valley
to the Regional Municipality of Hamilton-Wentworth concerning the
"Red Hill Creek Expressway North-South Section, Impact Assessment and Design Process. Draft Summary Report, Volume 2, July 1998"

Introduction

We submit these comments on the Draft Summary Report, Volume 2 (DSR2) with substantial reluctance. We have seen no evidence in the past that the provision of comments from the public nas had an appreciable impact on the course of action which the Region of Hamilton-Wentworth has embarked upon, or on the assessment of the environmental impacts of that course of action. On the contrary, it appears that environmental assessment is viewed by Hamilton-Wentworth as merely a "hoop" that must occasionally be jumped through to satisfy some regulatory requirement.

The evidence for this conclusion is overwhelming and can be found from the earliest stages of assessment of the Red Hill Valley Expressway in the late 1970s, shortly after the Ontario Environmental Assessment Act came into force. The extensive shortcomings in that initial process are partly documented in *A Review of the Mountain East West and North South Transportation Corridor Environmental Assessment Submission* (1984, 44 pp + app.) by the Social Planning and Research Council of Hamilton and District. The subsequent 1979 decision to proceed with the expressway project was wrung from the City and Regional councils through a combination of back room deals (documented by Jeffrey 1985 and Peace 1998), as well as by exaggerated growth predictions subsequently had to be lowered by 100,000 people.

When the assessment was referred to a Consolidated Board in 1984, the Regional government launched legal action to overturn its intervenor funding decision, and thus denied a reasonable opportunity by citizens and organizations opposed to the project to adequately present their case. The Region also turned to the courts (this time unsuccessfully) when the provincial government raised concerns about the environmental impacts of the project in 1990. A reasonable, open and representative government should have been prepared to sit down and discuss these concerns, especially in the light of new information available at that time, but this was not the attitude of Hamilton-Wentworth.

The provincial government attempted to pry open the doors of evaluation and assessment in 1993-94 with the appointment of the highly-respected David Crombie as a mediator in the dispute. His extensive re-examination of the need for the project and his suggestion of an alternative were dismissed by Regional Council in a short-circuited process that asked a transportation committee of council and transportation consultants to review a wide range of proposals that included tens of millions of dollars in environmental and economic components. Requests by the public to provide input were denied until

after Council had reached a decision. When the public was finally allowed to make brief presentations to a handful of councillors (and over 50 individuals and organizations made submissions!), these were also treated with complete disdain. No minutes were taken of the input, and even written submissions were not distributed to the members of Council. Less than 24-hours after the public submissions ended, the staff decision on the project was released and it included no reference whatsoever to the public input received.

Subsequently, Regional staff and council maintained that they had received all the approvals necessary under the Ontario Environmental Assessment Act, even after this falsehood was exposed by the Ministry of the Environment. Finding no way out, the Region demanded an exemption from the Act, and regional officials publicly threatened the provincial government that if such an exemption was not granted, then the Region would use the partial approval obtained in 1985 to destroy the valley without providing a useable expressway.

A so-called "public consultation" was also conducted by the Region with regards to the current "Impact Assessment and Design Process" (IADP). The results are documented in the *Red Hill Creek Expressway North - South Section, Proposed Assessment Process, Consultation Report* (April 1996, 104 pages + app.). It shows there was overwhelming opposition to the Region's IADP and in particular its refusal to include an examination of need and alternatives. Despite repeated attempts by the Region to rule "out of order" these public requests, the overwhelming majority of written comments from the public ask for these matters to be addressed. The subsequently filed "Exemption Order Request" (May 1996) completely ignores this public input. It was as if it never took place and showed again that the Region treats public consultation processes as nothing more than a cosmetic exercise.

This conclusion has been confirmed in the implementation of the IADP process. The Region established a so-called "Community" "Stakeholder" Committee (CSC) with a membership of its own choosing. A string of organizations were arbitrarily placed on this committee despite many of them being in clear conflict of interest. These included two private companies and four private construction associations whose members will financially benefit from the actual construction of the project. A construction union, the only labour organization in the Region that has publicly supported the expressway, was also the only labour organization named to the committee by the Region.

The CSC was charged with organizing public consultation about the project and reviewing the predicted impacts of the project. The records of the committee show clearly that dozens of criticisms and questions raised in the CSC by Friends of Red Hill Valley and other individuals and organizations went unanswered. In addition, comments and questions raised by members of the public in meetings in December, January and February were never replied to. In March, Friends of Red Hill Valley and seven other organizations formally withdrew from the CSC after it refused to provide regional council with an accurate reflection of the input received from the public in the meetings noted above.

With such a dismal record, it is clear that the only reason anyone should bother to make submissions on the DSR2 is to establish a public record against which regional officials and politicians can subsequently be judged. It is appears inevitable that submissions from the public which in any way disagree with the Region are likely to be summarily discarded.

The current exercise continues the dismal pattern of neither providing people with an accurate and reasonable evaluation of the consequences of the proposed expressway, nor allowing for appropriate

The DSR2 contains an "Executive Summary" which appears to be identical to a document issued nearly two months in advance of the DSR2. Apparently (although this is not stated) the DSR2 is the document "summarized" by this Executive Summary. The original release of this "Executive Summary" in June 1998 was accompanied by a great deal of fanfare. The entire text was printed in the Hamilton Spectator and three public meetings were held to allegedly provide an opportunity for members of the public to comment on it. The records of those meetings are illuminating. They are filled with requests for information. This is hardly surprising when material is released in such a backward fashion. The summary should be the last document released, not the first. How could it be evaluated when the background studies it summarizes had not been made available (although it appears from their dates that they were virtually all completed). More pointedly, how can an executive summary be evaluated when the document is summarizes is not released at least in conjunction with it.

What we have here is a gross abuse of process and common sense. The public that were invited to "comment" on the Executive Summary document in June without benefit of what it summarized or the background documents that informed it were abused. Would a government review agency submit to such an abusive process? Would it be considered appropriate to comment on an executive summary without being provided with the document it summarized and the appropriate background documents? But this is exactly how the public was treated!

Page 12 of the Executive Summary (in the DSR2) claims that there will be "further opportunities for community input". The centrepiece of this promise is the activities of the rump "Community" "Stakeholder" Committee. However, at its first meeting following the release of the DSR (on September 24) the CSC decided not to allow public input into its deliberations. It also rejected a proposal to hold further public meetings, and then decided to disband itself.

We have subsequently spoken to the Environmental Planner about other "opportunities" for further input and he was unable to provide assurances or details of any further public comment opportunities in addition to the written submission period ending on October 19 (and limited to the incomplete information in the DSR2). We are left with the DSR2 suggestion that some secret meetings with individuals and groups hand-picked by the Region may occur at unspecified times and in unknown locations.

The omissions from the list of organizations to be included in these meetings (pages 53 and 54 of the DSR) are instructive. The recreational trails consultation apparently has no place for the Red Hill Valley Volunteers, the successor organization to the Red Hill Valley Rehabilitation Project which designed and constructed the trails, and which continues responsibility for community monitoring of these trails. The King's Forest Orienteering Club which has mapped the valley and brought thousands of youth onto its trails is also curiously omitted. And of course, Friends of Red Hill Valley, which has organized over 100 public walks in the valley, is also excluded from this carefully controlled "consultation".

Interesting exclusions from the "consultation" on recreational parks include the Rosedale Parks Committee and three very active neighbourhood groups: Community Action Parkdale East, Beach Preservation Committee and Concerned Citizens of Ward 5. Finally it is noteworthy that the Hamilton Naturalists Club and Watershed Action Toward Environmental Responsibility and the Bay Area Restoration Council are excluded from the "consultation" on Restoration/Landscaping.

Coincidentally each of these organizations has taken a strong stand against the expressway project.

public input and comment.

Reviewing The Draft Summary Report, Volume 2

The DSR2 was made available along with a dozen background studies between August 6 and 15, 1998. It is not feasible for a volunteer organization to respond to such a massive volume of material in such a short time period of time, and certainly a holistic review is impossible in this time frame.

Since the DSR2 is apparently based on the background studies, a thorough review of those documents must be undertaken and completed first, before the DSR2 can itself be properly evaluated. The review of these background studies requires a wide variety of scientific and professional expertise. Although lacking in any ability to pay for such examinations, Friends of Red Hill Valley has nevertheless attempted to encourage such reviews by volunteers concerned about the future of the community. We understand that some such reviews have been (or are about to be) submitted to the Region. These include comments on air quality by Tom Muir, Dr. David Pengelly, Dr. Robert Korol, Dr. Brian McCarry, Dr. Pavlos Kanaraglou and others; comments on water quality and quantity by Dr. George Sorger; comments on heritage resources by Dr. Walter Peace; and comments on microclimate by Dr. Stephen Murphy. We understand that the Federation of Ontario Naturalists and the Hamilton Naturalists' Club have examined issues regarding terrestrial resources, and that the Coalition on the Niagara Escarpment has submitted comments on the impacts of the project on the Niagara Escarpment and its plan area.

While each of these submissions should be carefully considered by the Region, they represent only a small portion of the work that is necessary to evaluate the background studies. However even the results of these reviews makes very clear that much of the consultant work on this project is shoddy and incomplete, necessarily calling into question the content of the DSR2 itself and leaving much of it in a state of uncertainty. The conclusion is inescapable that the deficiencies in the background studies must be corrected, and the DSR2 re-written in the light of those improvements before a reasonable opportunity will exist to review its contents.

It must also be noted that some background documents, especially those on stream re-alignment and fisheries, have not yet been released. This further compromises the review process. Predicted impacts on terrestrial resources, heritage resources and recreational resources are clearly dependent upon complete knowledge of the stream re-alignment proposals.

In addition, no information has been released explaining the determination of traffic predictions (and its components) for the expressway project. The noise and air quality impacts are entirely dependent upon these predictions and it is not possible to evaluate the various studies on these impacts without the background study on traffic predictions. Despite many written and verbal requests, the Region has repeatedly refused to release this information, perhaps because it will show that the expressway is not necessary (as was concluded in the 1994 provincial study of the project undertaken under the direction of Mr. David Crombie). The traffic studies form the central premise of the air, noise and climatic studies and MUST be provided before any reasonable evaluation can be completed of these studies. Of course, the Cantox (1998) study on health impacts arising from currently predicted air pollution is also dependent upon the unreleased traffic prediction studies. Its authors already raise a list of concerns about the data they received from the air quality studies.

The "Executive Summary" Release: An Abusive Process

This speaks volumes about the commitment of Hamilton-Wentworth to community and public input.

A review of the Executive Summary (which is reprinted in apparently identical form in the DSR2) makes it very clear that its release was a political activity intended to try to promote the expressway and downplay its very considerable impacts. Evidence of this is very easy to find.

- The chart on page 1 is inaccurate and misleading. The first item of comparison between the 1985 and 1998 designs is wrong. The 1998 design includes a fifth expressway lane from Mud Street to Greenhill Avenue (a full one-third of the expressway's length). The second item makes reference to a "possible structure" which the reader is left to guess about. The third item leaves the distinct impression that the interchanges at King Street and Mud Street have been deleted from the project. The fourth suggests that ramps no longer are planned between King Street and Queenston Road, another deception. The fifth fails to mention that 5 kilometres of the creek is now to be relocated and completely reconstructed (this is how the sixth change was accomplished). The seventh we have to take the Region's word for because information has not been provided on any of the suggested pedestrian crossings. The one on Woodward Avenue has obviously been mentioned to try to make things look rosier, even though it is more than two kilometres away from any part of the expressway. A notable omission (along with the stream relocation) in this list is the planned addition of 21 stormwater ponds.

- More sales pitches for the "new improved" expressway greet us on page 3. The statements in the first column share the common feature of NOT telling the reader what the impacts will be. Instead they are devoted to declarations that they won't be as bad as previously planned. What is the place of such salesmanship in a document supposedly presenting impacts? In particular, why are these the statements made at the very beginning of the document? It might be appropriate to comment on the effects of changes after explaining what the actual impacts will be (supposedly the purpose of the document). It would also be reasonable to include such information if readers were being asked to evaluate alternatives, but this is not the case in this document. One can only conclude that we are dealing with a political rather than a scientific document, and that its main aim is to sell the project rather than to explain what its impacts will be, evaluate their acceptability, and describe what will be done to mitigate them.

  Some of the claims cannot be verified anywhere in the document, while others are seriously misleading, such as the following:

  -- "allows the Region to reduce sediment loading to Hamilton Harbour". In fact, the background documents admit that sediment loadings to the harbour will increase, especially during construction.

  -- "the current proposal incorporates a trail system whereas the 1985 Expressway design did not". In fact, promises of a trail system were made by the Region before 1985 and detailed in the Moore-George study prior to construction beginning in 1990. More significantly, this little sentence doesn't bother to mention that a trail system already exists in the valley (thanks to the intervention of the provincial government with no assistance from the Region) and that that trail system will be seriously degraded by the expressway proposals.

  -- "saves provincial taxpayers approximately $50 million". This is completely false. The total cost of the east-west north-south expressway was given as $123 million in the Region's assessment submission (1982). The total construction cost is now over $360 million and

reaches $525 million when interest on the loans is included. The north-south expressway alone costs far more today than was predicted in the 1980s and the provincial taxpayers as well as local taxpayers are all paying a much larger bill.

Mention of the "Stoney Creek Landfill" is curious. The Expressway does not enter Stoney Creek at any point. We have found no mention of this site is included anywhere in the DSR2 or previous documents.

The region is not on schedule (page 3). For example, the Exemption Order request (June 1996, figure 3) schedules "Detailed Design, Construction and Monitoring" for "Fall/Winter 97/98" (more than a year ago) and this phase has not even begun yet. This is just another political statement to mislead the public and continue the big lie that the expressway is a "done deal". In the opposite direction, the DSR2 falsely suggests that construction activities will not start before summer/fall 1999 when in fact Regional staff issued a document in June of this year revealing their intent to begin corridor clearing as early as January 1999. Given the very obvious public concern about the integrity of the valley ecosystem, it is grossly dishonest of the Region not to mention this scheme in the DSR2.

The Draft Summary proper that begins on page 4 contains so many unsubstantiated and misleading political statements that it would require a document of at least twice its size to record them all. We will only note some of the worst instances. The worst instance on page 4 is the inclusion of the Red Hill Combined Sewer Overflow Pipe in the project. This is a separate project which the Region is required to implement under agreements with the Hamilton Harbour Remedial Action Plan (RAP) and the MOE. The class assessment of this process was carried out entirely separately and includes a commitment to build this facility in alternative locations if the expressway does not proceed. It is entirely inappropriate for this facility to be considered part of the expressway project. These facilities are not part of the expressway project and including their positive effects on the environment is obviously being done to try to cover up some of the massive negative impacts of the project. One might just as well include references to modifications to the Woodward Avenue STP which also empties into Red Hill Creek and make the claim that these should be considered as mitigating factors for the expressway project. This is just dishonest.

It should also be noted that the expressway project originated over 45 years ago and despite the "assessment" process it underwent in the 1980s and the exemption order process in 1995-97, three of the four "components" described on page 4 in the project were first revealed to the public as part of this project in June 1998. Not only is the CSO facility a new and illegitimate addition, but the creek relocation and the 21 stormwater ponds were also first revealed when the "executive summary" was issued on June 11. A fourth component, the reconstruction of the Burlington Street interchange, was only brought to public attention in December of last year. None of these components were described as part of the project in the exemption order request filed by the Region in June 1996 and consequently none could reasonably have been considered in the Minister's decision to grant the exemption in March 1997. This shows in the most forceful way the complete and utter disdain for public input displayed by the Region throughout the history of the expressway project, as well as its contempt for environmental assessment processes. The creek relocation, the stormwater ponds, and the Burlington Street interchange are massive projects in themselves and promise very significant environmental

impacts. It is particularly abusive for new elements to be hidden until very recently and then sprung on the public, which was required to respond in less than nine days (at the June 17, 1 and 20th public meetings) without any details or background information.

- A sentence on page 4 also promises the Region will "ensure no further degradation of the water quality of Red Hill Creek and Hamilton Harbour". Apparently this is because the contaminated runoff will be directed to the 21 stormwater ponds whose water quality is not mentioned even though they are the subject of the subsection. The statement is thus both deceptive and incorrect. It is beyond belief that the water quality of the creek will not deteriorate when at least 75 hectares of its watershed are paved or otherwise degraded, following which hundreds more hectares in its upper watershed are to be converted to the suburban sprawl which the expressway is being built to encourage.

- The estimated number of trees to be removed (40,000 - page 5) does not correspond with the background study whose estimate is 41,471. This is a small matter but is part of a larger pattern in the Executive Summary of trying to paint the best possible face on the project impacts rather than honestly presenting the facts.

- On page 6, we are told that the only 14% of the QEW study area "will be cleared as a result o construction activity". Interestingly, no mention is made of the area "negatively impacted" as was done for the valley portion of the study area. A glance at the Dougan & Ass. study explains this. Over 70% of the class one wetland area will be negatively impacted! The document, however, tells us that only 4% will be "directly impacted through project construction". This is another example of how the Executive Summary has been used to intentionally downplay the negative impacts of the project and mislead the reader.

- Page 6 also includes the following incredible statement: "Irregardless of the Expressway, if corrective measures are not used, the creek will eventually widen to five times its present width and permanently remove approximately 30% of the vegetation that exists within the valley." No evidence is provided for this claim and it cannot be found in any background study released by the Region. On its face, this is an outrageous claim in itself and is surely a gross exaggeration. The 30% figure (exceeding as it does the 25% figure for direct impacts) is obviously intended to convince the reader that it's more beneficial for the valley's vegetation to build the expressway than not to. This is clearly absurd.

  However, it should be placed in its proper context. The current degraded state of Red Hill Creek's hydrology is entirely the responsibility of the City of Hamilton and the Region of Hamilton-Wentworth which have pursued policies for decades to direct stormwater flows into the creek as quickly as possible. Indeed the use of Red Hill and other creeks for "conveyance of stormwater" has been the explicitly stated policy of local government. The 1995 biological study conducted by the Hamilton Naturalists' Club recommends numerous rehabilitation measures aimed at addressing this problem. The local government, however, has never taken any interest in preventing or correcting the hydrology problems, except now when they may pose a threat to the expressway project or some other road structure.

- Further down the page, the claim is made that "when the project is completed there will be an overall increase in the quality and quantity of fish habitat in Red Hill Creek". No reference point is provided so we are left to guess what is being compared. Are we comparing the

historical creek before settlement? Or the creek before the Region began dumping sewage into it in the 1950s? Or the creek before the massive development in its upper watershed in the 1960s, 1970s, 1980s, etc.? Or the present degraded creek to the one postulated to exist at the end of the project. Or the creek during construction with the one expected to exist after construction is completed? Or any one of these compared to the creek after the paving and development binge accompanying the suburban sprawl in the rest of its watershed that the expressway is intended to stimulate?

- There is another slippery statement in the following paragraph suggesting to the reader that the federal Department of Fisheries and Oceans "prefers" replacement of habitat. Friends of Red Hill has no doubt that the Department prefers that streams are not savaged in the first place.

- The next section is titled "Water Quality and Quantity" but interestingly makes no comments on the quantity aspect since the expressway will certainly greatly increase stormwater runoff. The comments it does make on water quality are highly deceptive because the claimed improvements to Red Hill Creek and the Harbour are entirely dependent upon the CSO facility which is not part of the expressway project. They also carefully neglect to discuss contaminant loadings to the proposed stormwater ponds. The Bay Area Restoration Council has made very clear to the Region that the RAP requires *improvements* to sediment and contaminant flows from Red Hill Creek separate from and above and beyond any changes that occur as a result of the expressway project (see BARC letter of May 14, 1998 in particular, and earlier BARC comments on the expressway).

- The section on Air Quality is perhaps the most deceptive in the entire Summary. The first sentence we can state categorically is false. There has never been any assessment of the effects of the expressway on regional air quality. The claims in this direction (made originally in June 1998) were thoroughly refuted by Dr. Kanaroglou and Dr. Pengelly in their statement of June 22 (see appendix A). The subsequent feeble attempts by RWDI to avoid apologizing for their blunder are appropriately dealt with in the submission on this "study" by Mr. Tom Muir. It is thoroughly dishonest of the Region to continue making these false and thoroughly discredited claims. It is truly frightening that "our" government appears so eager to distort reality and put people's lives at risk in order to save their pet project.

The Inside Cover of the DSR

DSR2 opens with a group of falsehoods on the inside cover. They include the following:

- "The purpose of this document...is to provide concerned parties with an understanding of: ...how impacts will be reduced (mitigation);...". In fact, most discussion of mitigation in the document fails to include specific promises or explanations of what actual mitigation will take place. Instead we are presented with promises of "further investigation", "will investigate the feasibility of", "will investigate prior to construction", "feasibility ..not known", "possible options","there are a number of opportunities" "contingency plans will be prepared", etc. The message to the public is clear: 'We the Region will do whatever we feel like, if we feel like it, and if we decide to devote any money to do it'.

- "The Region initially addressed need and alternative locations in 1982..." This date was merely when the Region's "investigations" were reported. They were actually conducted in 1978-79, a full two decades ago.

- "The Region and Ministry of Transportation then revisited the need for the project in the 1990's". Such a revealingly precise statement! This revisiting was so definite that the Region cannot even tell exactly when it took place. Neither can it produce any documents to show it took place, with the exception of MTO documents which concluded that an expressway was unnecessary. Friends of Red Hill Valley has repeatedly asked Regional officials and politicians in person and in writing over the last seven years to provide documentation of this "revisiting", but it has never been provided apparently because it does not exist.

- "Alternatives to the Red Hill Valley route were examined but due to cost, neighbourhood disruption and environmental impact, none are considered more acceptable than the current Expressway project." This statement may be technically correct, but it is intentionally misleading because it doesn't bother to include the 1978-79 date at which these alternatives were last examined by the Region.

- This section ends with a list of documents that allegedly "support these conclusions". Included are two which decidedly do not support these conclusions. One is the Regional Transportation Review whose authors have publicly admitted that they conducted their study *assuming* that the project would go ahead, and did not evalute either its appropriateness or the need for it. The second is the MOT report titled *The Red Hill Creek Four Lane Road, March 1994.* Even the title shows this document does not support the expressway. Its stated conclusion is that an expressway is not needed and future traffic needs even under extremely high population growth rates can be met through the widening of Mt. Albion road by two lanes and linking it to the four-lane Woodward Avenue. ("A four lane road provides sufficient capacity to meet the long term traffic forecasts, under either a low growth or high growth scenario" p.53). The Region has repeatedly attempted to mislead the public about this study and its conclusions. Unfortunately, but probably not surprisingly, this deceitful activity continues in the DSR2.

Other Comments

The DSR2 comments on air quality should be examined in the light of the Mr. Muir's review of the RWDI study that apparently provided their basis. Mr. Muir has shown that the predicted impacts are grossly underestimated and that the RWDI study lacks any credibility. Not surprisingly, the DSR2 maintains the exact opposite and makes completely unsubstantiated claims that the RWDI study predictions are "much higher than would likely be realized". Even the Region's own consultants (Cantox, p.30-31) dismiss the RWDI predictions as underestimates.

The comments on climatic changes found as well as the background study by RWDI on Thermal Dynamics completely ignore the fundamental concerns about the impact of the destruction of the Red Hill forest and its replacement by an expressway. They pay no attention to evidence that the valley and its forest play a very significant role in urban air circulation and generate air drainage patterns that are potentially critical to the relief of air pollution in the Hamilton area . The role of the valley as a heat sink is not addressed and instead we are presented with a facile "analysis" that takes no account of topographic realities or convection patterns. We have obtained an independent analysis that suggests that the freeway will alter the wind patterns, increase windthrow, raise local temperatures by 4-5 degrees Celsius, decrease humidity, and probably eliminate local radiation inversions over what used to be the forest canopy (meaning more air will be exchanged into and out of what used to be the forested valley). All of this means the edge effects will self-perpetuate as native species die and more invasive (resilient, light-adapted) species take over. Eventually, the forest will completely disappear

(probably over 20-30 years, depending on the age of what's left) as there won't be much in the way of nutrient cycling or regeneration of forest trees (or herbs) as reproduction halts (loss of pollinators or unequal temperatures). To avoid this would requires buffer of about 300 metres which is "terraced" (vegetation that gradually rises in physiognomic height to delfect wind).

The comments on noise fail to explain expected impacts in an understandable fashion. The DSR2 doesn't bother to define dBA or explain that it is measured on a logarithmic scale and what this means in practical terms. It is also noteworthy that there are no promises to actually mitigate noise impacts, merely to investigate the "feasibility"

The comments on cultural heritage downplay their importance, dismissing them as "disturbed". There also appears to be no evidence of native involvement in this work. We are told that "no human remains have been uncovered", but an examination of the background studies suggests that this is because no attempt has been made to discover human remains. Red Hill Valley has been occupied or used for over 9000 years and it is inconceivable that it does not contain numerous burial sites. However, when "archeological research" is limited to excavations of 10-12 inches, it is not surprising that "no human remains have been uncovered".

The comments on Visual Resources conclude that impacts generally cannot be mitigated. There is no indication as to what will be done about this.

The comments on transportation operation and safety are extremely facile and essentially declare: "trust us". There is no information on sources of information. No reference is made to impacts on adjacent streets. Volumes as high as 29,000 AADT are forecast in the RWDI study for the residential King Street and up to 28,000 on Barton Street. These are only slightly lower than peak flows one-way on the expressway and suggest that rush-hour traffic on these and other adjacent streets will be dramatically increased by the construction of the expressway.

Comments on Land Use leave most questions and issues unresolved, referred to either detail design or further investigation. While the opportunities for public input have now been cut off, the future of nearly all recreational facilities in or near the valley are in doubt. We believe the impacts have also been understated. For example, the suggestion that the Rosedale Park baseball diamonds can continue to be used (and the number even expanded) seems highly unlikely when they are to be flooded on a regular basis. The Cantox study also makes clear that use of recreational facilities, particularly by the young and the elderly, should be discouraged because of degraded air quality. No mention is made of this study in this section of the report or anywhere else. This suppression of essential information is inexcusable and directly contradicts promises made on page 12 that these findings that "the Region will ensure that all findings and recommendations" on air quality "are communicated to area residents and users of recreational areas adjacent to the Expressway". The Cantox study was completed on or before June 11. Its conclusions were available to the Region when the three public meetings were held in June and when the DSR2 was released in August, but regional officials chose to suppress this damning indictment of their pet project. This activity borders on the criminal. We believe a judicial inquiry into this activity is warranted.

The information on Fisheries is even less than on Transportation. The background study (if one exists has not been made available. The statement on page 40 that none of the wetlands affected by this segment are fish habitat is false. The wetland north of King Street which will be destroyed by the project does provide fish habitat. The claims for net improvements with regards to the Queenston

Channel are specious since the channel was originally put in place as part of the expressway construction in 1990-91. There is no mention of impact to fisheries during construction except with regard to stream cover. This is despite apparent plans to relocate and completely reconstruct five kilometres of the stream. The document also fails to note that the entire stream re-alignment project is unprecedented in size and highly uncertain in outcome. The role of groundwater in fisheries habitat is ignored and the admitted degradation is dismissed as "not considered significant".

The comments on surface water include several references to "up to 100 year storm". What does this mean? Does this mean that the project or area will be safe in a 99-year storm or is this code for a project designed only for a 50-year storm event. For example, on page 44 the claim is made that the expressway will be flood free up to 100 year storm, but will flood to a depth of 2-4 metres in a Regional storm event. Then we are told that flood levels at Greenhill etc. will be considerably lower under a Regional storm than under a 100-year storm. The section admits that considerable flooding will take place over a large portion of the expressway during regional storms. What will be the likely cost of rehabilitation? What account has been taken of global climate change in determining the likelihood of flooding events?

The Water Quality statements are highly misleading because they include the impacts of the CSO facilities that the Region is required to construct irrespective of the expressway. The claim made on page 4 is that CSO pollution occurrences will be reduced "to approximately 2 times per year". Given that the CSO at Greenhill Avenue runs pretty much constantly and apparently is not part of the Region's plans, this seems highly exaggerated. If the Region were actually interested in CSO occurrences in Red Hill Creek, it would have corrected the Greenhill situation long ago, as well as the other CSOs that empty into the creek. Instead the implementation of the Pollution Control Plan has been delayed and postponed, not only in Red Hill but throughout the Hamilton Harbour watershed. to a point where mere completion of the CSO containment program has been put off until at least 2014 (instead of the 2000 target date). A major reason for this delay is the unreasonable diversion of tax dollars from the RAP to the expressway project.

The net impacts on vegetation and wildlife are admitted to be very severe to ecosystem functions in both the valley and the wetlands and are conveniently undetermined for all other aspects. No mention is made of the impacts on wildlife migration. The accompanying "mitigation" maps are fanciful in the extreme. Much of the suggested regeneration (and there appears to be no commitment to actually do any of it) would not be in place for decades, if ever. Conveniently there is no date on the mitigation maps.

Page 5 tells us that there are "292 hectares of "open space/natural area" within the Valley "study area". This is a curious figure given that the Redhill Creek Escarpment Valley ESA contains 594 hectares (NAI, volume 2, p.300). While the latter includes areas around Felker's Falls and the floodplains of Montgomery and Davis Creeks below the escarpment, these constitute less than 25% of the total ESA. Note that the ESA does NOT include King's Forest Golf Course or other sporting facilities in the valley and is bounded by the CNR line rather than Brampton Street on the north. The discrepancy between these two numbers needs an explanation.

The description of impacts is misleading because it applies to the entire valley area. The natural area in the south end of the valley is both larger and wider than the north end, but the expressway impacts are roughly similar which means that impacts in the north end are far more dramatic than indicated by the 25% direct and 25% indirect figures presented on page 5. The maps in the Dougan & Ass. (1998)

2236

study show that for the valley north of Albright Road, the direct and indirect impact zones total well over 95% and cover the entire valley in most locations. In addition, in many locations the indirect impacts extend beyond the boundary of the study area.

It would be useful for the DSR2 to tell the reader just exactly how one can do construction in a wetland and/or an open body of water (Van Wagner's Pond) and only "directly impact" the area where the road footings are placed. Unfortunately no such explanation is provided anywhere in the DSR2. What is defined as "directly impacted" appears from the DSR2 and the Dougan study to be limited to the area that must be cleared for the expressway right of way. No account is made for the movement of construction vehicles beyond this narrow boundary indicated on the maps as only 75 metres in width in many locations. Even the right of way for the east-west expressway, built on a flat plain, is wider than this. Perhaps the authors have no knowledge of construction practices, but it would be quite amazing (and refreshing) to see a construction company that actually tried to limit its destruction to the lands on which it was actually doing construction.

In conclusion, there are dramatic shortcomings in both the DSR2 and the accompanying background documents which must be rectified prior to the initiation of a proper consultation process on the predicted impacts of the Red Hill Valley Expressway. Alternatively, given the extent of unmitigatible impacts already identified (although usually underestimated in extent and magnitude), it would be wiser to reconsider the entire proposal for an expressway in Red Hill Valley.

Don McLean, Chairperson

FAX COVER SHEET

Monday, October 19, 1998 05:55:47 PM

To: Special Projects Office
Attention: Chris Murray
Fax #: 546-2385

From:
Fax: 5 pages and a cover page.

Note:

Mr. Murray,
Attached is a copy of the submission of the Hamilton Naturalists' Club on the Red Hill Creek Expressway Impact Assessment and Design Process Draft Summary Report, Volume 2. A formal signed copy will be forwarded by mail. Thank you.

Hamilton Naturalist Club.

October 19, 1998

Terry Cooke, Regional Chairman
and Members of Regional Council
c/o Robert Prowse, Regional Clerk
Regional Municipality of Hamilton-Wentworth
P.O. Box 910
Hamilton, Ontario
L8N 3V9

Dear Mr. Cooke and Members of Regional Council:

Re: **Red Hill Creek Expressway, North-South Section: Impact Assessment and Design Process**

This letter serves as the response of the Hamilton Naturalists' Club (HNC) to documents produced for the Regional Municipality of Hamilton-Wentworth as part of the Impact Assessment and Design Process (IADP) for the Red Hill Creek Expressway, North-South Section.

The Hamilton Naturalists' Club has been the region's voice for wildlife since 1919. The club is a non-profit organization, chartered in Ontario, with a current membership of over 500. Its goals are:

- to promote the enjoyment of nature through environmental appreciation and conservation;
- to foster public interest and education in the appreciation and study of nature; and
- to encourage the wise use and conservation of natural resources, and environmental protection.

In 1999, our club will celebrate 80 years of providing the City of Hamilton and the Region of Hamilton-Wentworth with valuable, reliable, and accurate information relating to natural history in the region. As a result, the Hamilton area boasts a wealth of knowledge of its natural heritage, perhaps more than any other municipality in Ontario.

The club has produced a state of the art publication entitled the *Hamilton-Wentworth Natural Areas Inventory*, containing a comprehensive set of recommendations for protection and conservation of local natural areas. Ninety-two sites were identified and used by the Region of Hamilton-Wentworth to designate 80 Environmentally Significant Areas within the current Regional Official Plan.

The club has produced several other documents. These include: *The Reptiles and Amphibians of the Hamilton Area; Checklist of the Birds of Hamilton-Wentworth; Date Guide to Birds of Hamilton-Wentworth; Naturally Hamilton: A Guide to the Green Spaces of Hamilton-Wentworth*; and *The Citizen's Guide to the Protection of the Natural Areas of Hamilton-Wentworth.*

We have also provided over $100,000 in the past 10 years to assist conservation authorities to acquire and protect significant natural areas in the Hamilton-Wentworth Region.

The club was the initiator of the Nature Walkathon for the Environment, which has raised over $150,000 for local environmental projects.

The HNC is also an active stakeholder in the Hamilton Harbour Remedial Action Plan, and was the architect and strongest supporter of Fish & Wildlife Habitat Restoration proposals in the Harbour, Cootes Paradise, Grindstone Creek, and Red Hill Creek.

The club continues to be involved in many activities including school yard naturalization, wildflower restoration and monitoring on the Niagara Escarpment, and the re-establishment of Peregrine Falcon populations in Hamilton.

Ecological Impacts

The HNC is the leading local organization in its capacity to provide quality commentary on the plans for wildlife and associated terrestrial resources in the Red Hill Valley, having authored the comprehensive investigative study: *"The Biological Inventory of the Red Hill Valley"*.

The authors of the *Red Hill Creek Expressway North-South Section Impact Assessment and Design Process Draft Summary Report* (Vol.2 July 1998), should be commended for recognizing the very significant wildlife and ecological function of the Red Hill Valley in its current condition, and for recognizing the tremendous negative impacts and significant terrestrial resource losses that will occur as a result of construction and operation of an expressway in the valley.

The authors state that, "High-level impacts will occur to ecosystem functions throughout the entire Red Hill Creek valley system including the re-entrant section into the Niagara Escarpment. This is due to removal of habitats and significant biota (i.e. Carolinian floodplain forests, valley slope forests, and wetlands); and loss of critical ecological function such as primary and secondary linkage corridors (i.e. Red Hill Creek and Davis Creek valleys, and Niagara Escarpment)."

The authors then state that, "High-level impacts include the removal or significant disturbance of existing natural areas resulting in the net loss of ecological function that cannot be mitigated within the study area. In particular, these include the loss or disturbance of features representing habitats of irreplaceable integrity that are critical to supporting living things that are considered significant and habitats which play a critical functional role (such as habitat linkage) that will disappear or be permanently reduced."

The authors have assumed that medium-level impacts will occur to Vegetation and Wildlife Habitat and to Significant Species.

Feasibility of Claims Regarding Mitigation

While the authors recognize the potential for medium- and high-level impacts, we feel that their claims for mitigation are questionable and unsubstantiated. On page 49 of the above mentioned document, the authors appear to have provided a concept for Protection Measures, Conservation Measures, Biodiversity Recycling, Habitat Enhancement, Habitat Creation and Habitat Management plans for mitigating impacts to Vegetation and Wildlife Habitat and for Mitigating Impacts to Significant Species. The authors conclude that these apparent medium-level impacts can be partially or fully mitigated through the re-creation, restoration and enhancement of habitats and linkage corridors.

We feel that this unsubstantiated claim is a gross over-simplification and represents a major error. The reality is that mitigation is impossible for the loss and destruction of vegetation, wildlife habitat, wildlife, ecosystem function and ecological function in at least 150 ha within (I) the road corridor (permanent loss of existing vegetation), (ii) storm water management ponds, (iii) hydro corridors, (iv) and other negatively impacted areas affected by expressway construction and operation.

Although approximately 150 ha will be severely impacted over the course of development, the greatest impacts will be felt in the road corridor. Here, a total of 75.1 ha of vegetation and wildlife habitat will be completely removed. Within this 75.1 ha area there are conservatively estimated to be 40,000 trees of varying species and ages, each with its own connections to the countless macro- and micro-organisms within the system. On average, 532 trees per hectare will be removed. Within an area of this size, 40,000 trees and the roles they play represents significant ecosystem function no matter how they are distributed. The loss of these trees is undisputedly a high-level impact and cannot be mitigated within the study area. In fact, it is arguable whether the ecological function of 40,000 trees could be mitigated within the entire Region of Hamilton-Wentworth.

Even with the best of intentions, an advisory Group and Landscape Restoration Plan will not be able to offset this key high-level impact to vegetation and wildlife habitat.

Loss of Significant Species

A rich diversity of flora and fauna exists in Red Hill Valley. More than 1000 species are residents and/or use the area as a migration corridor. Those recorded thus far include 578 plant taxa, 18 species of fish, 15 amphibian and reptile species, 24 mammal species, 78 breeding bird species, 177 migrant bird species, 45 species of butterflies, 136 species of moths, and a host of aquatic and terrestrial invertebrates. The loss and impact assessment of these highly valuable terrestrial resources found in the study area has not been determined nor are they even mentioned.

The comprehensive "Red Hill Valley Biological Inventory Project" identified all parts of the study area as significant in some way. The importance of maintaining the integrity of the entire study area was emphasized because of the variety of wildlife habitats it provides.

The list of significant species identified in the IADP is incomplete.

It is a fact that six nationally and provincially rare species were reported to reside in the study area, two in the plant category, three breeding bird species, and the nationally and provincially rare Southern Flying Squirrel. An additional plant species designated as provincially rare was also identified. A total of nine nationally and

provincially rare
bird species were observed using the valley for a migration corridor. Six more bird species designated as provincially rare were also seen using the valley corridor, one of which was assessed as a possible breeder in the valley. Thirty additional species considered rare in Hamilton-Wentworth were found, including 20 plants, five moths, two butterflies and one each of fish, breeding birds and herpetofauna. All of these species will potentially suffer from habitat displacement.

Considering the high-level impacts to ecosystem functions, and the loss of critical ecological functions such as primary and secondary linkage corridors, it is likely that these species will become extirpated from the valley. Although they may survive expressway construction and initial operation, their demise is inevitable. The elimination of these species is a high-level impact that cannot be mitigated within the study area.

Impact on Environmentally Significant Areas Through Disruption of Corridor Function

The high-level impacts to the Red Hill Valley Study Area's ecosystem functions and ecological functions pose very serious and wide ranging threats to other Environmentally Significant Areas in the region. Every Environmentally Significant Area (ESA) that is linked by primary and secondary corridors will be highly impacted. There are no less than seven ESAs that will be negatively impacted by expressway construction and operation. These far ranging impacts have not been mentioned.

As noted earlier, the Hamilton Naturalists' Club organized and led the natural areas inventory that resulted in the current ESA designations in the Regional Official Plan. Part C of that plan focuses on Land Use Strategies and includes policies on protection of ESAs.

The preamble to this section states in part: "The ecological functions and physical qualities of Hamilton-Wentworth's natural features should be used in such a way that they are protected, preserved and enhanced. Utilization should be carried out in a responsible manner, on the basis of sustainability." This is immediately followed by Section 1 which is titled "Resource Protection" and which begins: "Opportunities to experience nature should not be taken away from future generations either through our decisions/actions or by neglecting our responsibilities for protecting, preserving and enhancing the natural features that exist in this Region. We are obliged to protect the natural features upon which we rely for enjoyment, relaxation, education, and for provision of the basic components to sustain life. To fulfil this obligation, the Region through policies in this Plan, as well as other actions and programs, is committed to the long term protection of the natural environment." The impacts of the Expressway acknowledged by the Region clearly violate this.

The next section (1.1) is titled "Environmentally Significant Areas". Subsection 1.1.2 part (a) reads in full: "Land use changes in or adjacent to Environmentally Significant Areas will only be permitted where in addition to meeting other policies in this Plan, such development: (I) will not adversely affect, degrade or destroy any of the qualities which
served as the basis for the area's designation; (ii) will not cause any significant impacts upon water quality and quantity; and, (iii) will not adversely affect the implementation of any resource protection policies or plans." The expressway project is obviously completely incompatible with these policies.

Members of the Hamilton Naturalists' Club have contributed thousands of hours of volunteer time to identifying the wildlife resources of our community, educating the public about the biodiversity of the Hamilton area, and assisting the regional government in developing appropriate protection policies such as those quoted above. We have done so in good faith. To see those efforts and policies discarded so easily is extremely dismaying.

In conclusion, the Hamilton Naturalists' Club rejects the documents produced for the Regional Municipality of Hamilton-Wentworth as part of the Impact Assessment and Design Process (IADP) for the Red Hill Creek Expressway, North-South Section as incomplete, erroneous and unacceptable. The documents point out the low value the authors place on the terrestrial resources of the Red Hill Valley. The authors are violating their own land use and environmental protection policies outlined in the Official Plan and they are completely ignoring the consolidated community values established in the watershed plan for Red Hill Valley.

Therefore, we remain opposed to any further planning for construction and operation of an expressway in the Red Hill Valley.

Sincerely,

signature needed.

Pierre Arnold, President

c.c. Sheila Copps, M.P. (Hamilton East)
Edwin DeBruyn, Department of Fisheries and Oceans (Canada)
Chris Murray, Special Projects Office, Hamilton-Wentworth Region
Federation of Ontario Naturalists
Friends of Red Hill Valley

Canada Centre for Inland Waters
867 Lakeshore Road
Burlington, Ontario L7R 4A6
905-336-6465

Remedial Action Plan for Hamilton Harbour

October 19, 1998

Mr. Chris Murray
Special Projects Division
Hamilton-Wentworth Region
25 King Street West, 10th floor
Hamilton, Ontario L8P 1H1

Dear Mr. Murray:

Re: Red Hill Creek Expressway Impacts Assessment

The purpose of my participation in the Community Stakeholder Committee regarding the Red Hill Creek Expressway is to reflect the common interests of the members of the Bay Area Implementation Team (BAIT) as they pertain to the Hamilton Harbour Remedial Action Plan (RAP). Keith Rodgers has been carrying out a similar role on behalf of the Bay Area Restoration Council, a public interest group which advocates and monitors implementation of the RAP. Both groups have in common a concern about the potential impact of the expressway project on the ultimate achievement of a restored and protected Hamilton Harbour.

Our first task has been to ensure that Hamilton-Wentworth staff working on the impact assessment are well acquainted with those goals of the Remedial Action Plan which might be affected by the expressway. I think we have accomplished that task.

A second task has been to suggest measures which might mitigate impacts when these latter appear to be counter-productive to RAP goals. For example, the dredging of Windermere basin in advance of construction is a suggestion that has come forward in our discussions.

A third task, now before us, is to ensure our groups understand the predicted impacts of the expressway as they pertain to RAP goals. BARC has already expressed its concern regarding what it believes the impacts to be, and its further comments will constitute a refinement of its views. The Bay Area Implementation Team as a group has not yet been presented with impact information.

