

Appendix F:

Air Quality Technical Memorandum



Air Quality and Human Health Risk Analysis in support of the Detroit River International Crossing Project federal environmental assessment process.

Project technical studies were prepared in support of both the federal and provincial EA processes, and are in accordance with the provincial EA Terms of Reference, and the Final Federal EA Guidelines (2009).

Results of the studies indicate that air quality effects during operations of the Windsor-Essex Parkway are not likely to result in significant adverse effects or significant indirect effects on human health. Of particular note:

- Quantitative modeling that has been undertaken for the Project and was assessed against relevant federal and provincial criteria and standards.
- Localized air quality effects are expected to be similar to other existing corridors with comparable volumes of traffic.
- Localized air quality effects including increases in fine particulate matter (PM_{2.5} and PM₁₀) are not likely to result in increases in the risk to human health.
- It has been determined that localized air quality effects during operations of the Windsor-Essex Parkway are not likely to be significant.

A careful review of the project documentation for air quality and human health¹ and additional consultation with project experts was undertaken in response to the concerns raised by the City of Windsor. The following summarizes key results:

- Air quality in Windsor is driven by trans-boundary pollution.
- Both the Tunnel and the Parkway are slightly preferred over the other alternatives for receptors within 50 m and that all alternatives are preferred over No Build for air quality beyond 100 m.
- None of the alternatives result in sufficient enough change to impact the Air Quality Index.

¹ The Air Quality Impact Assessment Supplementary Documentation, March 2009 (Bridging Document), The Memorandum regarding Air Quality, response to Submission by City of Windsor, March 2009 The Air Quality Assessment: Technically and Environmentally Preferred Alternative, December 2008 (TEPA report), The Practical Alternatives Evaluation Working Paper: Air Quality Impact Assessment, May 2008 (Practical Alternatives report); and The Air Quality Impact Assessment (August 2007) (August 2007 AQIA), as well as consultation with Air Quality and Human Health experts.

- All alternatives showed exceedances of the PM_{2.5} criteria using very conservative silt loading factors and all alternatives showed similar improvements for NO_x concentrations.
- The predicted modeled concentrations represent the maximum concentrations that occur once per year, and are not indicative of concentrations that occur most of the time, nor do the predicted maximum concentrations occur simultaneously at all receptors.
- The predicted modeled concentrations that are presented in the reports use a conservative 90th percentile background concentration (i.e., typical background is lower 90% of the time) which artificially elevates predicted concentrations and exceedances.
- The human health risk assessment interpreted the potential for overall adverse effects of the proposed Windsor-Essex Parkway, and specifically considered the effects on people in the immediate project area. The study, which was done in concurrence with procedures outlined by regulatory agencies², concluded the Parkway is not likely to result in an increased health risk when compared with a Future “No Build” scenario.

In consideration of the available studies and information, it has been concluded that the impacts of the proposed Detroit River International Crossing project, will not result in any likely significant adverse environmental effects on air quality or human health. Based on the scope of the project and the assessment, as well as the overall conclusions that the project is not likely to result in any significant adverse environmental effects; the Federal Responsible Authorities do not wish at this time to refer the Access Road component of the Project to the federal Environment Minister for mediation or Panel Review under s.20(1)(c) of CEEA.

² Regulatory agencies referenced included: Ontario Ministry of the Environment (MOE), Environment Canada, Health Canada, the Canadian Council of Ministers of the Environment (CCME) and the United States Environmental Protection Agency (U.S. EPA).



Air Quality and Human Health Risk Analysis in support of the Detroit River International Crossing Project federal environmental assessment process.

August 20, 2009

RE: Response to the City of Windsor re: the Draft CEAA Screening Report, 2009, CEAR #18170, Detroit River International Crossing Study

Comments on the draft CEAA Screening Report (July 2009) were submitted to Transport Canada during the federal public consultation period (July 8 –August 7, 2009), by Gowling Lafleur Henderson LLP (Gowling), on behalf of the City of Windsor (Letter from D. Estrin re: Draft CEAA Screening Report, 2009, CEAR # 18170, Detroit River International Crossing Study, August 5, 2009). The comments and concerns raised in the letter as well as the enclosed attachments were carefully reviewed and considered by the Federal Review Team (FRT) for the Detroit River International Crossing Project (DRIC).

The City of Windsor has previously raised concerns with the technical studies for Air Quality and Human Health Risk during both the MTO and MOE consultation periods and in response to the submission of the provincial EA. Specifically, concerns have been raised with regard to the potential for significant environmental effects related to traffic operations on the access road component of the project (Windsor-Essex Parkway).

Project technical studies were prepared in support of both the federal and provincial EA processes, and are in accordance with the provincial EA Terms of Reference, and the Final Federal EA Guidelines (2009).

Results of the studies indicate that air quality effects during operations of the Windsor-Essex Parkway are not likely to result in significant adverse effects or significant indirect effects on human health. Of particular note:

- Quantitative modeling that has been undertaken for the Project and was assessed against relevant federal and provincial criteria and standards.
- Localized air quality effects are expected to be similar to other existing corridors with comparable volumes of traffic.
- Localized air quality effects including increases in fine particulate matter (PM_{2.5} and PM₁₀) are not likely to result in increases in the risk to human health.
- It has been determined that localized air quality effects during operations of the Windsor-Essex Parkway are not likely to be significant.

A careful review of the project documentation for air quality and human health¹ and additional consultation with project experts was undertaken in response to the concerns raised by the City of Windsor. The following summarizes key results:

- Air quality in Windsor is driven by trans-boundary pollution.
- Both the Tunnel and the Parkway are slightly preferred over the other alternatives for receptors within 50 m and that all alternatives are preferred over No Build for air quality beyond 100 m.
- None of the alternatives result in sufficient enough change to impact the Air Quality Index.
- All alternatives showed exceedances of the PM_{2.5} criteria using very conservative silt loading factors and all alternatives showed similar improvements for NO_x concentrations.
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In consideration of the available studies and information, it has been concluded that the impacts of the proposed Detroit River International Crossing project, will not result in any likely significant adverse environmental effects on air quality or human health. Based on the scope of the project and the assessment, as well as the overall conclusions that the project is not likely to result in any significant adverse environmental effects; the Federal Responsible Authorities do not wish at this time to refer the Access Road component of the Project to the federal Environment Minister for mediation or Panel Review under s.20(1)(c) of CEAA.