Carrie Hoffelner
ISAC Committee Member
310 Stouffville Road
Richmond Hill, ON L4E 3P4

June 21, 2005

Dear Members of Regional Council:

Re: 19th Avenue Interceptor Sewer – Final Preferred Route

I write to object to the Transportation and Works Committee selection of 19th Avenue as it's preferred route for the sewer. I believe the committee has done so based on incomplete and inaccurate information, particularly related to hydrogeological data.

I note that Dr. Zaltsberg, hired by the Region on behalf of a number of ISAC members to review the data has expressed his concerns that I believe were not included in the reports provided to you for consideration in advance of this decision at the committee level. Below I have included two excerpts from his conclusions based on the data provided by the Region for his review.

To conclude that 19th Avenue is the best alternative in the absence of the hydrogeological report and Dr. Zaltsberg's review and comment on same undermines the very process the Region embarked upon to ensure the best route is selected. Dr. Zaltsberg writes,

"The Region is going to make a final decision regarding the preferred route in the absence of the hydrogeological report to support this decision. This is unacceptable and unprecedented."

"Re: A Six page document entitled Comparison of Step-Drawdown Test and 72-Hours Test Results for theYDSS Interceptor Sewer Project prepared by Beatty & Associates and dated May, 2005.

I have reviewed the above-mentioned draft document and provide the following comments:

1. There is no one fully penetrated test well at the entire area under study. Therefore, hydraulic properties (transmissivity, T, and hydraulic conductivity, k) for the whole aquifer are still unknown.

2. At some locations (PRW-YS3, PRW-LS1, PRW-LS4, PRW-SR4, and PRW-BA1s) the screen was not positioned within a layer(s) with the highest T and/or k values. For example, in the test well PRW-YS3 the gravel layer was encountered within a depth interval from 20.7 m to 24.7 m, while the screen was installed at a depth from 30.8 m to 39.3 m. The T values obtained at all these locations cannot be considered as representative characteristics of the main aquifer under study.

3. At many locations the pumping rate applied was below the maximum rate allowed by well construction and site specific hydrogeological conditions. Applying the maximum pumping rate at

each location could provide more representative T and k values than those derived under the low pumping rate conditions.

4. For a number of reasons, the most reliable T and k values could be obtained from the monitoring data at observation rather than pumping wells. There is no indication whether the Proponent applied this approach in his/her T calculations.

5. Detailed description of the method(s)/equation(s) used and assumption(s) made for T calculations should be provided.

6. Two or three examples of T calculations (computer print outs) should be provided.

7. In the absence of borehole logs and well constructions for the pumping test wells PRW-1, 2, 3, 6, and PRW-BA1d I am unable to evaluate the reliability of the T values obtained at these locations.

8. Table 2 – Summary of 72 h Pumping Test Results
   a. the k values should be submitted along with explanation of how they have been calculated
   b. the k value for PRW-BA1d should be submitted
   c. all elevations given should be double-checked

9. The water bearing capacity of the buried esker along Bayview Ave. and difficulties associated with the potential dewatering/pressure relief operations in this area were the focal point of heated discussions on J.Morton's proposed alternative route. Two boreholes (PRW-BA1s and PRW-BA1d) located within this esker have been tasted. The T value derived for the shallow well PRW-BA1s is 63 m2/day which is around the median T value (68 m2/day) for all 15 pumping test wells. The T value for the deep well PRW-BA1d (90 m2/day) is slightly above the median value. Therefore, the data submitted by the Proponent (although their validity is still questionable) do not support serious concern that dewatering/pressure relief operations within this buried asker should create a significant technical problem.

10. In conclusion, the data submitted in Table 2 are not fully reliable, traceable and sufficient for alternative route ranking and selection.

Groundwater modelling: Under the well-known conditions of significant heterogeneity of the Oak Ridges Moraine deposits, the potential negative impact of sewer installation on the natural environment could only properly be estimated by means of 3D numeric transient groundwater modelling. Such modelling should incorporate all geological data available and the results of 72 hour pumping tests. A model should be calibrated with the available groundwater monitoring data. As a result of this modelling, the zone of influence for each route will be delineated. This delineation will allow making a more environmentally sound estimate of the potential negative impact of dewatering/depressurization operations on the groundwater regime, water supply wells, streams and wetlands.

In our professional opinion, any decision on the preferred route will not be fully substantiated and defensible unless additional studies (i.e., pumping tests) and groundwater modelling are conducted for each alternative route under consideration. In addition, a more detailed modelling may well be needed along the preferred route selected, for areas of appreciable subsurface or construction complexity."

As members of Regional Council you ought to re-consider this decision given the absence of complete hydrogeological data. No hydrogeological report has been completed.

In addition we have raised numerous concerns at the ISAC meetings related to the reliability and validity of the matrix used to select the best route. These concerns have never been addressed. We continue to raise concerns that the Region has failed to comply with the Minister's conditions and has refused to resolve the outstanding concerns related to the data.

The dewatering rates ("20-40 L/s on 19 Ave and 40-80 L/s on Elgin Mills Route) to which reference was made at the Transportation and Works Committee Meeting on June 15th, 2005, according to Dr. Zaltsberg,

"I have never seen these numbers before and I do not know how did they come up to them. I even do not know their meaning- 20-40 L/s per a pumping well during the construction period? How many pumping wells will be needed? 20-40 L/s per each 50 m (or X m) along the route? What specific segments (in m) on 19 Ave and on EMR which require dewatering did he refer to?"

These are fundamental and serious concerns that the Region must address before the final decision is made. Also, the Peer Review Team has not provided it's input into this route. This is also unacceptable.

In my view the Region appears to be not interested in demonstrating that the best route has been selected and appears to have been working backwards throughout this process, using the ISAC as a rubber stamping process. Regional Council ought not to select this route until these matters have been resolved. In pushing ahead the Region may risk further delays as these expressed concerns will not go away and must be resolved.

I look forward to attempting to resolve these concerns and welcome the opportunity to do so. I hope you will consider these comments, defer this decision and require staff to answer fully the concerns expressed.

Sincerely,

Carrie Hoffelner