From my perspective, there are two factors standing in the way of proceeding with this next task. One is a desire to ensure the impact predictions are as good as they can be, before responding to them. Impact prediction is an inexact art which very

often relies on models into which many assumptions are built. The models, the assumptions, and the data fed into the models all warrant review by as many knowledgeable experts as possible to yield the best possible predictions. This review is under way, both because the Region has requested agency comments and also in the context of a federal screening under CEAA. But it is not yet complete. I am seeking the opinions of officials in the agencies who are reviewing the documents, but in some cases they have not yet completed their analysis. Under these circumstances, I prefer to wait until their reviews are complete, and factored into the Region's impact assessment (or into the federal screening), before presenting RAP stakeholders (on BAIT or BARC) with an analysis of how the project may help or hinder the attainment of RAP goals.

The second factor is the inclusion of the combined sewer overflow (CSO) project as part of the Expressway project. Impacts of the CSO project had already been evaluated under a class EA project. They were not seen as mitigative to the expressway project, but warranted on their own merit (as recommended in the Remedial Action Plan in 1992). Now that their impacts are included as mitigative measures under the expressway project, it is very difficult to determine the impact of the expressway alone. If there were some way of presenting information so that the reader of the technical report on surface water quality could extract the impacts of the CSO project to look at the roadway independently, this would be helpful.

As a consquence of these factors, I am not in a position to provide you with a formal response by the end of today as originally requested. When these matters are resolved, I will propose a review of impacts in relation to RAP goals as an agenda item for the Bay Area Implementation Team. This team is inclined to base its comments on technical and scientific considerations in order to remain as objective as possible. This is its strength. However, its members recognize that qualitative factors are also extremely important in decision-making, and they expect that these will be reflected in the input of the Bay Area Restoration Council.

I hope you will find this sufficient, in anticipation of further technical work on impacts.

Yours truly,

Louise Knox

cc: BAIT
BARC Board of Directors
RAP Technical Team
RAP Forum
Sally Leppard, LURA Group
Ed de Bruyn, Fisheries and Oceans Canada

70.80.03.2

THE CITIZENS EXPRESSWAY COMMITTEE INC.

RESPONSE TO THE DRAFT SUMMARY REPORT VOLUME 2

The region Of Hamilton-Wentworth has produced a "Draft Summary" which is as comprehensive and detailed as such a document can be while under the title of "Executive Summary".

There are a number of comments on the content of this document which our membership wishes to make.

Regarding the opening statement titled "Focused on Design and Construction

1) The Region of Hamilton-Wentworth is undertaking the Red Hill Creek Expressway project because the region as a whole will share its benefits and positive impacts. While it must be recognized that the vast majority of the negative impacts will be confined to the valley itself this is not always true. Therefore any reduction in negative impacts, be it location specific or region wide, should be addressed in this document. Not just the changes of impact confined to the valley, but all improvements should be stated.

2) Reference is made to the conclusions of planning studies. All of these studies predict a crisis in roadway capacity for the year 2020 if no additional capacity is built, but most state that existing conditions are not adequate. The opening statement suggests, misleadingly, that this project exists only to meet future demand. There is a present and pressing need for this project. This should be stated.

3) "Alternatives to the Red Hill Valley route were examined...none are considered more acceptable than the current Expressway project." is a gross understatement of the facts. None are considered remotely acceptable, none are remotely feasible, None are one iota as acceptable, never mind not more so.

In comparing the 1985 design to that of 1998.

1) The authors have chosen to compare the present QEW interchange design to the 1990 MTO design. There were earlier, more tentative, designs which had a greater impact than even the 1990 MTO design. Had these been chosen for

the basis of comparison the Region could claim an even greater reduction in detrimental environmental impacts.

2) The additional interchanges and 7% grade of the original design obviously means there will be a reduction in negative air quality impacts. This fact should be stated even if there is no way to quantify this improvement.

Regarding the "What does 'the project' include" section.

1) We are pleased to see the recognition of the fact that so much more than an expressway is being designed. Since most residents of this region understand and agree with the need for the expressway it would be redundant to address that fact. It might have been helpful, however, to re-emphasize the pressing need for, and tremendous benefits of, the channel realignment, stormwater management facilities, and combined sewer overflow pipe.

2) The first sentence in the creek realignment section "As a result of past development activity, the portion of Red Hill Creek that extends from approximately the TH&B rail to Barton...." Can too easily be misconstrued to suggest it is only local development that is involved in the erosion. It would be clearer if the development of most of Hamilton Mountain was targeted as responsible for the present erosion problems which the realignment will address.

In the section on air quality impacts there is an over emphasis on the local changes. While the information that vehicle emissions will decrease region wide is useful, it would have been instructive to suggest what kind of air quality improvements will occur at locations along Centennial Parkway, Cannon Street, etc.

Overall, the Draft Summary fairly and unflinchingly reports present understanding of the impacts this project will have. The authors are to be commended for their ability to delve through reams and reams of material and arrive at a brief yet thorough summary.

Particular praise should be given to those staff who drew the maps. These maps meet the challenge of every cartographer; they provide a lot of information but are at the same time easy to read. It is obvious that previous comments by members of the public were incorporated into this excellent work.

Jim Harvie, Chairman.

70.80.03.2

Review and critical comment on:

Red Hill Creek Expressway North-South Section, Impact Assessment and Design Process, Draft Summary Report Vol. 2 July 1998

by

Tyler Smith, Field Botanist, Royal Botanical Gardens

As a member of the Landscape Restoration Advisory Group the author was invited to comment on the above named Draft Summary Report Vol. 2 (DSRV2). The purpose of this group is to gather advice from local experts for the development of a mitigation strategy for the natural lands impacted by the expressway project.

The DSRV2 provides a concise overview of the preliminary planning for the Red Hill Creek Expressway. While DSRV2 addresses a wide variety of issues this paper will deal only with the sections relating to vegetation and wildlife habitat, including the supporting document "Red Hill Creek Expressway, Impact Assessment Terrestrial Resources Technical Report, June 29, 1998" (TRTR) prepared by Dougan & Associates Ecological Consulting Services.

The DSRV2 is an admirable attempt to distill a complex development project down to essential key points. However, in the interest of brevity some important points have been over-simplified. In high-profile projects such as this, where public input is to play a valuable part in the planning process, it is critical that all information, both positive and negative, be presented clearly. I submit the following comments in hopes that we will empower all the stakeholders in this important project to make informed decisions. By honestly appraising the full ecological impacts of the expressway a mitigation strategy can be developed to minimize the impact to this sensitive natural area.

In particular, the concept of Direct and Indirect Impact Zones needs clarification. The definitions in the TRTR are clear: The Direct Impact Zone "includes all lands that will undergo clearing and grading during Expressway construction, creek realignment or other infrastructure related works" (p. 5, TRTR); The Indirect Impact Zone "includes all lands within 50m of the Direct Impact Zone. This dimension represents an average distance within which the most profound effects of factors such as salt spray, microclimate alteration, forest edge disturbance, and wildlife conflicts will be experienced." (p. 5, TRTR). The definition of the Indirect Impact Zone in the DSRV2 is subtly but significantly different: "a 50-meter setback distance from the limits of roadway grading was used to determine the habitat area *potentially* disturbed by Expressway construction..." (page 48, DSRV2, emphasis mine). The area within the indirect impact zone will definitely, not just potentially, experience "profound" impacts.

Serious *potential* impacts are not addressed in either report. Natural areas adjacent to the indirect impact zone will potentially be seriously compromised by such well-studied factors as: increased light and wind exposure, increase in abundance of edge dwelling predators and parasites (feral cats, cowbirds etc.), loss of plant pollinators due to increased desiccation (resulting in decline in local plant populations), and invasion of fragmented habitats by exotic species. As the DSRV2 makes no mention of these potential problems it seriously underestimates potential ecological damage to the Red Hill Creek Valley.

To rectify these shortcomings would require clarifying the issue of Indirect Impact Zones, and including a brief note addressing potential ecological impacts to adjacent natural areas. Inclusion of Direct and Indirect Impact Zones on the Impact Map, as is done in the figures in the TRTR, would also help improve the report in this respect.

The DSRV2 clearly and concisely summarizes the net impact of the project on ecosystem functions: "High-level impacts will occur throughout the entire Red Hill Creek Valley system

including the re-entrant section into the Niagara Escarpment", where high-level impacts "cannot be mitigated due to the magnitude of their effects in the landscape and lack of opportunities to replace similar ecological functions elsewhere in the Watershed." (P. 49, DSRV2). In contrast to these clear statements, treatment of net impacts to vegetation, wildlife habitat, and significant species could be improved. The assertion that the net impact to these indicators "Will be determined after the Landscape Restoration Plan is completed" (p. 49, DSRV2) is vague in light of information available in the TRTR. The net impact to significant habitats and species is clearly articulated on page 16 of the TRTR: "There will be substantial permanent loss of significant habitats and the species they support... This may be partially mitigated if proposed habitat restorations and wetland works are implemented... The created systems are unlikely to sustain the biodiversity, structure and integrity of existing habitats, due to overall fragmentation and dilution of native seed sources which normally support natural successional processes." There is no reason this statement could not be included in DSRV2, and doing so would considerably improve the accuracy of the report. It would also put mitigation techniques (protection & conservation, biodiversity recycling etc.) in their proper context.

There is one further point that should be addressed. The impact of this project on the hydrology of the valley is troublesome. As a result of changes to hydroperiod this development will create new and expanded wetland habitat that will most likely be dominated by invasive species (p. 17, TRTR). Encouraging such persistent weeds as purple loosestrife and reed canary grass could be devastating to the existing wetlands in the area. This is especially true in this case, where the impact of altered hydrology on Van Wagners Ponds & Marshes is an open question. There is no mention of this problem in DSRV2, and so again the report underestimates the ecological impact of the project.

In summary, the DSRV2 falls short on several key points. As written it significantly under represents the ecological impacts of the planned expressway. These inadequacies can for the most part be addressed using information available in the TRTR. As the project moves into detail design and construction important decisions will be made involving trade-offs between different aspects of the project. These decisions must take into account as fully as possible the positive and negative impacts of the project. It is hoped the inclusion of the above recommendations will serve to strengthen the developing mitigation plan, allowing the impact on the ecology of the Red Hill Valley to be minimized.

70.80.03.2

BAY AREA RESTORATION COUNCIL

OF HAMILTON-WENTWORTH AND HALTON REGIONS INC.

Room B130F, Life Sciences Building, McMaster University, Hamilton, Ontario L8S 4K1
Telephone (905) 525-9140 Ext. 27405 Fax (905) 522-6066 Email barc@mcmaster.ca

October 27, 1998

Mr. Chris Murray
Special Projects Office
Regional Municipality of Hamilton-Wentworth
25 Main Street West, Suite 1000
Hamilton, Ontario L8P 1H1
FAX: (905) 546-2385

Dear Mr. Murray,

On behalf of the board of the Bay Area Restoration Council, I am writing in response to the region's request for comments regarding the Impact Assessment and Design Volume 2 document for the proposed Red Hill Creek Expressway. Unfortunately we are unable to provide any detailed comments at this point as we are awaiting feedback from members of the RAP technical team who are conducting a review under the Canadian Environmental Assessment Act of the region's detailed assessment documents. Once this feedback is received and we have had an opportunity to review it, we will provide the region with more detailed comments.

I do want to take this opportunity to point out that the invitation to participate in a process such as the review of the proposed expressway presents mixed blessings to community organizations such as BARC; on the one hand it is a positive situation in that feedback from the community is requested, but on the other hand the technical nature of the documents involved makes community group responses difficult. BARC is lucky in the sense that we have access to an independent source of expert advice through the Hamilton Harbour RAP office, but bear in mind that most community groups do not share this advantage.

I would also like to make it clear that BARC still has concerns about the potential impact of the proposed expressway on the Hamilton Harbour Watershed. We are subsequently anxiously awaiting feedback from federal staff so that we can determine whether our on-going concerns regarding harbour watershed impacts are warranted. You will recall that the BARC board has consistently raised concerns with the region about the proposed roadway over the past several years. Most recently, our board submitted a statement to the Transportation Services Committee and Regional Council regarding the proposed roadway and our concerns about its potentially negative impact on the community's ability to reach RAP goals (see February 3, 1998 statement). Following that submission, former BARC president Dr. Keith Rodgers made a presentation to the Transportation Services Committee in order to elaborate on BARC concerns. Most recently, Dr. Rodgers made a submission on behalf of BARC to the Community Stakeholder Committee for

the proposed north-south expressway detailing additional concerns. BARC takes its responsibility to monitor the implementation of the Hamilton Harbour Remedial Action Plan very seriously. To this end, we appreciate the opportunity to provide input on the DSR Volume 2 and ask that you bear with us as we wait for technical input on the region's impact documents.

Yours truly,

Lynda M. Lukasik

Lynda M. Lukasik per M.B.
BARC President

cc: BAIT
RAP Technical Team
RAP Forum
Sally Leppard, LURA Group
Ed DeBruyn, Fisheries and Oceans Canada

Appendix VIII: Public Letters Draft Summary Report Volume 2

COMMENTS

1. Have heard very little about the thousands of families who have purchased new homes on the Mountain on the assurance that the Red Hill
2. Expressway would be built.

2. Also all the business's thatestablish themselves on the East Mountain with the promise that the Expressway would be built.

3. We certainly have needed another road up the Mountain for a very long time and particularly ~~in the Winter months.~~ And we ~~certainly will~~ need in the near future with the continued groth on the Mountain .

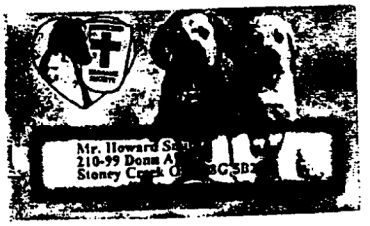
4. The cost of this project has probably tripled since it was first proposed and will continue to increase the longer we put off proceeding.

5. So get on with building the Red Hill Expreeway.

6. GET THE DAMN THING CONSTRUCTED.

NOW NOT LATER

Howard Wm. Smith



70.80.03.2

649 Glen Moor Cres.,
Burlington, Ontario, L7N 2Z8.
1998.09.15

Mr.C.Murray,
Transportation Dept.,
Regional Municipality of Hamilton-Wentworth,
25 Main St., West, Suite 1000,
Hamilton, Ontario, L8P 1H1.

Dear Mr. Murray,

While I am no longer the BARC representative on the CsC for the N-S Expressway's IADP, I have reviewed the draft report and have had a couple of thoughts that are not addressed specifically in that report.

1. Impact of road salt on the Creek and the Harbour

I have been studying the occurence of a chemical stratification under ice in the Harbour during the winters of 1993-94 and 1995. This stratification is due primarily to salt discharges to the Harbour. I enclose the draft summary of a preliminary report that will shortly be completed. While there seems to be little quantitative data on the impact of road salt on the environment, there is some literature that suggests possible impacts on the nearby vegetation and on the aquatic habitat in the Creek and Harbour. It may also affect industrial use of Harbour water due to the corrosive effect of chlorides. Road salt is not the only source of salt to the Harbour, of course, so its relative impact needs to be assessed. However, the high levels of chloride in the creeks already observed in past winters are clearly the result of road salting.

This phenomenon has also been observed in Irondequoit Bay near Rochester, N.Y., both in creeks entering and in the Bay.

I have received the report that you sent on the topic of "anti-icing", thank you. I note that they seem to be using chloride salt solutions, so the same concerns apply unless substantially less chloride is projected to be used.

In any event, more salt will be coming down Redhill Creek.

2. Emergency Measures in the case of Spills

In highway operations, as else where in the Region, there has to be ways to deal with spills. Toxic sustances, especially liquids, are an obvious concern, especially since the Expressway is proposed to go over or close beside the Creek through much of its length.

While environmental concerns are implied in the above, I am also reminded of an incident that occurred on the QEW ...

.....2

in the 1980's where chlorine gas was released and occasioned evacuations in the area. Heavier-than-air gases such as chlorine (with severe health effects) might not disperse as readily in the valley as on the open QEW. Indeed it might be 'channelled' down the valley, thus affecting a larger area more severely.I hope that you will have addressed this kind of issue in your planning.

I thank you in advance for the opportunity to comment, and in anticipation for your response.

Yours sincerely,

G.Keith Rodgers

cc. BARC office
Ms.L. Lukasik, President of BARC,
Ms.L. Knox, Hamilton Harbour RAP Coordinator,
Mr.M. Charlton, Chm., RAP Technical Team.

DRAFT.

Winter Stratification in Hamilton Harbour

Part I - 1993 and 1994 data
- Equation of State (Temperature, Conductivity, Total Suspended Solids) -
- Historical Record of Ice Severity -

G.K. Rodgers
National Water Research Institute
Environment Canada
&
The Hamilton Harbour RAP Implementation Office
August, 1998.

Management Perspective

Observations made in February and March of 1994 in Hamilton Harbour showed the existence of a layer of water on the bottom of the Harbour extending from the SE corner in Windermere Channel to the deepest part of the basin in the centre of the Harbour. This layer appears to be formed as a result of municipal wastewater and road-salt discharges. The layer at the bottom has high conductivity (high dissolved solids content), slightly higher temperature, lower oxygen levels (as low as 3.5% of saturation), high nutrient levels and high sodium and chloride content.

These observations took place at the end of a winter of extensive ice cover. The Harbour reached nearly 100% of ice cover. Based on freezing - degree - day records from the meteorological station at the Royal Botanical Gardens, this winter was the coldest in 30 years. It is possible that the ice cover reduced wind mixing and hence minimized dilution of the water as it moved through the Harbour. The intensity of this phenomenon may vary greatly depending on the severity of the winter. The use of road salt could be linked to this as well.

The consequences of this phenomenon could be harmful. The oxygen depletion was not observed to be as severe as in the summer hypolimnion. There could be effects on bottom fauna and sediment chemistry. In fact, it seems that the formation of this type of bottom layer only takes place when ice cover (and related snowfall) is extensive - maybe one year in 5 or one year in 10 at the present rate and distribution of road salt use. Road salt does increase the chloride content of the Harbour in winter and this has the potential to have deleterious effects on industrial use of bay waters due to its corrosive effects, but this is a general concern and is probably unrelated to the question of whether salt-induced stratification of the Harbour takes place.

The existence of this mechanism for exposing the aquatic environment to artificially elevated concentrations of contaminants from sewers and road run-off reinforces the need to address watershed development, treatment of melt waters and use of road salt. Also, this would support the contention that municipal wastewater treatment for suspended solids and phosphorus removal should not be relaxed in very cold winters.

This phenomenon is likely present in other harbours and embayments in the Great Lakes, especially where ice cover is more consistent. Additional observations would aid in developing a better idea of the scope of the phenomenon, the details of its development and its consequences. A similar situation has alredy been documented in Irondequoit Bay, N.Y.

Summary

Data are presented on the presence of a stratified water column in Hamilton Harbour in winter. The bottom layer has some undesirable characteristics. This layer formed in the winter months of January to March, 1994, during a winter when the Harbour was almost completely covered by ice in February. One source of the water in the lower layers is probably the combined discharges of the Woodward Avenue Sewage Treatment Plant and Redhill Creek, representing approximately 85% and 15%, respectively, of the combined inflow to the south-east corner of the Harbour through Windermere Basin. It is possible that combined sewer overflows during a high melt period could also have contributed, but no record of such overflow exists. Salty water from snow dumps could contribute to the density anomaly, but not necessarily the high nutrient condition of this lower layer.

The water mass apparently forms by virtue of its higher dissolved solids content and likely higher suspended solids content which allows it to move along the bottom of the harbour. The mixing processes that might ordinarily break up such a water mass before it entered the main body of the Harbour - namely wave action or convection - are supressed by the ice cover. Consequently, the water mass can be traced from Windermere Basin, along the deepest parts of Windermere Channel, into the dredged 'borrow' pit (depth 20 m) on the east side of the Harbour between the Burlington Ship Canal and the Confined Disposal Facility (Pier 27). It is possible that it moved across a 13-14m depth sill between Stelco and the Canada Centre for Inland Waters, to the deepest (25m depth) basin in the central part of the Harbour (west of the NW corner of the Stelco property and south of LaSalle Park), although the trend in concentration of salts doesn't directly support this scenario. Consult Figure 1 for this pattern.

The bottom water mass carries a distinct dissolved solids signature, easily measured by its higher conductivity, with significantly higher levels of total phosphorus, ammonia, sodium and chloride. Severe depletion of dissolved oxygen also took place. At one place, at the greatest depth and at one time, dissolved oxygen was as low as 3.5% of saturation. There were extensive areas of the bottom water below 50% of saturation. This water layer, in the central parts of the Harbour, is generally warmer (3 - 3.5°C) than the overlying water masses (0.2 to 3.0°). In areas closer to the source in the eastern part of the harbour, the temperature of this bottom layer has been observed as high as 5.2°C, well above the temperature of maximum density for pure water. This is the result of dissolved solids affecting water density.

This water mass was observed in a winter in which ice cover was virtually complete (January to March, 1994). In the absence of any other winter data on water quality in this bottom layer, it is uncertain whether the observed conditions are as severe in winters when ice cover is less extensive. It is more usual for solid ice cover to form in the western half of the Harbour, and for the eastern half to be open or to

contain only partial ice cover with floating pans of ice. In the latter situation, wave action, wind-driven currents or turbulence may be sufficient to induce mixing that reduces the impact of this density current on the central deep basin.

The significance of this phenomenon is not known. Clearly, there exists a situation that resembles the more intense summer hypolimnetic oxygen depletion. It is possible that this winter chemo-hypo-limnion provides a reservoir of water with a markedly higher nutrient content and lower dissolved oxygen that might accelerate the onset of oxygen depletion in the period of formation of the summer thermocline (April to June). However, it is hard to see how it would affect the total amount of nutrient in the water column that becomes fully mixed following the break-up of the ice cover. Bottom fauna could be affected. Apparently bacterial activity is great enough to cause oxygen depletion.

Therefore the Remedial Action Plan recommendations for Hamilton Harbour, calling for major reductions in phosphorus, suspended solids and ammonia loadings has wider implications than originally considered. The loading targets in the RAP were focussed on improving summer water quality conditions. These same recommendations can now be considered as improving both winter and summer conditions. Furthermore, suggestions that phosphorus and ammonia controls might be relaxed during the winter months (in order to save operating costs) are now less acceptable, especially in very cold winters when ice cover is extensive.

Such density flows are probably quite common in winter in the Great Lakes, especially where waters of higher dissolved salt content flow into smaller, enclosed embayments or harbours. Even larger embayments may be significantly affected, where there is extensive and long-lasting ice cover. Such flows are quite predictable since they follow the drainage pattern of the bottom topography. Discharge from sewer systems and road salt are implicated. This is the situation in Irondequoit Bay, N.Y.

Obtaining adequate observations in areas of variable, weak or shifting ice masses such as exist in Hamilton Harbour are a serious constraint to obtaining adequate information since vehicle access is awkward. Recording equipment put in place over the winter could be used to advantage.

Hubbard, Pam

From: Foulds, Rosemary
To: Hubbard, Pam
Subject: FW: Comments on Red Hill Creek
Date: Tuesday, October 13, 1998 10:55AM

Hi Pam

Here they are.

r

From: David Pengelly
To: bpearce; skapusin; rfoulds; Hubbard, Pam
Cc: Hunter, William; Kapusin, Sonya; Ed Cocchiarella; buonocne; corrde; Bob Korol; Knox,Louise [Burlington]; Brian McCarry; Pavlos Kanaroglou; Mah, Terry [Ontario]; Pearce, Bill; Rosemary Foulds
Subject: Re: Comments on Red Hill Creek
Date: Friday, October 09, 1998 11:18PM

Ms Pam Hubbard,
Regional Municipality of Hamilton-Wentworth.

Dear Ms Hubbard:

I enclose for consideration by the Region the following abbreviated review.

Review of the Draft Summary Report of the Impact Assessment and Design Process of the Red Hill Creek Expressway North-South Section.

October 9, 1998.

The focus of this review is the Air Quality Impact Assessment section of the Report.

On page 7 of the report, the statement highlighted in red indicates : " the Red Hill Creek Expressway will decrease vehicle emissions in the region by 3 to 16 percent." Careful examination of the origin of this statement fails to reveal any evidence of support in either the RWDI or Cantox reports. It appears to have arisen from a misinterpretation of results of the HAQI study. This error has repeatedly been drawn to the attention of the Region. There is no evidence to support this statement as it stands.

In the section on air quality a distinction has been made between regional and local impacts. It is true that some pollutants have a shorter range of effect than others, but most pollutants other than dustfall will maintain substantial concentrations over distances of kilometers from a source. This is particularly true for inhalable and respirable particulates. The impact of fine particulate is very likely to be substantial many kilometers downwind of the Expressway. Thus I am certain that this model has grossly underestimated the area impacted by particulate pollution, and thus the number of people experiencing adverse health impacts.

A recent publication by Dr. Burnett and colleagues in the 1998 May-June edition of the Canadian Journal of Public Health demonstrates that the combined effects of the gaseous pollutants and fine particles are much more severe than separate estimates have previously indicated. Since sulphur dioxide has been left out of the analysis, and the effects of carbon monoxide, nitrogen dioxide and ozone have been minimized, it is clear that the adverse health impacts of traffic on the Red Hill Creek section have been grossly underestimated.

I have read the recent review of the RWDI report carried out by Mr. Tom Muir of Environment Canada, and I am in complete agreement with all the statements Mr. Muir makes. Since the Cantox report uses the data from RWDI as a starting point, given the substantial weaknesses in the RWDI approach and outcome, it is not surprising that the health outcomes have been underestimated.

The fatal flaw in the air pollution assessment of the Red Hill Creek Expressway lies in its failure to properly estimate the likely density of heavy truck traffic on the North- South segment. In addition, without any supporting evidence they dismiss the complication introduced in determining emissions from heavy vehicles presented by the substantial gradient in this segment. They point out that carbon monoxide emissions from gasoline vehicles increase 11 fold on a 3 percent upgrade, but assume the reverse happens on the downgrade. Quantitatively the reduction could not balance the increase, and in any event they do not provide any evidence to support their statement. Furthermore heavy diesel vehicles use decompression braking on down slopes, raising crankcase pressures, and thus leading to greater emissions. This issue has not been addressed.

I strongly oppose the construction of the North-South Red Hill Creek section, on the grounds that air pollution associated with it will lead to an unacceptable adverse health impact on the Region of Hamilton Wentworth.

If, in spite of many logical arguments to the contrary, the Region insists on continuing with the construction of this segment in this location, I would suggest the following mitigation strategy:

A toll of sufficient value to act as a deterrent (for example thirty dollars per trip) be exacted from each heavy vehicle using the Red Hill Creek segment, and the proceeds of these tolls are to be used in support of health care in Hamilton Wentworth. If there are other impacts of these vehicles (such as noise , etc.) these costs should be added to the toll and the proceeds distributed accordingly.

Thank you for the opportunity to submit these comments.

L.D. Pengelly.

L. David Pengelly
Institute of Environment and Health
Assoc. Clinical Professor, Dept's of Medicine; McMaster U. and U. of T.
McMaster University, Rm. HSC 3E27
1200 Main W., Hamilton, ON L8N 3Z5
TEL: 905-525-9140 x 22694
FAX: not available

DR. R. B. McKAY
[redacted] 166 V.
NORTH YORK
ONT
M2L 1G

CHRIS MURRAY
ENVIRONMENTAL PLANNER
SPECIAL PROJECTS OFFICE
THE REGION OF HAMILTON-WENTWORTH
SPECIAL PROJECTS OFFICE
10TH FLOOR
25 MAIN STREET
HAMILTON, ONT
L8P 1H1

Oct 10th, 1998

Dear Mr. Murray

RE: IMPACTS OF THE RED HILL CREEK EXPRESSWAY NORTH - SOUTH SECTION / MTO - HAMILTON-WENTWORTH'S DOCUMENTS

I have great concern over the cost to the region of the impacts of the Red Hill Expressway as outlined in the MTO-Hamilton-Wentworth's Documents. This expressway should not be built. Accordy to project biologists "the impact of the approved Expressway on key functions of the valley system will be profound and largely irreversible." How can the region and provice afford the ≈ $136 million for this project???? The ecological and financial impact of this project are devastating. I understand that experts in comment on the project have suggested that due to the negative health impact of the expressway young and old people should not frequent the Red Hill Valley. This is very

Scary. How can you be part of a decision that so negatively impacts the health of our community!! The expressway will attract numerous truck traffic (including American truck traffic) that otherwise would not be there.

Please stop this expressway. It is too expensive financially and too costly for our health.

Sincerely,

L. McCoy

Tony Clement Ontario Minister of Transportation.
Dave Braden, Flamborough councillor

RR#3, Dundas, Ontario
L9H 5E2

Dear Mr. Murray,

Re MTO/ Hamilton-Wentworth's Documents on Impacts of the Red Hill Creek Expressway, North-South Section:

I found the impacts of the Red Hill Expressway, as detailed in these documents to be too costly to the region. No but that biologists working on the project state that: "the impacts of the approved Expressway on key functions of the valley System will be profound and largely irreversible" summarizes the impacts of the expressway succinctly - but is why I should not be built, - No- can the region/province afford the (under) estimated $136-million for this project. - There are cheaper better alternatives

① DON'T BUILD ANY EXPRESSWAY, SPENDING ON PUBLIC TRANSIT INSTEAD

② a) Widen Centennial Parkway b) Build Crombie's 1994 roadway.

The Red Hill Creek should not be straightened, nor crossed for an expressway!!

However should this costly expressway project go ahead, I have the following input: There should be sound barriers for

any / all parklands / Trees should be planted all along highway corrido as a sound / noise barrier (noise impacts are to great for the area - both the park land, and, housing / Bridges over the highway for the River (walk trails to bay)
- Given the high PM 10 level's predicted for the highway, it should not be built - Your line that young / old should not frequent the Red Hill Valley once the expressway is built should be substituted for: highway lovers / trails should not frequent the valley so as not to disrupt recreational users and wildlife in the valley.
- As per Drs. Kanaroglou / Pengelly's June 22, 1998 letter: the report's claims that the expressway will reduce emissions and improve regional air quality should be withdrawn.
- Four lanes up the escarpment should be more than sufficient.
Again, given the financial, ecological and health costs of this project, I urge its cancellation, but, should it go ahead, please consider my suggestions and keep me informed of all opportunities (there should be lots!) of public input - Please keep me on the mailing list, especially for expressway updates.

Yours SADLY
JIM. PURNELL

70.80.03.2

McMASTER UNIVERSITY

SCHOOL OF GEOGRAPHY AND GEOLOGY

Burke Science Building Room 311
1280 Main St. W.
Hamilton, Ontario, Canada L8S 4K1
Telephone (905) 525-9140 Ext. 23534 or 23533
Fax: (905) 546-0463

Fax Transmission sent to:

Name: Mr. Chris Murray Fax: 546-2385

Address: Special Projects Office
10th Floor
25 Main St. W. Hamilton, Ont. L8P 1H1

Pages: 3 Date Sent: 16 October 1998

Message: Dear Mr. Murray:

Attached please find my response to the "Red Hill Creek Expressway, North-South Section, Draft Summary Report, Vol. 2" which comments on the Report's coverage of culture and heritage matters. I would be pleased to discuss this further with you or your colleagues. (905-525-9140 x23517) (FAX 5406-0463) Dr. Walter Peace

Fax Transmission From: _____

Account: _____

Response to
"Red Hill Creek Expressway, North-South Section,
Draft Summary Report, Vol. 2"

by
Dr. Walter G. Peace

I would like to comment on the treatment of cultural heritage issues in "Red Hill Creek Expressway, North-South Section, Draft Summary Report, Vol. 2" as released by the Regional Municipality of Hamilton-Wentworth in July 1998. My comments are based on my personal and professional interests in the history and heritage of Hamilton. Of particular relevance to my expertise are:

(i) I served as a citizen appointee on the Hamilton Historical Board from 1990 to 1996; and
(ii) I am the editor of a just published book about the area in question entitled "From Mountain to Lake: The Red Hill Creek Valley".

I would begin by noting that the report draws heavily on two excellent reports compiled in the past two years. These reports (Archaeological Survey of the Redhill Creek Valley, City of Hamilton, Ontario by Mayer Heritage Consultants Inc. and The Red Hill Creek Expressway, North-South Section, Impact Assessment, Summary Report of the Cultural Heritage Resource Assessment by Unterman McPhail Cuming Associates) represent the most comprehensive inventories and assessments of the Red Hill Creek Valley's cultural and heritage resources that are available. The Draft Summary Report, Vol. 2 relies on these sources to identify the following:

18 archaeological sites;
10 built heritage sites; and
9 cultural landscapes.

I would like to make the following observations about these reports. First, while they represent inventories of existing knowledge, it seems to me that additional survey work should be carried out in the Red Hill Creek watershed. This need is especially strong in the area of the watershed above the escarpment. It is, in my view, strange that no survey work was carried out in the suspected vicinity of Cook's Castle (south of Albion Falls). In addition, given the large number of pre-European contact Aboriginal sites across the southern limit of the City of Hamilton, it is surprising that this area was not surveyed, according to the Mayer Heritage report.

While it is important to consider these (and other) types of cultural heritage resources, it is also necessary to recognize that, together, these and related resources comprise a cultural landscape in the broadest sense of the term. Failure to look at landscapes from this 'holistic' perspective can result in a minimum amount of loss or damage to individual resources while the overall integrity of the landscape as a whole could be severely compromised by the expressway project. In other words, the individual elements/components should not be viewed in isolation, but rather, as integral parts of a very complex whole. In my view, the Draft Summary Report fails to do this.

The danger one encounters in treating these resources as discreet entities is evidenced by certain expressions and phrases used in the Draft Summary Report. For example, the 10 built heritage sites are referred to as "a small number" and the 9 cultural landscapes are summarily dismissed with the phrase "fewer number". The 18 archaeological sites are covered with comments about the requisite excavation and salvage being carried out such that it "helps us better understand the past". These comments are prefaced by the statement that the "cumulative net impact of Expressway development will be generally benign". In my view, these sweeping generalizations amount to the token recognition of matters pertaining to the cultural heritage of the Red Hill Creek valley for the residents of both the local area and the entire region. From my reading of the report, there is a lack of concrete ideas regarding the preservation of the valley's cultural heritage. If anything, the language of the report seems to imply that the heritage resources are not very important, despite the fact that the two background reports cited above would suggest otherwise.

My third general observation concerns the extent to which all the necessary and appropriate steps have been taken to ensure that knowledgeable Native peoples have been involved in the process. It is not clear, for example, that such experts have been consulted so as to minimize the possibility of burial site disruption.

My assessment of the Draft Summary Report's coverage of cultural and heritage can be encapsulated as follows:

1. Two excellent sources were used to identify the valley's heritage resources, but it isn't entirely clear that all areas have been adequately surveyed.
2. The report treats these resources as discreet entities and fails to recognize how all aspects of the landscape in concert with each other are part of the areas's heritage.
3. This view of landscape as a collection of discreet elements overlooks the fact that any landscape is experienced by users (hikers, cyclists, historians, environmentalists, etc.) in its entirety. It is not experienced as a series of discreet archaeological sites or historic structures. To see it in this light is to ignore the interdependence of the elements of cultural landscapes.
4. From the prospective of one who is interested in and concerned with the cultural heritage of the Red Hill Creek valley, the underlying philosophy of the Draft Summary Report makes it easier to dismiss this area as being of lesser significance/importance.
5. It is somewhat disconcerting that the excellent work reported by Mayer Heritage Consultants and Unterman McPhail Cuming Associates seems to have been either ignored or summarily dismissed with words and phrases which overlook the importance of our past.
6. Finally, in my view, the landscape of the entire watershed is one of Hamilton's most significant cultural and heritage resources. Its importance is well documented and recognized. That the Draft Summary Report, Vol. 2 falls short of acknowledging this is regrettable.

Review Comments on RWDI Draft Report, Vehicle Air Emissions Inventory dated June 22, 1998.

Overall Impressions

This report reads like a muddled obfuscation designed to cover-up the Region's "Big Lie" that, "... the Red Hill Creek Expressway will decrease vehicle emissions in the Region by 3 to 16%.", as reported in both volumes of the Draft Summary Report. There is absolutely no evidence presented to support this claim, and it really is preposterous on its face, given the reality of roads, and any knowledge of the analysis which it misinterprets and misrepresents. Moreover, the authors of the HAQI report from which this misrepresentation was drawn immediately denied that this claim had any basis in their report, and this was reported in the Spectator. So there is no excuse for this continued lie.

The failure of this report to clarify the issue by spelling out exactly what the analysis referred to was really about is an egregious act of malpractice by the RWDI staff that wrote the report. In my opinion, they and the company should be brought before the engineering profession's official organisation and investigated for unethical practice.

Specific Comments

1. Page 1. Section 1. This section is missing a lot of important details and facts that describe and delimit the scope of the studies being cited. The wordings chosen are misleading as a result because they do not accurately and fully explain what analysis was done, what the assumptions were, what was included and left out, and what the results actually were in scope and detail.

Needed is a complete listing of all the planned roadway improvements that were considered, what vehicles constituted the "cars" that were modelled and were sport utility vehicles in the mix, what pollutants were included and what the emission levels were in each scenario and relative to the present time. Also, it would be interesting and useful to provide the data on emissions for the whole time under study - e.g., throughout the day, season, and for the whole planning horizon.

The key findings section is really misleading and continues the big lie started by the region. There is a need to explain that the net decrease in emissions is not an absolute reduction compared to today, but a relative reduction drawn from a comparison of two scenarios of future emissions that are both higher than today, but differ in certain assumptions, including about a variety of roadway improvements, and not just the expressway.

The fact that expressway is proposed to deal with growing traffic, which implies growing emissions is omitted. There is also no critical assessment of how the rest of the traffic volume fits in and what the traffic data are based on, and how realistic the assumptions about traffic really are. There is also a need to cross-check this report with the other RWDI report on air quality for consistency. I would ask that my comments on the RWDI study on air quality be read in conjunction with these comments as there are a lot of overlaps.

For example, the assumptions about traffic speeds, free flow conditions, and failing to account for the expressway grade are all subject to serious bias towards underestimating the emissions and resultant health impacts. This is covered in more detail in my other set of comments.

2. Page 2, para 2. There is a misleading sense to the claim that PM emissions are primarily the result of wheel-roadway interactions rather than vehicle tailpipe emissions. There is no explanation or evidence offered to support this claim. It reads like tailpipe emissions are a minor component, which can easily mislead the ordinary reader.

This is a further problem because the PM notation is not qualified as to size, since smaller particles (e.g. PM 2.5) tend to be associated with the emissions, especially diesel trucks. Needed here is a thorough explanation of the statements made.

3. Page 3. The HAQI model inputs are all from the Region with no rationale or evidence in sight. It's apparent that these inputs are all based on assumptions, and can be changed at will by coming up with different or alternative population, employment, land-use and transportation infrastructure assumptions.

It is notable that PM emissions were not included, and only car traffic was modelled for one peak morning hour, yet the region still claims in the DSR reports that "decreases in vehicle emissions" will be realised. What's left out is never mentioned and there are no qualifications whatsoever! This is another proof of the big lie.

4. Page 4. Table 1. If it weren't for this table, there would be no way of learning from the report text that the emissions in 2021 for both existing and new roadway scenarios are higher than in 1991. This is outrageous, because the text still basically reads, especially on pages 4 and again on 9, that the RHCE will have a positive effect on the air quality of the Hamilton airshed and contribute to a net decrease in emissions.

The fact that this only exists as a bunch of assumptions, is for the year 2021 for cars only, and still involves higher emissions and pollutant levels than at present, is never revealed. I find this a really outrageous abuse of trust.

There is also an inconsistency between the HAQI year 2021 used in the table, and the RWDI air quality report that used 2010 as the year when the expressway will reach capacity. This is important because the assumptions about congestion and the free-flow of traffic on the expressway hinge crucially on the capacity of the expressway and when that capacity is reached, among other related factors, especially at the peak hours. This issue needs a full explanation.

5. Page 4. It is worth noting that the report admits that for off-peak hours, emissions levels with the new roadways in place, may be higher than for the existing base roads. This is of course, due to the well known fact that roads do not solve traffic problems, they create them by inducing more traffic than ever, including discretionary trips. Unfortunately, there is again no spelling out of what the new roadways consist of in their entirety.

And again, free-flow of traffic is assumed, but with no data or evidence to back it up, and this conflicts with the higher traffic noted in the above para, which can very well grow back to congestion. And again, the inconsistent scenario timelines of 2021 in HAQI and 2010 in RWDI, arise again and are relevant to any consideration about traffic capacity, congestion and all the assumptions in the analysis that deny congestion if only we build the expressway.

All of these inconsistencies need to be explained and their implications derived.

6. Page 5. There is no data or evidence provided to support any assumptions about the extent to which traffic on Hwy 20 will really switch to the expressway. It also bears explaining as to why it can be assumed that all the traffic on Hwy 20 will travel in a throughway manner once it switches to the expressway. For many vehicles, including trucks, the trips they are on involve local deliveries or trips and do not need to go to the expressway for a short hop. This all needs to be examined and explained.

7. Page 6. The data in table 2 are offered as givens with no explanation or evidence in support. Also, the assumptions in section 4.1 are questionable (see my comments on the RWDI air quality report), especially the ignoring of grade changes, and assumptions about speed limits, and free flow traffic.

8. Page 7. Table 3. None of the results here are qualified as per the assumptions made, especially regarding the ignoring of grade, the free-flow traffic assumption, and the 90km/hr limit on the RHCE.

It is noteworthy that the Nox is higher across the board for all vehicles. This compound is linked to smog and ozone in a direct way, but these are not measured. There is no clear-cut gain here, notwithstanding the claims made, because the different pollutants have different impacts and differing hazards. With a clear increase in NOx (and associated smog and ozone) , as well as the omission of several pollutants of concern such as PM10, benzene, and PAH and others, it is not possible to say unequivocally, as is stated on pages 4 and 9, that the RHCE will have a positive effect on air quality. This is yet more evidence of the big lie!

9. Page 7/8. Once again, the implications of the assumptions made in the scenarios are ignored. The effects of grade are ignored (see my comments on RWDI air quality report), free-flow traffic on all roadways is again assumed, and the posted speed limits are used.

I ask, when except at night, are the 403 and QEW not congested? Moreover, the RHCE will just exacerbate the problem on these two existing roadways. And further, when is the posted speed limit ever the speed that vehicles travel on these roads?

Taken together, just these three assumptions involve a clear bias toward underestimating the emissions and air quality impacts. Scenarios that take account of higher speeds (reality on our roads), congestion (another reality on our roads), and the effect of grade on the expressway, among other things, need to be modelled and the results reported.

The results in table 4 are not critically reviewed to see how they conform to a real world scenario, and what they really mean in fact. For example, by what evidence do you say that all the vehicles are in a passing through mode, and not doing local trips? The scenario and table contains the tacit assumption or implication that all vehicles will switch and when and if they do, they will travel the whole route with no local stops or shorter routes. The way the results are described, as involving substantial reductions in per vehicle emissions, makes it sound that all emissions, in total, will be reduced by the same amount.

10. Page 9 Again, I must protest that the conclusion lacks factual clarity, and is misleading. They read like half truth and appear to be a cover designed to help the region flimflam the residents. It is just a lie to say that the expressway will have a positive effect on air quality, when in fact emissions will increase! This is pure double-speak!

The use of the words "net decrease" is plainly misleading and deliberately so, and is fact an untruth. Referring first to "vehicular sources" as the source for the reductions is again misleading, and then switching in the next sentence to

"automobile emissions" adds confusion, and continues the region's lie that emissions will be reduced 3 to 16%.

This can easily make the average reader think that emissions will be reduced in absolute terms compared to today, and not directly tell the reader that the reduction is only a relative one, predicted for the future, that is higher than the present emission level, but lower than another future prediction. There is no effort to really explain to the reader what the scenario analysis really modelled and how to evaluate the results.

