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Mr. Herb Pirk
Chief Administrative Officer
Town of Newmarket
465 Davis Drive
PO Box 328, Stn. Main
Newmarket, Ontario
L3Y 4X7

December 4 1998

Dear Mr. Pirk,

I have reviewed the Terms of Reference for an Individual Environmental Assessment of the proposed Lake Ontario Water Supply via Durham West, received from you earlier this week. My comments are attached. I would like to emphasise that these comments are based on a quick review of the documents only, given that the deadline for providing comments to the Ministry of the Environment is today.

As discussed with you, I will prepare a prepare a brief proposal/schedule for a review of information on Lake Ontario raw water quality related to the proposed pipeline within the next week or ten days. Subsequently, I will prepare a proposal outlining how Ecosystems Consulting could provide advice to the Towns of Newmarket, and possibly Aurora, on the Environmental Assessment itself.

Looking forward to working with you,

Sincerely,

Kate Davies

Katherine Davies D.Phil.

COMMENTS ON THE TERMS OF REFERENCE FOR AN INDIVIDUAL ENVIRONMENTAL ASSESSMENT OF THE PROPOSED LAKE ONTARIO WATER SUPPLY VIA DURHAM WEST

Prepared By:
Katherine Davies D.Phil.
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1. PURPOSE OF THE UNDERTAKING (SECTION 3)

1.1 GENERAL DESCRIPTION OF THE UNDERTAKING

Section 3.1 of the Terms of Reference contains a general description of the undertaking, focusing exclusively on the infrastructure components. The Terms of Reference should require the EA to address other aspects of the undertaking including ownership, management and operation of the facilities; liability; project financing and operating costs (the need for financial analysis is mentioned in Appendix 2). In particular, the Terms of Reference should require the EA to describe the proposed partnership between York Region and Consumers Utilities in detail. This information is essential for a comprehensive description of the undertaking. Without it, the Terms of Reference and the EA will be incomplete and not meet the requirements of the EA Act.

1.2 PURPOSE AND RATIONALE FOR THE UNDERTAKING

Section 3.2 of the Terms of Reference describe the purpose and rationale for the undertaking. Appendix 1 describes the rationale for the selection of the Lake Ontario Durham West Alternative in more detail.

The purpose and rationale for the undertaking are based on the projected regional water demands to 2031, contained in the York Region Master Plan. These demands are, in turn, based on projected population growth. In other words, the increased water supply that would be provided by the pipeline is necessary for the continued growth of York Region. Thus, the underlying purpose of the undertaking appears to be to allow continued development in York Region (or to coin a phrase - 'if you build it, they will come').

Unfortunately, the assumptions used to generate the projected population growth for the Region are not described in the Terms of Reference. They should be included in the Terms of Reference and the EA because the projected population growth is used as the rationale for the estimated water supply needs, and therefore for the undertaking itself. If the purpose and rationale for the undertaking are to be adequately described in the EA, the proponent should be required to substantiate the growth projections.

2. ALTERNATIVES (SECTION 4)

4.1 RATIONALE FOR THE RANGE AND TYPES OF ALTERNATIVES THAT WILL BE CONSIDERED

Section 4.1 in the Terms of Reference and the Demand Analysis in Appendix 2 describe the alternatives for the water supply, including water use efficiency programs and the continued use of groundwater. However, the alternatives are dismissed and not described in sufficient detail:

- **Water use efficiency programs:** While the conclusions of the Regional Master Plan that water use efficiency programs and other means can only provide a short-term solution may be valid, the Terms of Reference should require this position to be carefully substantiated in the EA. In addition, the effect of the undertaking on water use efficiency programs should be examined. The EA Act requires a thorough consideration of alternatives to the undertaking. It is noted that water conservation programs in Europe and elsewhere are achieving significant savings in water use.

- **Use of groundwater:** The proponent proposes to continue use of groundwater at the current rate, however, the option of increasing groundwater usage is not discussed. I have been informed that groundwater mapping of the area has not yet been complete. Hence, it may be premature to ignore this alternative entirely. Even if increased use of groundwater cannot meet the Region's projected needs, this alternative should be addressed in the Terms of Reference in more detail and examined in the EA.

4.2 ALTERNATIVES TO BE CONSIDERED IN THE EA

Section 4.2 in the Terms of Reference describes alternatives to the undertaking's components, including the raw water intake and the water treatment plant. Appendix 2 mentions that reports have been prepared on raw water treatability and water chemistry and quality objectives, but neither of these items is discussed in sufficient detail in the Terms of Reference. In particular, the Terms of Reference should require the proponent to examine the following matters in the EA:

- Information on raw water quality at plants in the area, and the effects of treatment on water quality. This should include chemical and microbiological parameters;

- Water quality (chemical and microbiological) in the area of the proposed intake, including the potential effects of spills at Pickering NGS on radiological parameters;

- The effects of cooling water used at Pickering NGS on algal blooms, etc. and the potential for this to affect raw water quality, odour and appearance;

- Conventional and alternative treatment technologies, including chlorination/chloramines, membrane filtration, ozonation, ultra-violet, including combinations of conventional and alternative technologies;

- Requirements for addressing cryptosporidiosis, Giardia, viruses and other emerging microbiological of concern;

- Expected levels of chemical and microbiological parameters in the distribution system and at the tap;

- The chlorine residual required as a result of the extended distance from the treatment plant to the consumer and details of disinfection requirements along the supply system, and predicted compliance with relevant provincial/federal objectives for trihalomethanes/disinfection by-products;

- The effects of mixing groundwater with Lake Ontario treated water, especially in terms of any degradation in water quality; and

- The estimated risks to human health associated with the anticipated levels of disinfection byproducts/trihalomethanes at the tap, based on epidemiological studies conducted in the Canadian Great Lakes Basin.

On page 8-13 of the Terms of Reference, "primary and secondary generation criteria" are provided. On p.8, minimising disturbance to fish habitat is shown as a secondary generation criterion only for the raw water intake and the need to protect fish habitat is hardly mentioned subsequently. The protection of fish habitat is a regulatory requirement of the federal Fisheries Act and should therefore feature as a primary generation criterion for the raw water intake. It is especially important because of the influence of cooling water discharged from Pickering NGS on local fish populations. It should also be included as a primary criterion for the transmission mains because the Infrastructure Corridor Study Area includes several watercourses.

3. OTHER APPROVALS REQUIRED (SECTION 8)

Section 8 in the Terms of Reference lists the other approvals that "may be required". This is somewhat misleading. Most, if not all of these approvals *will be required*. The Terms of Reference should clarify which approvals will be required. For example, the statement that "this project has potential to trigger a review under the Canadian Environmental Assessment Act" (p. 32) is misleading and requires clarification. In fact, it is difficult to see how this project could fail to trigger a federal EA through the Fisheries Act, given that it will involve disturbance to fish habitat in Lake Ontario, and possibly elsewhere along the pipeline's route.

An issue not addressed in this section of the Terms of Reference is what would happen if the proponent fails to secure the necessary approvals. For example, I understand that the Town of Pickering is opposing the undertaking and may not provide the OP amendments required.