In any case, the fact that all the scenarios must involve more traffic, and more emissions, or why would we be building more roads and the expressway, is never presented to the reader in a straightforward way - an honest, open and transparent way!

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October 15, 1998.

70 Townsend Ave.,
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October 18, 1998

Mr. Chris Murray
Region of Hamilton-Wentworth
Hamilton, Ontario.

Dear Chris;

I want to provide some further abbreviated comments on other aspects of the Region's reports on the impacts of the Red Hill Creek expressway.

1. CANTOX report on possible health effects

1.1. This report does not consider at all the possible health effects on people who live near the valley, especially those within the 200 meter line, but additionally everyone who may be exposed to high concentrations that are maintained farther away. This point was raised by David Pengally in one of his comments to you. Moreover, children who spend the day in nearby schools are also at risk, but this is not characterised or assessed.

Even more critical is the omission of any health effect assessment of pollutants other than PM10. I noted in my comments on the RWDI reports, the lack of study and concern about several pollutants that are now seen to have even more of a health effect that the particulate matter. This has been pointed out by Pengally and McCarry, and means that the health effects impact assessment must go back to the drawing boards in order to rectify this serious omission.

1.2. Even restricting the focus to the limited assessment done by CANTOX is problematic. CANTOX used information and data supplied by the Region and in turn from RWDI reports, but the RWDI reports have a great number of problems, and the Region's information has no documentation and is based on some dubious or incorrect assumptions, as pointed out by me in another submission, and by David Pengally and Brian McCarry. As well CANTOX is critical of the RWDI reports and points out seven uncertainties introduced by the RWDI modelling, several of which involve a direct and identifiable underestimation of air quality guideline exceedances, the exposure levels, and the risk of health effects.

Further, CANTOX was instructed to use the 24-hr averaging period, even when assessing effects on workers and children who are exposed during the day-time hours, when the 8-hr and 1-hr averaging periods would be the

appropriate and more realistic exposure levels. Based on these facts, and the risk groups not assessed, it is reasonable to state that the health effect impacts estimated by CANTOX are gross underestimates, and I agree entirely with Pengally and McCarry on these matters.

1.3. Unfortunately, there is insufficient data in the RWDI reports to deduce and estimate of 8-hr max concentrations. However, it appears from a close look at the various data provided, particularly the CO data, that the max 8 hr concentrations of PM10 are certainly much higher, and may be 3 or more times higher, than the max 24-hr level. This warrants very close consideration and a reanalyses of the risk assessment using the 1-hr and 8-hr levels, for the case study exposures of workers, children and others who frequent the valley during the daytime.

1.4 Notwithstanding the limitations imposed on the CANTOX study it is still significant that they concluded that the PM pollution in the valley will be a health hazard, and going further, that it is a health hazard at present levels, without the expressway (no safe level of PM).

However, the shortcomings and the new scientific data and findings released recently, underscore the criticism that these estimates of health effects are grossly underestimated.

2. Impact Assessment and Design Process, Draft Summary Report, Vol. 2.

2.1. There is really a need for an assessment of the cumulative impacts of the expressway. There are a lot of disjoint pieces of impacts referred to, and only some have supporting evidence to back-up what the document says, however, there is a need to synthesise and integrate what all these pieces add up to in total impact.

I would argue, that when you do this, you can clearly see that the construction of the expressway will be an unmitigatable catastrophe for the valley, the surrounding communities, and indeed for the Region as a whole. The Terrestrial Resources Technical Report, by Dougan and Associates, makes it very clear by the use of maps especially, and data, that substantial areas of the valley will be virtually demolished in the dust and dirt of the construction phase, and will continue to be severely impacted post-construction and in the operation. In respect to this kind of impact, it is impossible to really state that any part of the valley will not be radically impacted and changed by the placement of this roadway in it. It is very clear that none of the valley will ever be the same again.

The enormous loss of trees and vegetation, and the pitiable number of little trees that are mentioned as being planned for replacement is one example.

No mention is made of the impacts on wildlife who will all of a sudden become homeless and driven away to disturb and haunt the surrounding neighbourhoods, and become road-kill. And the list goes on and on - the incredible noise (underestimated and glossed over), the loss of cooling vegetation and the heat island effect of the roadway combined (again glossed over), the air quality problems, the impacts on water quality from roadway runoff (which the report glosses over assuredly with no data), the excavation of contaminated sites, the visual impacts and impacts on the escarpment, the loss or needed relocation of recreational lands, the loss in property values to nearby residents (which the report totally ignores), and the salt-spray from the roadway in winter which will affect the valley for 50 to 100 meters on either side of the road, killing and damaging whatever vegetation is planted.

This can continue to go on and on, and a summary of the cumulative impacts must be undertaken. What is actually going to happen here and how does it compare to the present? There are so many things that will happen, and so many things that the studies so far either ignore or make assumptions about that are not credible or reliable. The way the DSR Vol. 2 reads at present you would never think that the proposal was to build an expressway of this magnitude in the valley.

2.2. Problematically, there is no data or evidence with which to judge the impacts of many things on other things which we value, including particularly, impacts on fisheries, migratory birds, and Hamilton Harbour. The increased runoff and sediment from the construction and watershed development is either ignored or glossed over. There are a lot of statements in the report assuring the reader that everything has been considered on these counts, but there is no information provided to the reader to assess the validity of the words.

2.3. You really must do something to put down the "Big Lie" on page 7, regarding the expressway's impact on air quality and vehicle emissions. This is a complete and patent falsehood to claim that the expressway will reduce vehicle emissions in the Region by 3 to 16%. You have received many critical comments on this matter, but only continued the lie into version 2, and you really must correct this!!

2.4. using the CSO project to prop up the expressway is really objectionable. This project has nothing to do with the expressway, but is owed to the health of the harbour and community.

2.5. References to the Watershed Planning process are misleading at the best. I participated in it, and the expressway was a conflict with virtually every subgroups objectives and wish lists. Moreover, the expressway word essentially never appears in the body of the watershed plan. This is another example of the region misleading the reader into thinking that the watershed plan working

groups were all in favour of the expressway and that the plan somehow manages to compensate for the damage the roadway will do to the valley. This is totally false as a credible impression!

3. Overall Additional Comments

3.1. I think that given the lack of so many critical pieces of evidence and information, and the damning nature of what impact information does exist, that there is a need to go back to the beginning of the process and start again. It was not legitimate to issue a DSR document without any supporting documentation, and have a so-called public consultation process based on it. The fact is no one could respond with reasoned comments because there was no evidence to support what the region chose to say in the DSR.

The reports that are still missing must be provided, the comments received must be responded to and new, required analyses done, and the impact summary must then be rewritten. Then and only then is it legitimate to have a public process to go over the findings and respond to concerns and criticisms raised..

As it is, the region has committed some egregious attempts to mislead and deceive the public. The DSR is full of unsubstantiated claims and statements of fact, that upon close scrutiny just do not stand up. Or, the implications of things like noise, air quality, heat, and cumulative effects, are simply not really dealt with but are glossed over. Everything will be all right we are told. Baloney I say!!

I am certain that I could provide further comments on other aspects of the expressway assessment documents and process. There are issues regarding the noise, heat and several other assessments that I have problems with. As well, there is nothing on fisheries and migratory birds and general habitat issues to respond to. Furthermore, I know that there are numerous other sources who are going to send their comments in. Also, I want to see how the region is going to receive and react to the comments that it will get.

So that's a kind of long-winded way of saying that I am finished for the moment. If I think of anything that really moves me, then I will take advantage of your agreement to accept late submissions, and tend to that in a couple of weeks.

Thank you for the opportunity to provide these comments and concerns.

Yours Truly,

Comments on RWDI Draft Air Quality Assessment for N/S RHCE (by Tom Muir)

Exec Summary:

1. The 1989 RWDI study also predicted NOx levels above provincial standards, not just PM.

2. One year of meteorological data is not adequate to account for reasonably expected annual variations, but no explanation or rationale for this selection period, or discussion of possible problems is offered. Location of met station does not adequately account for the topography, vegetation, cooler temperature, and so on, of the valley route over much of its length, and the effects of this on met conditions. The fact is the objective of the study, "to establish existing atmospheric conditions in the valley", has not been met!

3. There is no indication provided for where the traffic volumes data came from, and no supporting analysis.

4. The exceedances occur up to 200 meters from roadway and indicate that the roadway is a source. This exceedance distance is inconsistent with the statement that the levels of pollutants cannot be detected above background beyond the 200 meters.

5. Comparison with the Hwy 404 leaves out all the assumptions and comparative nature of the two roadways. The Red Hill valley is a unique place and geography, which is ignored in this comparison. Overall, there is insufficient data and information provided to make the comparisons that are made.

6. What is the cost of wet sweeping and flushing and will it be done?

Main Report

1. Generally, calling this report an air quality assessment, is a partial truth and misleading. Only a restricted number of pollutants were covered (CO, NOx, PM10, and TSP) , with major pollutants of concern left out. These include, PAH, benzene, ozone, VOCs, SOx, metals, and others, including photochemistry products like nitrated and sulphonated PAHs. If this study is to be a true air quality assessment, then these other substances need to be included.

2. Page 2. Putting the PM10 and TSP measurements into a 24 hour period will have the well known effect of averaging down the peaks or spikes that will be observed over the course of the day. This is particularly important to the peak traffic periods, which will disappear in the averaging. What is needed are 1-hour and 8-hour maximums. This is important because human exposures will take place predominantly during the day and during the peak traffic and pollutant

concentrations. Daytime exposures are also important because of photochemistry products which require sunlight.

3. Page 2-3. The meteorological terms descriptions makes it clear that the location of the met station is of premier importance, particularly in the case of the valley topography and effects on atmospheric stability, mixing height and dispersion of emissions. This means that the selection of the met station at Woodward avenue is highly suspect and will bias the results. None of this is discussed in the report. What is needed is a critical review of the problems inherent in choosing a met station outside of the entire valley.

4. Page 4. The guidelines offered for comparison purposes does not include those from other jurisdictions and others that are proposed, especially for the PM2.5. It would be useful to have coverage of these and the emerging issues involved.

5. Page 5. The report states that no long-term air quality or meteorological measurements have been carried out in the area. This is important because one of the conditions of the 1985 EA approval was that just such measurements be made prior to, during, and after construction. The Region started work in 1988-89 before work was stopped, and then restarted again in 1995, and yet there are still no air quality data. So why is there still no data till almost 1998, and what exists is not long-term? Also, why is there no data measuring the impacts of the Linc on air quality?

As well, the met data from Woodward Ave, are, as indicated above, not reflective of the valley environment, and one year of data is not reflective of possible variation, including a future featured by global warming. Needed are further analyses to elaborate these concerns and answers are needed to the questions raised here, as this appears to be in direct contravention of the 1985 approval conditions.

6. Page 6. It would be interesting to know the duration of the maximums and the means.

7. Page 7. There are no measurements of the CO in the valley itself. This needs to be done. By its nature, the valley would be expected to be lower in all these substances concentrations, and so the measurements given as ambient will be biased as measurements of valley concentrations. The present measurements do not conform with the study objectives 1 and 2 on page 1, to establish existing atmospheric conditions in the valley and to assess impacts on local air quality, which is presumably the area local to the valley. All these concerns need to be addressed with real analysis and data.

8. Page 7. NO2 is also a reactive free radical which will directly attack tissues, and this is not mentioned.

9. Page 8. Again, there are no measurements of ambient NO or NOx that are relevant to the valley location. This results in the same bias mentioned in 7 above. Real data on the valley location are needed.

10. Page 8. In tables 3 and 4 there are no error bars or standard deviations on the data presented, therefore any trends are not statistically discernible. Needed here is the ranges or variance of the data measurements presented.

11. Page 9-10. There is no mention or discussion of emerging PM10 and PM2.5 concerns as can be seen in the scientific and regulatory literature. As well, there is no mention of other standards or criteria from elsewhere or under consideration or recommended. Needed here is coverage of these concerns.

12. Page 10. There should be data reported on daytime or peak traffic use, 8-hour levels of PM10 and TSP, since daytime exposures are most important.

Why is it that the PM10 frequencies of occurrence greater than the 24-hour criteria cannot be quantified? This needs to be explained and rectified.

There is no evidence presented to support the claim that the 24-hour PM10 exceedances of the criteria are due to industry rather than transportation. There is evidence that the transportation and industry sources can be differentiated analytically. Looking at the PAH on the TSP or PM10, and seeing if it is PAH associated with industry, or a S-PAH (thioarene, or s-arene) that is associated with transportation, can answer this question. As it is, the statement made is insupportable.

On the other hand, the locations of the monitoring stations are far removed from the Red Hill valley, so these data are biased and not representative of the valley location. To interpret these data as reflective of the valley, as this report appears to do since the locations and possible biases and errors are not noted, is objectionable. Again, data for the valley location is needed, so that we get an accurate picture of existing conditions in and near the valley.

13. Page 12. Once again, needed is a measure of the 8-hour maximums for the daylight hours in particular. This is especially needed for the PM risk assessment, carried out by CANTOX, which used the 24-hour maximum to characterise exposures that were all during the daytime, and particularly, the working hours of the day. The 24-hour maximums involve an averaging that

results in reducing the level identified as ambient, compared to realistic exposures which involve the daytime 8 hours.

This is important, because you can see from Table 6a that the 1-hour maximum is very high, the 24-hour maximum much lower, but still above the AAQC, and one can predict that the 8-hour maximums will be somewhere in between, and significantly higher than the 24-hour maximums. This implies that the 8-hour maximums would entail a much higher exposure for real life situations. This needs to be rectified and 8-hour data provided so as to be realistic.

14. Page 13. What is the variance or range of the PM10/TSP ratio? How does it compare to other reference sources?

15. Page 13/14. It is stated that several VOCs were consistently detected, but at low levels. What does low levels mean? It appears that this value judgement may be misleading to readers. There should be some discussion as to how these compounds and levels compare with lists of air toxics of concern and what the various agencies, such as MOEE, DOE, or U.S. EPA, have as programs and targets for reductions.

A better explanation of what the chemicals are and their toxicology is needed here. It is not sufficient to just say low levels and leave it at that.

16. Similarly, what does low levels of PAH mean? What about the 8-hour maximum value? Also, what about the nitrated and sulphonated PAH, and any other critical pollutant PAH? As well, how do these levels compare with other locations.

17. Page 14-16. How relevant are the monitoring station locations noted in the data tables, to the Red Hill valley location? This needs to be well discussed and rationalised.

Also, PAH look like a problem, but again there is no measure of source identification re transportation.

18. Page 17. Table 9 only reflects winter data. For some pollutants, the summer is the problem period. Summer data are needed! As well, there is no PAH or TSP in the table, which needs rectifying.

19. Page 18, top. The measurement procedure for wind speed readings is problematic. It says that there were a high number of calm wind readings at 10m, so readings were taken at 30m and "adjusted" to the 10m height. There is absolutely no explanation of how this adjustment was made, what it is based on,

how it is rationalised, and how it can be seen as an accurate representation of actual conditions at 10m?.

Moreover, this adjustment does not seem valid. If the wind is calm at 10m how can an adjustment of the reading at 30m be a realistic representation of 10m, if the actual 10m reading is not acceptable because it is too calm? This appears bogus on the face of it. For example, para 3.2.2 indicates that calm occurs only 2 per cent of the time, and yet the top para, as noted, indicates a high number of calm readings at the appropriate 10m height! What is the error and uncertainty introduced here?

The expressway will not be 30m in the air. If calm readings are high in number at 10m, which is still above the roadway height, then that is the way things are. How can you justify moving the measurement up to 30m? This is a real big problem!!

This adjustment biases the dispersion and atmospheric stability determination by increasing both relative to the true wind speed reading at 10m. I see a big problem here that is just glibly glossed over. Needed is a complete explanation of the adjustment process and all the possible errors and other limitations introduced by it.

20. Page 19. The bias introduced to wind speed, as noted above, is then glibly used to calculate atmospheric stability, but with no mention of substituting the 30m adjusted for the 10m. This implies that the atmospheric stability is also biased and uncertain by an unknown and unacknowledged amount. None of these concerns is noted!

21. Page 20/21.There is a reduction in the number of pollutants modelled, with no explanation or critical assessment. This is needed. What about PAH, and benzene and SOx, and metals to say the least.

This is another example of the progressive narrowing down of the scope of the air quality assessment.

22. Page 21, Table 10. In general, the assumptions in this table are liberal, not conservative (worst case) as the overall report claims the modelled results are. The following comments are several and relate to pages 20-22 and Table 10.

The emissions modelled in Table 10 are for the winter, however, what about impacts on environment and health in the summer due to heat and sun, smog formation, and general photochemistry kinetics?

In Table 10, the operating year is set at 2010, however, the project rationale and planning horizon is 2021. This creates a consistency problem, and likely biases downward the air quality impacts of the project as it is rationalised by assumptions about traffic volumes in 2021, and especially given that traffic is expected to grow beyond 2010. Specifically, the report indicates that 2010 is the period when the expressway will reach the vehicle design capacity (this is only 8 years after the planned completion of the expressway in 2002), implying that traffic growth after that will be beyond the design capacity.

However, this conflicts with the 2021 horizon used in the RWDI report, Vehicle Air Emissions Inventory, dated June 22, 1998, which also uses free-flow traffic assumptions for that period in the analysis reported on. Free-flow traffic requires that design capacity not be exceeded, implying no congestion. It is ridiculous to assume no congestion (free flow), as the reality on the Ontario road system involved in this report is gridlock - what roads in this area are not congested at rush hour, and really most daytime hours for that matter?

This 2021 assumption, and free-flow traffic assumption, in the "Inventory" report are evidently in conflict with the Air Quality Assessment report assumption that capacity is reached in 2010.

These clear conflicts also bear on the Region's claims in the Impact Assessment and Design Process, Draft Summary Report, Vol. 2, that the expressway will, "... decrease vehicle emissions in the Region by 3 to 16%." This is an outrageous and false claim, based on selected assumptions which are not or only partially reported, and is not supported by the evidence, as in fact, the evidence contradicts this claim.

In fact, the so-called "decreases" are not absolute decreases from the present situation regarding (selected) emissions, but represent emissions higher than today, and which are "decreases" only in relative terms, relative to another higher emission scenario modelled for 2021. Moreover, these scenarios are modelled only for cars, and for CO, NOx, and hydrocarbons, and are the product of a whole bunch of assumptions, including free-flow traffic, and the implementation of a number of road improvements (not just the expressway) which are never provided in detail.

Furthermore, there is no data or analysis provided to support the traffic projections. The only reference is the Region and they don't appear to have any substantive analysis either. Instead, the RWDI report merely states that the data were provided by the Region, as "givens", with no report reference.

The vehicle speeds for the expressway are not realistic compared to actual speeds driven on the highways directly connected to the proposed roadway. That is, the normal speed driven on the QEW and the 403 is far in

excess of the posted 100km/hr, with 120 km/hr being closer to the reality out there. This situation is essentially public knowledge.

The higher actual speeds, as more representative of reality, should be modelled. The "Inventory", and other reports indicate that NOx emissions per mile, at least, are elevated at speeds above 90 km/hr.

In table 10, what is the rationale for the vehicle mix? There is no apparent distinction between ordinary cars, and the emerging dominance in the fleet mix and new vehicle sales of the large sport utility vehicles. These vehicles have recently come to represent about 50% of new sales, and have substantially higher emissions per mile or km (50 to 75% higher?). Since the report models go far out into the future, the importance of these emerging trends, that the report ignores, is likely to increase.

It also appears that the heavy truck proportion is also lower than it is in reality, and this is likely to become more important if truck traffic increases as expected with liberalised trade. This is big problem here, as it once again consists of assumptions that bias the emissions and air quality impacts downwards.

All this needs a careful critical review and new model runs are needed to illustrate the impact of changing these assumptions to conform more with reality.

23. Page 22, Table 12. The emission rates shown in this table appear to be the same for all classes of vehicles. Is this correct, or is there some unstated rationale for this?

It seems ridiculous to assume that all classes of vehicles have the same emission rates per mile/km. We know that ordinary cars and sport utility vehicles are much different. We also know that heavy diesel trucks emit more heavily per mile/km than cars.

This issue needs explanation and a rationale for the assumption. Once again, it seems the assumptions are biased towards lower emissions and less impact on air quality. This is partly due to the use of averages (again unexplained and unsupported), and partly due to choice of assumptions.

24. Page 22, bottom. Where is the underlying rationale for the free flow traffic conditions in the expressway case, and also the idling conditions assumptions? Related to this, where is the analysis underlying the time distribution of traffic volume, and its rationale?

25. Page 23, Table 13. This table contains only the lowest expected ambient level for PM10 (annual average) and by and large the second lowest

levels for CO and NOx (99th percentile). What about the 1 hour, 8 hour, and 24 hour levels?

Since, at the present time, there is no roadway in the valley, then the emissions resulting from completion of the expressway will be added to whatever the ambient levels are for any interval (1-, 8-, 24-hr.) at the time of day and season of choice. Therefore, the rush hour peak interval of emissions will be added to whatever the real time ambient level is at that same time, and not to some assumed background level chosen arbitrarily to be the average annual value or the 99th percentile annual value.

This assumption about what constitutes the ambient or background air quality levels of contaminants is another bias that has the effect of lowering the model predicted concentrations of the contaminants to essentially the lowest, or near lowest, levels that can possibly be derived from the monitoring data. Each averaging period, from 1 hr. to 8 hr. to 24hr. to annual, has the effect of lowering the maximum concentration that will be calculated from the observations.

That is, the 1-hr averaging period can and will reflect the peak hour, or daily maximum hour (not the instantaneous maximum), but the 8 hour averaging period will combine the 1-hr maximum with other values that are less than the peak, thus resulting in a lower average 8-hr. maximum. Similarly, the 24 hour averaging period will combine the very lowest overnight periods with the highest peaks, such that the peak hour or hours of the day will be smoothed down to invisibility by the averaging and be hidden by the 24 hr. maximum statistic. The annual averaging just takes this smoothing and hiding process one step further. This smoothing and reducing process can be seen in virtually all of the Tables 2 to 9.

There is also the concern about how accurate the station at Elgin/Kelly reflects conditions in the Red Hill valley and the use of this station to calculate the ambient or background to be used in the modelling, taking also into account the concerns raised immediately above. For example, Table 9 indicates that the PM10 1hr and 24-hr maximums for the valley monitoring station at King St. And Mount Albion road were 186ug/m and 53ug/m respectively. Unfortunately, these data only reflect the period December 19, 1997 to February 28, 1998, but on page 17-top, are stated to be reflective of readings taken at comparable urban sites in the region, however, no explanation of what this means in concrete terms is given.

Largely because the expressway will add a roadway source that is not already in the valley, it will add a new source, it can be argued that the modelled 1-hr. and 24-hr. concentrations should be added to the 1-hr and 24 hr readings of ambient air quality results for the valley location listed in Table 9. There is no argument or evidence given to support using the average annual, or 99th

percentile average values from another location as the background ambient levels.

The point being that if the modelled results as reported are to stand-up as "worst case" or "conservative", then the fact that the new traffic generated emissions in the worst 1-hour and worst 24-hour periods, will be added to the already existing 1-hour and 24-hour maximums observed and reported in Table 9.

The fact that table 9 draws on a limited time period may present a problem, however, the valley location should have been monitored for a lengthy period a long time ago and the fact that it wasn't reflects on the region's compliance with the 1985 approval order, and the integrity of the process. The lack of data means that joint probability distributions for the modelled results and the 1 and 24-hr maximums observed cannot be calculated using the required full year of data. If it could be, then an alternative frequency of occurrence of modelled plus ambient at or above the air quality standards could be calculated.

It remains in the realm of possibility that the use of actual 1, 8, and 24-hr ambients for all contaminants measured in the actual valley location would increase the modelled concentrations and the percent of time that standards are exceeded. The point here being that it is the transient maximums or spikes, that have the most potential for damaging impacts because they occur during the daytime, and perhaps especially in summer to account for photochemistry effects, and to account for more people being out and subject to exposure.

In any case, the use of the Elgin/Kelly data needs a careful explanation and rationale, as regards what really constitutes an appropriate and scientifically defensible background.

This whole issue raised here needs a thorough and systematic explanation from the region and the consultants.

26. Page 24, top para. Once again we see an assumption creeping in with no explanation of consequences. This pertains to the decision to reduce the met data to one year and to pick that year with the fewest calms and highest frequency of E and F stability classes (most stable, but generally at night). One reason given is that the model doesn't handle wind speeds below 1 m/s. This resonates with the earlier assumptions, and comment above, about using the 30m height at the met station because the 10m level had too many calm periods, and so the 30m data was "adjusted" to 10m.

What is going on here? These assumptions seem to mean the modelling is using insufficient and biased statistics, which is a classic logical fallacy. This

whole set of assumptions needs to be carefully explained and analysed to show what the implications are.

27. Page 24, para 2. What is the data source and rationale for the traffic volume data used in the model, but provided by the region? Also, what information was not available and therefore defaults were used, and what were the defaults and what were they based on?

28. Page 24. The study scenario (section 4.3, para 1) is not rationalised and is misleading. The para. 1 states that it is a "reasonable worst case", but this needs to be drawn out point to point in detail, with all the assumptions and givens noted and explained.

It also asserts that "... high background pollution levels added to predicted concentrations coupled with coincident vehicle movements." However, this is driven by assumptions and givens with no rationale or data provided to justify the claim.

Also, as discussed above, table 13 is not the highest background levels of contaminants, but the second lowest (99th percentile) for CO (the model runs for CO (p. 23) were 1-hr and 8-hr running average, not the 99th percentile); second lowest for NOx (model runs for Nox were 1-hr and average, not 99th percentile); and the lowest for PM10 (Table 6(a)) and almost tie for lowest in Table 6(b) (model runs for PM10 were 24-hr and annual block averaged, not average annual).

The upshot is the report seems to be adding apples and oranges, and this appears deceptive. As noted above, since there is no road in the valley at present, what constitutes the "background" depends on the time period that is being measured. Whatever the time period considered, at that time it is the "background", to which the expressway related emissions will be added.

It can be argued that the analysis should add all the same averaging periods. That is, for CO you would add the 1-hr or 8-hr plus the model; for NOx it is 1-hr or average (and should do 8-hr and 24-hr ambient) plus model; and for PM10 should be 1-hr and 24-hr ambients (and 8-hr) plus the model.

Again, the point being that a rationale and explanation of implications is needed for the use of the lower annual or 99th percentile averages rather than the same period (1, 8, 24-hr maxs) ambients. I think that using the annual values avoids the calculation of the joint probability of occurrence of maximum levels of the various short (intraday) periods (that is "background" plus expressway) that are of toxicological concern, reduces the frequency of occurrence of air quality standard exceedences, and conceals whether the exceedances that do occur are bunched together in time at a critical period. It is

easy to predict that adding like averaging periods at the intraday level will produce some big concentration spikes at certain times.

29. Page 24/25, Study Scenario. Further arguments can be made that this is not the "worst case" really, environmentally or toxicologically.

- citing CO and NOx for January, while perhaps involving higher emission factors (which is not explained in details) , does not account for the fact that in January there is no smog or ozone to speak of, and photochemistry is not as strong.

- the Pm rush hour is consistent with max 1-hr CO and Nox, but then why wouldn't it be?

- not allowing for gravitational settling or fallout should be explained, however, this would be negligible for gas phase pollutants, however, the smaller particles are likely to float or have a long atmospheric residency time, whereas the larger, heavier particles are likely to settle out faster. What does this mean needs a good explanation.

- the use of 1 year of met data from 1993, with adjustments made for calmness (as noted above twice), does not seem representative of reality. What was 1993 like compared to 1998? What about global warming, which should surely be of note in a study purporting to predict almost 25 years in the future? It is also inaccurate to say that "actual" hourly met measurements were used in model runs. In fact, a specifically chosen year -1993 -, with arbitrary and unexplained adjustments made at least two levels, is what is used, and this is not the actualise.

- as noted above, the so-called background ambient levels are biased low compared to other period ambients and modelled data, as well as real concerns about peaks that will be experienced in the real world as opposed to the "averaged" world. There is also the repeated question about the relevance of the Elgin/Kelly station.

These scenario specs and the scenario itself is in need of close scrutiny as regards the implications of the assumptions, givens, and these critical comments. Generally, the scenario implies that there will be no change in anything in the model in the future.

30. Page 25. The annual average daily traffic is just assumptions and givens, with no data, and no supporting evidence or rationale provided. This is subject to a great many things that can change the data. Also, the hour of day distribution will not be the same for weekends as weekdays, as assumed, but no implications or explanation is provided for this assumption.

31. Page 26. The omission of ozone and SO2 from the analysis is glibly brushed aside with questionable comments as unimportant. Ozone is a big problem and a health concern, is related to NOx and smog, yet is not

considered. The possibility of additive, synergistic, or at least cumulative effects with other pollutants is not recognised.

The omission of SO2 is explained away as a minor issue, which flies in the face of a major policy decision facing Canada and the U.S. regarding sulphur in gasoline, which is perceived to be a significant air quality and health concern. Here we are having ozone alerts in the summer, but it not important enough to account for.

Overall, these omissions and their glib explanation lack credibility, which extends to the overall report results. The assertions regarding S and O3 are contentious and misleading, with no evidence offered in support. The issue of O3 is avoided by saying that it is not related to local vehicle emissions, but to long range transport. This is at best a partial truth. It suggests that the expressway will not contribute to the O3 problem, which is simply untrue. It also implies the expressway will never have an influence on ozone levels near the valley and in the larger surrounding area. At bottom, the best explanation for the omission is the statement that it was outside the scope of the project (page 26, para. 1, last sentence).

32. Page 26, Sect. 5.1 and on. As discussed in several of the above comments, there is a problem here of adding apples and oranges. If you want to get the maximum 1, 8, or 24-hr overall air quality concentrations due to the construction of an expressway that is not there at present, then you need to add together the like averaging periods. That is, add the maximum 1, 8, or 24-hr ambients or background, to the maximum 1, 8, or 24-hr modelled concentrations due to the expressway.

For example for CO from Table 2, the max. 1 hr.= 9ppm; the max. 8 hr. = 4ppm; and the 99th percentile = 2.7 or 2.5 from Table 13. The highest modelled (plus report selected 99th percentile as background) prediction = 5.7ppm. If you add the difference between the 99th percentile and the 1, and 8-hr maximums (6.5 ppm, and 1.5 ppm) you get maximum concentrations for those periods of 12.2 ppm and 7.2 ppm respectively. These compare to the 8 hr. AAQC = 13ppm and the 1 hr. AAQC = 30ppm.

The NOx are similarly lowered and the same calculations as above, using Tables 4 and 13, can be done. In this case, from Table 4 for 1993, the max. 1-hr = 0.49 ppm, and the max. 8-hr = 0.2 ppm, and from Table 13 the 99th percentile is 0.184 ppm. Thus, the predicted max. 1-hr concentration should equal 1.0 ppm (the max. 1-hr ambient from Table 4 which is 0.49, minus the 99th percentile from Table 13 or 0.184, which equals 0.31, and is then added to the reported max. predicted 1-hr of 0.69). Although there is no AAQC for Nox, the difference noted here is still substantial at almost 50% higher in the combination of the same averaging periods.

33. Page 27. The Ozone Limiting Method is hardly described at all in terms of assumptions and limitations.

Further, this calculation once again uses the 99th percentile calculation for background NO2, although this uses ozone and an unexplained methodology as above. The relationship between this calculation and the method of the other calculations should be provided so that we can follow the argument and check the data results. For example, how do the numbers in Table 3 compare with calculations of these same numbers using the OLM? This should be done to provide a measure of verification of the accuracy of the OLM.

If the OLM computed numbers are similar to those in Table 3, which they should be or they are not credible, then a similar calculation to those in comment 32 above can be done. Although the 99th percentile appears to be the same as the max. 24-hr from Table 3 for 1993 (0.06 ppm), it is lower than the corresponding max. 1-hr concentration of 0.10 ppm, for a difference of 0.4 ppm. Therefore, using this difference the max. 1-hr concentration would be the max. 1-hr of 0.15 ppm cited in the report, plus the 0.4 calculated in the previous sentence, equals 0.19, which is essentially right at the AAQC of 0.20 ppm.

34. Page 29, PM10 section. These predicted concentrations need to be recalculated using the same approach as above. The average 1994/95 max. 24-hr PM10 concentrations from Table 6a, is 142 ug/m3. The difference between this and the background of 27.5 ug/m3 used in the report is 114.6 ug/m3. Thus the recalculated max. 24-hr concentrations are all higher by this amount, and the new predicted max. 24-hr concentration is the report calculated 249ug/m3, plus 114.6 ug/m3, equals 363.6 ug/m3. This is more than 7 times the interim AAQC of 50ug/m3.

It is also possible to do a similar calculation for the ambient PM10 data in Table 6b, which happen to be somewhat lower than those in Table 6a (same station mean for 1992 to 1995 is 93 ug/m3).

Also, the background level of 27.5 ug/m3 used in the report is less than the valley location max. 24-hr monitoring level of 53.1 ug/m3, and the 1-hr max. of 186 ug/m3 from Table 9, involving differences of 25.6 and 158.5 ug/m3 respectively Thus, for the 24-hr max. concentration, adding the difference of 25.6 means that the highest predicted PM10 concentration is now 249 plus 25.6 equals 274.6 ug/m3. Another main point here is that even given the limited sampling basis for the valley location, the existing, no expressway concentration is already in excess of the 24-hr interim AAQC.

35. Page 30. There is a big problem here with the first sentence in para. 2 regarding the likelihood of peak traffic volumes coinciding with stable

atmospheric conditions. Given the assumptions and methodological manipulations of the stable or calm air conditions of the real world, as commented on several times above, how can one make such a statement? It completely ignores that calm air was basically adjusted out of the model.

First, when the 10m height on the met station presented "too much" calm air, so it was moved to 30m and then adjusted to 10m, with no explanation of methods or implications, and second when the met data was reduced to one year,1993, selected because the model used could not handle wind speeds less that 1m/s. So given all this manipulation, there is no basis on which to make the statement made as noted above. This clearly tends to bias the exceedance problem downwards!

This really smells like something bad!!!

36. Page 30. There needs to be an detailed explanation of how the 13% of the time for exceedances was derived, and the implications.

Is this annually averaged? How do the calculation suggested in the above comments concerning the proper measure of the background affect this result? In general, how sensitive is this calculation to model assumptions?

Is the 13% evenly distributed over the year or is it concentrated at a particular time of the year. Does it occur in winter or summer?

37. Page 30. The use of the Hwy 404 comparison does not take into account the unique characteristics of the Hamilton and Red Hill valley locations and their relation to the Hwy 404 location. There are also a lot of assumptions and other factors that are not discussed in the report.

38. Page 32. It is interesting that everything within 200 meters of the roadway will be exposed to PM10 above the interim AAQC of 50 ug/m3, and that the decline below that standard is very flat indeed. This is different than saying that the expressway has no impact beyond 200m.

39. Page 36 The discussion on the fact that road grade was not considered appears as a muddled mess and a poorly considered afterthought that appears to recognise there is a big bias and underestimation of emissions introduced by this omission of grade, but then doesn't follow through. With the examples given of emission increase factors for cars of 3-fold for hydrocarbons (HC) and 11 fold for CO, how then can the report authors continue to refer to the results as "conservative"?

Moreover, the increases in HC and CO are clear indicators of incomplete combustion, which will naturally lead to increased emissions of the products of

incomplete combustion (PICs), including PAH, TSP. PM10, and so on. Further, the emissions of trucks (just observe their exhaust stacks) and other heavy vehicles are also increased by grades, but this is not even mentioned.

There is clearly a big problem here and another bias downwards introduced by not considering grade. You cannot simply dismiss it by saying that the upgrade increases in emissions are cancelled by the downgrade. There is not even one smidgen of evidence offered in support of this claim.

This question of grade is critical and needs to be analysed and accounted for.

40. Page 37 and 38. It is significant that there is some admission in the report that the expressway will be a health hazard, and that there should be restrictions in the use of the valley. That's just great! Will the region assume the liability for the health impacts?

41. Page 39. There is a mention here on the need for monitoring VOCs and PAHs after construction. However, we already know and can measure what PAH species come off the QEW from transportation sources and we can measure the PAH now, so why wasn't it measured, or why don't we, and why wasn't it modelled?

There is no excuse for this omission. PAHs are dangerous carcinogens and have been monitored in herring gulls resident in Hamilton Harbour, and implicated in heritable mutations in that species. The route of exposure is considered to be through breathing!

Also, PM10 and TSP contain PAHs, metals, organics, pollen, and other pollutants, but no effort was made to explain any of this hazard. More generally, there are a large number of compounds of PAH and VOC, and many are known carcinogens and mutagens, but all were ignored by this study.

42. General residual comments.

The consideration of the concentrations and impacts around school zones needs to be done explicitly.

Where there are no Ontario standards for certain contaminants, there are no references to standards in other jurisdictions (U.S. EPA, Europe) or from external agencies (WHO, ATSDR). These should be included where pertinent.

Prepared by:

Red Hill Expressway Project
Hamilton, Ont.

A. L. CLEMENS
657 BRIGHTON AVE.
HAMILTON, ONT., L8H 6H3

Mr. John Vander Mark

Dear Sir: Re Red Hill Creek Expressway.

Having travelled Mount Albion Rd on several occassions, at various times of day, I can easily see why some people become frustrated, mainly between Green Hill and King Sts., only because there is no passing lane, when busses are stopped or some one is making a left hand turn. I agree we need a correction to this problem, but possibly three lane road would suffice. This would preserve a great environmental woodland, hiking and play area.

As far as major transports are concerned I seem the most of whom would use it would be those who cross our province from Michigan to New York States.

I feel certain the future Line will be re-extended to Fruitland Rd. or beyond in a lesser built-up area to take care of the above problem.

Yours sincerely
Andy Clemens

P.S. This letter is also sent to
Aldermen Dave Wilson and Mrs Geraldine Copps.

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DATE SENT Oct. 19 /98 NO. OF PAGES (INCL. COVER) 3

FAX TO:

NAME: Ms Pam Hubbard FAX # (905) 546 - 2385

ADDRESS: Regional Special Projects Office
(Company/Institution) (City) (Country)

FROM: Brian McCarry OFFICE: ABB 156 EXTENSION 24492

SUPERVISOR

Please give a copy of this to Chris Murray

MESSAGE:

Pam:

Enclosed are - some comments on the consulting reports re Redhill Creek Expressway.

I sent them to an email address I have for you but the message bounced back.

The email address I have for you is:

CORP/REGION/phubbard@regionenv.hamilton.ca

should "regionenv" be "region.env."? Send me your email address to "mccarry@mcmaster.ca".

Brian

October 17, 1998

Comments and Observations on the Consulting Reports on the Redhill Creek Expressway

Brian E. McCarry, Ph.D.

My comments and views are directed more to what is **not** in the reports by RWDI and CanTox than to what is contained in these reports. Other comments on the consultant's reports have been submitted by various individuals and groups, including David Pengelly and Tom Muir. Tom Muir's evaluation of these reports provides a detailed section by section review and criticism while David Pengelly focussed primarily on health effects issues. I will try not to repeat comments made in these submissions.

The fundamental issue at the heart of both of these reports is the impact of the key underlying assumptions on the final modelling results. From these reports it appears that both RWDI and CanTox were given specific ground rules by the Region concerning starting assumptions for their consulting reports; for example, assumptions related to traffic flow and the relative numbers of cars and trucks on the proposed expressway came from Regional staff. I could not discern from the reports how these numbers were arrived at or what data was used to justify these assumptions as reasonable. These assumptions are crucial to the whole exercise and have direct and critical impacts on the results of the modelling calculations and the health effects predictions.

RWDI was asked to do a single large scale modelling scenario based on traffic flow and traffic make-up data provided by the Region. Next, CanTox was retained to take the RWDI values and develop a risk assessment projection for people in and near the valley. The explanation in the CanTox report as to how they calculated their risk estimates is clear and well written.

Emissions from vehicles scale almost linearly with increased traffic volume. It is my understanding that traffic volumes on all major highways in Ontario are significantly higher than the levels predicted during the design phases of the highways; in some cases, a doubling of traffic flow over the design value has occurred in less than a decade. The traffic estimates in the report are very conservative and it is highly probable that these levels will be reached sooner than in the report's timeframe.

The gasoline-diesel vehicle mix is another issue that the reports did not discuss. Sadly, data on the mix of gasoline-powered vs. diesel-powered vehicles in the Region is non-existent. It is not clear to me what data the Regional staff used to arrive at the value for the percentage of trucks they provided to RWDI. The US EPA emission factors for heavy trucks are almost 10-fold higher than for an automobiles. Thus any increases in truck traffic result in disproportionately higher increases in emissions from highways and roads.

A recent conference in Windsor brought public attention to the issue that truck traffic is predicted to double in Southern Ontario over the next 5 years as a result of NAFTA and the increased use of trucks for just-in-time manufacturing deliveries. Furthermore, this conference discussed the nature of this increased truck traffic, particularly American trucks which drive the Detroit-Buffalo

route through Canada rather than along US highways. Construction of the Redhill Creek Expressway will provide a convenient and ideal shortcut for truck traffic on the Detroit-Buffalo route. Increased numbers of trucks will change the traffic mix on the expressway with concomitant increases in vehicle emissions and impacts above those predicted in the reports. These issues were not discussed in the reports.

The recent visit to Hamilton by Dr. Rick Burnett of Health Canada provided an opportunity hear his views on air pollution. Dr. Burnett's recent work has looked at the impacts of air pollution on increased mortality in 11 cities in Canada, including Hamilton. His research results show that the health effects impacts of gaseous pollutants such as ozone, nitrogen oxides, sulfur dioxide and carbon monoxide have been dramatically underestimated. Previously; the impact of these gases has been ignored by other research groups due to their focus on particulate material as the major factor in air quality health effects.

Burnett's estimates for the impacts of fine particulate material on humans are consistent with impacts reported by other researchers in the scientific literature. However, his estimates for the human health impacts of gaseous pollutants in Canadian cities is **three times greater** than the impact of particulates. These finding's mean that the number of deaths and the number of cardio-respiratory problems directly linked to exposures to air pollution is about three to four times greater than had been estimated previously. Burnett's findings are significant and important; unfortunately, they were published shortly after CanTox had prepared its report. The health effects impacts in the CanTox report are clearly rather low if you believe Dr. Burnett's recent data.

Even if the assumptions about vehicle traffic flows and the gasoline/diesel vehicle mix are correct, there are some significant issues that these reports do not address that are important in considering before deciding whether or not to construct this expressway. First, based on Burnett's recent findings, the health effects impacts of emissions from vehicles on the Rehill Creek Expressway will be significantly greater than estimates provided in the CanTox report. This is new science and does not reflect on the quality of CanTox's report. However, this new information is important and must be placed front and centre on the the discussion table. Second, projected increases in the total number of vehicles and the increased number of trucks over the next 5, 10 and 20 years have been addressed in a most conservative manner.

The future trends in emissions and health effects impacts are obvious. Increases in traffic flow will occur in a timeframe that is shorter than in the RWDI report if the experiences of other highways in Ontario is any predictor of the future. As traffic flow increases, congestion at peak times will lead to stop-and-go traffic, resulting in even greater levels of emissions. Stop-and-go traffic effects were not factored into the RWDI report. As the number of trucks increases, the emissions will go up dramatically. In light of these arguments and the new health data from Health Canada, it is my view that the projections in the reports underestimate by a significant margin the long-term trends in both vehicular emissions and their accompanying health effects impacts.

70.80.03.2

EXAMINATION OF REPORT:

Philips Planning and Engineering, *Ltd. Red Hill Creek Expressway (North-South section) and Q.E.W. Interchanges (Red Hill Creek Expressway and Burlington Street): Impact Assessment and Design Process Surface Water and Stormwater Quality Technical Report.* (July 1998)

In my opinion there are some major problems with this report if it is to be used as a predictor of stormwater and surface water characteristics and problems as a consequence of the construction of the Excpressway. These major problems are:

PROBLEM 1 **Unwarranted precision of predicted values.**

The numerical predictions appear to be very precise, being single values with no range of same. This is unwarranted and is even admitted in the text. To make things worse, references are quoted which give the rosiest picture from the point of view of the proponents of the Expressway. An example will illustrate this problem.

Table 6.9, page 63 *Summary of Sediment and Erosion Control Measure Performance Based on Storm Median Total Suspended Sediment Concentration*

Undisturbed	No control	Erosion control	Erosion and Sediment control	Post construction
25	4145	680	283	50

Source Schueler et al. 1990

The value in the No Control column is 4145/25= 165 times the Undisturbed mg/L. This is based on Schueler's estimate. Other sources quoted in the same report (page 39) give other estimates: Wolman, between 5 and several hundred fold increase; Vice, 10 times greater than for agricultural areas (which would not be applicable) and 200 times greater than preconstruction levels for grasslands. The value under the Erosion and Sediment control column is 283 mg/L, a 15 fold reduction from the No Control value; this is close to Schueler's value of 14 fold reduction and presumably is based on it. Both these estimates are based on Schueler's report only, which happens to give the lowest increases in sediment concentration as a result of highway construction.

On page 54, Philips admits that " The maximum pollutant removal efficiency of stormwater management practises ranges from 50-90% depending on the specific pollutant constituent and specific practise" It would seem from this that a 15 fold removal of sediment, which amounts to a 93.3% removal seems overly optimistic.

Schueler and associates were evidently hired by the Metropolitan Washington Council of Governments (see references page 3); the other authors quoted above are from the U.S.G.S or have published in Hydrol. Sci. Bull. (see references page 4), and would thus seem further removed from the subject they were reporting on.

In any event, Philips does not seem to me to be justified in making single figure predictions reflecting a relatively favourable scenario, as they have done.

This lack of a range of values of predictions is a major problem throughout the report, because it gives the impression that it is possible to make predictions more precisely than is justified.

PROBLEM 2 Unrealistic aim to meet mandate

On page 55 it states *"Water quality which presently does not meet the Provincial Water Quality Objectives shall not be degraded further and all practical measures shall be taken to upgrade the water quality to the Objectives"*

As quoted from page 54, pollutant removal is between 50 and 90%, so there are bound to be residual impacts in critical areas. Given that the predictions mentioned in Problem 1 may not be accurate, it will be difficult to know when PWQO will be exceeded. These two problems compound each other.

PROBLEM 3 Lack of consideration of important pollutants, their effects and measurement

The pollutants that are considered in the report are: BOD5, Copper, Coliforms, PAH, Total P, Total Suspended Solids and Zinc. There is no consideration of Nitrogen, as ammonia , nitrite or nitrate, no consideration of general toxicity and no discussion of the salt that would be used to de ice the highway.

There is no discussion of the anticipated increase in urbanization that would occur around the highway, particularly on the Mountain.

There is no consideration of the effects of the contents (salt, toxins) of runoff flooding the catchment areas on the flora and fauna in these catchment areas or of the accumulation of same on the habitat or the people using the area.

In Table 6.8, page 62 there is no provision for monitoring the effects of the highway, on the catchment areas, let alone on the surrounding habitat, as part of management. It seems that monitoring stops after the main effects of construction are over (page 63). Surely, monitoring and the evaluation that requires it is an integral part of any management process.

PROBLEM 4 Complete intransigence about going ahead, regardless of anything

On page 3 it states *"However nothing in this condition will interfere with* the issuance of the permit pursuant to S.28(3) of the Conservation Authorities Act or *the overall proceeding of the project in accordance with the decision of the Joint Board"* (italics are own emphasis). This attitude reflects an inability to admit that there are any basic flaws in the project regardless of what evidence may be uncovered. It should be recalled that the 1985 Joint Board decision was a split one in which the two voting in favour were not representing Environmental Authorities, while the dissenting vote was representing them. It should also be noted that the project has changed significantly since that decision was made: the channel of Red Hill Creek is to be changed and the last leg of the Expressway is to go through a different area than it was originally planned to.

There are also some specific disturbing points in the report:

1) There is no such thing as "100 ppm coliform (Provincial Standard)", page 8.

2) 5.04 x 10e15 faecal coliforms per 100ml (Table 5.13, page 38) is an absurdity, it would be impossible to fit that many bacteria into 100ml

3) There is a contradiction between Table 6.7 (33% removal of faecal coliforms) and Appendix E.2 Table (68% removal of the same bacteria)

4) The proposed use of the Greenhill Ave. site is disturbing, given that there is a problem with the holding tank at that site: the smell already indicates a problem and the constant discharge was measured in the winter of 1998 by the team of WATER and found to contain

very high levels of Total Coliforms and E.coli. (see page 46 of report). The fact that Site No 2 was even considered as a catchment is highly disturbing, as this is inside the Ottawa Street Landfill site, which is known to contain toxic leachate and to be a problem even without additional stress.

I have not made an exhaustive list of the objections that I feel need to be considered, but if the above are dealt with, the report will look quite different.

In my opinion this report is unacceptable in its present form.

George Sorger PhD
Professor of Biology
McMaster University

Review of the Region's Proposed Red Hill Creek Expressway with Respect to Impacts on Fish Habitat

By concerned biologists:

Cory Lewis
Shawn Staton
Tÿs Theÿsmeÿer
Dr. Joe Minor

With special thanks to Don Mclean and Brian McHattie for providing information towards the project

October 1998

Table of Contents

Statement of Purpose

Several specific components of the Red Hill Creek Expressway (RHCE) project, as proposed by the Regional Government of Hamilton-Wentworth, are expected to have negative impacts on the fishes of Red Hill Creek, and their habitats. This independent review will focus on these impacts, as well as identify information deficiencies in the Region's documentation. It has been determined by, and summarized within this review, that the RHCE project proposal as currently stated will be detrimental to Red Hill Creek's diversity and sustainability as a productive Lake Ontario tributary. Many of the impacts associated with the creek will also affect Windemere Basin and Hamilton Harbour.

In preparation for this review, it was necessary to acquire all possible, relevant information detailing the RHCE project, its predicted impacts, and the Region's mitigation options. This search, however exhaustive, was only successful in locating a minimum amount of information relating to fisheries impacts. Other fields of study such as "air quality", were afforded several documents, studies and summaries. It quickly became obvious that although Red Hill Creek (RHC) was a highly significant valley feature, little or no effort was expended on detailing the proposed alterations of this feature, in the form of reports. For the most part, this has left the public blind to the Region's intentions and has excluded any possibility for public input.

Within Volume 2 of the Draft Summary Report (DSR), three major changes to Red Hill Valley's surface hydrology are proposed. These features are intended to form the basis of the RHCE flood prevention plan, yet have been promoted as mitigation options to compensate for extensive habitat loss and water quality degradation, resulting from the Expressway and it's runoff.

The three main RHCE project components being dealt with in this review are the:

1. Five kilometers of creek re-alignment
2. Construction of 21 stormwater ponds
3. Re-defining of Red Hill Creek's floodplain

In addition to the three project component sections mentioned above, this review will also provide some background information on the historical character of Red Hill Creek. This portion will describe some of the more significant aspects of the RHC fish communities of the past, as well as set the stage for the next section which comments on the current and future potential of the fisheries community. Following this discussion, the importance of groundwater to the RHC fishery is explored and the impacts the RHCE project may have on this seemingly neglected aspect of fish habitat.

Another section has also been dedicated to documenting some of the Region's more recent activities that have had negative impacts on the fish and fish habitat of Red Hill Creek. These problems have resulted when local governments and agencies neglect responsibility, and operate without concern for our natural resources.

Historical Fisheries Community of Red Hill Creek

There is little or no documentation of Red Hill Creek's fish communities prior to 1967 (C. Portt and Assoc. 1997). This leaves much of the summary of past characterizations open to subjective interpretation. Based on background information on other Lake Ontario tributaries, several conditions may be accepted as typical in history for a system like Red Hill Creek, but again little proof is available to support any definite conclusions.

Many of Lake Ontario's larger streams once experienced significant spawning runs of Atlantic salmon. These streams are comparable in nature to Red Hill Creek, and therefore it seems almost certain that Red Hill was also utilized by this species each fall during the spawning run (Peace, 1998). The Atlantic salmon were known to enter Hamilton Harbour in huge numbers in the mid 1800's, however due to stream habitat destruction they were all but gone from Lake Ontario by 1900.

Also of importance from a historical fisheries perspective is the discovery of brook trout bones in the Glenn Meyer midden at King's Forest Park dating back to 1200 AD (Peace, 1998). This adds credit to the belief that Red Hill Creek was once a coldwater stream alive with native brook trout populations. Brook trout have typically been the species that guide stream management practices, when they are present. Because of their sensitivity to changing environmental conditions, they are considered an indicator species revealing stream quality through changes in population health. If indeed brook trout did once occur in Red Hill Creek, their loss is most likely indicative of the first major dramatic changes in the RHC watershed.

The atlantic salmon and brook trout's highly specific habitat requirements also sheds some light on historical conditions in the RHC watershed such as water temperature, forest cover, groundwater input, fluvial stability, and dissolved oxygen. These parameters are obviously much different in today's Red Hill Creek, and are a reflection of the rapid rate of urbanization and watershed hardening. The native salmonids have long since been lost while other species that don't require such cold water temperatures and are more tolerate of the creeks hydrological and geomorphological instability remain.

The creek remains an important component of the Hamilton Harbour ecosystem. It is in fact the second largest in the Hamilton Harbour watershed behind only Spencer's Cr. As Hamilton Harbour continues to recover under the Hamilton Harbour RAP, healthy tributary streams will be directly required for the perpetuation of such harbour species as walleye, various suckers, pike, muskellunge, trout perch, and numerous minnows.

Comments on Current and Future Potential of the Fisheries Community

Although C. Portt and Assoc. (1997) have summarized the contemporary fisheries data, further comment on specific issues warrant mentioning here. Firstly is the issue of salmonid spawners. C. Portt and Assoc. (1997) go to great lengths to disprove the assumption that the Chinook salmon smolts (actually parr) captured kilometers upstream in Red Hill Creek were naturally reproduced. They contend that the size of the captured individuals is suggestive of the larger stocked individuals released at the mouth of the Burlington ship canal several convoluted kilometers away. It should be noted here that recent surveys of other Lake Ontario tributaries by the MNR has shown natural reproduction by this species to be much more common than was previously thought. Chinook salmon are also the least demanding of the migratory salmonids as the young do not require year round cool stream temperatures since they smolt out of the creek prior to warm summer temperatures. Further evidence suggesting recruitment potential (but overlooked by C. Portt and Associates) was cited by Staton (1996) who reported *developing* rainbow trout eggs at the mouth of Davis Creek in mid May, weeks after the peak of the spawning run for this species. However, regardless of the origin of the young salmon, the fact remains that adult chinook salmon spawn in the creek and that parr of this species are present. It can thus be concluded that suitable fish habitat exists for both life stages of this species.

Chinook salmon, as well as rainbow trout and brown trout use Red Hill Creek as habitat at least on a seasonal basis. Since these fish are generally much less tolerant than the majority of Red Hill's resident species, there is no doubt that the entire fish community (and the quality of the watershed as a whole) would benefit from management that acknowledges their presence.

In particular, groundwater resources are of paramount importance in reducing stressful summer temperatures. The hydrology technical report, Terraqua Investigations Ltd. (1997), identified a 'major groundwater discharge zone' in the reach halfway between King Street and the escarpment. Further evidence of groundwater discharge in this area was reported by C. Portt and Assoc. (1997). They installed a temperature logger at the downstream end of Kings Forest Golf and Ski Park which recorded temperatures at 15 minute intervals from July 4 to December 13, 1996. Their findings indicated consistently lower temperatures in this area with "daily maxima typically between 19 and 22C" (with an overall maximum of 24.5C) for the hottest summer months of July and August. Thus, the stream temperatures moderated by this major groundwater discharge zone demonstrate excellent coldwater *potential* for the lower RHC watershed.

It is also worth noting that the section through the golf course immediately above this site has very little shading (Staton 1996) and is therefore susceptible to solar heating. Further reductions in stream temperature could therefore be expected in this reach (as well as immediately downstream) by enhancing riparian vegetation to increase shading. If this occurred, the possibility of re-establishing a coldwater fishery seems unquestionably plausible.

Thermal conditions reported by Stoneman and Jones (1996) in other Lake Ontario tributaries containing salmonids compares favorably with RHC. For example, in the lower Wilmot Creek with a maximum water temperature of 23.5C, a community that included brown trout and rainbow trout was

encountered. Surprisingly, even in the warmer waters of the lower Ganaraska River with a maximum water temperature of 28C, Stoneman and Jones (1996) still encountered a few rainbow trout. Since the overall maximum temperature was 24.5C for the reach of RHC in question, the thermal conditions are relatively close to those reported from the lower Wilmot Creek. As such, it would be realistic to suggest that even without riparian enhancement, the *existing* temperatures in this reach could support low numbers of salmonid species such as rainbow trout and possibly also brown trout.

Impacts of the RHCE project on Groundwater Discharge to the Creek

Unfortunately, it appears that the Region has not considered the effect of the RHCE project on groundwater discharge *from a fisheries perspective.* In fact, disruption to groundwater is not even mentioned in the DSR's Fisheries Impacts section. Instead groundwater is considered separately. In this section of the DSR, the impact of the RHCE is expected to cause a 30% reduction in recharge in the sensitive groundwater areas. Although "some enhancement is possible, overall there will be a net reduction in recharge". Incredibly, the Region concludes that "Overall, groundwater impacts are not considered significant" (DSR2).

In order to enhance recharge, the Region proposes to mitigate by designing storm water infiltration facilities (basins and trenches). But as pointed out in the DSR, this will impact groundwater quality by introducing contaminated recharge water likely high in sodium and chloride and possibly other pollutants. This is further verified by the hydrological report (Terraqua Investigations Ltd. 1997), which found that "... contaminant susceptibility is the greatest in the lower watershed where the permeable sands and gravels exist". It therefore seems likely that the stream water may receive increased loadings of sodium, chloride and other pollutants from groundwater inputs further degrading stream water quality and stressing the aquatic community.

Also overlooked, with regard to groundwater disruption, is the stream channel re-alignment. This new channel will also be constructed on a bed at a higher elevation then the creek now flows. By comparing the respective maps, it is apparent that the southern most portion of the channel re-alignment and associated flood plane creation will directly overlap the only 'major groundwater discharge zone' on the lower portion of RHC. The consequences of these substantial disruptions has not even been considered. However, in light of the above noted significance of the groundwater discharge in this reach, any changes could have serious consequences to the existing *and potential* fisheries resources throughout the remainder of the watershed. That being said, it is essential that the Region direct thorough study to this matter before proceeding with the detailed design.

Recent Impacts to Fish Habitat by the Regional Government

The attitude of local government towards any or all of Red Hill Creek's anthropogenic problems, has typically been *Laissez faire*. Attention is often only paid to problems, when the repercussions of neglect directly affect budget. Even then, actions only seem to be taken after intense public pressure forces them to make a decision in the best interest of the community.

Despite the fact that the Fisheries Act clearly states "no person shall carry on any work or undertaking that results in the harmful alteration, disruption or destruction of fish habitat (Section 35(2)) without authorization by the Department of Fisheries and Oceans", the City of Hamilton and the Regional Government of Hamilton-Wentworth consistently do physical damage to Red Hill Creek.

One such example that resurfaces often is the cleaning of culverts. On several occasions, large machinery has been driven through the creek bed in order to access the woody debris built up at the mouths of culverts. In some cases when access was restricted, earth has been back-filled into the creek in order to provide footing for the equipment. These activities occur regardless of season and often take place during the spring and fall fish migrations. The damages are perpetuated downstream, as sediments are carried away and deposited on spawning beds, and in pools used as staging areas for migrating fish.

The removal of the debris itself represents the destruction of fish habitat, and is often directly harmful to many fishes. In stream woody debris is one of the most important forms of stream fish habitat. The turbulence and pressure generated by woody debris when it falls in and restricts the stream channel results in the construction and maintenance of pool habitat. The debris also provides necessary cover for larger fish, protection from predators for all fish, and a food source for aquatic invertebrates that intern become fish food. During the removal of debris, smaller species, and the larval stages of larger ones, which frequently utilize the debris jams as cover can be crushed, and at the very least will have lost their habitat.

Another example of neglect relates to the construction of the King Street overpass in which a wide, smooth concrete channel was constructed. The concrete channel and culvert was identified by the Region's fisheries consultant, C. Portt and Assoc. (1997), as a barrier to fish migration and there have been no plans to correct the situation. The culvert also directs water at the existing stream bank, causing accelerated water velocity and interrupted sediment transport. As a result, during rain storm events, high velocity water was directed at the stream bank causing rapid erosion. Further downstream, excessive erosion caused the uncovering of a main sewer line exposing it to the risk of damage.

To remedy this problem the city undertook to create a new stream channel, protect the eroding bank with armor stone and rebury the sewer line. Even though the regional government was notified of the situation more than six months previous, the project did not finally get under way until the spring spawning run of white suckers, the most abundant large fish currently using the creek. During the channel repairs, no effort was taken to minimize impacts to the water quality of the creek or to the

spawning fish. One of the authors of this report was present at the site and witnessed large quantities of sediment dumped into the creek as earth was added. The creek was further muddied as the machinery drove through the fresh earth and the creek bottom, causing excessive sedimentation and smothering fish eggs from the construction site to the mouth of the creek. This was such a blatant violation of the Fisheries Act and done so openly that onlookers could hardly believe what they had witnessed.

This project did not, however, include alterations to the King Street culvert to correct the underlying hydrological problem. As a result, the new channel does not generally receive water under normal flow conditions. When it does receive water during a flood event, it accumulates sediment which will result in its eventual filling in. The creek also continues to erode away under the armor stone wall, and will eventually result in its collapse. Once this happens the city will be back in its original position of an eroding bank and an uncovered sewer line. This is typical of the band aid approach that the Region has taken and results in wasted tax dollars and the continual destruction of fish and fish habitat.

These are but a few recent examples of the disregard the regional government has shown towards the fish and fish habitat of RHC and also of their complete indifference towards the Fisheries Act (the Queenston channel would be yet another notorious example). This behaviour has created a widespread distrust towards the regional government by individuals concerned with the health of the aquatic community in general. As such, the Region's plan to 'fix the creek' during the proposed construction of the RHCE has been understandably met with much cynicism by those interested in the rehabilitation of the Red Hill Creek fishery.

Construction of 21 Stormwater Ponds

Description of Works

Recently revealed (in June 1998), the Region has added a total of 21 stormwater ponds to the design of the RHCE project. The reasons behind this are far more complex than are superficially obvious. These retention areas will serve a multi-fold purpose, and impart both positive and negative impacts on various resources, including Red Hill Creek.

Firstly, it should be stated that in all instances, both the function and effectiveness of stormwater ponds are directly related to several variables including pond size, location (proximity to water sources), percent of Expressway water collected and retention time. To date, none of these factors have been quantified, and released to the public. The Region claims that these ponds will improve water quality, create wildlife habitat, and buffer flooding. These goals may be viewed as optimistic at best.

There is little information available as to how the contaminated water will be collected from the Expressway, or diverted from local developments to the stormwater ponds. Of primary concern is the ability of the system to successfully collect all of the water for storage/treatment, and the consequences to Red Hill Creek should the system fail.

Proposal Concerns

A recent study by Marsalek et al. (1997) characterized stormwater runoff from the Skyway Bridge in Burlington, Ontario. They found that mean concentrations of Zn, Cu, and Pb in runoff sediment was high and indicated that according to the OMEE guidelines for sediment quality, this sediment was "grossly polluted". Marsalek et al. (1997) also concluded that "the runoff chemistry indicates that uncontrolled discharges of highway runoff could significantly impact receiving water quality". Considering the severity of these findings from the QEW and the fact that stormwater runoff from the RHCE will essentially be the same, it is imperative that there be no possibility of untreated stormwater runoff entering RHC.

In order to prevent this, the ponds themselves are being constructed to catch and treat Expressway runoff. It is also stated in the DSR that runoff from some existing developments will also be diverted into the valley for treatment in these ponds, but does not indicate what quantity this will be. By doing this, the Region feels comfortable saying that water quality will be improved in Red Hill Creek, however it is only logical to assume that even if every single contaminant was prevented from migrating from the expressway to the creek, that water quality would *remain the same*. The ponds will have no impact on the contamination currently entering the creek from sources such as leaking landfills and CSO's for example.

In reality, stormwater ponds remove only a fraction of the stormwater's contaminant load, and lock it up in the sediments that eventually need to be removed and disposed of in a hazardous wastes landfill. What would the expected maintenance schedule be on such ponds and what guarantees would there be

259(a)

that the Region stick to it? Also have the costs of such maintenance been investigated?

After a period of time, the water is *discharged* back into RHC (DSR, 1998). It is unclear what is meant by the word "discharged" in this situation as no information has been provided as to how these ponds will be maintained, or remain effective, in the event of large, closely timed rain events. In any case, the discharging of stormwater into RHC that normally would have been taken up by the trees or absorbed by the soils further compounds the already existing problems of excessive creek flows. Consequently these ponds may actually increase the volume of water to the creek, translating into increased erosion and flooding.

Based on what is known about the volumes of water entering Red Hill Valley, it is not likely that the stormwater ponds will have a significant positive influence on the risk of flooding within the valley. Any water retention value placed on the ponds will be offset by the increase in surface hardening directly related to the Expressway and it's promotion of new and rapid urban development above the Escarpment. A visual interpretation of the DSR maps shows that the ponds are of sizes insignificant to flood protection, and are often located in the middle of interchanges, thus limiting the storage capacity.

The Region also refers to these ponds as wetlands, and considers them to some degree to be compensation for habitat loss. According to the DSR maps, these stormwater ponds are mostly located immediately off the shoulder of the Expressway and therefore will serve little or no function as valuable habitat. Although properly designed, functioning stormwater ponds would be expected to help reduce the high levels of contamination created by expressway runoff, the overall impact to the RHC watershed and Hamilton Harbour will surely be a net increase in heavy metals and PAH's. Many other contaminants may percolate through to the ground water (see section on groundwater impacts) where they can migrate, or may also be taken up by the pond's plant community, and distributed through the food web.

Re-defining of Red Hill Creek's Floodplain

Description of Works

Little is known regarding the Region's plans for re-defining Red Hill Creek's floodplain. No effort has been made to estimate the total area of potentially flooded valley that would result from different size rainstorm events. It is clear however, that several extensive areas have been allotted for inundation by floodwaters, but nothing quantitative. Upstream of King Street there will be a substantial increase in floodplain area, while downstream there will be a substantial reduction.

Above King Street, channelization particularly within the golf course, and floodplain filling below the golf course has resulted in loss of much of the creeks original floodplain. It would appear that the proposal will attempt to recover some of this floodplain during channel reconstruction and further add to it, although the exact nature in which this will be down is not clear. It would also appear that flooding downstream of King Street will attempt to be mitigated through the construction of a berm just above King Street creating a 'stormwater detention area'. A similar such structure would also be placed near the mouth of Davis Creek. These berms would then apparently limit floodwaters entering the lower valley. This will apparently result in water ponding behind the berm in a reservoir fashion during large and intense rainfall events expected to occur once every 5-100 years.

Proposal Concerns

Floodplains themselves are natural watershed features, and offer a variety of benefits to watercourses and fish and wildlife. Red Hill Valley already has floodplains, with adapted plant communities, however these will be abandoned with the new creek re-alignment, and in most cases filled with expressway.

The natural channel design will supposedly allow for, and promote floodplain inundation, in an effort to reduce the velocity of the creek and slow erosion. This completely altered surface water regime will impact existing vegetation communities, both riparian and terrestrial, and displace most species that are dependent on the currently drier conditions.

The new floodplain will be fresh and "unwashed". This essentially means that it has never been subjected to a sheet of moving water before. The first rainstorm that floods these areas will likely remove enormous amounts of soil and debris and flush it back into the creek. The initial result will be a significant increase in creek and harbour sedimentation, and huge deposits of debris left at many downstream locations. These debris jams may retard the ability of the culverts to convey the water, and deflect impact to the banks.

Will the newly construction floodplain be designed to allow fish movement from the floodplain to the creek? During flood events fish move into the floodplain to avoid the high channel velocities. Will the newly designated large floodplain area (reservoir) above King Street be contoured to ensure that most fish will be able to find their way back to the channel as the floodwaters recede? If this is not the case,

large numbers of fish may be trapped and killed in this reservoir area. The problem of trapping fish in the floodplain is further enhanced by the rate at which floodwaters rise and fall within the RedHill Creek Floodplain. What is the anticipated flood cycle in the reservoir area?

What will be the life expectancy of the newly designated large floodplain area above King Street and on Davis Creek? Currently large quantities of sediment enter the creek during a rainstorm. As a consequence of the new stormwater detention areas acting like reservoirs, large quantities of sediment will be continuously deposited in this area during regular flooding events. Does the Region have predictions on the rate of in-filling of this area? Further to this what will be done as the water retention capacity of this area diminishes? And what effect may in-filling have on the riparian vegetation and on interrupting sediment transport within the creek?

Red Hill Creek Re-alignment Works

Description of Works

In order to reduce the risk of flooding and minimize the number of creek crossings within the expressway corridor, the Region has decided to relocate a five-kilometer stretch of Red Hill Creek to the west side of the valley. This will also allow the Region to reduce the number of expressway creek-crossings from 14 to 8, and remove several man-made fish barriers such as the Queenston Weir (RHCE: Executive Summary, 1998).

The length of creek to be re-located, stretches from the King's Forest Golf Course in the south, to Barton Street in the north. It is claimed that new alignment is expected to lengthen the creek by 300-500 meters, and be constructed on a bed at a higher elevation then the creek now flows.

Proposal Concerns

Poor urban planning within the Red Hill Creek watershed, both above the Niagara Escarpment as well as adjacent to the lower valley, have created the extremely unstable condition of the creek. For decades, the Red Hill Creek has essentially been used as a municipal drain, conveying tremendous volumes of stormwater from human settlements to the receiving waters of Hamilton Harbour. Immediately following a rain event, a huge pulse of water drives its way north tearing at the channel, and hurling debris downstream. Shortly after the rain has stopped, the pulse of water leaves the system and water levels return to seasonal norms. This "flash-flooding" can occur inside a twelve-hour period, and the only signs of its existence are scattered debris found in the trees along the banks. Although the Region has proposed stormwater detention areas (5 to 100 year event), it is not known what impacts if any these and other works may have on annual peak flows which is the root of the present channel instability problem.

The few details that are available relating to the Red Hill Creek re-alignment proposal are contained within a series of maps and associated paragraphs printed in the Region's Executive Summary and Draft Summary Report Vol.2. It is here that claims of improved fish habitat quantity and quality are found. One of the more staggering claims made is that, "The Region will utilize a natural channel design approach to resolve the creek erosion problems..." (RHCE: Executive Summary, 1998). At this point it is unclear how a natural channel design will accomplish this goal of reducing erosion, as the main causes of the problem (flash flooding) will not have been addressed. Also, if built the RHCE will precipitate further urbanization of the upper watershed, further increasing watershed hardening which is expected to have a compounding effect on channel instability.

A natural channel design is a practical and proven means of correcting minor waterway erosion problems, but to our knowledge it has never been applied on a scale of this size, and within such a highly urbanized watershed. A "fresh" channel carved in the Red Hill Valley floor will not last at all, given the force, and frequency of the uncontrolled flood pulses. No guarantees can be offered for its' success, nor have examples of other comparable projects been presented. In contrast, there are several

documented cases of failed projects available for consideration. For a good example the reader is referred to Martin-Downs (1994) case study of the Humber River diversion for the Highway 407.

An important component of channel stability is the presence of mature trees and there root systems. This was found to be especially true of RHC. In the fluvial geomorphology report, Anonymous (1997), concluded that "the long term stability of the creek's banks are strongly dependent upon large woody debris as vegetative control against stream bank erosion". In the absence of such vegetation, this study measured erosion rates (in the reach of proposed re-alignment) of nearly 2m(!) on bends with sparse vegetation. Considering these facts, we feel that the erosion process throughout much of the new channel will be impossible to mitigate effectively. The Region claims that nearly the entire length of the channel will be re-vegetated, but for this to be effective in preventing excessive erosion, mature trees would need to be planted! Regardless of re-vegetation, without the presence of large, mature trees, massive erosion of the new channel seems certain. Thus, considering the facts presented by the Region thus far, the risk of failure to the newly formed channel seems almost inevitable.

Aside from the fact that the scale of this proposal appears unprecedented, there are several other more serious concerns, directly related to RHC fishes and their environment. None of the details regarding construction timing or procedure have been revealed to the public. For example, it is not yet known how the transfer of water will occur from the original channel to the new one, or what length of time will be given to allow for stabilization. This removal of water will have serious consequences on the resident fish population, and creates the potential for disturbing migrating species in the spring and fall of the year. It is highly unlikely that even under ideal conditions, a project of this size could be completed within a time frame of least impact. This window would only exist when the majority of fish have left the system for the winter, and there are no fish species migrating or spawning.

Once the water transfer of water has been made, the channel will begin to erode, and redefine its boundaries. This will create a tremendous amount of sedimentation that will move downstream and dump into Windemere Basin. The sediment loading will accelerate the filling of the Basin and translate into larger and more frequent dredging costs. Dredging in Windemere Basin last occurred in 1988, and now eleven years later is needed again. At it's current level, the basin will not hold the material that will be flushed out of the newly created channel. Sediments will begin to pass through to Hamilton Harbour, further hindering the objectives of the Hamilton Harbour Remedial Action Plan.

Re-locating the fish populations is another major consideration. No explanation as to how this will be accomplished has been offered. Even if every effort is made to be thorough in collecting and moving these fish, there is no doubt that severe losses will be incurred. The loss of fish will continue after the re-location is completed. The new channel will be void of aquatic invertebrates, the main stable for stream fishes. Invertebrate populations will take several years to return to acceptable levels, and even then, some sensitive species existing only as remnant populations, may be lost forever.

The proposal also states that as a benefit of the RHC expressway, three barriers to fish migration will be removed. This includes pilings at the Burlington Street bridge, the Queenston concrete channel, and a small concrete saddle upstream of King Street. The King Street culvert, a serious barrier to migration and a result of expressway construction, to this point remains. The Queenston road channel is also a result of RHCE construction and represents a violation of the Fisheries Act. It therefore should be

removed or modified regardless of whether the Expressway construction proceeds. The pilings at the Burlington Street bridge do not represent a barrier to fish migration, and therefore its removal represents a negligible improvement to fish habitat. This means that only the concrete saddle above King St. will be removed (this relatively minor structure could have likely been removed relatively inexpensively by a community fisheries improvement project). Immediately downstream, the much more substantial King St. culvert remains.

There has also been an unsettling lean towards reducing the size of the culverts being used to convey Red Hill Creek beneath the roadways. The Region claims that this change in project design will decrease construction costs and *improve* fish habitat. This is not the case, and may well be more detrimental to fish movement, creek stability, and flood prevention, than larger structures. Hard bottomed culverts of any size will also eliminate creek meandering, an integral part of having a natural channel design.

In the DSR vol. 2, there is a little noticed statement in the top, right-hand corner of page 41. Here it is warned that although a natural channel design will be employed in the creek re-alignment proposal, "Bank protection (hardening), already exists in Red Hill Creek, and this may *increase* as a result of expressway construction". This essentially means that although approximately 800 meters of hardened structures (gabion baskets, concrete channels, etc), will be removed, there may actually be a net increase in bank hardening? This may be due to the fact that if the natural channel design fails, there will be a serious flooding potential for the expressway. In such a case, the Region will undoubtedly return to its old methods of trying to fortify the banks and protect it's investment in the expressway, to the detriment of Red Hill Creek.

Two notable features of fish habitat that will be lost under the existing RHCE plan include the pool at the Heritage bridge abutments and the loss of one of the only functioning floodplain wetlands to an off ramp onto King Street. The wetland will be lost through filling for the off ramp, while the removal of the Heritage Bridge abutments will alter the hydrological conditions that serve to maintain one of the deepest pools in the creek.

In the DSR2, the region claims an overall increase in in-stream cover over time "as vegetation matures". In what time frame is this? For substantial woody vegetation, we would expect approximately 50 years! In the meantime, there will be a definite net decrease in in-stream habitat which quite likely may never be replaced if.

Most disturbing is the lack of any Regional commitment to consider the possibility of creek re-alignment failure. This is a very real, and potentially dangerous situation, that has received no contingency plan. Without a guarantee of success, the potential for a disaster is very real and must be considered.

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Appendix IX: Letters Draft Technical Reports

Dear Chris, Dec. 1, 2002

Re: New Scheme Proposed for RHCE Design

What I'd like to bring up, involves several of the reports - both recent and first draft. However, it is the primary ones to which I would like to direct my remarks. In my mind, these are the air pollution and noise assessment studies that were done by RWDI and which are being updated. So as not to have my remarks refused because of missing a deadline, I want to submit my thoughts at this time. I was in contact with RWDI recently and was led to believe that the noise impact study results will be essentially the same as in the '98 report. What is troubling about the modeling, however, are the traffic volumes and the percentage of heavy trucks that you and iTrans disagree over. Why are your figures right and theirs wrong? (Spectator articles of Oct. 2002).

Whatever one thinks of the assumptions used in the studies undertaken, it is pretty obvious that the rhvp has been an open sore for the community for a long time. I know that positions are poles apart from the perspective of the proponents and the opponents of the expressway. My proposition is a serious attempt to put forward a proposal that would bridge the two sides and make for a result that we can all live with.

PREAMBLE

In my opinion, the two most serious concerns of having an expressway run down the valley are health-related. I'm going to suggest that there is a solution that can overcome two critically important impacts that will affect the local community to a horrific extent if the project is allowed to proceed as contemplated.

Noise

This will become a huge problem for people living in Noise Sensitive Areas (NSAs). The provincial standard of 55 dBA for sound level over a 24 hour period may be accepted by people who now experience 50 dBA as their ambient level. However, there are hundreds of residents who live in quiet neighbourhoods who will be affected by traffic noise in a serious way - even with the sort of mitigation proposed by RWDI. By the way, I do not accept the 7.5% heavy trucks in the mix as being reasonable once access for U.S. trucks is upgraded, which is what is happening now. The way the traffic numbers were arrived at in the analysis does not reflect NAFTA highway objectives nor to the improved Canada-U.S. border crossings that are already being implemented. It is totally unrealistic, in my view to use a 2 or 3% value of AADT (CSC minutes of April 9, 1998) to account for U.S. trucks that would use the expressway as a short-cut. When adding a more realistic total of U.S. trucks to local trucks, a much higher value than the 7.5% of AADT seems evident. It seems very reasonable in such circumstances to support the numbers the iTrans Transportation Planning and Traffic Consultants are predicting for Red-Hill, i.e. more than 1 million trucks per year who won't start or stop in the city. If iTrans is right, we will have much greater noise levels than RWDI is predicting.

It means, then, that the City is going to have to mitigate noise in a major way. The use of noise barriers as given in the '98 report will not ameliorate the impact sufficiently, in my view. When people suffer from sleep deprivation and cannot converse outside with their neighbours and friends, some other mitigation solution is called for.

Air Pollution

This is another area in which we are awaiting a "final" report. It is especially troubling to hear that revised numbers and "highly conservative modeling assumptions" are to be made "more realistic" in the new report. In fact, more realistic overall traffic volumes and a heavy truck percentage that is at least double the 7.5% figure would make the results worse not better than what is described in the '98 report on Air Quality Impacts.

What is clear - is the following. Air pollution kills, and causes many of our citizens to seek medical attention because of breathing problems from lung cancer, asthma, emphysema and heart attacks. A major health study undertaken by Professor Pengelly has shown that 300 people die prematurely every year because of bad air. (The numbers are probably higher now to reflect annually increasing numbers of smog days). The argument that there will be an alleviation of air pollutants as a consequence of relieving city streets of stop-and-go traffic is **not supported** by studies done in other cities which clearly show that expressways induce more traffic overall and become congested themselves. Since Hamilton is already a city with poor air quality we need policies which will promote clean air rather than make it worse.

THE RED-HILL CREEK EXPRESSWAY ENVELOPE (RHCEE)

Because noise and air pollution affect people's health in such a profound way, we need to be open to other alternatives. Since a noise barrier will be needed to mitigate traffic noise impacts, in any event, it seems reasonable to assume two vertical walls on both sides of the roadway that would act structurally as well as acoustically. A roof cover spanning the walls, together with supports located in the space separating northbound from southbound traffic would constitute a box enclosure having reasonable spans, to create, in effect, an above-ground tunnel.

A ventilation system coupled with an air purification system would allow for clean air discharges from the envelope. The result would be virtual traffic noise mitigation, and elimination of air pollution from vehicles traveling through the RHCEE.

Other Advantages

If the roof was designed to be flat or only slightly sloped, an immense roof garden stretching from the escarpment to the QEW would be possible. The side walls could be ivy covered with tree plantings nearby that might allow the flying squirrel population to continue to live in the valley. The bird populations, whose survival depends on their being able to communicate, would similarly continue to thrive. And, recreational parks and sports fields would remain as places for people of all ages to enjoy outdoor activities.

Final Thought

I accept that such a solution will be expensive, but if we take total costs into account, the highway envelope may indeed be a reasonable alternative. One thing that can be said about it - it does meet the mandate requirements of a design in the valley!

Bob Korol, former member of the Community Stakeholder Committee for the RHCE and co-chair of Citizens for a Sustainable Community

HAMILTON-WENTWORTH
THE SUSTAINABLE REGION

The Regional Municipality of Hamilton-Wentworth
Transportation, Operations & Environment

Roads
Predesign & Special Projects
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FAX

DATE: June 24, 1999 **FILE NO.**

NAME: David Chadder

COMPANY: RWDI

PHONE NO.: **FAX NO.:** (519) 823-1316

TOTAL NO. OF PAGES: Six (6)
(Including Cover Page)

Comments:

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Please contact person shown below if all pages indicated are not received.

FROM:
Chris Murray
Telephone: (905) 546-2486

RWDI Received
JUN 2 ? 1999
ORIG To: DSC
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2

Fisheries and Oceans / Pêches et Océans

Bayfield Institute / Institut Bayfield

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867, chemin Lakeshore
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Your file / Votre référence

Our file / Notre référence

5250-378

June 23, 1999

Regional Municipality of Hamilton-Wentworth
Regional Transportation Department
Roads Division, Special Projects Office
77 James St. N., Suite 320
Hamilton, Ontario
L8R 2K6

Attention: Mr. Chris Murray

Dear Mr. Murray:

RE: Health Canada's Review of Information in Support of the Environmental Assessment of the Red Hill Creek Expressway - North-South Section.

Attached is Health Canada's (HC) specialist or expert information or knowledge, pursuant to subsection 12(3) of the *Canadian Environmental Assessment Act* (CEAA), on the air quality reports prepared for the CEAA environmental assessment of the Red Hill Creek Expressway, North-South section. Mr. Barry Jessiman, A/Head of the Air and Waste Section of the Bureau of Chemical Hazards, reviewed and provided expert advice to Fisheries and Oceans Canada (DFO), based on the documentation provided to date, on the existing environment, potential environmental effects, and the proposed mitigation measures for the project.

The Region has now received comments from DFO, Environment Canada, National Energy Board and HC.

Should you have any questions or comments, please contact me at (905) 639-0771 or FAX (905) 639-3549.

Laud Matos
Fish Habitat Biologist
Fish Habitat Management-Ontario
Fisheries and Oceans Canada

Attach.

Canada

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, Ontario
K1A 0K9

Your File
5250-378
Our File
SA98-084

June 21, 1999

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

Dear Mr. Matos:

RE: Red Hill Creek Expressway - Provision of Expert Information

This is further to your request for specialist or expert information or knowledge pursuant to subsection 12(3) of the *Canadian Environmental Assessment Act* (CEAA).

Attached are the comments received from Mr. Barry Jessiman, A\Head of the Air and Waste Section of the Bureau of Chemical Hazards, who reviewed the air quality reports prepared for the Red Hill Expressway project.

If you have any questions, I can be reached at (613) 941-8917.

Yours sincerely,

Claude David
EA Coordinator - Central Region

cc. B. Jessiman - A\Head, Air and Waste Section, Health Canada
R. Kwiatkowski - Chief, Office of Environmental Health Assessment, Health Canada

Attachment

Canada

Comments on the Red Hill Creek Expressway Assessment

Barry Jessiman, Health Canada

June 21, 1999

I have read the various reports[1] submitted to the Regional Municipality of Hamilton-Wentworth in assessing the air quality impacts of the proposed Red Hill Creek Expressway and have some major and some minor comments to make.

By and large, the report by RWDI on air quality appears to be an attempt to look at a very complex issue with a simple framework. As a result, many assumptions are made of a questionable nature and supporting data is drawn from inappropriate sources. Specific comments addressing many of these inadequacies are delineated in the comments of others already presented including such things as vehicle traffic density and composition, baseline air quality, comparison of predictions for the Expressway to measurements for Highway 404 to show the conservativeness of the modelling, and some other issues discussed in detail by Tom Muir. All of these assumptions reduce the confidence in the resulting data and the subsequent analysis of health impacts conducted by CanTox.

One of the major problems for the analysis done is the narrow scope used in that for the most part, only the air quality in the valley of the proposed expressway is assessed. Air quality changes from transportation corridors have both local and regional impacts and it is inadequate to assess only one of these.

I was especially struck by what I view as two major omissions in the analysis, though this probably speaks to the terms of reference for the study rather than the analysis that was done. Firstly, while there is no question that the building of this expressway will degrade air quality in the vicinity of Red Hill Creek with some impacts on human health, there has been no attempt to quantify the benefits to the communities which will see less traffic. The reports assume that traffic will be diverted to the new roadway from the QEW and the Centennial Parkway and the overall emissions changes are quantified in the RWDI Emissions Inventory report. No attempt is made to subsequently assess the improvements in air quality near these roadways and the subsequent health benefits that might be achieved for these communities. The negatives associated with Red Hill Creek are thus the only point of comment. Given that any traffic moving from the Parkway to an Expressway will present an improved emissions spectrum because of improved traffic flow, one would expect that there should be an improvement regionally. However, as expressed above and by others, some of the assumptions used by RWDI are inappropriate and would lead to an underestimation of the emissions expected from the Expressway. I think the chief one relates to the assumption about speed on the Expressway,

[1] Impact Assessment and Design Process: Existing Air Quality Draft Technical Report; Vehicle Air Emissions Inventory: North-South Section; Air Quality Assessment: North-South Section; CanTox Draft Report; comments by T. Muir, D. Pengelly and M.D. Lumley

wherein the traffic is assumed to move at the speed limit without congestion. Congestion will occur and the speed limit will be exceeded, both of which will lead to increases in the emissions for the roadway. This will result in an underestimation of the health effects for the Expressway. Overall, a better use and explanation of assumptions and underlying characteristics is required, but additionally a regional approach to benefits and impacts is required.

The second issue of omission is the absence of an analysis of the relative benefits of providing alternate forms of transportation i.e. expansion of mass transit vs. the building of a roadway. While I understand other modes were examined in 1985, this report exists in isolation from those and there is no analysis of the *relative* benefits from an air quality perspective. It is well known that the provision of additional roadways, while initially improving regional emissions profiles, encourages the use of personal vehicles for discretionary and non-discretionary trips and in the end will increase vehicle usage and thus the regional emissions profile. While this issue strikes at basic policy concepts of transportation, I believe it is essential within the perspective of air quality to provide an analysis of the impact of providing alternate forms of transit in addition to the option of simply providing more roadways (which has a finite ability to address both congestion and air quality issues).

The lack of a regional analytical framework has also permitted the dismissal of the ozone issue. Ozone is couched as being the result of long-range transport, a statement not wholly grounded in truth. While the emissions in the valley will be only a minor contributor to ozone in the valley, it is not clear that such is the case on a regional basis. As ozone is a major source of health effects, it cannot be removed from the analysis based on the rationale presented in the reports. Again, the narrow scope of the study has eliminated the consideration of an important issue. Other pollutants, especially SO_2 but also including CO and NO_2, need to be included in the assessment of health impacts for a variety of reasons, not the least of which is new research indicating greater impacts than can be accounted for by PM alone. Reliance on attainment of provincial or other objectives is inadequate given the knowledge that most of these pollutants appear to exert some non-threshold effects.

Another issue of increasing importance is that of Climate Change. Many of the steps required to address climate change will necessitate local actions and in order to properly examine the impact of this project, this issue needs to be addressed. Both the provision of new roadways and the removal of a significant green space and 10s of thousands of trees have impacts that need to viewed from a climate change perspective.

The mitigation strategies discussed are at best of limited benefit, and in the manner presented give a false impression that they would reduce the impacts of the expressway. All of these (page 37 of the air quality assessment report) address TSP issues but will have minimal impact on particulates of relevance to human health ($<PM_{10}$).

The CanTox report suffers from the local perspective taken in the RWDI report. Additionally, while they note that the scientific literature cannot be used to address the issue of the increased personal PM_{10} exposure and health effects attributable to PM, they then proceed to make and present detailed calculations as to the additional health burden imposed by increases in personal

exposure on local users of playgrounds and hiking trails, as well as for workers assigned to tasks in the valley. This attribution cannot be made based on the current body of scientific literature, though the additional exposure calculations are useful for perspective.

Major Recommendations

1. Take a regional approach to addressing the air quality impacts of the expressway which would encompass more than the impact on valley air quality.
2. Include an analysis of the impacts of non-roadway alternatives to the expressway on air quality.
3. Use more realistic assumptions regarding traffic speed and characteristics.
4. Discuss the climate change impacts of the new expressway, including the impact of the loss of green space.
5. Include all pollutants such as ozone, sulphur dioxide, carbon monoxide and nitrogen dioxide for the purposes of health and environmental impacts.

Miscellaneous

The table shown in report B.10(p. 34, Table 5.10) should make reference to "Flood Storage Volumes" not "Flood Plain Velocities".

AIR QUALITY ISSUES:

Vehicle Emissions

The scope of report B.12 is limited to hydrocarbons, carbon monoxide and nitrogen oxides. What about particulate matter?

Scenario 1: Travel via RHCE versus Centennial Parkway - Report's conclusion: pollutant emissions from a single vehicle using the RHCE were predicted to be 52% to 143% of those using the Centennial Parkway. Emissions of NO_x increased.

- (1) Where do the values 52% and 143% come from? These values are not reflected in the Table 4. Grade effects were not taken into account because the consultant stated that the grade effects would be the same in both scenarios which is true but the roads travelled to achieve the same destination are very different. Major city roads versus highways. Grades may have significant impacts in the emission rates of pollutants as referenced in RWDI's Air Quality Assessment Report.

Scenario 2: Travel via RHCE versus Highway 403/QEW Combination - Report's conclusion: pollutant emissions from a single vehicle using the RHCE were predicted to be 46% to 71% of those using the Highway 403/QEW combination. The decrease being attributed to a decrease in distance traveled (8 km shorter) and a decrease in speed (90 km/hr vs 100 km/hr).

- (2) Where do the values 46% and 71% come from? These values are not reflected in the Table 4. Grade effects were not taken into account: see previous comments.

Local Air Quality and Air Quality Assessments

This was the focus of much of the work, and the subject addressed by documents A.5 and B.13. Definite flaws (some of which require follow up) were noted in these reports. However, it is likely that the estimation of impacts remains a conservative one, with appropriate remedial and monitoring efforts proposed. The report does give undue weight to the exact locations of impact areas, which might better be generalized more, without discount of anticipated peak levels. It is unfortunate that no attempt at an assessment of PM2.5 levels was made, since the models utilized in the study have been used for this purpose in the United States.

Report B.13 is a later draft than A.5, therefore our review focuses on the former, and more specifically on the meteorological aspects. **Please note that no review of the projected traffic flows was carried out.** It is interesting to note that the earlier draft indicated an intention to deal with the very real topography of the project, by dealing separately with "inside of valley" and "outside of valley". This differentiation was dropped in the later draft, without comment or justification.

Anticipated air quality impacts of the project, were estimated using standard U.S. EPA assessment models. These models require meteorological data (discussed below), and emissions data (derived from traffic projections and Environment Canada vehicle-based emissions estimation). These models basically neglect topography (except for that of the proposed highway itself, i.e. its elevation above flat terrain).

Meteorological Data - The basic meteorological dataset consists of hourly measurements at an instrumented tower near the projected Lake Ontario end of the project.

- *data quality*. The report indicates that it was necessary to combine two data levels (with correction) to reduce the number of data-hours with zero wind speed. While modeling limitations at very low wind speeds are well known, the level combination approach is unusual. Attached below (Figures 1 and 2 - on page 16) are graphs of wind speeds and direction from other sites in the general area (1951-80 normals for these sites, for convenience, vs the 1993 data for the MOE site used in the report). There is reason to suspect that the wind speeds used in the report may be somewhat low.
- *station suitability*: it should also be noted that the valley portions of the project, though not far from the tower, will have a somewhat different wind regime, with more common wind directions parallel to the valley. Figure 1 shows wind direction frequencies for the Hamilton area: comparison of data for RBG (Hamilton Royal Botanical Garden) and Hamilton Airport suggests qualitatively the sort of funneling that might be expected in the valley portions.
- *size of dataset*: one year's data is used for the modeling. The US EPA commonly recommends five years of data for such purposes. The impact of this reduced dataset of the results cannot be exactly evaluated.
- *overall* Use of lower wind speeds is expected to produce more conservative estimates overall. This suspect underestimate of speed probably compensates for the shorter-than-desirable dataset. It may also compensate for the neglect of the topographic on other portions of the project. However, these suspected wind direction differences indicate that the results should be interpreted more broadly, with less focus on specific wind directions, following a conservative approach. This is particularly pertinent in the identification of high impact zones.

Other Data - The report indicates that solar radiation data was used in combination with tower measurements to estimate stability class, using a method recommended by the US EPA. The report does not indicate the source of this data (none known in the area), but B.11 makes reference to the application of such data, measured in downtown Toronto. Combination of two such widely-separated data sources would be quite dubious, and must be justified, if this is what was done. Clarification is required.

It is not apparent how mixing heights were derived. These could have been estimated from contemporaneous upper air measured near Buffalo. Documentation of CALINE (the dispersion model) suggests that results are insensitive to mixing height, which is what one would anticipate for a near-surface emission source. This aspect of the report should be clarified.

Models Usage - CALINE (used for dispersion calculation) user manual indicates (Abridged Users Manual): " 8.1.7 The model should not be used in areas where the terrain in the vicinity of the highway is sufficiently rugged to cause significant spatial variability in the local meteorology."
The report indicates no attempt to allow for such terrain variability, as was previously noted. At the very least, this must be considered in interpreting the results.

- The report uses the Ozone Limiting Method to apportioning the components of NOx, using a simple formulation. The assumed background ozone level is sufficient to maintain a conservative estimation of criteria pollutants.
- The "background" PM concentration used (p. 23) is not appropriate for this location. The urban sources are too close: the "background" is likely to be high under the same circumstances that gives high concentrations due to expressway emissions, while "background" levels are assumed constant and independent. An upper percentile value would have been more appropriate.
- Modeling was done without deposition, which is conservative from the perspective of air concentrations. However, this neglects deposition into the potential fish habitat of Red Creek. Since the waterbody at issue is a stream, it seems likely that the impact on water concentrations will be small, but this should be estimated.
- Some discussion is warranted of the assumed "silt content of road dust". Documentation (p 30) suggests that one value was used for the entire expressway (0.5 g/m2). This value may be too high for much of the project. AP42 p 13.2.1-12 (1/95) suggests:

  "For annual conditions, a default value of 0.02 g/m2 is recommended for limited access roadways. Even fewer of the available data correspond to worst-case situations, and elevated loadings are observed to be quickly

depleted because of the high ADT rates. A default value of 0.1 g/m2 is recommended for short periods of time following application of snow/ice controls to limited access roads."

- Use of 0.1 rather than 0.5 would lower the computed emission rate by a factor of 2.8, using the EPA emission formula for paved roads (p. 13.2.1-1).

Interpretation of Results - Predicted results were compared to ambient roadway measurements taken for the proposed widening of Highway 404. Highway 404 has approximately 24% more vehicles during rush-hour than are predicted on the Red Hill Creek Expressway (RHCE). The measured maximum 24-hr TSP and 24-hr PM10 results were considerably lower than the predicted results from this study. This demonstrated that the predicted results of TSP and PM10 for the RHCE were conservatively overestimated.

- If the measured results are used to refine the predicted results for the RHCE, will the 24-hr TSP and PM10 AAQC still be exceeded?

- Total Suspended Particulate (TSP) - the maximum 24-hr TSP concentrations are predicted to exceed the provincial criteria **at most** of the receptor locations. The maximum predicted 24-hr TSP concentrations was 598 ug/m^3. The AAQC for TSP is 120 ug/m^3. Is this acceptable? What is maximum 1-hr TSP value?

- Based on the predictive study contained in the report, the 24-hr TSP (120 ug/m^3) and PM10 (50 ug/m^3) AAQC will be exceeded **at least 13 % of the time** at most receptors. Is this acceptable? What are maximum 1-hr TSP and PM10 values?

- The report identifies particulate matter (PM10 and TSP) as the only pollutant of significance as a consequence of the project. This result is plausible, in spite of identified difficulties with the meteorological data.

- As noted, the wind speeds used are likely somewhat lower than should be expected as a long term average. However, the actual location of high impact zones should be checked for dependence on wind direction. What are effects on residential areas in light of these comments?

- The estimates of highway-induced dust levels is probably too high, as argued by the authors of the report, due in part to the choice of a model parameter. This is in part compensated by choice of an insufficiently conservative background level.

- Section 5.6: Effects of Roadway Grade Changes on Contaminant Emission Rates. The predicted emissions in the report do not address grade change of the road. The report states: "grades of 3% or more can have a significant impact on emission rates of Carbon monoxide (CO) and hydrocarbons (HC). At about 85 kilometres/hour (km/h), hydrocarbon emission in gasoline powered cars could increase by a factor of 3 and CO emissions by a factor of 11". Also, for HC, coasting downhill results in an increase in HC emissions. This situation needs to be studied further. What are the effects on emission rates for diesel and other alternate fuels? How about the effects on emission rates for trucks and buses? Hamilton is unique because of the Niagara Escarpment passing through the middle of the city. The changing grade may impact local air quality more significantly than expected.

- The significance of the neglect of deposition into the waters of RHC is uncertain, but should be assessed in connection with other measures of avoiding the pollution of the water course (see also comments under Water Quality, Stormwater Management).

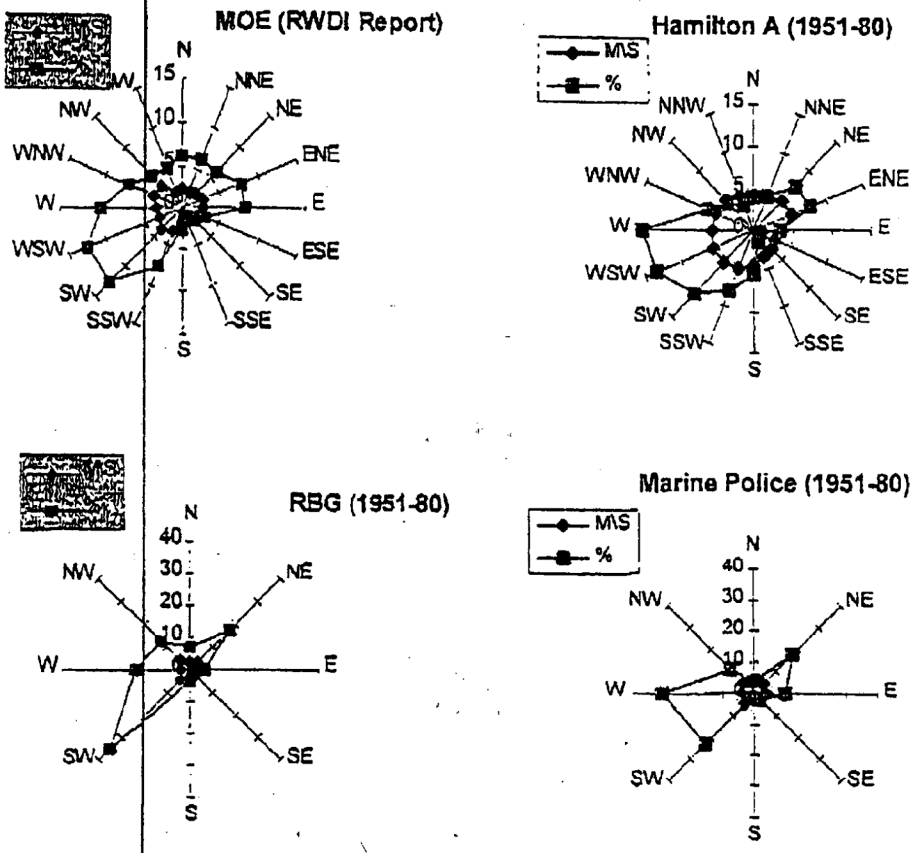

Figure 1. Comparison of Wind Direction Frequency for Hamilton Sites

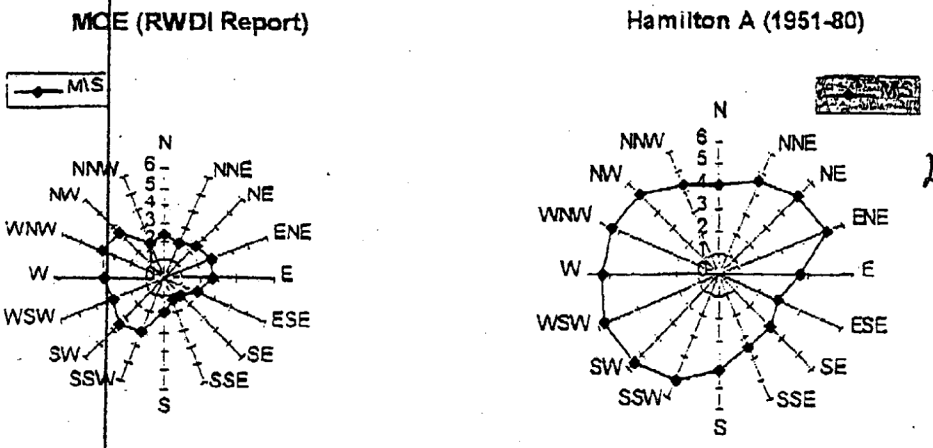

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Figure 2. Comparison of Wind Speed Frequencies for Hamilton Sites.

Remedial Measures - The measures proposed for reducing particulate loading are those commonly recommended.

Proposed Monitoring - Appropriate monitoring is recommended to confirm the significance of the expected particulate problem. It may however be desirable to have at least wind measurements at both the sites specified.

This study has shown that the construction of the RHCE will result in exceedences of the existing Ontario Ministry of the Environment (MOE) Ambient Air Quality Criteria (AAQC) for particulate matter. **Therefore, we recommend that additional pre-construction and post-construction testing for Nitrogen oxides (NOx), Carbon monoxide (CO) be performed, or the refinement of the air quality models based on additional data obtained from testing at other roadways.**

General

- There appears to be a typo on p.28, section 5.1.2.2, the identification of Receptor 48 in the following: "the highest NO_2 concentration of 0.15 ppm, which was predicated to occur at two receptor locations; Receptor 48 located at the playing fields near Glen Castle Drive, ...", should probably have been Receptor 98 based on Figure 3b. The predicted NO_2 concentrations are below the AAQC of 0.20 ppm (1-hr). Predicted 24-hr NO_2 concentrations were also found to be below the AAQC of 0.10 ppm.

- PM10 - There appears to be a typo on p.29, Section 5.1.3 (Particulate Matter as PM10), the acronym TSP in the following passage should be PM10: "Maximum 24-hr TSP are predicted to exceed the provincial criterion at most of the receptors". The highest predicted PM10 concentration was 249 ug/m^3. The interim AAQC for PM10 is 50 ug/m^3.

Possible Human Health Effects

Document B.3 focuses strictly on the results of the modeling exercise, discussed below. Consequently, the impacts dealt only with the expect excessive PM10 levels, and as experienced by individuals near to the expressway. This explicitly neglects any increase/decrease in the particulate burden on a larger scale – probably because the modeling effort on which this work is based identified no contribution to "background" levels. The modeling work does not address PM2.5, which is the subject of current work on an ambient air quality objective. A statement qualifying the conclusions would be in order, though arguably any increase would be slight, and likely offset by reductions elsewhere, as suggested by B.12.

Thermal Dynamics Impact Assessment

Document B.11 presents the results of a model which appears to have been developed by RWDI. It appears to involve modeling of a thermal plume, which may be hot or cold (positive or negative temperature anomaly). The model is described summarily, and no model validation is provided. A fuller description, with validation, is normally expected for a newly developed model, therefore we unable to comment on the modeling work.

Canada-U.S. Air Quality Agreement

Under Article V of the agreement, Canada has an obligation to consult on projects which may cause serious transboundary air pollution. The proposed expressway is to be located in an area not far from, though not adjacent to the border, and will likely contribute to pollution over Lake Ontario, which does affect pollution flow patterns. Pollutants of interest are ozone (a secondary pollutant) and fine particulate matter (PM2.5 - both a primary and a secondary pollutant).

- It is not expected that the expressway would constitute such a significant source. Indeed, the modeling (presented in B.12) indicates reductions in projected emissions, over the Hamilton area. Nonetheless, it would have been desirable if modeling results had been used to provide an estimate of

at least total primary emissions for as many pollutants as possible, in context of the overall regional emissions, to facilitate this determination. Report B.12 (p.4) contains such information for a specific case.

Kyoto Protocol

Under this protocol, Canada has undertaken to reduce its greenhouse gas emissions: transportation is a significant source of such emissions. It is noted that the expressway is projected to result in lower emissions overall, by the time of its completion (at the cost of the trees removed to facilitate the project). Report B.12 (p.4) unfortunately omits CO_2, since this greenhouse gas was not considered by the model i used for this table. An opportunity has been missed to extend the modeling effort to provide an estimate of the greenhouse gas impact.

I trust that this information will be helpful to your department, as the lead responsible authority. Please contact the undersigned or Bill Bien (905)336-4948 if you wish to discuss the above comments.

Sincerely

M. A. Shaw
Environmental Assessment Projects Officer
Ph.(905)336-4957 Fax(905)336-8901
E-Mail: michael.shaw@ec.gc.ca

cc.
W. Bien, Chairman, Environmental Assessment Coordinating Committee (EACC)
R. Dobos, Secretariat, EACC
J. Gee, GLCAB, EPPA
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W. Young, AEB, MSD
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T. Wallace, EPB
A. Borgmann, EPB, EMD
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E

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DEC 1 1 2002

December 08, 2002

Red Hill Valley Project
Suite 320, 77 James Street North
Hamilton, ON L8R 2K3

Dear City of Hamilton,

I have a few comments on the draft studies for the Red Hill Valley Project. I have always been against an expressway going through the Red Hill Creek, and, after reading the drafts, I still feel the same, even more so.

You say the expressway will benefit the people of Hamilton, I have yet to see how.

1. I see it as a shortcut for truckers who do not start and stop in Hamilton, they just sail on through! HOW DOES THIS BENEFIT HAMILTON?

2. I thought the expressway was supposed to be a local road to benefit local users and would take trucks off local streets, Sure doesn't look like it to me! HOW DOES THIS BENEFIT HAMILTON?

3. The burden of maintaining the road is entirely on the shoulders of the local taxpayer. Why should we have to bear the burden of provincial traffic? HOW DOES THIS BENEFIT HAMILTON?

4. What about air quality, health and noise, especially for the people living in close proximity of the expressway, you know, the people in the east end? First it was 60,000 vehicles a day, now it is 70,000. HOW DOES THIS BENEFIT HAMILTON?

Do any of you people who want the expressway actually reside in the east end? For all the people who want the expressway that live in Ancaster, Dundas, etc. what would you say if an expressway was going to be built in your backyard, so to speak? You would be furious, you would not stand for it!

You finally shut down SWARU, even before you said you would, well hallelujah, stand up and take a bow, too little, too late for my liking!
We, the people of Hamilton, and, especially the east end have been putting up with the emissions for years. I wonder how many people have or had cancer because of this. Now, if the expressway is built, we have to put up with emissions from this! For just once, it would be nice to be treated like Westenders, not Eastenders.

What about extra emissions. If there is an accident on the expressway, the vehicles are just going to be sitting there idling away? I don't recall reading anything in the drafts about this. If there was, I guess I missed it. I just think of the people that are even closer to the expressway than I am.

I read in the Spectator that the States did a study in 1998 called "The Surface Transportation Project" which was backed by 200 (TWO HUNDRED) environmental groups. It revealed that cities that spent billions for new road capacity had the same congestion levels as cities which had not.

Wake up Hamilton, take note, building the expressway will only increase traffic and destroy valuable wilderness and create more health problems, we can't even take care of current health problems in a timely fashion. That's another can of worms.
HOW WILL THIS BENEFIT HAMILTON?

In regards to the "Economic Assessment Of Impact To Businesses At The QEW Interchange", of course these people weren't worried about increase in dust, noise, odors or emissions. Why should they be. They are there to make money. They work in their air conditioned environment and at the end of the day go home, probably to Burlington, Ancaster, Dundas, etc. We have to stay in the east end, this is where we live.
The several businesses that are for the expressway, indicated, once completed, this would benefit their business, the almighty dollar is what's important, not people!

If the expressway goes through (and I'm still holding out for a showstopper) in my opinion it will be another item to add to the list of city screwups!

1. The Ottawa street dump was built on a feeder stream that feeds the Red Hill Creek. How asinine!

2. Need I mention Gore Park?

3. What about the million-dollar, six year-old valley recreational trail that will be cut 18 times by reroutes of the creek bed, making a series of new bridges necessary.
   What about the extra trees that will be lost than previously estimated?

4. Finally, I just can't seem to get those last four flying squirrels off my mind. You know, the ones you didn't recapture. Did they die a slow strangulated death because of these collars!?

Well, I guess you have heard enough from me, but, just two last thoughts to ponder:
Do plan a Master Valley Restoration, just do it without the expressway, and, remember, come next election time, the people in the east end vote too.

Sincerely,

Sally Carey

Amanda Burry

From: Bianco, Catherine [cbianco@hamilton.ca]
Sent: Monday, December 16, 2002 2:45 PM
To: Sally Leppard (E-mail); Pam Hubbard (E-mail)
Subject: FW: (no subject)

-----Original Message-----
From: Hripsimeus@aol.com [mailto:Hripsimeus@aol.com]
Sent: Wednesday, October 16, 2002 10:38 PM
To: rhvp@city.hamilton.on.ca
Subject: (no subject)

Dear Sir/ Madam:

It would be of a great relief and appreciation for tax-paying citizens of Hamilton to enjoy a better quality of living in our homes when the Red-Hill Expressway is completed. We live on HWY 20 and I cannot explain to you how terrible it is to eat dinner in your house and hear the empty transport trucks make such a loud noise that your guests think it is an earthquake. We do not ever intend on moving from our home. The hedges that we had planted over 10 years ago on our lawn do not help much with the noise.

I read some of the natural resource concerns in which I think some are ridiculous. We have plenty of parks and wildlife here in our city and it is very silly thing to worry about some kind of flying squirrel. I live around the creek and as far as I can see it is just a dirty damp area where a lot of rubble accumulates. That's all. Also did anyone against the expressway ever think that it is a danger to children, which can drown or get lost or even abducted by a criminal? Is that more important or is the flying squirrel more important?

Stoney Creek.

Amanda Burry

From: Bianco, Catherine [cbianco@hamilton.ca]
Sent: Monday, December 16, 2002 2:43 PM
To: Pam Hubbard (E-mail); Sally Leppard (E-mail)
Subject: FW: re redhill road construction

-----Original Message-----
From: Les Mady [mailto:les.mady@sympatico.ca]
Sent: Tuesday, November 19, 2002 9:35 PM
To: rhvp@city.hamilton.on.ca
Subject: re redhill road construction

I'm so sick and tired of reading Mr.Mclain's beliacing and constaintly promoting his owne purpose on this subject.
How come that the citysent of Hamilton canot "soo hom an his freands" for the increased cast of the millions of $ they hav added to the cost of this road construction.
I'm all for freadom of expretion of openions, but there must be away where a small goop of peaple canat fores their will on the majority without being financaly resposible for thair action.How can we sop this nonsence?

Amanda Burry

From: Bianco, Catherine [cbianco@hamilton.ca]
Sent: Monday, December 16, 2002 2:41 PM
To: Pam Hubbard (E-mail); Sally Leppard (E-mail)
Subject: FW:

-----Original Message-----
From: Martin, Barb [mailto:Bmartin@hamilton.ca]
Sent: Friday, November 29, 2002 9:52 AM
To: 'rhvp@city.hamilton.on.ca'
Subject:

Mr. Ron Faichney 905-690-9161 asked me to email you his comment.

His comment is: Build The Bloody Thing. It's long overdue!!

Barbara Martin
Customer Contact Centre Representative
bmartin@hamilton.ca
Tel: 905-540-6097

Amanda Burry

From: Bianco, Catherine [cbianco@hamilton.ca]
Sent: Monday, December 16, 2002 2:39 PM
To: Sally Leppard (E-mail); Pam Hubbard (E-mail)
Subject: FW: The King's Forest

-----Original Message-----
From: Red Hill Valley Project
Sent: Friday, December 06, 2002 9:19 AM
To: 'jen hambleton'
Subject: RE: The King's Forest

Thank you for your comments on the Red Hill Valley Project. In order to include your correspondence in our final report, we need your address. We would appreciate your supplying this at your convenience.

-----Original Message-----
From: jen hambleton [mailto:collierhambleton@hotmail.com]
Sent: Thursday, December 05, 2002 7:10 PM
To: rhvp@hamilton.ca
Subject: The King's Forest

I'm opposed to this project because I don't want my city to be the laughing stock of North America. Putting a highway through a park will make for a great news story about a small, backward place when contrasted with the impossible idea of a sophisticated city like New York paving over part of say, Central Park.

As a former and possibly quite soon once again active soldier in The Canadian Armed Forces, I'd like to point out that with the world situation today, the timing for this debate is awful. Historically, citizens have been forced to ration gasoline during a time of war and one year from today

we could see the streets devoid of traffic. And as more people realize that our dependence on cars and trucks helps, by the way of oil revenues instable

elements throughout the world , who knows, perhaps people will voluntarily drive less.

TB. McQusten set up this reserve to be a park forever . If Hamilton must have it's own Beltway, it should be approached with an open mind. I don't think that other options, like a cut around Fruitland Road have been explored fully.

Thank- you for this opportunity to share my thoughts.
Sincerly,
David Collier

DEC 0 6 2002

1455 Garth Street, Unit 5
Hamilton, Ontario
L9B 1T4
December 2, 2002

Dear Mr. Murray,

I am writing to you because I have not received the information you stated you would send me during our telephone conversation in early November.

As well, I did check the city documents at the library, but did not see any traffic studies pertaining to projected and present traffic flow for the Lincoln Alexander Parkway and projected traffic flow for the proposed Red Hill Creek Expressway, since January 1997.

I am requesting the above information, to see any relevant documents. My telephone number is 905-383-1195 and I can be reached on Mondays and Thursdays. Thank you for your attention to this matter.

Yours truly,

Jane Corey-Ellenzi

Amanda Burry

From: Bianco, Catherine [cbianco@hamilton.ca]
Sent: Monday, December 16, 2002 2:38 PM
To: Sally Leppard (E-mail); Pam Hubbard (E-mail)
Subject: FW: Red Hill Valley Expressway Project

-----Original Message-----
From: Total Office Furnishings [mailto:tof@totalofficefurnishings.on.ca]
Sent: Wednesday, December 11, 2002 5:20 PM
To: rhvp@hamilton.ca
Subject: Red Hill Valley Expressway Project

How can we even entertain the idea of constructing the north-south expressway at this time, let alone maintaining the roadway in the years to come? Hamilton is currently battling with a $59 million shortfall - taxpayers CANNOT continue to pay for unnecessary projects! We have sewers, infastructure and garbage issues that will cost money, but must be addressed ...
Environmental issues also weigh heavily in my opinion of this project - the loss of trees/green space, additional car/truck pollution and noise - why? who are we building this roadway for? I do not find the traffic around Hamilton congested enough to merit this expenditure...
I believe more thought should have been given to the ENTIRE project...we currently have the east-west "link" which just empties (very dangerously) into my RESIDENTIAL neighbourhood - just what were the "experts" thinking? The intersection at Paramount and Mud has become deadly ... We now have drivers (still with an expressway-mentality) coming off the link and through our neighbourhood with excessive speed and very little regard to the traffic signals (I personally witness, at least once a week, vehicles (usually large trucks, but also cars) flying through red lights because they have too much speed to attempt to stop - it is only a matter of time before a very serious accident occurs here ... help us to remedy this mistake ... it was suggested to council that at least the truck traffic could be diverted from our neighbourhood by insisting that they come off the link at Darnall and use Highway #56 to get to Highway #20 - why was this never followed through?

You might tell me that the way to remedy our problem at this intersection is to continue with the project and build the north-south corridor ... surely there must be other solutions ... let's try to find them before it's too late ...

Mrs. Sandra Magwood,
16 Audubon Street South,
Stoney Creek, Ontario.
L8J 1J7

Amanda Burry

From: Bianco, Catherine [cbianco@hamilton.ca]
Sent: Monday, December 16, 2002 2:37 PM
To: Pam Hubbard (E-mail); Sally Leppard (E-mail)
Subject: FW: Question

> -----Original Message-----
> From: Martin, Barb
> Sent: Thursday, December 12, 2002 11:06 AM
> To: Red Hill Valley Project
> Subject: Question
>
>
> Please call Mr. Tim Rogers 905-570-7159 He wants to know if there will
> be a walkway along the brow from the east side to the west side which will
> go either under or over the expressway to connect Burce Trail.
>
> Thanks
>
> Barbara Martin
> Customer Contact Centre Representative
> bmartin@hamilton.ca
> Tel: 905-540-6097
>
>

Amanda Burry

From: Bianco, Catherine [cbianco@hamilton.ca]
Sent: Monday, December 16, 2002 2:43 PM
To: Pam Hubbard (E-mail); Sally Leppard (E-mail)
Subject: FW: expressway

)riginal Message-----
From: Jason Leach [mailto:jason@living-hope.org]
Sent: Thursday, November 21, 2002 11:07 AM
To: 'Red Hill Valley Project'
Subject: RE: expressway

thank-you very much

I appreciate your help.

Jason

-----Original Message-----
From: Red Hill Valley Project [mailto:rhvp@hamilton.ca]
Sent: Thursday, November 21, 2002 10:39 AM
To: 'jason@living-hope.org'
Cc: Everson, Neil
Subject: RE: expressway

Thanks for your note, Jason. We agree that new opportunties for jobs on the Mountian are essential to long term prosperity. At the south end of the expressway/east end of the LINC the Official Plan permits a combination of residential, commercial and industrial development. The industrial component includes the Glanbrook Industrial Park. Most of these areas cannot be built out until the required infrastructure is in place --- including the completion of the Red Hill Creek Expressway.

Neil Everson in the City's Economic Development Department will be able to tell you more about the plans to attract industry to this area. By copy of this email, I've forwarded your message to him and asked that he respond to you directly.

-----Original Message-----
From: Jason Leach [mailto:jason@living-hope.org]
Sent: Wednesday, November 20, 2002 10:29 AM
To: rhvp@city.hamilton.on.ca
Subject: expressway

I am a downtown resident (25 years old) and have been in favour of the Red Hill Expressway ever since I got old enough to care about local politics. I believe it will be good for lower city residents who are unfortunately used to having trucks roar through their neighbourhoods everyday. And of course, it will provide a link to HIA from the east end and Niagara region.

However, lately one big concern has developed in relation to this project - no, I'm not a tree-hugger - my concern has to do with land zoning at the top of the expressway.
I constantly hear references made like 'once the highway is in, we can build thousands of more homes' and things like that.

Everyone who knows anything about our local economy knows that 1. we need

some big industrial investment to help our tax base and ease our tax burden, 2. we have a shortage of highway land available for industrial development, 3. the city of Brantford just eliminated their debt over the past 5 years thanks to explosive industrial growth along Hwy 403. and 4. suburban sprawl along a highway is a huge waste of land (see Hwy 403 through Ancaster) and will certainly not help our city's financial situation.

Where can I find info on what the land around the Linc/Red Hill junction is zoned as? If the majority is residential, I would seriously consider my support of this project. I never thought I'd say that, but we NEED industrial development in this city, not more residential.... take a look at the QEW, 401 etc.... the highways are lined with industry on both sides and then about 1,000 meters or so back from the highway the residential areas start. This should be our approach here (although due to the fact that the new expressway isn't a straight highway with land on both sides for miles, we should develop a huge industrial park along the junction)

Any help you can give me about my zoning question would be greatly appreciated.... or email addresses to folks at the city who deal with this sort of thing.

Thank-you

Jason

My Freeways Opinions

One & foremost we cannot afford it   DEC 11 2002

our green space is violated when we lose our smog days what's going to happen, lack of trees etc. don't we matter?

(3) what happened to rail service? trucks should be secondary.

(4) Clean water & good sewer system is very much in need and most important.

(5) Hamilton has a reputation for poor; hasty judgement, sewage in the red hill creek, ~~Gore Park~~. Hamilton is like a spoilt child I want want isn't that why we got amalgamated cause you can't manage your money so you want all of ours?

for years some very intelligent people have been giving their opinion on the expressway maybe the small time politicians & Council should listen to the people more isn't that what democracy is all about?

I live at 15 Marston St
Marston
I'm a tax payer
on a fixed income
Stoney Creek
In short
my Postal Code L8J1G5

Save Address(es) | Block

Previous | Next | Close

From : "amanda" <aburry@lura.ca>
To : <abburry@hotmail.com>
Subject : FW: Comments on Draft Studies for Red Hill Valley Project
Date : Wed, 18 Dec 2002 18:19:47 -0500

Reply | Reply All | Forward | Delete | Put in Folder...

Printer Friendly Version

-----Original Message-----
From: Sally Leppard [mailto:sleppard@lura.ca]
Sent: Wednesday, December 18, 2002 1:44 PM
To: aburry@lura.ca
Subject: Fw: Comments on Draft Studies for Red Hill Valley Project

Same

----- Original Message -----
From: "Red Hill Valley Project" <rhvp@hamilton.ca>
To: "'rhicks'" <rhicks3@cogeco.ca>
Sent: Wednesday, December 18, 2002 9:06 AM
Subject: RE: Comments on Draft Studies for Red Hill Valley Project

> Thanks for your email. Replies to your questions will be contained in the
> consultation report that is expected to be finalized in the first quarter
of
> 2003. This consultation report will have replies to questions raised
> concerning the reports released in 1998 for comment, as well as the 2002
> reports.
>
> We'll contact you as soon as the report is finalized.
>
> -----Original Message-----
> From: rhicks [mailto:rhicks3@cogeco.ca]
> Sent: Wednesday, December 18, 2002 8:28 AM
> To: rhicks; Red Hill Valley Project
> Subject: Re: Comments on Draft Studies for Red Hill Valley Project
>
>
> Dear Mr. Murray
> Just a friendly reminder that I await your respnse to my message of Dec
> 12th.
> Pleae know that your attention to this is appreciated.
> Regards
> Bob Hicks
>
> ----- Original Message -----
> From: "rhicks" <rhicks3@cogeco.ca>
> To: "Red Hill Valley Project" <rhvp@hamilton.ca>

Amanda Burry

From: Bianco, Catherine [cbianco@hamilton.ca]
Sent: Monday, December 16, 2002 2:37 PM
To: Sally Leppard (E-mail); Pam Hubbard (E-mail)
Subject: FW: Comments on Draft Studies for Red Hill Valley Project

-----Original Message-----
From: rhicks [mailto:rhicks3@cogeco.ca]
Sent: Thursday, December 12, 2002 8:38 AM
To: Red Hill Valley Project
Subject: Fw: Comments on Draft Studies for Red Hill Valley Project

Red Hill Valley Project
Suite 320
77 James Street North
Hamilton ON L8R 2K3

Attention: Mr. Chris Murray Director Red Hill Valley Project

Dear Mr. Murray

Further to my response to you on Monday of this week, I would like to make a further request.

In your reponse dated December 9th you stated the following:

"In fact, it's estimated that between an average of 195 fewer collisions each year will be avoided by the construction of the expressway. Of the 195, 73 are expected to result in injury or fatality. Also, the estimate of 195 is conservative; using a less conservative approach, the figure is an average of 426 fewer collisions per year. Aside from the human factor, this tranlates into a predicted collision cost savings of just over $3 million annually using the lower number and a savings of about $7.5 million annually using the higher number."

Please provide the detailed data on your traffic accident claims. I believe this claim was raised in 2000 but the supporting documentation has never been released. If this information is being used to justify the expressway project the public deserves an opportunity to examine these details more closely.

I look forward to your response.

Yours truly,

Bob Hicks
4467 Hawthorne Drive
Burlington ON
L7L 1G7
rhicks3@cogeco.ca
home phone 905-632-5829

----- Original Message -----
From: "rhicks" <rhicks3@cogeco.ca>
To: "Red Hill Valley Project" <rhvp@hamilton.ca>
Sent: Monday, December 09, 2002 10:46 PM
Subject: Re: Comments on Draft Studies for Red Hill Valley Project

> Red Hill Valley Project

> Suite 320
> 77 James Street North
> Hamilton ON L8R 2K3
>
> Attention: Mr. Chris Murray Director Red Hill Valley Project
>
> Dear Mr. Murray
>
> Your response (below) to my letter is neither appropriate or adequate.
>
> The response that you have provided states that you wanted to further
> identify and understand the impacts the roadway would have on the
> environment and then mitigate or lessen any impacts that we could. That
> objective remains as wise today as it was in 1997, however to date you
have
> not done this adequately considering the significance of the impacts that
> this project will have on the surrounding community.
>
> I was expecting, and still would appreciate a much more detailed response.
> Therefore, please know that I still object to this project and recommend
> that it should not proceed. Also, it would be appreciated if you would
> provide a response that specifically addresses each of my three itemized
> points.
>
> Yours very truly,
>
> Bob Hicks
> 4467 Hawthorne Drive
> Burlington ON
> L7L 1G7
> rhicks3@cogeco.ca
> home phone 905-632-5829
>
> ----- Original Message -----
> From: "Red Hill Valley Project" <rhvp@hamilton.ca>
> To: "'rhicks'" <rhicks3@cogeco.ca>
> Sent: Monday, December 09, 2002 9:21 AM
> Subject: RE: Comments on Draft Studies for Red Hill Valley Project
>
>
> > Thank you for your comments on the Red Hill Valley Project.
> >
> > Hamilton is a city with an Official Plan that directs where growth will
> > occur. The City and the former City of Stoney Creek determined that the
> > southeast section of the Mountain was to be an area of growth for
> > residential, commercial and industrial properties. This growth was
> > predicated on the completion of the Red HIll Creek Expressway. You
might
> > ask why the City is pursuing this growth and the answer is that we need
> > assessment growth in the industrial/commercial category. Healthy cities
> > have assessment ratios of 65/35 --- 65% residential and 35%
> > commercial/industrial. Hamilton's ratio is 86% residential to 14%
> > commercia/industrial. In the 1950s, this ratio in Hamilton was 50/50.
> >
> > In 1985 the expressway project was approved by the Province, which is
> paying
> > 50% of the cost. When the City was ready to recommence work on the
> > north-south leg in 1997, we first wanted to complete an impact
assessment
> > process --- in other words, we wanted to further identify and understand
> the
> > impacts the roadway would have on the environment and then mitigate or
> > lessen any impacts that we could.
> >
> > There are many in our community who do support this project. The
business
> > community around the Port needs more transportation infrastructure; the

> > airport is depending on transportation infrastructure for growth and
> > expansion. The residents who live in areas where large trucks are using
> > streets not designed for their weight are waiting for the expressway.
In
> > fact, it's estimated that between an average of 195 fewer collisions
each
> > year will be avoided by the construction of the expressway. Of the 195,
> 73
> > are expected to result in injury or fatality. Also, the estimate of 195
> is
> > conservative; using a less conservative approach, the figure is an
average
> > of 426 fewer collisions per year. Aside from the human factor, this
> > tranlates into a predicted collision cost savings of just over $3
million
> > annually using the lower number and a savings of about $7.5 million
> annually
> > using the higher number.
> >
> > -----Original Message-----
> > From: rhicks [mailto:rhicks3@cogeco.ca]
> > Sent: Friday, November 29, 2002 8:34 AM
> > To: rhvp@city.hamilton.on.ca; rhvp@hamilton.ca
> > Subject: Comments on Draft Studies for Red Hill Valley Project
> >
> >
> > Red Hill Valley Project
> > Suite 320
> > 77 James Street North
> > Hamilton ON L8R 2K3
> >
> > Attention: Mr. Chris Murray Director Red Hill Valley Project
> >
> > Dear Mr. Murray
> >
> > I am submitting to you my comments on the Draft Studies for Red Hill
> Valley
> > Project which are as follows:
> >
> > I object to this project and recommend that it should not proceed for
the
> > following reasons:
> >
> > 1) This project violates and goes against the principles and spirit of
> > Sustainable Development defined as development that meets the needs of
the
> > present without compromising or jeopardizing the ability of future
> > generations to meet their own needs. I say this based on the many
> arguments
> > that have been put forward by opponents to this project that are well
> > documented.
> >
> > 2) The opponents to this project have made their case well and the City
of
> > Hamilton has not responded to their reasons why this project should not
> > proceed in a way that has made a convincing case why it should proceed.
> In
> > my view the City of Hamilton has listened closely enough to the
> objections
> > as made evident by the lack of appropriate responses to those
objections.
> >
> > 3) In light of the seriousness of this decision, I would recommend the
> > following approach be taken to fairly address all issues before this
> project
> > proceeds any further. The opponents should be allowed to submit their
top

> > 100 reasons why this project should not proceed and the City of Hamilton
> > should respond in writing to each concern to make it's case why those
> reason
> > should not individually or as a hole put an end to this project. If the
> > City can provide convincing reasons why those concerns are of little
> > importance or inaccurate then the project would be given support by the
> > community to proceed based on a cost benefit analysis and dependant upon
> the
> > projects affordability.
> >
> > I request that the comments provided above be filed as an offical
> objection
> > to this project as it is being recommended at this time.
> >
> > I would also appreciate a written response to the above, via mail or
> email,
> > at your convenience.
> >
> > Yours very truly,
> >
> > Bob Hicks
> > 4467 Hawthonre Drive
> > Burligton ON
> > L7L 1G7
> > rhicks3@cogeco.ca <mailto:rhicks3@cogeco.ca>
> > home phone 905-632-5829
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Amanda Burry

From: Bianco, Catherine [cbianco@hamilton.ca]
Sent: Monday, December 16, 2002 2:45 PM
To: Pam Hubbard (E-mail); Sally Leppard (E-mail)
Subject: FW: Red Hill Valley Project

-----Original Message-----
From: AustinPa7@aol.com [mailto:AustinPa7@aol.com]
Sent: Friday, October 18, 2002 4:20 PM
To: rhvp@city.hamilton.on.ca
Subject: Red Hill Valley Project

Would like to enquire whether or not a Cultural Resource Evaluation has been conducted in the proposed development area. If so - would like to obtain a copy. If not - would like to register my concern.

with regards/thanks,

P. Austin

Comments on
Fisheries – Existing Conditions and Predicted Impact

from Friends of Red Hill Valley
December 2002

1. This response has been prepared as a result of a citizens' review of the document entitled "Red Hill Creek Expressway Impact Assessment and Design Process: Fisheries – Existing Conditions and Predicted Impact" (Portt and Coker, 2002). This report was prepared in June, 2002 for the City of Hamilton as a submission to the Department of Fisheries and Oceans and was released to the public in October, 2002 along with a series of other reports. Of these recent reports, the current review is specifically limited to Portt and Coker (2002). Several other documents prepared and released concurrently in 2002 by the City of Hamilton contain information relating to fish habitat and where relevant, reference to these reports has been made.

2. It should be further noted that the City of Hamilton released numerous documents in 1998 relating to the preliminary design of the proposed RHCE project. At this time, the public was invited to comment on the many draft reports, several of which related to impacts on fish and fish habitat. In response to the considerable shortcomings of these reports (and the overwhelming controversy to the project in general), several critical reviews were submitted to the project proponent within the stated timelines. *To this day, four years later, we have received absolutely no response to these submissions with our concerns essentially ignored.* Consequently, many of these concerns, outlined in our original submission on fisheries impacts in 1998, will be re-stated here as many are as relevant as they were 4 years ago.

3. Red Hill Creek remains an important component of the Hamilton Harbour ecosystem and is the second largest watershed in the Harbour. As Hamilton Harbour continues to recover under the Hamilton Harbour RAP, healthy tributary streams will be directly required for the perpetuation of many harbour species, including forage species such as common suckers and cyprinids, as well as predators such as northern pike.

   The Red Hill Creek watershed has been extensively urbanized and as a result has become a very hydrologically flashy system. This has resulted in extensive erosion and channel instability contributing to habitat degradation in many reaches of the creek. Despite these physical impacts and generally impacted water quality, a total of 24 species of fish have been reported from the regions downstream from Albion Falls. These include chinook salmon, brown trout and rainbow trout, as well as the northern hog sucker and northern pike (Portt and Coker, 2002). Although no COSEWIC listed species have been reported, several species are noteworthy. These include the threespine stickleback (*Gasterosteus aculeatus*) which has been classified as highly significant in the Region of Hamilton-Wentworth (Staton 1996) and the lake chub (*Couesius plumbeus*) which likely ascends Red Hill Creek in the spring to spawn (Portt and Coker, 2002), but occurs only very rarely in Hamilton Harbour (Heagy et al., 1995: cited in Staton 1996). Fish diversity is highest in the lower reaches where the effects of several deep pools and close proximity to Hamilton Harbour influence the community.

4. The most significant proposed direct alteration to fish habitat in the Middle Red Hill Creek includes "the re-alignment of the creek from the Bruce Trail footbridge at the base of the Niagara Escarpment to downstream of the CNR railway". This 8 km reach represents the majority of the entire main branch of the watershed and includes virtually all of the Creek's most significant fisheries habitat accessible from Lake Ontario (most habitat above the escarpment has been essentially lost through urbanization – see Staton 1996). Existing habitat will be replaced by a newly created creek using the principles of Natural Channel Design (NCD) as outlined in WRIS (2002). Although a review of this design is beyond the scope of the present response, several points are warranted. Firstly, this reconstructed channel is an enormous undertaking of unprecedented proportions and the possibility of design flaws leading to channel failure is high. It appears that the authors have presented the 'extreme upside' of such an experiment, and the consequences of partial or complete failure could result in the Creek gravitating towards a further degraded state than its present condition (with the added stress of re-colonization of the aquatic community including benthic invertebrates and fish). As such, **we strongly recommend the design deserves a rigorous and unbiased, out-of-province peer review by recognized experts in the field of fluvial geomorphology and NCD.**

5. That said, we have chosen to highlight some of our own most pressing concerns regarding the proposed reconstruction of 8km of Creek channel.

Natural channel design can be a practical and proven means of correcting minor waterway erosion problems, but to our knowledge it has never been applied on a scale of this size, and within such a highly urbanized watershed. Even with the stabilizing measures proposed, a "fresh" channel carved in the Red Hill Valley floor would soon fail given the severity and frequency of the uncontrolled flood pulses that now plague the Creek. Thus, moderating the current flow regime will be essential if any possibility of success is expected. Locally, other less ambitious NCD projects have failed and for a good example the reader is referred to Martin-Downs (1994) case study of the Humber River diversion for the Highway 407. Considering the City of Hamilton's (and the Region) past record regarding diligence with matters regarding fish habitat (see appendix for examples), one is not encouraged.

6. The issue of bank stability of the newly constructed channel is crucial to the possibility of a healthy, dynamic stream channel. Previous reports note the dire importance of mature trees and their roots systems to maintain bank stability under the Creek's current flow regime. The fluvial geomorphology report (Anonymous 1997) concluded that "the long term stability of the creek's banks are strongly dependent upon large woody debris as vegetative control against stream bank erosion". In the absence of such vegetation, this study measured erosion rates (in the reach of proposed re-alignment) of nearly 2m(!) on bends with sparse vegetation. Even if flows are reduced to a point that might allow the possibility of a healthy, dynamic stream channel, excessive erosion of the new channel seems almost certain before mature trees and their root systems can become established. Construction of the new channel will result in the loss of large riparian trees. Even in sections that use the 'paleo channel', estimates indicate that trees will be removed for several meters from the edge of the new bank. Such tree removal will effectively remove all canopy cover over the entire Creek. This will cause direct exposure to solar warming and cause high stream temperatures further stressing the aquatic system.

Specific concerns are warranted for the lower reaches of the Creek. Fish habitat has already been disrupted in 2002 by the re-location of the creek downstream of the CNR as part of the remedial work related to the Rennie, Brampton and Nash landfills. The expressway plans require further disruption of this reach including the removal of part of the leachate collection for the Rennie dump, and the removal of 70,000 cubic metres of highly toxic material from this landfill. This poses very obvious serious risks to the creek, fish populations and the marsh. Thus, there are two major changes to the creek channel in this region, with the additional risk of exposure to a potentially disastrous toxic spill into the creek if the new channel fails.

7. The re-alignment calls for the removal of several structures noted as barriers. One of these, the concrete saddle above King St. is a relatively minor structure that no longer appears to function as a barrier to fish passage. An inspection of this structure in November 2002 revealed that recent channel adjustments (due to the collapse of high bank) have raised the water level below, reducing the drop from 60cm to something less than 20cm.

8. Additional concerns are warranted once that channel has been constructed and transfer of Creek flow has been made. The channel will begin to erode, and redefine its boundaries. This will create a tremendous amount of initial sediment loading that will move downstream and dump into Windemere Basin. This loading will accelerate the filling of the Basin and translate into larger and more frequent dredging costs. Dredging in Windemere Basin last occurred in 1988, and now eleven years later is needed again. At its current level, the basin may not hold the material that will be flushed out of the newly created channel. If this happens, sediments will begin to pass through to Hamilton Harbour, further hindering the objectives of the Hamilton Harbour Remedial Action Plan.

Lastly, although the City contends that up to 500m of additional fish habitat will be created by a longer channel, this will be more than negated by the addition of 6 new bridges (not to mention 1 emergency bridge, 4 golf course bridges, and 4 pedestrian bridges).

9. Portt and Coker (2002) have made only a brief mention of salmonid spawners and further comment on specific issues warrant mentioning here. Fall spawning runs of chinook salmon in Red Hill are common and in 1995, Staton (1996) reported the collection of a chinook salmon smolt of about 10 cm in length from the lower Creek, suggesting natural reproduction. C. Portt and Assoc. (1997) go to great lengths to dispute that the salmon smolts (actually parr) captured kilometers upstream in Red Hill Creek were naturally reproduced. They contend that the source of these individuals may have been from those stocked at the mouth of the Burlington ship canal many convoluted kilometers away. This explanation would require a parr to travel from cold, clear lake waters into the much warmer, turbid and polluted waters of Windemere Basin, past the Woodward Sewage Treatment Plant and finally ascend several riffles to the pool where it was captured. It seems far more probable that this parr was naturally reproduced. Recent surveys of other Lake Ontario tributaries by the OMNR have shown natural reproduction by this species to be much more common

than was previously thought. Chinook salmon are also the least demanding of the migratory salmonids as the young do not require year round cool stream temperatures since they smolt out of the creek prior to warm summer temperatures. Further evidence suggesting recruitment potential (but overlooked by C. Portt and Associates) was cited by Staton (1996) who reported developing rainbow trout eggs at the mouth of Davis Creek in mid May, weeks after the peak of the spawning run for this species. However, regardless of the origin of the young salmon, the fact remains that adult chinook salmon spawn in the creek and that parr of this species are present. It can thus be concluded that suitable fish habitat exists for both life stages of this species.

10. Chinook salmon, as well as rainbow trout and brown trout use Red Hill Creek as habitat at least on a seasonal basis. Since these fish are generally much less tolerant than the majority of Red Hill's resident species, there is no doubt that the entire fish community (and the quality of the watershed as a whole) would benefit from management that acknowledges their presence. In particular, groundwater resources are of paramount importance in reducing stressful summer temperatures. In the present report by Portt and Coker (2002), the significance of groundwater is minimized with the following statement on page 4: "Below the Escarpment the underlying Queenston shale has low permeability, as does the overburden in most areas. As a consequence, there is relatively little groundwater infiltration or discharge." No further mention of groundwater discharge or its potential importance to the RHC fishery is made. In contrast, the hydrology technical report, by Terraqua Investigations Ltd. (1997), identified a 'major groundwater discharge zone' in the reach halfway between King Street and the escarpment. Further evidence of groundwater discharge in this area was reported by C. Portt and Assoc. (1997). They installed a temperature logger at the downstream end of Kings Forest Golf and Ski Park which recorded temperatures at 15 minute intervals from July 4 to December 13, 1996. Their findings indicated consistently lower temperatures in this area with "daily maxima typically between 19 and 22C" (with an overall maximum of 24.5C) for the hottest summer months of July and August. Thus, the stream temperatures moderated by this major groundwater discharge zone demonstrate excellent cold water potential for the lower RHC watershed.

Thermal conditions reported by Stoneman and Jones (1996) in other Lake Ontario tributaries containing salmonids compares favorably with RHC. For example, in the lower Wilmot Creek with a maximum water temperature of 23.5C, a community that included brown trout and rainbow trout was encountered. Surprisingly, even in the warmer waters of the lower Ganaraska River with a maximum water temperature of 28C, Stoneman and Jones (1996) still encountered a few rainbow trout. Since the overall maximum temperature for the reach of RHC in question was 24.5C, the thermal conditions are relatively close to those reported from the lower Wilmot Creek. As such, it would be realistic to suggest that the existing temperatures in this reach could potentially support cold water species such as rainbow trout.

11. Unfortunately, it is apparent that Portt and Coker (2002) have not considered the effect of the RHCE project on groundwater discharge from a fisheries perspective. The channel re-alignment above King Street directly overlaps the only 'major groundwater discharge zone' on the lower portion of RHC. As such, this channel re-alignment may have a significant influence on groundwater discharge and could have serious consequences to the existing and potential fisheries resources throughout the remainder of the watershed. A thorough investigation into these matters would be prudent to prevent risking a permanent harmful alteration.

12. It is also worth noting that a 30% reduction in recharge in the sensitive groundwater areas is expected as a result of the RHCE works (cited in the Draft Summary Report, 1997). The City of Hamilton has previously proposed mitigation by designing storm water infiltration facilities (basins and trenches). However, this will impact groundwater quality by introducing contaminated recharge water likely high in sodium and chloride and possibly other pollutants. This possibility is also noted in the hydrological report (Terraqua Investigations Ltd. 1997), which found that "contaminant susceptibility is the greatest in the lower watershed where the permeable sands and gravels exist". It is therefore imperative that any proposed stormwater ponds do not contaminate any existing/future groundwater discharge to the Creek.

13. Expressway runoff is grossly contaminated and presents an additional threat to the RHC aquatic community that will be difficult to mitigate. A recent study by Marsalek et *al.* (1997) characterized stormwater runoff from the Skyway Bridge in Burlington, Ontario. They found that mean concentrations of Zn, Cu, and Pb in runoff sediment was high and indicated that according to the OMEE guidelines for sediment quality, this sediment was "grossly polluted". Marsalek et *al.* (1997) also concluded that "the runoff chemistry indicates that uncontrolled discharges of highway runoff could significantly impact receiving water quality". Considering the severity of these findings from the QEW and the fact that stormwater runoff from the RHCE will essentially be the same (or possibly worse due to higher traffic volumes), it is imperative that there be no possibility of untreated stormwater runoff entering RHC.

14. In order to mitigate direct contamination of the Creek from hazardous expressway runoff, as well as provide some stormwater quantity attenuation, storm water management ponds are proposed at various locations within the valley (Porrt and Coker, 2002). However, such ponds remove only a portion of the stormwater's contaminant load; what settles out is trapped in sediments that will continually need to be removed and disposed of as hazardous material. Properly designed stormwater ponds would be expected to help reduce the high levels of contamination created by expressway runoff, but the overall impact to the RHC watershed and Hamilton Harbour will surely be a net increase in loadings of heavy metals and other pollutants.

Based on what is known about the volumes of water entering Red Hill Valley, the proposed stormwater ponds will have a negligible impact on the reduction of peak flows that are necessary (previously, design maps often showed storm water ponds located in the middle of interchanges, thus limiting the drainage area and storage capacity). In fact, such ponds will only lessen the effect of the additional area of hardened surface introduced to the watershed through the construction of the expressway. The situation will be further exacerbated through the increase in surface hardening directly related to the new and rapid urban development associated with the expressway.

An additional concern surrounding the proposed storm water ponds is the issue of groundwater contamination if constructed on permeable soils. Many expressway contaminants may percolate through the soil to the water table (see section on groundwater impacts) where they can migrate as contaminated groundwater and potentially be discharged into the creek.

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Appendix: Local Government's Track Record on Impacts to Fish Habitat

The attitude of local government towards any or all of Red Hill Creek's anthropogenic problems, has typically been *Laissez faire*. Attention is often only paid to problems when the repercussions of neglect directly affect the budget. Even then, actions only seem to be taken after intense public pressure forces them to make a decision in the best interest of the community. Despite the fact that the Fisheries Act clearly states "no person shall carry on any work or undertaking that results in the harmful alteration, disruption or destruction of fish habitat (Section 35(2)) without authorization by the Department of Fisheries and Oceans", the City of Hamilton and the Regional Government of Hamilton-Wentworth consistently do physical damage to Red Hill Creek. As stated in Portt and Coker (2002), "The banks in some sections of Red Hill Creek and its tributaries are highly unstable, due to changes in flow which have accompanied urbanization, as well as past vegetative management practices and the presence of numerous in-stream channelization and erosion protection works, many of which have exacerbated erosion problems" – page 5. Some examples are discussed below.

City crews have also been noted as removing woody, stream side vegetation, often using chainsaws to remove dead snags which are operating as fish habitat, but perceived as potential flow restrictions. Another such example that resurfaces often is the cleaning of culverts. On several occasions, large machinery has been driven through the creek bed in order to access woody debris built up at the mouths of culverts. In some cases when access was restricted, earth has been back-filled into the creek in order to provide footing for the equipment. These activities occur regardless of season and often take place during the spring and fall fish migrations. The damages are perpetuated downstream, as sediments are carried away and deposited on spawning beds, and in pools used as staging areas for migrating fish.

Another example of neglect relates to the construction of the King Street overpass in which a wide, smooth concrete channel was constructed. The concrete channel and culvert was identified by the Region's fisheries consultant, C. Portt and Assoc. (1997), as a barrier to fish migration and there have (previously) been no plans to correct the situation. The culvert also directs water at the existing stream bank, causing accelerated water velocity, and interrupted sediment transport. As a result, during rain storm events, high velocity water is directed at the stream bank causing rapid erosion. Further downstream, excessive erosion caused the uncovering of a main sewer line exposing it to the risk of damage. To remedy this problem, the city created a new stream channel, protected the eroding bank with armor stone and reburied the sewer line. Even though the regional government was notified of the situation more than six months previous, the project did not finally get under way until the spring spawning run of white suckers – the most abundant large fish currently using the creek (at this point, the work was considered an 'emergency' need). During the channel repairs, no effort was taken to minimize impacts to the water quality of the creek, or to the spawning fish. Large quantities of sediment were dumped into the creek as earth was added (Tys Tysmeijer, pers. comm). The creek was further muddied as the machinery drove through the fresh earth and the creek bottom, causing excessive sedimentation and smothering fish eggs from the construction site to the mouth of the creek. This was such a blatant violation of the Fisheries Act, and done so openly, that onlookers could hardly believe what they had witnessed.

This project did not, however, include alterations to the King Street culvert to correct the underlying hydrological problem and massive erosion problems have continued to plague this area to the present day. The creek has continued to erode away under the armor stone wall, and has resulted in its total collapse. This is typical of the band aid approach taken by the Region and has resulted in on going destruction and degradation of fish habitat.

Finally, the massive 220m concrete channel at Queenston Road was constructed by the Regional Municipality in 1990-91 continues to wreak havoc on Red Hill fish populations. As early as the spring of 1992, regional officials reported to Council that the channel was interfering with the spawning run of white suckers. While some suckers do succeed in getting past this barrier, smaller fish are likely prevented from moving upstream past this obstruction, and chinook salmon have repeatedly been blocked in their fall spawning run by this channel. This channel has now been in place for more than a decade, and the local government has repeatedly refused to correct the problem.

These are but a few recent examples of the disregard the regional government has shown towards the fish and fish habitat of RHC, and also of their complete indifference towards the Fisheries Act. This behavior has created a widespread distrust towards the regional government (including the City of Hamilton) by individuals concerned with the health of the aquatic community in general. As such, the City's plan to 'fix the creek' during the proposed construction of the RHCE has been understandably met with much skepticism by those interested in the future of the Red Hill Creek fishery.

70 Townsend Ave.,
Burlington, Ontario.
L7T 1Y7
December 11, 2002

To: City of Hamilton,
Red Hill Valley Expressway

Subject: Comments on Pre Red Hill Valley and Post Linc' Construction Ambient Air Quality Monitoring by RWDI Consulting - October 7, 2002.

I have the following comments.

1. I have to wonder about the sincerity, and good faith of the City in this current round of invited comments on reports. This is because I have waited in vain for more than 4 years to get a promised written response to comments I submitted, again at City invitation, to several previous reports in October of 1998.

Since it seems that the City will never live up to its end of the public consultation process by responding to comments made, I have to wonder about the credibility of the City in this round of reports and invited comments. In fact, having a response to my previous comments would have assisted me in making the present set of comments.

Instead, my ability to undertake this review has been hampered. This lack of response is unacceptable, insulting, and calls into question the entire process.

Contrary to the City practice thus far, a credible process would respect the legitimacy of the approval processes, and that authorizations are not absolutely guaranteed. With such respect, the City would be cautious and defer actions until all the approvals are in hand.

As well, the City would involve the public consultation in two-way engagement, listening and responding to concerns in an open, public manner. Instead, what the City has done so far is to be thankless, effectively ignore comments and concerns raised, and to indicate that they are proceeding to build regardless of radically changed circumstances and much increased knowledge.

2. These RWDI monitoring reports claim to represent the fulfillment of certain requirements of the provincial approval process, and in particular, conditions set out in the report of the Joint Board Hearing of October 1985, regarding the construction of the East-West and North-South portions of the road-building projects examined by the Joint Board. The approval set out there, and by MOEE, is contingent on the completion of ambient air quality monitoring before, during, and after the construction of the projects.

In fact, this requirement of the approval process has not been met, since, for one thing, no pre-, or during, construction monitoring of the East-West section, the Linc, was ever done.

Furthermore, it is obvious that there are large differences in variables affecting air quality over the length of the east-west and north-south routes, indicating that multiple stations along those routes would be needed to provide the needed data called for by the approval process.

As well, the distance between the Linc, and the location of the monitoring station is greater than 150 metres or almost 500 feet, which is too far. Recent scientific studies indicate that measurements of, and human exposures to, fine particulate pollutants, such as included in PM10, are very much higher than ambient, up to 30 times higher, within 165 feet of such major roadways.

As well, it is reported that the levels of the ultrafines fall to 30% of the maximum within 330 feet. A station 500 feet away is not likely to pick this up.

These fine particulates are the deadliest, causing cancer, chronic bronchitis, cardiovascular disease, and asthma, in addition to acute mortality. There is a need to redo the monitoring to be closer to the roadway.

Also, the so-called post-construction Linc' monitoring was done in a location that the City's own data (Hamilton-Wentworth Traffic Volumes - 1998 and 1999 editions) says underestimates the Linc traffic by about 50%. In round numbers, the traffic in the chosen location would be about 35,000 to 40,000 vehicles per day instead of around 70,000 to 80,000 vehicles per day.

Given the RWDI reported direct relationship between traffic volumes and pollutant concentrations on a daily or 24 hour basis, it is evident that the pollutant concentrations reported by RWDI are an underestimate of the overall Linc air pollution levels. This fact is well known to the City, and to rectify this deficiency, more monitoring or modeling is needed to measure the air quality in areas more representative of Linc traffic volumes. It would also greatly help our understanding if the City would reinstate its traffic data collection in the area of the Linc and the proposed expressway.

Moreover, it highly relevant that the traffic on the Linc does not have the truck volumes that will exist if the North-South section is built in the Red Hill Valley. The City has failed to provide any reports and supporting references for estimates of light and heavy traffic loads to the expressway and to the Linc.

Since McMaster University scientists report that trucks emit 30 to 100 times more PM than catalytic converter equipped passenger cars, the present

post-construction monitoring results underestimate again the pollutant concentrations that would result from construction of the north-south section hooking up with the eastern terminus of the Linc near the monitoring station location.

Based on this failure to adequately provide the data called for by the approval process, I submit that the City has failed to meet the requirements of said approval process, and is not in compliance with the Exemption Order.

3. Further to a particular noted in 2 above, monitoring in the areas more representative in terms of Linc traffic volumes is needed as I stated, however, in the short run, RWDI can be asked to estimate what the levels of PM-10, CO, and NOx would be assuming double the traffic that was present during the period of their monitoring (and to estimate concentrations within 165 feet of the Linc).

In addition, changing the traffic composition to include truck volumes consistent with the construction of the north-south section in the valley should also be modeled and estimated by RWDI.

4. It is of concern that in both studies the monitoring period was only six months, and these months were not even comparable periods. Specifically, the "pre" study was for December 1997 to June 1998, and the "post" study was from May to November 2000. A more adequate sampling period would be 12 months in both cases, for what should be obvious reasons.

5. It is also of concern that the "post" study is much inferior in coverage and depth than the "pre" study. In the "post" study only PM-10 was monitored continuously, whereas, the "pre" study continuously monitored CO, NOx, NO2, and NO in addition to PM-10.

All the gas phase species should have been monitored in the "post" study because, for example, NOx and CO are more indicative or selective markers for road traffic sources than is PM-10. In addition, there is evidence, from Toronto, that premature mortality, and morbidity there are related to CO and NO2, and are greater than that associated with PM-10.

Again, these deficiencies further indicate the inadequate nature of the monitoring done. This monitoring should be redone in a comprehensive manner.

6. The RWDI studies contain a totally inadequate and shoddy assessment of the health risks of the various pollutants monitored. They make much of the point that there are no exceedances of MOEE criterion levels, but these are so incomplete, and out of date, that there is evidence that they are in no way protective of human health. It is very clearly acknowledged, everywhere, except

in Hamilton in seems, that air pollution is a significant health hazard and threat to public health.

For example, the MOEE interim 24-hour AAQC for PM-10 of 50 ug/m3 is cited, however, criteria in other jurisdictions, either existing or proposed, are omitted. Specifically, The European Union has set the level of 40 ug/m3 for all EU members to meet by 2005. It is further proposed that a more ambitious limit value of 20 ug/m3 be effective in 2010.

As well, a Canada-wide standard is under development with the aim to set a standard of 30ug/m3. Also, the U.S EPA has plans to reduce their PM-10 standard to 40ug/m3 from 50. All of these lower levels are predicted to prevent many premature deaths.

In general here, there are many non-essential metals in the air pollution, for which there are no biological homeostatic or balance control mechanisms, and which are known to be toxic. In most cases there are no criteria, some of these are associated with road traffic sources, and there needs to be a health risk assessment done on these.

There are also other and similar concerns here with the VOCs, some of which are also known carcinogens and are otherwise toxic. And as noted above, studies in Toronto have indicated significant health effects due to CO and NO2, but these too are ignored.

There are also a great many PAHs identified, some of which are known carcinogens and mutagens, and there is no risk assessment done on these. For example, the PAH contain the classic carcinogens, initially identified as causing scrotal cancer in English chimney sweeps, but popping up frequently in the literature as known and model carcinogens.

Further, the recent study published by two McMaster University scientists, and reported in the Hamilton Spectator on December 10, adds a new and foreboding chapter to the health effects of the particulate matter, and PAH mixture. This study showed that air polluted with PAH, which is associated with the PM-10 mixture, causes genetic damage in adult mice, a mammal species as humans are, that is passed on to the offspring, mostly through the father.

While the study suggested that air pollution from the Hamilton steel mills was involved, it is scientific fact that traffic generated air pollution contains many of the same PAH and PM-10 associated compounds, and can thus have the same kinds of effects.

None of these kinds, indeed any kinds, of health effects are considered by the RWDI studies which, as I noted above, are completely incautious in the

health regard, instead cavalierly stating that all is well since no MOEE criteria are exceeded. This is a clear case of failing to exercise due diligence with respect to the health of the community, and especially the children.

7. There are other examples of the total absence of any consideration of real health effects of the reported pollutant concentrations and their variations. Take, for example, the reported PM-10 data.

The scientific literature indicates that there is no level of PM-10 that is completely safe. In other words, every ug/m3 has it's own disease burden, in a seeming straight line, right up from zero. Published review studies indicate that a 1 ug/m3 change in PM-10 concentrations is associated with a 0.1% change in mortality, or a 10 ug/m3 change is associated with a 1% change in mortality.

There is also recent evidence from the U.S. that every 10ug/m3 increase in PM10 results in 6% more cardiopulmonary deaths, and 8% more lung cancer deaths annually.

There also exist dose-response functions (all per 10ug/m3 change in PM-10) for morbidity due to respiratory hospital admissions (12.0 per 100,000 population), emergency room visits (237 per 100,000), restricted activity days (0.58 per person), lower respiratory illness in asthmatic children (0.017 per child per asthmatic), asthma attacks (0.58 attacks per person), respiratory symptoms (1.68 per person), and chronic bronchitis (61.2 per 100,000 (risk of new case)). In other words, there are quantified relationships between unit increases in PM-10 concentrations and these forms of disease symptoms.

This observation reflects one aspect of the well publicized health effects of already existing ambient air pollution levels. There are several ways to consider the health effects of the RWDI reported levels of PM-10, but one is particularly illustrative. This is the change in average PM-10 levels over the day in the "post" case of the Linc.

The data show a change, with the onset of traffic, from about 18 as a low to about 28 as a high. So in round numbers, and in particular during the hours of the day when human exposure would generally occur, the traffic volume in the area of the Linc that was monitored caused the PM-10 concentration to increase by 10 ug/m3. Again, based on round numbers, the traffic volume at the monitoring site was about 50% of the real Linc traffic, which thus amounts to about 35,000 - 40,000 vehicles per day as compared with 70,000 - 80,000 per day.

Since the City has failed to record traffic volumes since 1999, it is difficult to be precise here about the traffic volumes in the monitoring period of 2000. Therefore, for present purposes, and to be conservative about unit vehicle

contributions to the PM-10 concentration, the higher traffic volume numbers are used in further analysis.

Thus, the onset of say a 40,000 vehicle traffic volume, a volume that excludes a lot of trucks that will appear if the north-south expressway is built, causes the PM-10 concentration to increase by about 10ug/m3. It logically follows, since emissions increase pretty much linearly with traffic, that a traffic volume of say 80,000 vehicles would increase the PM-10 concentration by 20 ug/m3.

Note that the use of both these traffic estimates herein does not account for the proportion of traffic that occurs in the off peak hours during the low concentration periods. This tends to underestimate the pollutant level increase induced by the traffic during the time period during which the increase takes place.

It is also noteworthy, that increasing the number of trucks in the vehicle mix, keeping the nominal volume constant, increases the effective volume by several times for every truck that replaces a car. There are a number of estimates of this effective increase ratio, from 3 to 5 in some reports, and the McMaster University estimate of 30 to 100 times with respect to PM emissions, as noted above. For conservative purposes, the 3 to 5 factor will be used here.

So, for example, if the 80,000 vehicles per day that now use the Linc, were to be augmented with 5000 additional trucks per day that will surely use it if the expressway is built, that will be the equivalent of adding 15,000 to 25,000 car equivalents to the traffic volume. Using the monitoring results cited above, this would result in an additional 3.8ug/m3 (15/80 times 20ug/m3) to 6.3ug/m3 (25/80 times 20ug/m3) to the PM-10 concentrations.

These observed and derived PM-10 concentrations have health effects that can be estimated using the scientific literature cited. The observed 10ug/m3 increase at the Linc site caused by the low traffic estimate of about (35,000 to) 40,000 vehicles is associated with a 1% increase in the premature mortality in the exposed population.

If the (70,000 to) 80,000 vehicles of traffic that now frequent the Linc have a similar unit air pollution impact as calculated above, then that would increase the PM-10 concentration by 20ug/m3, which is associated with a 2% increase in the premature mortality in the exposed population. The increase in the number of trucks in the traffic mix would add another 0.38% to 0.63% to the increased mortality.

Added on top of this premature mortality is the morbidity. The scientific data for these is listed above. In short, an increase of 20ug/m3 will result in

morbidity effects, such as hospital admissions, asthma attacks, emergency room visits, and new chronic bronchitis cases that are about double those effects cited above. The truck traffic would add an additional burden to this through the additional PM-10 associated with it.

It is also significant that diesel exhaust has been implicated in the U.S. as responsible for close to 80% of total added cancer risk due to outdoor air pollutants.

It is also interesting to consider the reported data on the cumulative frequency distribution of daily PM-10 levels. Put another way, this is a measure of the percentage of time daily that the PM-10 levels are at or below, or as much as, a certain concentration. This data indicates that 100% of the time the level is greater than zero (actually at about 8 ug/m3 as a minimum). This means that there is always an excess mortality and morbidity effect.

The data also show that 50%, or half of the time, the level is at or below about 22 ug/m3, and for 30% of the time it is as much as about 30ug/m3.

One problem with these data is that they don't indicate the time of day that the various PM-10 levels are incurred. This is because, humans, especially children, are out and about, and active during the hours of the day when the traffic and the concentrations of pollutants are the highest, implying a higher exposure than the averaged data indicate.

These cumulative frequency data should be recalculated to reflect concentrations during the hours of peak human activity and exposure.

8. Because of the failure of the City to provide traffic analyses that can be used to estimate the traffic that will use the north-south expressway in the Red Hill Valley, it is more difficult here to estimate such traffic induced increases in the PM-10 (and other pollutant concentrations) levels that will be associated with the expressway. Without issuing supporting documentation, the City has indicated that they expect about 70,000 vehicles per day to use the expressway, with about 6000 trucks daily, 3000 of which will be totally new through truck traffic that will then use the Linc. The reliability of these data is a question mark.

The City underestimated the traffic volumes on the Linc substantially, which raises the concern that the expressway estimates are similarly underestimates. The history of City traffic projections for these projects displays a large range and shows that these projections are highly unreliable. For example, in 1989 the east-west projection started at 26,000 to 35,000 and was not supposed to reach 62,500 until 2006, a volume surpassed in 1999.

Similarly in 1989, the north-south started at 27,000 to 39,000 (higher closer to the QEW), and climbed to 95,000 by the 10th year of operation (effectively 2017). Going further back to 1985, the projections used then to justify the need for the road said there would be 3.5 times more vehicles using the north-south as using the east-west!

Given this, there is no reason to think that the expressway traffic volumes will be significantly different from the Linc traffic of 70,000 to 80,000 vehicles within a short time after it opens, and not in 2021. And since it will provide a shortcut, and open the Linc and itself to the traffic flows of the QEW and the 403, the truck volumes will certainly increase, and the overall traffic and truck flows on the Linc will surely increase as well. These likely possibilities all suggest higher than official estimates of truck and overall traffic on both the Linc and the expressway in the nearer term.

The RWDI "pre" report indicates PM-10 levels that change from approximately 12ug/m3 in the morning to about 22ug/m3 with the onset of traffic. This change, presumably due to traffic, of 10ug/m3, is similar to the "post" change at the Linc, however, the Linc reaches a higher overall level of 28ug/m3, or 6ug/m3 higher. There may be numerous reasons for the difference, but the levels (including those of CO and NO2) are similar to those observed in Toronto sites influenced by traffic.

It is also worth noting that the "pre" monitoring station is a lot closer than 500 feet (more like 50 feet), but is located in a place downwind from the middle of the valley rather than from the roadway.

Recall that the 35,000 - 40,000 vehicle per day traffic at the Linc "post" monitoring station was associated with a 10ug/m3 increase in the PM-10 concentration, similar to the daily increase at the Red Hill "pre" station. But also note that the Linc morning level, after the overnight traffic lull, is 6ug/m3 higher than at Red Hill. This might indicate that the Linc traffic induces a permanent increase of 6ug/m3 over no Linc.

Using the 10ug/m3 increase in PM-10 associated with 35,000 - 40,000 vehicles on the Linc, it can be conservatively estimated that a similar traffic volume on the Red Hill expressway will induce at least a similar increase there. As noted above, one difficulty is allowing for traffic switching from other routes close to the expressway, so as not to overestimate the pollution burden of traffic on the expressway, and thus the ultimate pollutant (PM-10) concentrations.

Another difficulty is accounting for the relative increase in truck traffic that will materialize if the expressway is built. The City estimates 3000 new, through trucks , which we assume is the equivalent of 9,000 to 15,000 cars on an emissions basis.

So based again on the Linc data, the new trucks alone will induce between 2.3ug/m3 and 3.8ug/m3 in additional PM-10, or an additional 0.23% to 0.38% increase in premature mortality in the exposed population. The additional morbidity can also be calculated using the data cited above. There is also the increased cancer risk associated with the diesel exhaust.

One problem with this estimate of truck traffic is the lack of consistency with the projections of truck traffic being used to justify the Mid Peninsula Highway. The City projections are claimed to be for the year 2021, however, these numbers don't mesh with the Mid Pen.

The projections for this highway are based on long term growth in goods, tourist, and commuter transportation along the basic patterns of the past. This is based on population growth in Hamilton and Niagara of from 17% to 27% to 39% to the year 2031 depending on the degree of overlap from the GTA. Tourism into the Niagara peninsula is projected to grow from 15 million in 2000, to from 22 million to 40 million by 2031.

Commercial truck traffic is projected to grow at between 2.6% and 3.7% per year to 2031. Currently (2000), on an average day 7100 trucks cross the two Niagara bridges, and on a "workday" this is 8600 trucks. Assuming compound growth at the rates expected over 32 years (2000 to 2031), this means that the average day truck traffic will grow to 16,143 - 22,708 vehicles, and the "workday" traffic will grow to 19,553 - 27,505 vehicles by 2031.

As can be seen, there are difficulties reconciling these estimates with the City ones, and more generally, with the existing traffic on the Linc, however, that cannot be explored here, but is in need of attention.

With this in mind, if one assumes that the other traffic (non truck) using the expressway will be made up half new and induced, and half that switches from other roads near the expressway and are thus at least partly caught by the Red Hill "pre" monitoring results, then that leaves, in round numbers, about 30,000 vehicles. This implies another increase in PM-10 concentrations during the daily traffic period of about 7.5ug/m3, and an associated increase in premature mortality of 0.75%.

Again, as noted above, the morbidity calculations can also be done. Also, there is some of the residual 20% of cancer risk that is partly related to non-truck traffic air pollutants.

9) As noted and implied above, there are numerous scientific studies linking PM-10 and other traffic-related air pollutants with human disease and death. As is often pointed out by the researchers, the premature mortality

effects, and to some extent, the acute morbidity effects noted above, are just the tip of the iceberg.

There are many reasons to accept the reality or plausibility of chronic effects, including evidence on mortality, asthma, particularly in children, cancer, cardiovascular disease, and respiratory disease, as well as toxic mechanisms due to fine particles. These mechanisms include: absorption directly into the bloodstream and heart from the lung; toxic metals on PM catalyzing oxidative stress (OS); assorted exogenous radicals adsorbed to fine particles inducing OS in lung tissue and DNA damage, and semi-quinone radicals generated in combustion and residing indefinitely on particles inducing oxidative damage to DNA. There is also epidemiological and molecular epidemiological data from other countries showing similar health effects of air pollution.

A relationship between diesel exhaust, and cancer (as noted above), and also asthma, is now recognized in the scientific literature. In other reports, anecdotal evidence exists that asthma attacks in children living near the Peace Bridge in the Buffalo area have increased with the increase in truck traffic. At the University of Windsor, which is located right next to the Ambassador Bridge, reports of PM fallout and noticeably dirty snow are a regular occurrence. And this is just a short list that could be made much, much longer.

10. It is evident from the two RWDI monitoring studies that the areas and populations close to the Linc and to the proposed expressway are already being impacted, and their health already effected, by current levels of traffic generated air pollution. These current levels already carry with them a significant burden of illness and premature death which is recognized in the scientific literature, some of which was consulted in the above.

The additional air pollution emissions that the expressway and additional truck and other vehicle traffic will generate in the Red Hill Valley airshed will result in a significant increase in this disease burden in the exposed population. This will particularly affect those already living there, but also all those who will live in the developing urban areas, which in Heritage Green alone will eventually number about 43,000, up from the 18,000 or so that live there now.

As noted above, any increase of 10ug/m3 of PM-10 results in a 1% increase in the number of people who die prematurely per year, and this is just the tip of the iceberg. So in the exposed population, for every 100 deaths a year, this increase means that there is one more additional who will die prematurely. Then there are the new cancer and asthma cases associated with the truck diesel exhaust. And don't forget all the excess morbidity - disease and illness - cited above.

Even more tragically, the morbidity associated with asthma in children means that over time some of these additional deaths are going to be among these kids. And again, the recent McMaster University study shows how children can inherit genetic defects from their parents who are exposed to air pollution. Some more of these are going to result from increased levels of PM-10 that result from the proposed construction of the expressway, and for sure from the already completed Linc.

Thus, it is clear that these additional deaths and diseases, and their associated cost burden (we haven't even touched on the economic and health care costs involved here) are avoidable and preventable, and this fact must be recognized and publicized in any reasonable and credible public consultation process on the expressway or any other major road proposal. At the present time, this is not occurring. It seems that the expressway has become the holiest of Sacred Cows to which any cost in money and health will be sacrificed.

Yours Sincerely,

Tom Muir
Home 905 637-0577
Work 905 336-4951

Braun, Michele

From: David Pengelly [pengelly@mcmaster.ca]
Sent: Wednesday, December 11, 2002 12:38 PM
To: Murray, Chris [Red Hill]; Don Mclean
Subject: RHCE Report commentary

Dear Mr. Murray:

The reports which cannot fully be addressed without this information are:

Red Hill Creek Expressway
North-South Section
Draft Report
Pre-Construction Ambient Air Quality Monitoring
Prepared by: Rowan Williams Davies & Irwin Inc.
October 2002

Red Hill Creek Expressway
East-West Section
Draft Report. Post-Construction Ambient
Air Quality Monitoring For Lincoln Alexander Parkway
Prepared by: Rowan Williams Davies & Irwin Inc.
October 2002

Nevertheless, based on the information available, I have the following comments:

My first technical concern about both studies is that the ambient air monitoring period was only six months, in both cases, and not even comparable 6-month periods. The "pre" monitoring period was December 1997 -June 1998; the "post" monitoring period from May to November 2000. Although it would have been more costly, it would have been much better to monitor through a 12 month period in both cases.

I have also a major technical concern about the "post" study... the only continuous monitoring that was done was for PM-10. In the earlier study NOx, NO2 and NO as well as CO and PM-10 were all monitored continuously. Both gaseous species (NOx etc, and CO) should have been monitored in the second study, because NOx and CO are much more selective markers for road traffic sources than is PM-10.

The location of the "post" Linc monitoring site is virtually at the eastern terminus of the Linc, and the city's own data show that this is an underestimate of the Linc traffic perhaps by 50%.
Still, it is probably in a good location as far as estimation of impacts on the upper part of the Red Hill Valley is concerned. RWDI could be asked to estimate what levels of CO, NOx and PM-10 would be, assuming double the traffic that was present during their measurement period.

In the "pre" report, the data for PM-10 show levels which change from approximately 12 ug/m3 to 22 ug/m3 with the onset of traffic in the morning, and in the "post" report from about 18 to 28 in the

12/11/2002

same period. The "change", presumably due to traffic, is similar, but the overall level higher in the "post" report. There may be many reasons for the difference, but it should be noted that these values are comparable to those observed at sites influenced by traffic in Toronto(see APBIT study, Toronto 2000).

In the same way, the CO and NO2 levels observed in the "pre" study are comparable to those observed in Toronto. RWDI make much of the point that these are well below the MOEE criterion levels, but the criterion levels are so out of date that there is now good evidence that they are in no way protective of health in the community. In the APBIT study we showed that the morbidity and premature mortality related to CO and NO2 was far greater than that associated with PM-10.

Both of these studies, especially the technically superior "pre" study, demonstrate that areas close to the proposed RHCE are currently impacted with traffic-generated air pollution levels that carry with them a significant burden of illness. Any additional air pollutant emissions into the Red Hill Valley airshed will introduce a substantially increased burden, particularly to those now living in the area, and those who propose to live in the rapidly developing suburban areas, particularly to the northeast and southwest.

Need for further response time:

Since the air pollution impact of both the North-South, and East-West sections of the Expressway, and its comcomitant burden of illness depends critically on assumptions about traffic flow and vehicle type, it is clear that items (3) and (4) are essential to a proper analysis. I would suggest that you extend the comment period for the two October 2002 RWDI reports to 30 days after items (3) and (4) are available to the public.

Although strictly speaking the ambient monitoring reports will not be influenced by changes in traffic modelling assumptions, information from these reports can and will be used in estimating the burden of illness associated with the proposed changes in the expressway.

Thank you for your response.
David Pengelly.

Murray, Chris [Red Hill] wrote:

> Dear Dr. Pengelly,
>
> Responses to your requests are as follows:
>
> 1 and 2. Responses to government, NGO, interest group and citizen comments on draft technical reports circulated in 1998 and 2002 will be documented in a consultation report that we plan to issue the first quarter of 2003, along with the final technical reports.
>
> 3 and 4. The City has updated its traffic assumptions to reflect more accurately existing trends in truck/auto traffic. I understand from our consultant this information will be available very shortly. PDF copies of these reports will then be made available on our web site.
>
> Please indicate which of the ten draft reports you feel cannot be reviewed and commented on without this information.
>
> Chris Murray
> Director, Red Hill Valley Project
> Transportation, Operations and Environment Department

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cmurray@hamilton.ca

-----Original Message-----
From: David Pengelly [mailto:pengelly@mcmaster.ca]
Sent: Monday, December 09, 2002 1:36 PM
To: Murray, Chris
Subject: [Fwd: Re: Release of Red Hill Reports]

Dear Mr. Murray:
I made a request to Mr DeIanni for some documents which would provide information I am lacking to make an appropriate response to the City's call for comments on their reports, the deadline for which is this Thursday. He has not attempted to provide me with these documents, and I will spare you his correspondence on the subject. He did mention your name, and that he would pass on my request to you. To this date, I have not had a response from you, but I would certainly appreciate anything you could do to providethis
yours truly,
David Pengelly.

--

L. David Pengelly, Ph.D., P. Eng.

McMaster Institute of Environment and Health
McMaster University, Hamilton, Ontario

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Please telephone first to confirm FAX readiness

Response to Technical Reports

Questions:
any assessment of light pollution (from light standards and vehicles)?
–on significant butterflies and other insects in the prairie grasses
–on flying squirrels–are squirrels only to be found in escarpment-linked woods due to lower levels of light at night?

Any reassessment of transportation needs since initial approval given in 1985?
–in light of the Kyoto protocol that the federal government insists will be passed by Christmas:
-in changing Canadian behaviours away from ever increasing use of automobiles
-to lessen the impact on local industry and their compliance with Kyoto by our reducing our automobile emissions and relying less on highway access instead of developing better public transit
–in light of provincial plan to connect mid-peninsular highway to Red Hill Valley expressway and the extra wear and tear on the expressway (which will be a city road) from this volume of provincial and cross-border traffic?
–any comparison of loss of economic potential in neighbourhoods along the expressway like happened to by-passed communities between Ottawa and Montreal when the 417 was opened between them?
–need to improve rail connections between Hamilton and the GTA
–in light of amalgamation and the need to improve commuting options from west Hamilton, Flamborough, Dundas, Ancaster to the GTA
–changes in development and transportation patterns since 1985, particularly with respect to Munroe Airport

Proposal:
–beat Pearson airport to the punch and get an all-day train service from downtown Toronto to Hamilton airport, perhaps extending the GO train service from Burlington up to the airport along existing rail corridors or along hydro easements through Dundas and Ancaster or from Burlington up to Waterdown then to Ancaster and the airport
–since airports and rail are primarily federal infrastructures, perhaps an approach to Ottawa for infrastructure funding in exchange for municipal support for Kyoto principles
–Kyoto principles may also be met by turning the Red Hill Creek Valley into a national park under the recently announced increase in funding for park creation (especially in light of no provincial or national parks on the escarpment in the Niagara Peninsula); with the offer of the land for a park, the city could be financially compensated for giving up a potential transportation corridor enabling more work on the Highway 6 by-pass and/or improved rail services for the whole Golden Horseshoe
–rail connection with passenger service from airport and western wards would lessen passenger highway traffic commuting to Toronto and would help meet Kyoto targets while increasing property values due to variety of commuting possibilities; development of the east Mountain in hamilton and Stoney creek would not be impeded as commuters could still be able to take the Linc west to a rail depot and commute to the GTA

E-Dec 23

Comments on
Red Hill Creek Expressway North – South Section: Draft Report. Southern Flying Squirrel Study. Prepared by Dougan & Associates, October 2002.

Submitted by Friends of Red Hill Valley
December 2002

1. The southern flying squirrel is nationally listed as a "Species of Special Concern" (COSEWIC), being particularly sensitive to both anthropogenic and natural disturbances of the natural environment. Provincially, the Ontario Ministry of Natural Resources has designated this species with an "S3" ranking, meaning southern flying squirrels are considered rare to uncommon. An official provincial status has yet to be assigned. As a result of the 1991 Natural Areas Inventory, this species was designated as regionally "rare to uncommon" (Heagy and Ross 1995).

2. The main conclusions of the six studies conducted by Dougan and Associates is that an apparently viable population of southern flying squirrels estimated at 34 or more individuals, currently inhabits the Red Hill Valley, and that the members of this population encounter increasing difficulties in crossing increasingly wider roads. The authors attempted to locate southern flying squirrels in various parts of the City, but were unable to find them except in a section of the escarpment centred on the Red Hill Valley and extending eastward to New Mountain Road and westward to approximately Kenilworth Avenue. The width of the forest cover in the Red Hill Valley area is considerably greater than along most of the escarpment in Hamilton and Niagara Region, with the exception of the Dundas Valley. Consequently, it is reasonable to conclude that the Red Hill Valley area forms the core of the flying squirrel population found along this area. It would have been helpful if the authors of the study had attempted to determine relative population densities as part of their study. The objectives of the first study conducted by the authors included a population viability study but this apparently was not done. It would seem to be an important requirement.

3. It would have been helpful if the authors had provided some additional information about the gliding activities of southern flying squirrels. They note that the longest recorded glide is 75 metres. Was this from a tree to a tree? What was the vertical distance travelled? Was the glide entirely within an area of the forest or did it occur over open ground (or a road)? The studies undertaken would seem to suggest that gliding activity usually occurs within a forest and that gliding across an open space is increasingly rare as the distance across the space increases. But what is the normal preference or habit of the southern flying squirrel? Is there evidence that crossing open areas is a regular or an infrequent activity?

4. The proposed expressway is five lanes wide in the area of the escarpment, but the bridges and escarpment cut will be of a width that can accommodate seven lanes (three in each direction and one extra climbing lane). The road cut at the escarpment face will be about 80 metres wide and approximately 12 metres deep. After passing through the face of the escarpment in this cut, the road will go onto an elevated bridge (viaduct) that will be about 200 metres in length. Since there is no record of a squirrel travelling more than 75 metres in a single glide, it would seem very unlikely that squirrels will even attempt, much less succeed, a crossing at the escarpment expressway cut.

5. In addition, it must be recognized that southern flying squirrels can't fly. They actually glide and this motion requires that the squirrel begins a distance above the ground and the destination is necessarily a lesser distance from the ground (or actually onto the ground). The distance they are able to glide is reliant on the height of the object from which they 'take off'. For them to glide over a road will require that large trees are located on both sides of the road (if the large trees on only on one side, the squirrels won't be able to glide across in both directions). A successful crossing over the road while it is elevated on a viaduct would seem even more daunting since this structure will be some distance off the ground.

6. The study also has little to say about predation of southern flying squirrels or the effect of the proposed expressway on these predators and their activity. One known predator is owls and Red Hill Valley is home to great horned owls, screech owls and possibly other owl species. The creation of a wide clearcut swath in the valley for the expressway would make travel of the squirrels more difficult, if not impossible. In addition, any attempt by the squirrels to cross this gap, either over the road or under the viaduct would likely make them much more susceptible to owl predation than if they were to remain in the forest. A second known predator, especially of young squirrels, are raccoons. One of the known effects of habitat fragmentation created by roads is the elimination of the normal predators of raccoons and a resulting long term increase in numbers of raccoons. Indeed, in severely fragmented habitats, raccoons become regular feeders on human garbage, gardens and other opportunistic food sources. It would have been helpful if the authors of the studies had considered the impact of the proposed expressway on predator-prey relationships involving flying squirrels. For example, edge effects from fragmentation significantly increase predation of some bird species. Would similar effects occur with southern flying squirrels?

7. Southern flying squirrels are nocturnal mammals. The expressway will not only create a large barrier in the middle of their habitat, but this road will also be lighted and create a much wider area which is never darkened, day or night. This would presumably increase the barrier effect of the expressway. It would have been helpful in understanding the potential impact of the expressway, if the authors of the study had examined the response of flying squirrels to light pollution, or had at least conducted a literature review on this matter. If the squirrels are to travel under the viaduct, they will have to cross a lighted

area to get under the viaduct, then an area under the viaduct in shadow, followed by a second lighted area, and most to all of all three areas will be barren of trees.

8. Southern flying squirrels are distinguished by their high-pitch calls which are believed to be used by them to indicate location, issue warnings about predators, and may also play a role in other inter-squirrel communication. The expressway, both in construction and in operation, will create a major noise impact in an environment that is currently one of the quietest in Hamilton. It would have been helpful if the authors of the studies had investigated the impact of high noise levels of southern flying squirrels, or at least had undertaken a literature review on this matter.

9. An additional potential threat to the health and viability of the southern flying squirrel population arises from vehicle emissions and other degradation of air quality. Since these creatures are mammals, it can be expected that they may suffer ill effects from air pollution generated by the vehicles using the expressway. Cantox (1998) warned that these impacts were so severe that human children and the elderly should be warned to avoid the valley if the expressway is constructed.

10. The 200 metre viaduct is presented in the study as a potential though unproven way in which flying squirrels may be able to overcome the barrier effects of the expressway. The absence of flying squirrels in areas where such viaducts exist is presented in the report as a barrier to drawing firmer conclusions on this matter. However, the researchers did find evidence that southern flying squirrels apparently avoid using an existing viaduct already located in the Red Hill Valley. This viaduct is located at King Street, a six-lane roadway that is identified by the researchers as a barrier to flying squirrel movement. However, the researchers don't mention the existence of a viaduct under King Street, just west of Mt. Albion Road. This viaduct was constructed in 1990-91 in anticipation of the construction of the Red Hill Creek Expressway, and was built to a sufficient size to accommodate the six lanes of this roadway plus egress and exit ramps associated with the King Street interchange. While this viaduct is shorter than the one proposed near the escarpment, it apparently is acting as an effective barrier to the movement of southern flying squirrels further north into forested habitat abounding in oaks, black walnuts and other mast bearing trees which provide a food source for this species. It should be noted that vehicle movement on King Street is much less than the north-south expressway will present to the squirrels.

11. In considering the potential of the proposed viaduct as a way for flying squirrels to overcome the barrier effect of the expressway, it is worth considering the condition of the existing viaduct at King Street, and a larger one located further north at Queenston Road which was constructed at the same time. Construction of both these viaducts occurred more than a decade ago, but there is no woody vegetation whatsoever that has succeeded in colonizing the barren landscapes under these viaducts. Even grasses are absent from large areas under each viaduct. It is noteworthy that the proponent was responsible for both viaducts and has shown absolutely NO INTEREST in vegetative or other rehabilitation of the areas under and adjacent to these viaducts. Consequently, it should be assumed that the conditions under the proposed viaduct for the expressway will be similar to these condition. Since southern flying squirrels are a forest species, and showed avoidance behaviour in the studies of open areas, it might be expected that they would be unlikely to utilize the area under the proposed viaduct at the escarpment. This is borne out by their avoidance behaviour at King Street.

12. While it is interesting and worthy of study to determine the barrier effects of roads on southern flying squirrels, there are other likely impacts on this vulnerable species as a result of construction of the proposed Red Hill Creek Expressway. The most obvious one is loss of habitat. The population of southern flying squirrels in this area is not large, and the expressway will result in the clearing of a significant swath of this habitat up to 100 metres wide. The fragmentation of known flying squirrel habitat will occur over a distance of nearly four kilometres (the escarpment to King Street). This must be added to the already existing barrier posed by Mt. Albion Road (including residential areas and a golf course) since the forest cover remaining between the expressway and Mt. Albion Road will be extremely narrow.

In addition, the expressway project includes the re-location of Red Hill Creek through the middle of adjacent flying squirrel habitat (and the actual location of the first recorded sighting (1995) of this species in Red Hill Valley). This parallel disruption, occurring relatively simultaneously with the construction of the expressway itself, may make much of the potential refuge areas for the squirrel population unattractive or uninhabitable.

Add to all of this habitat destruction, the estimation of Dougan and Associates (1998) that significant impacts will occur to vegetation and wildlife up to 50 metres on either side of the construction area, and it would appear reasonable that the flying squirrel population may be driven out of the entire valley area from Mt. Albion Road to the King's Forest golf course and former ski hill, at least for the several years of construction. When these cumulative impacts are considered, it is not difficult to conclude that the Red Hill Valley flying squirrel population will be extirpated. Unfortunately, the authors of the study did not explore this possibility, perhaps because the proponent did not direct them to do so and/or dissuaded them from doing so.

13. Southern flying squirrels exhibit a rather unusual method of winter survival. They gather together in a single tree hollow or other sheltered location and use their collective body heat to avoid hypothermia and reduce energy loss. Up to 50 squirrels have been found in a single such hibernaculum. Thus it might be expected that the entire Red Hill population may share a single such site to survive during the winter months. Despite trapping each individual squirrel in Red Hill Valley many times, the authors of the study don't report on the discovery of any nest or hibernation sites in the Red Hill Valley. The latter hibernation sites may be quite rare, and consequently it is potentially possible that one or more favoured site would actually

be removed by the expressway clearcutting, or would be located near enough to the construction site to make it unacceptable to the squirrels for their winter hibernation. Thus, even if the population were to survive the other insults imposed by the expressway and stream re-location projects, the population might still be extirpated by the destruction of a suitable hibernation site.

14. If the expressway proceeds, it should be noted that southern flying squirrels have two breeding periods and that young squirrels remain in the nest for six to eight weeks. Tree removal during these two periods should obviously be avoided. In addition, removal of trees in the late fall or through the winter may result in removal or disturbance of a (perhaps the only) hibernaculum.

15. The report is also silent on the likelihood of southern flying squirrels to nest or carry on activity in close proximity to human activity. It is known that this species is rarely observed and that it prefers forest habitats, both of which suggest that it may normally avoid human activity areas. The study was able to catch flying squirrels within 20 metres of major roads like Centennial Parkway, but it should be noted that this was accomplished using a highly aromatic bait mixture (peanut butter, beer, molasses). Would the squirrels normally be found this close to a roadway if they weren't being baited?

16. An additional matter of concern that is addressed in previous studies is that of roadkill. Roadkill rates have been shown to vary with road width, traffic levels and vehicle speed. The study authors note that increased mortality due to vehicular collisions can have significant detrimental demographic consequences for populations of conservation concern. Effects of roads can become manifest in wildlife populations in ways other than simple avoidance or death; roads may act as barriers to dispersal (thereby preventing recruitment to populations relying on immigrating individuals), or act as barriers to movement between adjacent natural areas. Roads can also have significant effects on wildlife populations by breaking up contiguous habitat.

17. The 6-lane proposed expressway would physically fragment the escarpment habitat, potentially segmenting the local squirrel population, thereby increasing the risk of local extinctions of smaller isolated populations (Dougan and Associates 2002). The report indicated that a "wide road" (such as the proposed Expressway), "could have negative impacts on the distribution of the southern flying squirrels if it limits small local populations from receiving immigrating squirrels from other areas". In this regard, it should be noted that the normal range of a flying squirrel is believed to be up to five acres. Given the road construction and stream re-location plans, and their adjacent impact areas, five contiguous acres of suitable habitat may become a rare commodity in Red Hill Valley.

18. Finally proposals are advanced for possible mitigation by building "artificial trees" near the expressway. The authors candidly admit not knowing whether such structures will be used by the squirrels, or will be useful to them. Indeed the effect may be to lure them into a fatal attempt to cross the expressway. Flying squirrels are able to manoeuvre in flight around trees and other stable objects, but it is unlikely they will have the same ability to avoid 18-wheelers hurtling down the escarpment at high speed.

19. Sadly, the report recommends utilizing the planned expressway as a way of "testing" whether or not squirrels will be able to accommodate themselves to this obstacle. Would a similar 'study' be proposed to see whether or not children were able to cope with the increased air pollution imposed on their schoolyard? In fact, it is highly unlikely that much in the way of conclusions could be discerned from such a study. The squirrel population may be decimated by the effects of the construction of the road, or driven out of the area to a distant refuge, so their disappearance could not be clearly traced to their inability to cross the new highway.

Comments on
Niagara Escarpment Expressway Crossing Alternative Design Report

from Don McLean, Chair, Friends of Red Hill Valley
December 2002

1. The proposed project will require a 75-80 metre wide cut in the face of the Niagara Escarpment to a depth of 12-15 metres. It also includes more than three kilometres of expressway construction and operation INSIDE the Niagara Escarpment Plan Area. These impacts constitute the single largest and most destructive assault on the Niagara Escarpment World Biosphere Reserve since the inception of the Niagara Escarpment Plan and the Biosphere designation.

   Over the last two decades, the Niagara Escarpment Commission has paid close attention to impacts on the the escarpment including the creation of farm ponds, residential lots, barn expansions and other threats to the integrity of the escarpment. *Friends of Red Hill Valley urges the Commission to protect the escarpment with even greater vigour from this proposed project.*

2. This report is dated February 1999. It was kept hidden from the public until October 2002, a period of three years and eight months. Requesting comments from the public 44 months after the document was published would appear to mean one of two things:

   a) Either the report was submitted to the Niagara Escarpment Commission (NEC) long ago and consequently the comments now being solicited from the public will not be considered by the NEC which has long ago received and perhaps responded to the report;

   b) Or the report has not been submitted to the NEC and is now 44 months out-of-date and will have to be revised before being submitted. This would also suggest that public comments are superfluous, or at least partly a waste of time.

   We formally protest at this shabby treatment of the public, and note that it continues a long-established pattern of the proponent in relation to this project.

3. The report makes no reference to the planned re-location of Red Hill Creek within the study area. This may be because the re-location plans have changed since the completion of the report in February 1999. However, a 2002 report by Water Regime Investigations and Simulations Ltd. illustrates a re-location through a 400 metre stretch of high-quality hardwood forest at the foot of the escarpment to the west of the proposed expressway. This omission compromises the report because it fails to make any reference to the impacts of this relocation project on the natural environment in close proximity to the proposed impacts resulting from the expressway project and the resulting cumulative effects.

4. The report makes no mention of significant mammal species impacted by the proposed expressway escarpment crossing. This area of the escarpment is the residence of an apparently viable population of Southern Flying Squirrels. This is a species designated as "vulnerable" by the national Committee on the Status of Endangered Wildlife in Canada, and as a Species At Risk by provincial wildlife authorities. The presence of this population was not confirmed until the summer of 1999, several months after this report was finalized. Thus the omission is understandable but further compromises the report. It is clear that decisions reflected in this report were made prior to this confirmation and without considering the impacts on this significant species.

5. The report notes the presence of significant wildlife habitat and significant species in the study area. However, it fails to examine the specific impacts of the project on these species. It notes that the escarpment is part of a regionally significant wildlife corridor which will be disrupted by the

construction of the expressway crossing. However, it provides no assurances that wildlife will be able to continue using this corridor if the escarpment expressway crossing is put in place. This would seem to be among the most significant issues related to this project, and one that should be examined in much more detail. It is disturbing that only general statements are found in the report, and that there is not even detailed discussion of mitigative measures that might be implemented.

6. Reference is made on page 4 of the report to an Escarpment Crossing Design Working Group. Such a group is not envisioned in the Exemption Order and its existence has not previously been made public. It appears that the proponent hand-picked the membership of this group, and in so doing excluded several organizations that should have been represented on this group including Friends of Red Hill Valley, the Hamilton Naturalists' Club, the King's Forest Orienteering Club, the Coalition on the Niagara Escarpment and others. It also appears that this "working group" played a very significant role in the decisions related to the escarpment crossing design and may effectively be the 'authors' of this report (who unfortunately are not provided beyond "The Former Region of Hamilton-Wentworth", a body that no longer exists.

Friends of Red Hill Valley very strongly protests the limited composition of this secret organization, and the failure of the proponent to either reveal the existence of this group during its existence or to make public its meetings, or to invite our organization and other obvious stakeholders to participate in this group. In our view, the decisions of this group consequently should not be regarded as legitimate.

We note that the document incorrectly states that "the same groups participated on the GAC and CSC". In fact, neither the Hamilton Region Conservation Authority nor the Niagara Escarpment Commission participated on the CSC.

7. The report begins by stating its purpose and the three elements that it "documents". Unfortunately, the second of these three elements ("how the NEC have been involved") is barely mentioned. There is no mention of the involvement of the NEC in the early 1980s when the Commission reviewed this project and rejected it. While it is noted that the NEC was ordered by the Consolidated Joint Board to provide permits for the project, there is no mention of the fact that NEC representatives testified before the Joint Board and stated the NEC's opposition to the project. Mention is made of NEC concerns expressed to the Ministry of the Environment, and of a letter from the Ministry to the project proponent, but that letter is not provided as an appendice to the report. Neither are there any other NEC documents attached to the report, such as reports prepared by NEC staff regarding the project, legal opinions provided by NEC legal counsel, and other relevant documents. These omissions restrict the ability of the public to provide for a proper review of the document, and contribute to a generally misleading 'history' of the project and the interactions of the proponent and NEC provided in the report.

8. The section of the report labelled "1.1 Expressway Approval" provides several examples of a misleading and sanitized 'history' provided by the report. The first entry is six years after the project was approved by municipal councils in 1979 and thus neglects to mention the opposition of the NEC to the project during that period. The "1985" section neglects to note that the "approval under the Environmental Assessment Act" granted by the Joint Board was by a 2-1 split decision and that the only representative of the Environmental Assessment Board very strongly dissented on the need for the expressway, alternatives to the expressway and alternative locations for an expressway. It should be noted that the Hamilton Region Conservation Authority also strongly opposed the project at the Joint Board Hearings, along with the NEC. When all agencies charged with protection of the environment unanimously oppose a project, it is little more than a legal fiction to say it has an environmental approval.

9. In the "1985" section, the report says that the Region received a permit for the project. This is quite curious given that the conditions for issuing this permit included the provision of a "detailed grading

plan", and "a detailed tree preservation plan". These conditions could not possibly have been met by the Region for the current project under discussion since this report is only now proposing the design, and that for only the portion in the immediate vicinity of the escarpment face. The reference to receiving the permit may be to an earlier version of the project, but if this is the case, it should be pointed out that the "permit" was not for the project currently being proposed and clearly has no current validity.

10. The re-write of history continues in the "1991-94" section of the report. The first sentence is misleading. It neglects to mention that the province indicated its opposition to any expressway IN Red Hill Valley. It also neglects to mention that a provincial study undertaken in 1993-94 by Clayton Research found that there was no traffic need for an expressway. This study apparently convinced the Regional government to scale back its plans for a 6-7 lane expressway.

11. The "1991-94" section acknowledges a provincial "compromise" but curiously neglects to mention that this compromise did not require a new cut in the face of the escarpment and very dramatically reduced impacts on the lands of the Niagara Escarpment Plan Area. This sanitizing of the project's history undermines the credibility of the report and suggests that one of its key functions is to paint the best possible picture of the project rather than to provide the NEC with objective information.

12. The sanitization of the project received a boost from the provincial government in 1997 when it amended the Ontario Environmental Assessment Act. Prior to the amendments, proponents could apply for an receive an exemption from some or all of the requirements of the Act. This was properly called an Exemption Order. In May 1996 the proponent filed a formal Exemption Order Request. After that Exemption Order was requested, the province changed the terminology of such orders to "Declaration Order". This new term appears to be much more attractive to the proponent and consequently has been adopted. However, the fact remains that the Region did NOT request a Declaration Order. It requested an Exemption Order, and the shame of both the province in granting an exemption and the proponent in seeking an exemption should not be expunged from history. Note that the following statement in this report is thus factually wrong: "The Region subsequently filed this document in the form of a Declaration Order submission with the Ministry of the Environment for approval."

13. On pages 4 and 5 the report provides a description of the impact assessment process. The Exemption Order set out six components of this process. The report mentions the second, fourth and fifth components and says that steps two and four are both completed and the fifth step is nearing completion. However, no mention is made of step three which requires that "proposed changes to the approved design" be finalized. There is no mention because this step has not been completed. The most obvious evidence for this is the report itself which is presenting the proposed design changes to the escarpment crossing. It is difficult to imagine how one can "predict net environmental effects" (step four) and "evaluate proposed changes" (step five) when the proponent hasn't completed the "proposed changes to the approved design" (step three).

14. Page 6 of the document refers to a decision of the Region to confer with "directly affected stakeholder groups". There is no identification of who these groups were, or how the Region decided who was "directly affected". Friends of Red Hill Valley was not notified of this selection process, nor offered an opportunity to participate in this "selected" group.

15. Reference is made to the width of the escarpment cut BEFORE the proposed design changes as being a maximum of 65 metres wide. However, no reference is made in the text to the width of the cut NOW proposed. It is quite curious that such basic information is not included in the report. It appears, however, that the new cut will be considerably wider than the previous one since it involves moving one of the adjacent hydro towers 17 metres away from the cut (presumably to accommodate the wider cut). If the cut in the face of the escarpment is wider, then it is even more curious that this is not listed as a

"drawback" of this design.

16. In the section of the report on page 19 on viaduct length, it is noted that the "optimal length" is 325 metres. Nevertheless, the selected viaduct length is only 220 metres.

17. On page 20, one of the drawbacks identified for the 325 metre viaduct versus a shorter one is that there would be "more unvegetated area beneath the structure that is of limited value to wildlife". This is an important statement and suggests a conclusion by the proponent that the "wildlife corridors" provided by the viaduct will have very limited value.

It is possible to evaluate the value of these corridors today, prior to the construction of the viaduct, because two such viaducts already exist in the Red Hill Valley. One is created by the King Street bridge and the other by the Queenston Road bridge. Both of these structures were put in place in the early 1990s in preparation for the construction of an expressway in the Red Hill Valley that would pass underneath these structures. Both, therefore, have had more than a decade to "naturalize". A site visit to these locations will show that this naturalization has not occurred. In both locations, there are large areas with no vegetation whatsoever. Where vegetation has taken root, it is limited to grasses and no woody plants are evident despite 10 years of opportunity. In addition, both areas are subject to severe scouring and erosion as a result of the intentional direction of stormwater off the overhead structures (bridges) through pipes that only travel about 50% of the way to the ground below and thus empty their contents at high speed to scour the ground below. This evidence suggests that viaducts will result in areas with little or no vegetation.

Alternatively, it may be that a diligent proponent might be able to take some measures to make these areas more hospitable to vegetation and wildlife. Unfortunately, this particular proponent doesn't seem to find such a project worthy of attention, and so has left these degraded landscape for more than a decade without mitigative measures. The Niagara Escarpment Commission and other regulatory bodies should take note of this attitude of the proponent, and regard any promises about caring for nature as highly suspect.

18. The report neglects to mention the fact that most of the study area is a designated World Biosphere Reserve. Perhaps the proponent isn't aware of this, or doesn't think it's a significant designation. Certainly the proposed project pays no respect to this designation.

19. The report indicates that "two high quality trails" and a wildlife corridor will be located underneath the expressway viaduct. However, there is no indication of where precisely these features will be located or what measures will be taken to separate these functions. It would appear, at the very least, that vegetation will not be useful in this separation since the report notes that "area underneath the viaduct will likely not be vegetated to an extent due to lower light levels" (p.21). Consequently, it is difficult to envision a wildlife corridor of much utility, and the report unfortunately doesn't offer any detailed description of the mitigative measures planned to address this difficulty.

20. The report notes significant visual impacts from the proposed crossing, most of which can only be moderately mitigated. In June of 1998 a visual impact assessment report was presented by Hough Woodland Naylor Dance Leinster. It also noted high visual impacts. No mention is made in the current report of this earlier document, or of the involvement of this consultant in the evaluation of impacts. This omission is worrisome. The opinions of this consultant on the most recently proposed escarpment crossing design should be sought and considered by the proponent and the NEC.

21. Table 1 suggests that the proponent intends to install lighting along the proposed expressway, including along the viaduct. However, the impact of this lighting on nocturnal wildlife is not considered in the report. This lighting may create an additional barrier effect, compounding the impact on the wildlife

corridor. Southern Flying Squirrel and other nocturnal mammals may be negatively impacted as well as moths and other nocturnal insects. Ripple effects from these impacts could negatively affect other wildlife.

22. The impact of traffic noise from the proposed facility on humans is not considered in the report. Noise will have very significant negative impacts on human use of the valley including on trail users, birdwatchers, and golfers. The elevation of the roadway onto a viaduct would presumably increase the noise impacts. This factor should have been examined and taken into account in the decision to install a viaduct and in the decision as to its length.

23. Most of the discussion on impacts in Tables 1 and 2 is unnecessarily speculative. Scientific studies are available on the effects on birds and other wildlife of roads, noise, light and other disruptions and should have been examined, referred to and cited. It would appear that the proponent doesn't see these as worth looking at carefully. There is also experience, as noted above, with viaducts. For example, a recent report on Flying Squirrels in Red Hill Valley noted that movement of these mammals is apparently blocked by King Street despite the presence of a viaduct at that location. Speculative comments are made about how the damage to the escarpment may create 'cliff habitat' for unnamed species. This and other throwaway comments about longer views being less affected, landscapes softening, etc. detract from the credibility of the report.

24. Air quality impacts are not mentioned in the report. However a 1998 study by Cantox warned that children and the elderly should limit their exposures and not frequent the Red Hill Valley once the expressway has been completed. Presumably, such impacts will also affect other species. Again, the decision to install a viaduct and its length should have been considered in light of the air quality impacts of alternative designs.

25. The report neglects to examine the impacts of a three to four year construction period associated with the project, including very extensive blasting operations. Presumably the impacts on wildlife would be very severe during this period and may result in extirpation of various species. An area rendered inhabitable for three seasons for birds and other migratory species is not likely to be rapidly re-inhabitated when construction is complete, especially since traffic noise and air pollution impacts will quickly replace the disruption occasioned by the construction activity.

26. Formal references to various documents are made on page 8 of the report and elsewhere within the report. However, the report does not include a bibliography.

MEMORANDUM

NOV 19 2002

TO: Water Management and Environmental Impact Advisory Board

FROM: Bruce Duncan, Director of Watershed Planning and Engineering

PREPARED BY: Janet Wong, Environmental Planner

DATE: November 13, 2002

RE: Red Hill Creek Expressway

1. Introduction

HCA staff have reviewed the draft reports prepared by the City of Hamilton for the Red Hill Creek Expressway. We have prepared comments and are seeking input from WMEIAB members on these. Note that the reports are available from this office or from the City website (cweb/CityDepartments/toe/rhvp/default.htm). There is a staff recommendation at the end of this report.

2. General Comments to the City of Hamilton

The Red Hill Expressway was granted approval in 1987 by a Joint Board hearing of a proposal under the Environmental Assessment Act. In 1996, the City obtained an exemption order under the Environmental Assessment Act for design modifications to reduce the overall environmental impacts. As part of the exemption order, the City is required to assess the impacts of the modified alignment and started the Impact Assessment and Design Process in 1997. The City of Hamilton is moving forward with the Red Hill Creek Expressway project and this fall issued a series of updated reports. Comments are to be sent to the City, they will be responding to the comments and issuing revised reports in early 2003. We understand that some reports are still being updated, including the Terrestrial Resources Technical Report. HCA staff request a copy of this report and will provide comments on it.

The Conservation Authority is on the record as being opposed to the Red Hill Creek Expressway. However, in 1996 we indicated we would review the project with the intent of obtaining the best environmental solution possible, if the expressway is to be built. The original Joint Board decision requires the HCA to issue a permit under our Regulation. Staff have reviewed the recently released reports for both our Fill, Construction and Alteration to Waterways Regulation permit and more generally as a review agency with a program interest in flooding, erosion and

the natural environment. All aspects of this project, including any work for the King's Forest Golf Course, will require a permit under our Regulation.

Overall, staff do not have significant concerns with the recommendations of the reports. Most of our comments are on points of clarification. Many of our concerns will have to be addressed at the next step with the review of design drawings and related implementation plans. The environmental benefits and minimization of impacts reached in the conclusions of the reports will only be fully realized through careful and complete implementation of the recommendations. Particularly, we believe the use of natural channel design for this length of watercourse is unique. It cannot be stressed enough, as recommended, that the selection of designers and contractors for this aspect of construction is critical to ensure that the realignment will be successful. A general tendering process should not be undertaken. The remaining Red Hill Valley is to be available for recreational purposes. Important to this is continued public access along a trail system within the valley at least from Queenston Road south to connect with other trails along and above the Escarpment. The Red Hill Valley Trail was constructed in 1996 based on the alignment of the road. With the relocation of the creek, the trail will be disturbed. The reinstatement of the trail should be part of the project and included in the design plans.

It is clear from the reports that the Red Hill Creek is a system in trouble and the work to restore the creek as a healthy system is required whether or not the expressway is constructed. The expressway and associated creek realignment, cso pipe, and storm water management facilities only partially solve the problem. It is recognized in the documents, that many quality and quantity problems originate above the Escarpment. For this solution to work, out-dated methods of development should be reconsidered. For example, treating the problem at the source will be beneficial to the system. Currently the Mountain Brow Blvd Crossing/Central Mountain Stormwater Management Class Environmental Assessment is good example of attempting to address the problem. However, unless the City decides to review neighbourhood plans for undeveloped areas, alternatives with any significant benefits will be precluded.

One major aspect that should be addressed in the documentation is related to flood protection. The Regulatory Storm event for this part of the Province is Hurricane Hazel. The expressway will only be constructed to be above the 100 year flood event. Thus infrastructure will be at risk of damage and lives may be placed in danger. This is contrary to Provincial Planning Policy, which takes a preventative approach to flood protection. The report indicates that Provincial 400 series highways need only be protected to the 100 year event. As an environmental assessment should consider all provincial policy, it is recommended that the document identify what recent provincial highways were not constructed to the Regulatory event and why, and evaluate the environmental and economic impacts of constructing this road to the Regulatory event, including the cost of replacement.

Finally, works are proposed in Confederation Park. The works will include interrupting the Interpretive Trail, relocation of Van Wagner's Beach Road and minor relocation of Confederation Drive. The design currently does not affect the parking area at Hutch's Restaurant. We should be consulted on the landscape plans in the area and the Expressway project should include reconnecting the Interpretive trail to the Breezeway. If any fish habitat

compensation is required in Confederation Park, we should also be consulted as recreational and other uses of the ponds will need to be considered.

3. Specific Comments on Reports Reviewed

Business Impact Assessment of the Red Hill Creek Expressway/QEW Interchange

The documentation should recognize Confederation Park itself. Please clarify in the documentation, that Hutch's Restaurant is leasing the property and we are the managers of the land for the City of Hamilton (page 12). We should have been surveyed as an affected business. The current alignment will require realignment of a trail. This should be recognized and included in the mitigation measures. We understand that it is not standard practice to assess the impacts of noise on recreational and commercial activities. While noise has not been measured for this use, we would like to be involved in the development of the Landscape Management Plan for this area to minimize the impacts of the interchange being closer to Hutch's Restaurant. Will there be compensation for lost business during construction?

Page 4, the original Expressway alignment would have probably required a longer section of Van Wagner's Beach Road to be realigned, and a significant impact on our business, including loss of workshop and rental buildings. This should be documented in the report as it is unique to the original alignment (various pages in report including pages 5, 9, 12, 19).

Page 19, Construction, the original alignment would have affected our business operation specifically and directly through the loss of buildings, revenue and a need to relocate new facilities to maintain operations of Confederation Park.

Land Use Assessment

Page 2, the City of Stoney Creek Multi-use Pathway, Pedestrian and Cycling Route Master Plan Study, June 1995 should be reviewed.

On figures 2 and 3, we suggest the existing trail and cso pipeline symbols be changed to differentiate these two features better. Section 3 speaks to a number of facilities and structures that are not illustrated on figures and probably should be, for example the Rennie and Brampton street landfills and on-street bike paths.

On figure 2, the trails through Confederation Park should be illustrated, particularly the interpretive trail from Nash Rd N to Van Wagner's Beach Road along the old rail bed. Felkers Falls Conservation Area, from Felkers Falls to Tamwood Court, should be shown.

On figure 3, we note that the Eramosa karst boundaries have been refined from what is illustrated.

Page 13, the Confederation Park West concept plan (1999) specifically looked at development of Confederation Park west from about Nash Rd N. and considered the impacts of the Expressway. Aside from the business impact to Hutchee Restaurant discussed in the Business Impact

Assessment, trail changes and potentially other facility changes as a result of relignment of VanWagners Beach Road are required if the expressway goes ahead. Will these be funded by the City as part of the RHC Expressway project as with other trails that are affected?

Page 25, the Chippawa Rail Trail should be labelled on figure 3. This trail is part of the Trans Canada Trail system, which we understand is to link up with the Escarpment Rail Trail portion of the Trans Canada Trail. The design of the Red Hill Expressway should take into account this connection and this should be discussed in this documentation, probably on page 27 under Expressway Effects.

Pages 15 and 32, the Red Hill Valley Trail was constructed in 1996 based on the alignment of the road with the knowledge that some sections would have to be realigned. With the relocation of the creek, the additional trail sections will be disturbed. The reinstatement of the trail should be part of the project and included in the design plans as recommended.

Page 35, middle of first paragraph, it is probably an overstatement to indicate that 'there will still remain a net gain in habitat area over what is present now'. There may be a net gain within a particular area of a particular type of habitat, however the expressway itself will destroy the ecological corridor as noted in the table and several reports.

Pages 35 and 36, the Davis Creek Subwatershed Plan and stormwater works at Albion Falls are not finished projects with defined outcomes as implied by the text. We would hope that future development 'will give consideration' to various policy documents.

Appendix A, you probably spoke with Janet Wong at this organization rather than Julie and Confirmation Park should be Confederation Park.

Niagara Escarpment Expressway Crossing Alternative Design Report

We have no concerns with the preferred option (220 m viaduct). The grading and landscaping of the affected area is an important mitigation aspect that should be carried forward in the design drawings and Landscape Management Plan.

Southern Flying Squirrel Report

This report confirmed the presence of southern flying squirrels along the Escarpment in this area. Unfortunately, it was not able to determine what impact the expressway may have on the population. The project should include the recommended monitoring project to assess the impact of the road and test mitigation methods as a minimum.

King's Forest Golf Course Impact Assessment Study

Hole 2, proposes the removal of trees to relocate tee decks. The species, size, and condition of the trees should be documented and replaced as part of the Landscape Management Plan.

Hole 6, should this be 'there is no direct impact'. The impact summary did not include all the areas referred to and the mitigation summary included more. The plans in the Appendices are illegible and we are not able to review.

The ponds proposed on holes 11 and 14 will create water features to alter the difficulty of the golf course. These ponds must be off-line. What will the source of water be and if they are used for irrigation a Permit to Take Water may be required from the Ministry of Environment. The creek sections through the golf course fairways, tees and greens, should include a natural buffer of uncut grasses and shrubs. Generally we recommend a minimum width of 15 metres for this warm water fishery.

The bridges will have to meet the recommendations outlined in the Natural Channel Design report and be anchored to withstand the Hurricane Hazel flood event. These ponds as well as the bridges required to cross the realigned creek will require a permit under our Fill, Construction and Alteration to Waterways Regulation.

Fisheries Existing Conditions and Predicted Impacts

The main agency reviewer of this report will be the Department of Fisheries and Oceans. We will require their approval prior to issuance of a HCA permit.

Centennial Park throughout the document should be Confederation Park. Page 27, Centennial Park Road should be Confederation Drive. Please change these.

The description of Van Wagner's and Confederation Ponds are based on conditions before rehabilation works we undertook in 1998.

Page 38, second paragraph, are the existing flows based on current development conditions or on built out conditions. This should be clarified.

Page 51, first paragraph, last line, there appear to be editing errors. It is understood that the statement is saying a 90 metre culvert will not have a significant impact on fish movement.

We question the conclusion that the loss of fish habitat with some filling in of Red Hill Marsh and Van Wagner's Pond and marsh is not important. It may not be critical habitat, but it does provide habitat.

If the Department of Fisheries and Oceans determines that the channel redesign is not sufficient compensation and that additional compensation should be provided, we suggest that the lower portions of the Red Hill Creek are ideal areas to provide this, including Confederation Park ponds. We support the reconnection of Red Hill Marsh to the creek as a fish habitat improvement measure. If work within Confederation Park is proposed, we would like to be consulted as we also have to consider uses of wetlands and watercourses by breeding and migrant birds, reptiles and amphibians as well as fish.

Surface Water and Stormwater Quality Technical Report

We would appreciate an electronic copy of the preferred option and of the final modelling.

The Regional Storm event for this part of the Province is Hurricane Hazel. The expressway will be constructed to be above the 100 year flood event. Thus infrastructure will be at risk of damage and lives may be placed in danger. This is contrary to Provincial Planning Policy, which takes a preventative approach to flood protection. The report indicates that Provincial 400 series highways need only be protected to the 100 year event. As an environmental assessment should consider all provincial policy, it is recommended that the document identify what recent provincial highways were not constructed to the Regional event and why, and evaluate the environmental and economic impacts of constructing this road to the Regional event, including the cost of replacement.

The report should also clearly state whether or not private property is affected by the Regional Flood event and if the proposed Greenhill and Davis stormwater management facilities will affect private property or the ravine slope stability.

Page 30, why is volume an important determinant for this. Typically only peak flow is used.

Page 31, an additional 20% pavement should probably be included? Would there not be additional shoulders associated with this and is additional pavement equal to additional shoulder area?

Page 32, we recommend that the project include HEC-2 modelling of the final design in order to have an accurate record for use in future works.

Page 33, the 76 metre elevation is the 100 year event for Lake Ontario and the Regulatory flood for that waterbody. Hurricane Hazel is only applicable to inland waterways.

Pages 38 and 43, identify proposed channel velocities. These should be used in the natural channel design.

Page 40, it has not been statistically determined what return period storm event Hurricane Hazel is, therefore it is misleading to indicate the range specified and present this type of information. It can be stated that Hurricane Hazel exceeds any known analysis.

Page 46, why is future imperviousness not used?

Page 65, the location of minor culverts are identified as being on creeks 'not expected to be used by fish'. Fish passage is not a defintion of fish habitat. We do not believe a fisheries assessment on these areas was carried out and documented in the Fisheries report. It should be to determine if it is a relevant criteria for the selection of culvert design.

Page 69, although the proposed flood plain excavation in Red Hill Marsh is not recommended as a final option for flood control purposed, we believe it still has merit for improvements to the

aquatic and nearshore habitat and should be considered, particularly as there will be filling in on the north side of the marsh for the QEW.

Page 71, describes an alternative for flood control that would affect Confederation Park. The changes would affect our trail through the marsh and possibly the overland flow route through our facilities. The report does not recommend this as a preferred option. If there is a change, we would like to be consulted and alternatives considered for maintaining the trail system.

Page 82, the Total row first two and last two figures appear to be incorrect.

Page 85, the reduction in TTS seems low given the existing creek erosion. Does this include the impact as a result of natural channel design.

Page 86, Escarpment facility, what is the impact of the diversion of Montgomery Creek. We are reluctant to support a diversion. The golf course uses the water for irrigation.

Page 87, a quantity control area is being proposed along Davis Creek. Will this project include repair of eroding sections of this creek as it is identified as a high priority in the Natural Channel design report?

Implementation, short and long term monitoring and maintenance of the storm water management facilities are important. The plans must identify what monitoring and maintenance is required and who will carry out these functions as identified in the report.

The erosion and sediment control measures will have to include a soil analysis to identify necessary soil amendments and seed selection to ensure a fast and complete revegetation in this very sensitive area. The system is characterized by 'flashy' responses to storm events, which will make immediate stabilization of exposed soils imperative. Implementation of soil stabilization is even more critical in this location than on the Line, where a large part of the landscape plan was not implemented or had disappointing results.

Table E-1, what is the impact of ultimate development on these pollution loads.

Preliminary Natural Channel Design of Red Hill Creek

We would appreciate a copy of the Appendices with the final report.

Page 11, first paragraph, sediment was only collected for a short period by MOE and only at the Queenston Rd station.

Page 31, erosion sensitivity of the analysis is based on the Hannon Creek subwatershed maintaining the remaining floodplain and riparian corridor. The current neighbourhood plans for the watershed we understand do not retain the creek system. The plans for these neighbourhoods should be reviewed on this basis.

Page 37, second last paragraph, these comments have a bearing on the Mountain Brow Blvd Crossing/Central Mountain Stormwater Management Class Environmental Assessment.

Page 97, we strongly support the provision of naturalized buffers adjacent to creeks as recommended. These not only assist in retarding erosion rates, but also contribute to fish and terrestrial habitat conditions.

Page 113, the selection of a qualified contractor is imperative to the success of realigning this creek. We believe the use of natural channel design for this length of watercourse is unique (final length 7,607m). A general tendering process should not be used. We support the recommendations in section 3.4 Contractor Selection. There are also recommendations which should be specified in the contract documents to make this a successful project.

Page 119, on page 117 there were 16 bridge crossings in 1985, this page there are 21. Please review.

Section 2.2 identifies a number of design parameters for structures crossing under or over the realigned creek. These will need to be carried forward in the detail design.

Page 148, reference 64, we currently own and operate this flow monitoring station. Should this refer to section 3.7. Is this included in the cost of the project and has Water Survey of Canada been contacted? This can be resolved at detail design.

Page 153, fourth paragraph, please clarify that future flows under future expected development conditions have been accounted for and what impact this will have.

Page 174, we would appreciate a copy of the roll-out drawing for design review. It is recommended that an as built drawing be prepared.

Page 187, what is the quantity of sediment from the upper watershed that enters the system? We are trying to understand what percentage change can be removed by implementing this design.

Page 191, second paragraph, we are not aware that sediment is currently monitored at the Queenston Rd flow station. A monitoring program should be implemented as recommended. We are also not aware that sediment has ever been monitored at Mount Albion station. Who will pay for the construction and annual maintenance of the new flow monitoring station? We would like to discuss incorporation of this station within our network.

4. Recommendation

Staff recommend that:

> The Water Management and Environmental Impact Advisory Board recommends to the Full Authority that staff respond to the reports related to the Red Hill Creek Expressway based on this report.

Dr James Quinn.

12 December 2002

I have reviewed the Southern flying squirrel study and found the work to be reasonable, but lacking in some important elements. I do have a number of comments about the interpretation and implications of the study. The general conclusion that I draw from the report is that the large scale disturbance of road building combined with the resultant habitat fragmentation is likely to do cause significant harm to the population of Southern Flying Squirrels living in the Red Hill Valley. The outcome is likely to extirpate the population, ultimately. Isolation from Dundas Valley (if absence of SFS in habitat between Dundas Valley and RHC has been assessed correctly) puts the Red Hill Valley population at significant risk of extirpation with no rescue population (report Page 34).

I will start with the most general concerns and follow with more details. First, we know that the Southern flying squirrels are classified as S3 by the MNR. The biology of this species suggests that they sensitive to human activities and therefor of special concern (Page 7 report). We also know that some S3 status species are susceptible to large scale disturbances. It should be obvious that road construction represents a large scale disturbance to a small valley habitat. This disturbance seems to have been neglected in any discussion of the effect of the road on flying squirrels.

Aside from direct damage from the road, the carving of habitat into smaller fragments is known to be harmful to Southern flying squirrels (Stabb and Aird 1990; Page 28 report); isolating sub-populations and increasing the risks of local extinction (Page 44 report). Failure to find Southern flying squirrels in Chedoke Civic Ski club is troublesome and consistent with population failure with fragmentation by roads (403 and Jolly cut; report Page 24) 29 Site evaluations and the presence/absence study revealed that the squirrels are restricted to areas of the escarpment – note that these are the areas of the valley that are most free of roads with the largest forest fragments. (report Page 24) Report supports this argument about forest fragments needing to be large (report Page 28). Montgomery Creek site (North of Greenhill) lacked squirrels and seems to have been cut off from the RHV population by the two lane Greenhill road (report Page 34) Another habitat cut off from the rest and presumably leading to population extirpation.

A 4 lane road is a greater barrier than lesser roads (report Page 55). The planned expressway with increased traffic is likely to be an effective barrier indeed! The width of the Red Hill expressway will exceed the maximum known gliding distance of a SFS. The additional disturbance of increased traffic will strengthen the effectiveness of the barrier. Roads have a barrier effect on SFS and wider roads have a greater barrier effect (report Page 77). King street appears to be an effective barrier to movement by SFS and this is to be expected with the construction of a 6 lane expressway – the report prepares us to expect this highway to be an effective barrier. (report Page 56).

The proposed 200 m long viaduct through which the squirrels are expected to move seems poorly thought through. How wide will it be? How will it be vegetated properly to favour movement by the squirrels (Page 8, report). The report suggests that Southern flying squirrels avoid clear cut areas (report Page 45). It seems unlikely that they will

cross a viaduct unless it is properly vegetated. Despite one squirrel crossing highway 20, the 118 m gap at King street may be a significant barrier (report Page 28).

Study 1 suggested a population viability study and simulation examining the effect of removing the habitat that would be lost to the road – It did not appear that such a study was undertaken. Why not?? (See Page 18 report).

The recommendations are poor – **1**. monitor effect of the expressway on SFS – Most likely outcome based on the reported absence of SFS from habitat fragments, large scale disturbance and the barrier effect of the road – another population of SFS **extirpated!**

Recommendation **2** – erect poles – we don't even know if they are gliding across and they will not be able to make it all the way across anyway – temptation to become splattered on windshields of Buffalo-bound diesel trucks?

Recommendation **4** genetic analysis of gene flow – would only indicate a genetic connection and would not at all address the issue of whether a population was isolated enough to become extinct. Gene flow would restrict genetic divergence but not demographic failure unless the connections were very good.

Finally, The proposed testing of hypotheses about the impact of the road on Southern flying squirrels as a monitoring effort is most likely to bring scorn upon the decision makers who favoured the road if it is allowed. Alternatively those folks could recognise various risks, including the decimation of flying squirrels by disturbance during construction, habitat fragmentation, and road kills. It is clear that road construction will have very negative consequences for this sensitive species.

This report does not support the building of a road through Red Hill Valley.

Dr. James S. Quinn
Associate Professor of Biology
McMaster University

Comments on the
Land Use Assessment Draft Report 2002

from Don McLean, Chair, Friends of Red Hill Valley
December 2002

1. This report prepared is by Dillon Consulting, an agency much favoured by the local municipality and which has made a considerable amount of money off the Red Hill Creek Expressway project.

2. The list of information sources may explain why this report adds so little to our knowledge of anything at all. It would appear to be merely a rehash of various other reports already prepared and available for examination. Most notable is that these "reviewers" of "the potential impacts the Expressway will have" did not bother to ask a single soul who will be forced to live near this facility and suffer its impacts. The authors conducted no public consultation whatsoever, and appear to have been not particularly interested in the effects of the project on either the people who occupy the lands along the expressway (unless they were business people - an apparently exalted species which has rights no one else is granted) or the impacts on the lands they occupy.

3. The authors admit the focus of their "study" was on the "lands in the vicinity of the north-south uncompleted portion of the RHC Expressway". If they have decided to swallow the official myth that the Lincoln Alexander Parkway completed five years ago is "a portion" of this expressway, they might have contributed something useful by undertaking a study of the impacts of that "completed portion" on the lands adjacent to the Linc. This is a basic methodology of impact assessment, and would certainly have offered some impacts on the effects of the unbuilt expressway. For example, an evaluation could have been made of the impacts of the expressway on residential land values adjacent to it and how they have changed (compared to other parts of the City) with the construction and operation of the Linc. They might have also conducted a useful study of whether or not there were health impacts recorded among the population subjected to living beside the Linc.

4. Unfortunately, this report like many others is actively partisan in its support for the expressway project and in the repetition of a sanitized and circumscribed "history" that is incomplete and biased. Mention is made of various reports alleged to have been part of the development of this project prior to its actual adoption in 1979. Of course, unanimous decisions of the relevant local authority to protect the Red Hill Valley permanently as parkland, opposition of many official bodies and members of the public, repeated modifications as to where the road might be located, and other relevant history are carefully excluded.

   There are many examples of the bias, but I will mention only two provided in the "historical" section of the report on pages 4-5. In the first paragraph we have a prime example of circular logic. Mention is made of decisions "reinforcing the need for additional transportation capacity". How convenient! First we decide to build a road, then we create a need for the road to justify our decision to build it in the first place. The section ends as it began, providing a long quotation from the 1996 Regional Transportation "Review" that is intended to justify the need for the road. What it neglects to point out is that this 1996 "Review" ASSUMED the Red Hill Valley Expressway would be built, and made no attempt whatsoever to evaluate whether it was needed.

5. The references to Vision 2020 are brief, not surprisingly. Even though the Task Force on Sustainable Development that developed Vision 2020 was bluntly ordered to NOT examine or mention the Red Hill Creek Expressway, the Vision 2020 document and its accompanying implementation strategies fly in the face of the plans to pave large natural areas and promote more car dependence and urban sprawl. The

quotes from the Vision chosen by the Dillon authors make no mention of transportation. Why not include the following very relevant statement from the Vision? "Major roads have minimal noise and pollution impacts on adjacent lands and follow routes that cause little damage to the natural and human environment". The Dillon authors also avoid any mention of the numerous references to transportation found in the Vision and its implementation documents such as the "order of transportation priorities" that puts walking, cycling, and public transit ahead of goods movement and private motor vehicles (Implementing Vision 2020, 1993, Regional Municipality of Hamilton-Wentworth).

6. Reference is also made to the Parks Master Plan which curiously has nothing in it to PROTECT and ENHANCE existing parks or to increase the number of parks. Other municipal documents could have educated the Dillon authors that park space per person in east Hamilton is already substantially less than accepted standards before the further destruction of parkland envisioned in the expressway project.

7. Reference is also made to the Red Hill Creek Watershed Plan, but no mention is made of the fact that this plan was prepared ASSUMING the construction of the Red Hill Creek Expressway.

8. Finally the Dillon authors provide a piece about the new greenwash Environmental Health and Safety Integrated Management System. Not surprisingly, there is no mention of how this might relate to the expressway project, since it doesn't. Will this "system" protect the health of the residents of the Red Hill Valley and the surrounding neighbourhoods, or merely provide a green sheen to the action of the municipality determined to destroy the Red Hill Valley and poison the air of adjacent residents?

9. The anti-people bias continues throughout the document. In the description of the study area, people's homes are referred to only under "development" and are characterized as "a small residential development". There is no information on how many people live here, how many have respiratory health ailments, what the current value is of their homes, whether they make use of gardens for some of their food, whether the valley in its current state provides any benefits to them, whether they make use of the valley in its current state, or any other information about these REAL PEOPLE and their lives. Instead the bulk of the commentary is on POSSIBILITIES of redevelopment in other areas.

   The Dillon authors may protest that examination of these land uses is beyond the scope of their report (although that isn't the claim made for its purpose), but should be asked which other report bothers to examine these questions.

10. The report contains a great deal of material which is largely irrelevant to the expressway project. The section on upgrades to the Woodward Avenue Sewage Treatment Plan is an example. There could have been consideration of the impacts of expressway pollutants on the open air digesters of the plant, but none is provided.

11. Mention is made by the Dillon authors of the Rennie and Brampton landfill sites, but curiously nothing is said about the Nash landfill site located directly in the path of the proposed expressway. The Dillon authors are VERY FAMILIAR with the history of these dumps, since their company was engaged to evaluate them in the late 1990s and was again engaged more recently to conduct a class environmental assessment of the remedial plans that the municipality was forced to carry out after being caught allowing PCBs and other toxic chemicals to enter Red Hill Creek, and being fined $487,000. However, the Dillon authors forget to mention this history and forget to even mention the toxic contents of these dumps. Instead they take the occasion to praise their own work.

    The Dillon authors do mention that the expressway will "overlap" some of the remedial work, but don't bother to admit that it will require removal of a leachate collection system installed earlier this year. They mention that some "waste" will have to be excavated. This excavation is likely the single most dangerous activity in the expressway construction process. Dillon personnel (perhaps the same ones who

authored this study) recently told members of the public and members of the Community Liaison Committee that excavation of "waste" from the Rennie dumpsite was so dangerous that it would likely require evacuation of the neighbourhood because of the release of toxic vapours. Why don't the Dillon authors include these remarks in this study? Surely the toxic contents of this landfill and the fact that it must be excavated if the expressway is to be built, constitutes the single most important most significant fact about the land use affected by the expressway. The fact that the Dillon authors have nothing to say about this is disgraceful and should be subject to a police investigation.

12. The Dillon authors note that "there may be a need to expand the capacity of the trunk sewer" in Red Hill Valley. This is a very significant statement. If modifications are required to the trunk sewer line, then obviously these should be carried out AT THE SAME TIME as other construction work planned for Red Hill Valley such as the expressway and the CSO pipe. If this is not done, and expansion is deemed to be required, what's left of the valley ecosystem will be severely disrupted again. It is incumbent upon the City of Hamilton to make a final determination of the need for this sewer expansion, and/or for any repair or other work on this line, prior to any decision to begin construction work in the Red Hill Valley.

13. The discussion on Recreation and Open Space by the Dillon authors on page 13 of their report neglects to mention the presence of a provincial Class One Wetland. It also fails to note the existence of a portion of the Red Hill Valley trail and a pedestrian bridge (currently disrupted by the remedial work associated with the area's dumps). The existence of this trail is not mentioned until the review of the "middle" section of the valley. Does this mean that these recreational facilities will not be replaced and rehabilitated?

14. Again in the "middle" and "upper" sections, there is only minimal reference to the homes of people located along the valley. Again the Dillon authors seem far more interested in "developments" that will fill the pockets of one or more speculator should the expressway be constructed. On page 17 the number of baseball diamonds north of Greenhill Avenue is incorrectly given as four (there are five). While there is admission that these diamonds will have to be removed, and that three other diamonds south of Greenhill "will be affected" by the Greenhill CSO facility, the report doesn't tell us how many of these facilities will be replaced. The answer provided by the Dillon authors is "some" (a term usually meant to mean three or more). I believe the use of "some" is deceptive.

15. On page 18 the Dillon authors tell us that there is a "cap" on the number of residents in Heritage Green. An honest report would have noted that this "cap" has been raised twice in the past (essentially each time it looked like it might be exceeded soon).

16. The very brief section 4 of the report is devoted to "impact assessment and mitigation". The Dillon authors note that some of the expressway and related projects may require more private lands, but they offer no information on what these are. Similarly, we are told the trail will be relocated but exactly where remains a mystery, what will happen in the golf course is being "worked on", a master plan is being developed but is not yet available, there will be "some modification" to the landfill leachate collection system at Rennie, there may be other projects "emerging from the WINS plan", etc. One is forced to wonder why the report has been prepared if such crucial information has not yet been determined. Perhaps this is another example of the "creative" approach of the City to public consultation whereby incomplete reports are presented for comment, the comments are never responded to, and comment is not permitted on the final versions of the reports.

17. The Dillon authors admit that some of the rehabilitated and revegetated areas north of the Rennie landfill will be removed but assure us that "there will still remain a net gain in habitat area over what is present now". Since what is present now is either barren or only planted in the last few months, this claim, at least, should be within the reach of the municipality.

18. There is an admission on page 35 that the expressway will "result in an increase in traffic along Greenhill Avenue". This is almost certainly true, but why is Greenhill Avenue the only street that the authors think will be affected? What will happen to traffic on King Street, Lawrence Road, Queenston Road and Barton Street -- all streets that will be fed by interchanges or other traffic structures associated with the expressway project? What will the impact of this increased traffic on Greenhill (and almost certainly on the others noted) be on the land use beside these arteries? What will it mean for the residents who "use" the adjacent lands for their homes and businesses? Why isn't such basic information included in this so-called "land use assessment"?

19. Mention is made of the fact that the catchment area of a number of schools will be divided by the proposed expressway, especially in the "middle" section, and it is admitted that school children will have to cross the expressway on streets such as Barton and Queenston. Why is there no comment on the health impacts occasioned by such behaviour? The 1998 Cantox study on the health effects of the expressway specifically concluded that children and the elderly "should be encouraged to limit their exposures, and not frequent the Red Hill Valley once the expressway has been completed." They also warned that children who pass over the proposed highway will be at greater risk for respiratory irritation or asthma. Why aren't these warnings noted by the Dillon authors.

20. Page 36 of the Dillon report contains a categorically false statement. "With the exception of the impacts associated with the creek realignment, all of the above impacts were taken into consideration in the original environmental assessment." This is utterly false and it is certain that the authors of the report know that it is false. The evidence is overwhelming and admitted by both municipal and provincial authorities. The 1985 "assessment" is so deficient that it is now hidden in shame and virtually nothing specific from the majority opinion is ever repeated by them. Even the project itself has been substantially redesigned, while understanding and science related to highway impacts have dramatically advanced in the last 17 years. Unfortunately, this disgraceful claim reflects the general tone of this so-called "assessment", which frequently sounds like it was written directly by the proponent.

21. Table 3 of the report includes a column on "mitigation and costs". In fact, NO precise costs are given for ANY of the 18 items in the table. In a few cases, approximate costs with very wide ranges (i.e. $5 to $8 million) are provided. In many cases it appears that the cost is not known. In some places we are told the cost is "minimal" and in one we find the preposterous claim that erecting noise walls for Albion Mills Estates (a free gift from the City to the developers) is "negligible". When statements like this are encountered, every honest person has to question the credibility of the authors. A claim is also made that the costs of realigning the creek (hardly negligible) are available elsewhere. We would appreciate being given a precise reference since our search of these documents has not turned up any such information.

NOV 2 6 2002

BAY AREA RESTORATION COUNCIL
ECOLOGY · INDUSTRY · RECREATION

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November 20, 2002

Chris Murray, Director
Red Hill Valley Project Office
TO&E Department
City of Hamilton
Suite 320, 77 James Street North
Hamilton Ontario
L8R 2K3

Dear Mr. Murray:

Re: Red Hill Valley Project - 10 New Draft Studies for Review and Comment

Thank you for sending the Bay Area Restoration Council notice regarding the release of 10 new reports, including a full consultation report and design report for the Expressway and the other projects connected with it. However, it is impossible to review this volume of information in 45 days and provide meaningful comments.

Should the City of Hamilton set up a project assessment committee, we would be please to participate.

The Bay Area Restoration Council (BARC) is a non-profit, charitable organization established in 1991. Since that time, it has become the primary voice promoting and supporting the restoration of Hamilton Harbour and its watershed. BARC's membership includes representatives from over 60 business and non-profit organizations and 190 private individuals.

Yours truly,

J Thoms per MB

Jim Thoms
President

The Bay Area Restoration Council
is a confederation of community stakeholders
devoted to revitalizing Hamilton Harbour
and its watershed.

To: Red Hill Valley Project,
Suite 320, 77 James St. North,
Hamilton ON, L8R 2K3

From: The Iroquoia Bruce Trail Club,
P.O. Box 71057,
Burlington ON, L7T 4J8 Date: 7 Dec. 2002

Comments on Draft Reports on Red Hill Valley Project

We have studied some of these reports, in particular the one on "Stream Network Inventory, Fluvial Geographic Assessment and Preliminary Natural Channel Design of Red Hill Creek". We were surprised to read the section on the major re-channeling of the Red Hill Creek in the Kings Forest Golf Course area, without finding any rationale for this drastic and expensive change in the channel of the creek.

If, however, this re-routing of the creek along a "paleo channel" is to take place, we would like to draw your attention to the following:

1. The Bruce Trail follows the Niagara Escarpment- in some places on top, in other places part way down or at the foot of the escarpment. In the Kings Forest area we need a route, not on roads but preferably through woodlands, to link up with the rail trail below Mountain Brow Boulevard. The suggestion that the Bruce Trail be routed "possibly along the existing channel" of the creek is obviously unsatisfactory, as it would be leading the Trail away from the escarpment!

2. The comment that the Bruce Trail bridge is "no longer needed" under the new alignment of the creek is very misleading. The bridge may have to be relocated, but we still have to cross the Red Hill Creek. A bridge will certainly be needed in a suitable place near the foot of the escarpment. A shared pedestrian/cyclist bridge at Greenhill Avenue would not be suitable for the Bruce Trail.

We would like to become involved in discussions of the rerouting of the Bruce Trail and the creek crossing, as we have been four or five years ago concerning the design of the expressway crossing of the Niagara Escarpment. This should certainly involve an on site meeting with your planners and engineers.

You can contact us at the postal address above, or you can phone Paul Beneteau (905-335-0707) or Ian Reid (905-628-8329).

Ontario's Niagara Escarpment
l'Escarpement du Niagara de l'Ontario

Ontario

Niagara Escarpment Commission
232 Guelph Street
Georgetown ON L7G 4B1
Tel. No. (905) 877-5191 - Fax No. (905) 873-7452

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December 10, 2002

Chris Murray, Director
Red Hill Valley Project Office
Transportation, Operations &
Environment Department
City of Hamilton
320 – 77 James Street North
Hamilton, ON L8R 2K3

Dear Mr. Murray:

RE: RED HILL CREEK VALLEY PROJECT – RELEASE OF DRAFT REPORTS

Further to your circulation of October 9, 2002, we have had an opportunity to review the various draft reports and, on behalf of the Niagara Escarpment Commission (NEC), we offer the following comments and questions for your consideration:

Niagara Escarpment Expressway Crossing Alternative Design Report

The NEC is on record in 1999 as having supported the recommendations on a preferred preliminary design for an Escarpment crossing in a draft report prepared by the former Regional Municipality of Hamilton-Wentworth. In that there are no revisions proposed to the design of the Escarpment crossing, the previous comments and recommendations offered by the NEC remain valid.

King's Forest Golf Course Impact Assessment Study

Evidence suggests that the existing creek channel through then King's Forest Golf Course is exhibiting significant erosion and bank undercutting. Previous stabilization measures (i.e. gabion baskets) have failed (or are failing) and slumping into the watercourse. A review of the *Draft Report: A Stream Network Inventory, Fluvial Geomorphologic Assessment, Impact Assessment and Preliminary Natural Channel Design of Red hill Creek (June 2002)* prepared by Water Regime Investigations and Simulations Ltd. (WRIS) concludes that it will be necessary to undertake some fairly extensive stream channelization and stabilization measures along this section of the watercourse, even if there is no expressway constructed.

The Cooke & Associates study on the golf course provides site-specific assessments of impacts and possible mitigation measures on various golf hole

layouts to result from a realignment of the creek channel.

The creek channel realignment will result in alterations to seven (7) golf holes, at minimum five (5) bridge crossings, and the conversion of sections of the former creek channel into ponds/stormwater containment facilities in two locations.

Other than actual construction of a new creek channel, it is expected that the majority of the work on the golf course will consist of grading associated with the reconfiguration of tee decks and the construction of two ponds in the former creek channel as a replacement of the creek along fairways No. 11 and 14. Pond configurations are roughly estimated and depths are not provided. More work is necessary.

In principle, the NEC does not oppose this undertaking, however, the City is advised that a Development Permit from the NEC will be required for the final plan involving any alterations to the golf course layout, the design and depth of the ponds, and any remedial works proposed for the existing channel.

Snowdrifting Assessment

The consultant identifies potential areas of concern where snow drifting may occur along the proposed expressway and on/off ramps. The conclusion is that there is a minimal potential for snow drifting given the extent of existing tree cover, surrounding topography and land uses.

As to the positive effect of existing tree cover on minimizing snow drifting, we are uncertain whether the consultant has taken into account the removal of a substantial number of trees in the valley for the actual expressway construction, creek channel alterations and the rehabilitation of the former creek channel. This could conceivably impact upon the conclusions reached in the report.

The NEC recommends that additional planting of vegetation within or in close proximity to the *Niagara Escarpment Plan Area* be native species, indigenous to the Red Hill Creek Valley. The identification of species, their planting location and other details (size, numbers) could be incorporated into the overall Landscape Master Plan when finalized.

Fisheries Existing Conditions and Predicted Impact

Under **Section 4.2 Methodology**, was any sampling undertaken during drought conditions? If so, this should be taken into account since it may affect the reliability of the results.

We are uncertain whether there is recreational fishing taking place in the sections of the Red Hill Creek below the Escarpment. If so, it is conceivable that this may

have affected sampling results and we would question whether this was taken into consideration.

Fish sampling detected five (5) common fish species present in the Red Hill Creek watershed, yet only one sampling event during a single season took place in the Red Hill Marsh. Some species that are found in Hamilton Harbour and Lake Ontario may use certain reaches of the watershed (including the marsh) for spawning and foraging at different times of the season. It is highly probable that some species could have been missed. We, therefore, question the results obtained from only the one event.

Based on the above concerns, we are of the opinion that multiple sampling events over multiple seasons using a variety of methods should be undertaken to confirm the presence or absence of species.

Under **Section 6.1.2.6 Riparian Vegetation**, a large percentage of the current creek channel runs through areas dominated by some mature floodplain forest. The proposed creek channelization requires the removal of an extensive amount of this mature forest with only minor negative environmental impacts expected over the short-term (from Table 10). The salvaged sod mats and shrubs that are proposed for planting at various locations along the new channel may not be adequate to provide sufficient erosion and sedimentation control. The result could be increased sedimentation to the new creek course.

Also of concern is the potential for loss of shading to the creek provided by the mature vegetation cover. Large-scale tree removal could conceivably cause significant negative impact to aquatic habitat and function. The consultant suggests that the natural vegetative community is not expected to be in the advanced stages of succession for an estimated 15 – 20 years. What are the expected impacts to the creek community to be during this time frame?

Under **Section 6.1.2.7 Water Temperature**, the report suggests that only minor changes in water temperature are anticipated as a result of the construction of the new creek channel. This is due mainly to the loss of mature vegetation that currently provides a shading effect to the creek. As in the paragraph above, even modest changes in water temperature can impact upon fish habitat, health and community. Many species have narrow ranges of adaptability.

The loss of existing vegetation and the cooling effect of the canopy cover (which will require a long regenerative period) may cause the creek water temperature to warm, resulting in negative impacts on the current aquatic community. Perhaps the City can address this in some fashion (e.g., through the planting of trees) or, maybe has in the Landscape Master Plan. Please confirm.

With reference to Table 10 (**Evaluation Summary for the Anticipated Environmental Impacts**), we have the following comments:

- There is no defined scale for the +/- method;
- There is no mention of temperature impacts, with the exception for a temporary reduction in shading of the creek which is given a rating of only 1-).

Under **Section 6.1.4.1 Benthic Invertebrates**, the report contains details on post-construction colonization. There are, however, no results on the presence, or absence, of existing populations and, unless there is something that we have missed in the review, we wonder how details on post-construction can be given in the absence of details on the existing colonizations. At the very least, an inventory of present populations will provide a basis for post-construction monitoring activities.

Under **Section 6.4.2 Infilling of Wetland**, although the areas proposed for infilling do not appear to be utilized by fish species (1998 sampling event), the area may serve as an indirect habitat by playing a role in nutrient and sediment supply, water flow and supply. The area to be filled exhibits a wetland vegetation may also provide some natural wastewater treatment which may directly lead to improved habitat quality where fish are found. More study is necessary to deal with this matter.

Under **Section 7, Monitoring**, we feel that a monitoring program should also include:

- Descriptions of the approaches and methods to be used, including target indicators;
- Monitoring of the chemical parameters of water quality should be included in addition to the biological monitoring components;
- A description of the frequency and duration of monitoring efforts. This should also take into account the fact that different species will colonize/forage at different times of the year);
- A description on how the monitoring results will be used to adapt and modify current plans (an adaptive management/monitoring approach); and
- Monitoring the establishment and health of riparian vegetation.

Southern Flying Squirrel Study

On page 71, the results of a study on the movements of 23 flying squirrels in Hamilton found one individual squirrel had crossed a wide road and three (3) that crossed a narrow road, the results of which... ***"were ambiguous with respect to what effects a major highway could have on flying squirrel populations".***

The "wide road" referenced in the study was Centennial Parkway, a 4 lane 20 m wide "highway" with an average traffic volume of 11,900 vehicles between 1700

and 0500 hours. Though gliding from tree-to-tree is their primary method of movement (the maximum glide for a Southern Flying Squirrel is estimated to be 75 m), it was not clearly determined in this study how the squirrel actually crossed. We can make certain presumptions, however, did the squirrel glide, run or access the railway underpass to cross the "wide road"?

Given that the estimated maximum glide is 75 m, the proposed expressway will be 70 to 80 m wide with a maximum estimated traffic volume of 22,420 cars. We, therefore, have to conclude (although not stated in the report) that it is extremely unlikely that the flying squirrels will cross the Red Hill Creek Expressway, a "major highway". On this, there would appear to be no ambiguity. The Flying Squirrel habitat will, in effect, be cut off at the Expressway.

Also, on page 71, the consultant expressed how there was no Southern Flying Squirrel habitat found at the Chedoke Ski Club along the Escarpment in the western end of the City. Habitat fragmentation (in turn causing the squirrel population to be isolated) was considered a cause for their absence. Yet, the report does not address the amount of squirrel habitat to be lost and fragmented as a result of the construction and related remedial works for the Red Hill Creek Expressway. The conclusion could be that the remaining habitat will not sustain the squirrel population over time. More work is required to address this issue.

Draft Report – Post Construction Ambient Air Quality Monitoring for Lincoln Alexander Pakrway

We note that the consultant concludes that the results of the monitoring over a six month period in 2000 generally indicates that air quality falls within acceptable Ministry of the Environment and Energy (MOE) guidelines. The predominant wind direction over the course of the monitoring was from the south-southwest and the northeast.

We do take note that inhalable particulate matter (caused largely from dust emissions) predictably increases at morning and evening rush hours. We also note that only two samples in September 2000 showed results over the maximum rate in MOE guidelines. With a meteorological change apparent over the last several years resulting in hotter, drier summers (and humid heavier air conditions), what future impacts can be expected on inhalable particulate matter and other airborne matter adjacent to the Parkway?

Can changing weather conditions be expected to skew the results of the monitoring?

One would predict that an increase in inhalable particulate matter would result, as dust is generated from passing vehicles in these warmer, drier conditions. Can other levels of more toxic air borne particulate such as zinc and lead levels be expected to increase as well? More study is required.

Also, only one area was studied. Admittedly, this site was close to the proposed North/South section of the Red Hill Creek Expressway. Since it may be that the North/South Expressway and the Parkway will be used by heavy trucks and other private vehicles as a short cut to and from the Queen Elizabeth Way, Highway 403 and, potentially, the mid-Peninsula highway, it may be more beneficial to obtain representative samples (and compared them) at two locations (minimum) along the Lincoln Alexander Parkway.

Draft Report – Pre-Construction Ambient Air Quality Monitoring

Again, we have to question whether the advent of hotter, drier conditions (particularly in the summer months) over the last few years will have significantly affected the results obtained in 1997 and 1998. The study was performed from December 1997 to June, 1998. Air quality measurements were not undertaken in the warmer, usually drier, months of the summer.

The conclusion from the report suggests that levels of carbon monoxide, nitrogen oxides and inhalable particulate matter were generally found to be low over the course of the study and within accepted MOE guidelines. The consultant concluded that the results seemed to be reflective of, and expected from, roadway traffic. There is a strong correlation between traffic volumes and concentration levels at the King Street/Mt. Albion Road intersection, where all measurements were recorded.

The traffic volume on King Street and Mt. Albion Road is not that which is to be expected along the expressway. If a daily maximum of 22,000 vehicles is estimated on the expressway, how is that expected to affect the air quality in the Valley?

The consultant was only considering air quality in pre-construction conditions.

What are the predicted effects of climate change (e.g. hotter, humid, drier conditions, and during periods when air containing particulate and vehicle emissions is trapped in the Red Hill Creek valley by air inversion and the effects of the Escarpment) on the environment with the expressway in place.

One might expect pollution levels to be higher. What are the predicted effects on air quality in the Valley also given the loss of vegetation (as a filtering element) resulting from the expressway construction and creek channel realignment?

Table 4.1.1.1 is a summary of measured ambient Carbon Monoxide (CO) statistics for 1996 to 2000 at the Elgin/Kelly Street monitoring station and the King Street/Mt. Albion Road station. It is suggested that annual averages of CO measured at the Elgin/Kelly Street station were higher in 1996 but have been

consistent and lower in more recent years. There is no explanation offered as to why.

Draft Report – Business Impact Assessment of the Red Hill Creek Expressway/QEW Interchange

As this area is well removed from the *Niagara Escarpment Plan Area*, we have no particular comment to offer on this draft report.

Draft Report – Land Use Assessment

We take note on Page 17 that baseball diamonds on the west side of the Red Hill Creek valley both south and north of Greenhill Avenue and four tennis courts will be removed to accommodate the Expressway and a new Combined Sewage Overflow (CSO) tank. Soccer fields on the east side of the creek have been relocated to nearby schools, however, there is no mention of whether the baseball diamonds are to be re-established anywhere within the Valley.

We note that the Red Hill Valley Trail is to be realigned throughout the Valley and the Bruce Trail is to cross under the expressway viaduct at the base of the Escarpment. The expressway construction will impact on the experience of trail users to access the Valley Trail and Bruce Trail.

We conclude that, generally, the trail experience for users will be degraded in certain areas, from what exists today.

The updated Surface Water and Stormwater Quality Technical Report

We understand that the City has submitted this report to the Federal Department of Fisheries and Oceans (DFO) for their review and that a copy was provided to the NEC for information.

We question only one aspect of the report at this time.

On Page 30, we are unclear as to the reason behind the selection of the storm event of September 17, 1976 as being the most appropriate event for discrete simulations based on creek flow and volume response. We wonder, perhaps due to the effects of climate change, why the scale of a storm event 25 years ago would be considered as opposed to the scale of more recent storm events. Recent storm events of the last three or so years have produced intense rainfall but have occurred less frequently. The rainfall produced in one storm event in May, 2001 produced greater amounts of rainfall over a period of a few hours than had been recorded over somewhat more normal climatic conditions for the area dating to the early to mid 1990's.

Can the City advise that the stormwater management system proposed for the Red Hill Creek valley is to be based on more recent storm events that are predicted to be more intense in the future?

The conclusions and recommendations in this report should be satisfactory to the Federal DFO, the Provincial Ministry of Natural Resources (MNR), the Ministry of Transportation (MTO) and the Hamilton Conservation Authority (HCA).

Draft Report – A Stream Network Inventory, Fluvial Geomorphologic Assessment, Impact Assessment, and Preliminary Natural Channel Design of Red Hill Creek

In that the upper reaches of the Red Hill Creek watershed are relatively non-urbanized (e.g. in area of Hannon Creek), what are the predicted effects of sediment loading on the watershed in future now that the areas above the Escarpment come on for subdivision development, and Regional Official Plan Amendment No. 9 has been approved extending the urban boundary into Glanbrook?

We note on Page 6 that there is no reference to the *Niagara Escarpment Planning and Development Act (NEPDA)* **in Figure 1-3.**

The *NEPDA* contains objectives that unique ecologic areas, stream and water supplies be maintained and enhanced. Development Permits are ordinarily required from the NEC prior to the alteration of a creek course or development within or adjacent to a creek floodplain.

We had some trouble deciphering what the symbols were on **Figure 1-8** on Page 14. In particular, two colours (light green with cross-hatching and brown, open triangles over a yellowish-orange background) were not identified in the legend.

In summary, in addition to the comments, questions and concerns outlined in this comment, we recommend that the conclusions and recommendations in all draft reports satisfy the various agencies also having jurisdiction over development in the Red Hill Creek valley including (but not restricted to) the DFO, MNR, MTO and HCA.

In addition to any permits/certificates required from other agencies under the *Federal Fisheries Act, the Ontario Water Resources Act, the Lakes and Rivers Improvement Act, Conservation Authorities Act* and, if necessary, the *Environmental Assessment Act*, please include the requirement for a Development Permit under the *NEPDA* (which would apply to certain undertakings noted in this comment).

We expect that you will provide copies of all comments from all parties and the City's response sometime in the New Year.

Thank you for the opportunity to review the draft documents and to provide our comments. Please direct any inquiries or questions to David Johnston at ext. 243 or email david.johnston@mnr.gov.on.ca.

Yours truly,

Ken Whitbread
Manager

c. Scott Konkle
General Manager
Hamilton Conservation Authority

Joad Durst
Supervisor
Guelph District
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DJ/ES HW 08 04/gmm c:\EA\Ham\Red Hill Creek Valley Proj. commnt let, Dec 11-02

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"Promoting greater awareness of magical Red Hill Valley"

December 10, 2002

Mr. Chris Murray, Director
Red Hill Valley Project
Suite 320, 77 James Street North
Hamilton, ON L8R 2K3

Dear Mr. Murray,

Thank you for the opportunity to comment on the Draft Report,
Pre-Construction Ambient Air Quality Monitoring, October 7, 2002.

Several questions and concerns come to mind after reading this report.

- Why was a computer modeling survey of Expressway air quality levels not undertaken as a logical 'add-on' to this pre-construction survey?
- Why were not air quality monitoring stations set up in the Valley, as well as on its perimeter?

The report notes that "there were four 24-hour periods when levels of PM_{10} exceeded the MOE's 24-hour interm Ambient Air Quality Criteria. (AAQC) I am concerned that when an estimated 70,000 vehicules a day begin using the Expressway, levels of PM_{10} will exceed the Air Quality Criteria with alarming frequency. I would also like to see monitoring stations established in the Valley. These stations would provide a firm foundation for the comparison of future air quality.

I urge you to advise City Council to delay the Expressway project now. We all require more information about the impact of the proposed Expressway on Neighbourhood Air Quality.

Sincerely,

Scott McNie

Scott McNie, Coordinator

"Short of a miraculous transformation in the attitude of people and governments, the Earth's remaining... forests are destined to disappear..."
Klaus Toepfer, Executive Director, United Nations Environment Programme, August 2001

2

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December 10, 2002

Mr. Chris Murray, Director
Red Hill Valley Project
Suite 320, 77 James Street North
Hamilton, ON L8R 2K3

Dear Mr. Murray,

Thank you for the opportunity to comment on the Draft Report,
Fisheries Existing Conditions and Predicted Impact, June 2002

"Based on the current proposal, the project is not just consistent with the Department of Fisheries and Oceans habitat policy, but greatly exceeds the standard of no net loss." (Conclusions, p.55)
I strongly disagree with the conclusions of C. Portt and G. Coker. The authors are convinced the present fisheries habitat will be improved by the proposed 7 km reconstruction of the Red Hill Creek. They further suggest that any negative impacts from the Expressway can be solved.
However, their thinking ignores three important facts.

- The Red Hill Creek fisheries habitat is improving. In 1995, the Naturalists' Club carried out a biological inventory and found, "18 kinds of fish, including rainbow trout, and northern pike.."
- Money intended for creek realignment needs to be spent on water control measures and watershed protection on the mountain.
- The Creek and the Valley are interdependent. Each brings life-sustaining support to the other. Trees and shrubs shade the creek while being nourished by it. Conversely, a water table change or Expressway runoff could kill countless trees and leave creek banks exposed .

I urge you to reject the report's conclusions and advise City Council to take immediate steps to protect the creek's watershed and control water flow over the escarpment..

Sincerely,

Scott McNie

Scott McNie, Coordinator

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Klaus Toepfer, Executive Director, United Nations Environment Programme, August 2001

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3

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"Promoting greater awareness of magical Red Hill Valley"

December 10, 2002

Mr. Chris Murray, Director
Red Hill Valley Project
Suite 320, 77 James Street North
Hamilton, ON L8R 2K3

Dear Mr. Murray,

Thank you for the opportunity to comment on the Draft Report,
Business Impact Assessment of the Red Hill Creek Expressway/QEW Interchange, October 2002

I am deeply disappointed by the narrow Terms of Reference, used as a basis for this very limited report. This study was an excellent opportunity to explore how much new and existing businesses might benefit from the proposed Red Hill Expressway. It was also an exciting chance to explore how protecting the Valley's unique natural and historical 'assets' might attract new business and re-energize existing ones. It simply makes sense to put all of the information on the table – examining the pros and cons of both sides, adding up projected costs and benefits and then finally making a decision.

I urge you to reject this report and advise council about the need for a new and comprehensive business impact assessment looking at the entire length of the valley.

Sincerely,

Scott McNie

Scott McNie,
Coordinator

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4

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"Promoting greater awareness of magical Red Hill Valley"

December 10, 2002

Mr. Chris Murray, Director
Red Hill Valley Project
Suite 320, 77 James Street North
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Dear Mr. Murray,

Thank you for the opportunity to comment on the Draft Report A Stream Network Inventory, Fluvial Geomorphologic Assessment, Impact Assessment and Preliminary Natural Channel Design of Red Hill Creek, June 19, 2002.

"The 2002 alignment reflects changes from the 1985 alignment which includes alterations to the overall alignment, the footprint of the expressway corridor, number of bridges crossing the creek, and bridge spans..." (p.130)

In its new draft study, the City of Hamilton and its consulting company, Water Regime Investigations and Simulations Ltd. (WRIS) propose that "significant portions of the existing stream channel alignment be moved and re-set to be in better harmony with the watershed in the valley." (p.119) In other words, they are suggesting a virtual reconstruction of the entire 7km Red Hill Creek! (including a dozen bridges!) Many Hamilton residents who have witnessed a flooding Red Hill Creek will be skeptical of the report's proposal to successfully realign the creek, even with its geometrically planned natural channel design. It's time to focus on the source of the flooding problem and move to control water flow over the escarpment by protecting and enlarging the creek's flood plain/watershed on the mountain. The proposed 'meander pattern alignment' leading to existing recreational trail loss (p.146), significant cuts, alteration and destruction of terrestrial habitats (p.140, 146), disruption and movement of important archeological sites (p.146), more frequent golf course flooding (p.142), and loss of local historical features (p.148), may prove largely unnecessary....

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Klaus Toepfer, Executive Director, United Nations Environment Programme, August 2001

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The draft report raises a number of troubling questions...

- Why did it take five months for this study to be released to the general public?
- How can a project so fundamentally different from the original not be subject to another environmental assessment process?
- Why are recent 'natural channel design' advances seen as important enough to 'delay' the Expressway project, while advances in modern medicine and climate change impacts are not?
- How can local Councillors oppose a re-examination of the Expressway project, given that this report warns of staggering 'economic costs in perpetuity' under the 'accepted' 1985 study?
- Why are rich archeological sites like the Iroquois Longhouse village found near Rosedale Arena not afforded immediate government protection for future generations?
- How could Madame Justice Dawson deny Ottawa's intervention in January, without the benefit of information contained in this current study dated, June 19, 2002?

I urge you to carefully consider these concerns and advise City Council to request an independent, comprehensive assessment of this and other recently released draft reports. Thank you.

Sincerely,

Scott McNie

Scott McNie,
Coordinator

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October 31, 2002

NOV 0 6 2002

Mr. Chris Murray
Director of the Red Hill Valley Project
Transportation, Operations and Environment Department
City of Hamilton
320-77 James Street North
Hamilton, Ontario
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Dear Mr. Murray:

Re: Draft Reports
Post Construction Ambient Monitoring of Lincoln Alexander Expressway
Pre-Construction Ambient Monitoring of Red Hill Creek Expressway, North-South Section

Ministry staff have completed review of the above referenced draft reports. We have no further comments on the Pre-Construction Ambient Monitoring of Red Hill Creek Expressway, North-South Section report by RWDI dated October 2002.

With respect to the Post Construction Monitoring of Lincoln Alexander Expressway report by RWDI dated October 2002, we re-iterate our concern of February 19, 2001. The draft report continues to attribute PM10 exceedances and other elevated values above 30 micrograms per cubic meter completely to traffic emissions from the expressway. The pollution roses presented do not show absolute average levels of PM10. Rather, they show frequency of hourly averages above a threshold and thus are strongly influenced by wind frequency. Due to the high frequency of southwesterly winds, the roses indicate greatest contributions from that direction which is then extrapolated to the conclusion that the source was the expressway. In fact, based on data provided previously, most of the higher levels were due to long range transport of particles from outside of the City. Both PM10 exceedances occurred during smog episodes when PM10 was elevated City wide.

The Ministry estimate of peak contributions from the expressway were 3 to 13 micrograms per cubic meter (24 hour average). This estimate was confirmed by average daily time series plots by hour of the day. The difference between average levels during low concentration periods (early morning hours) and highest peak periods (morning rush hour) was 8 to 15 micrograms per cubic meter in a series of graphs for each month of sampling.

Please contact Mr. Frank Dobroff at 905-521-7706 if further information or clarification is required.

Yours truly,

Carl Slater

Carl Slater
Supervisor, Air, Pesticides and Environmental Planning
West Central Region

c: F. Dobroff