



May 2, 2008

Mr. Allan Clark
1050 Sherman Crescent
Pickering, Ontario
L1X 1P3

Re: Redevelopment of Wilberforce Veneers Factory Lands

Dear Mr. Clark:

Thank you for speaking with me a few weeks ago and again on Monday regarding the redevelopment of your eight acre property in Wilberforce from heavy industrial to tourist commercial. The subject lands front on Pusey (Dark) Lake which has been identified by the Ministry of the Environment and Ministry of Natural Resources as a highly sensitive cold water lake trout lake. According to the local official plan, this means that “. . . the amount of habitable development has already reached or exceeded the lake’s capacity”. The policy goes on to say that:

“New development within 300 metres of the high water mark of an “at capacity” lake will not be permitted except for development on existing lots of record or where the tile bed or filter bed can be located more than 300 metres from the high water mark of the lake in the direction of natural surface drainage. Notwithstanding, in some limited cases, new development may be permitted, provided an EIS (Environmental Impact Study) has been prepared in consultation with the Ministry of the Environment which demonstrates that the proposal will not impact or further degrade the water quality of the lake.”

The critical sentence in the above quote is the last one, as it provides direction in a policy context. A key component of the EIS will be to demonstrate that the redeveloped site is having a beneficial impact on Pusey Lake insofar as water quality is concerned.

As noted in Dana Cruikshank’s email of March 2th, the water quality parameter of concern is phosphorus; he sets out very nicely the comparison that must be made between historical and future loadings of phosphorus. I have been involved in similar assignments (i.e., two on Lake Kashagawigamog, one on South Lake in the Township of Minden Hills, and another on the Indian River between Lake Muskoka and Lake Rosseau in the Township of Muskoka Lakes), and have been able to demonstrate benefits to downgradient

16 Robert Boyer Lane, Bracebridge, Ontario P1L 1R9
(705) 645-1413 Facsimile: (705) 645-1904 www.mnal.ca E-mail: info@mnal.ca

water quality (i.e., concentrations of phosphorus in the downgradient lakes). All of these were approved for redevelopment except for the project on the Indian River (Hanna's Landing) which has very recently been submitted to the Township for review. Even though use on your property will increase in future relative to past usage, improved technology in treating phosphorus, both via sewage and storm water runoff, will reduce phosphorus loadings relative to the past inputs. Accordingly, I am going to need estimates of future phosphorus loadings from whatever sewage treatment systems your consultant engineers are recommending, and I will need to work with them to quantify loadings from stormwater runoff. As well, I will need to have discussions with you and others who have historical knowledge of the site to assist me in estimating a phosphorus loading for it. As well, I will need details on your development proposal.

The balance of this letter constitutes our proposal of services, including the tasks we anticipate undertaking to complete the EIS, timing, and cost for doing so.

PROPOSED WORK PLAN

Task 1: Acquisition of Background Maps and Information on Natural Features

We will acquire stereo pairs of the most recent aerial photographs for the subject property and adjacent lands, and background topographic (1:10,000 scale Ontario Base Maps) and natural feature maps on file with the Ministry of Natural Resources (MNR). I will carefully review the Official Plan of The Municipality of Highlands East to ensure that the environmental policy context is addressed. Another document that will need to be considered is the 2005 **Provincial Policy Statement** (as it relates to natural heritage features). As well, we will visit the Natural Heritage Information Centre web site in Peterborough to ensure no natural features are overlooked, and secure background water quality from Dana Cruikshank, of the Ministry of the Environment, and fish/fish habitat data from Gerry Moraal, of the Ministry of Natural Resources in Minden.

Task 2: Review of background information, collected in Task 1, including the identification of any specialized work.

Task 3: Preparation of Aerial Photographic Base Map

Using the aerial photographs, we will prepare a base map for the subject property and its adjacent lands, for natural features mapping purposes. The size of the map will be suitable for presentation and report purposes.

Task 4: Field Investigation

A detailed field investigation of the subject property will be undertaken to determine the qualitative characteristics of the site's natural features. The following elements will be inventoried:

- soils and site drainage characteristics throughout the property, based on manual soil auger borings to a maximum depth of 1.3 metres;
- slope conditions;
- recharge and discharge areas;
- overland drainage;
- composition, physiognomy, and distribution of plant communities constituting the upland, riparian and wetland vegetation (including compilation of overstorey and understorey vascular plant species list);
- wildlife species sightings and description of wildlife habitat quality including existing and potential corridors; and
- fish and fish habitat characteristics;

A photographic record of natural feature highlights will be maintained, and included in our report.

Task 5: Mapping of Resource Features

One or more maps of the site's natural features will be prepared to show existing conditions. At this point, we expect to map the following:

- disturbed lands;
- slope conditions, and rock outcrops;
- upland and riparian vegetation;
- wetlands, if any;
- direction of overland drainage;
- any open/successional fields;
- wildlife habitat; and
- fish habitat.

Task 6: Data summary and analyses for the site, particularly to demonstrate site potentials and constraints to residential/commercial development. In this task, the results of our data collection will be synthesized in map and text formats to reveal both opportunities and constraints to development. The following will be covered:

- suitability of the land base for supporting residential and commercial development, including footprints, buildings and related infrastructure;
- areas of disturbed land requiring remediation/rehabilitation, particularly through landscape treatment;

- areas of fish habitat;
- the biological significance (provincial and local) and natural values of the site based on our review of background information and field inventory results, with reference to relevant sources (e.g., **Atlas of Rare Vascular Plants of Ontario, Ontario Rare Breeding Bird Program**, etc.);
- the extent or area of natural features including Pusey Lake, to be affected, directly or indirectly; and
- actions that may be necessary to prevent, change, mitigate or remedy any impacts resulting from the location of buildings, roads, and stormwater treatment facilities.

Task 7: **Preparation of an EIS**, based on the format set out in the Ministry of Natural Resources' **Environmental Impact Study Training Session** (July 1995). In this regard, the following content is suggested.

A. Description of the Proposed Development

1. The proposal and its purpose
2. A general location map and site plan.
3. Activities associated with the proposal both during the construction and post-development phases which may have an impact on the natural environment.

B. Description of the Environment Including Surrounding Areas

1. Description of the methodology, timing and techniques selected to undertake the environmental inventory. Relevant reports for/by other agencies will be reviewed, and where appropriate, information included, particularly from the Ministry of the Environment and Ministry of Natural Resources.
2. A biophysical inventory of the following:
 - a) Earth Resources
 - soils, including areas of disturbed land;
 - topography; and
 - erosion sites.
 - b) Water Resources
 - surface water quality and quantity; and
 - surface drainage.

c) Vegetation Resources

- inventory of overstorey and ground flora;
- vegetation communities including littoral/wetland areas; and
- special emphasis on any rare or uncommon species, their location and distribution.

d) Wildlife Resources

- inventory of all wildlife species identified during site visit;
- important/significant habitat; and
- special emphasis on any rare or uncommon species, their location and distribution.

e) Limnology of Pusey Lake

- physical and hydrological;
- water temperature and dissolved oxygen profiles;
- water clarity;
- general water chemistry (pH, alkalinity, suspended solids, turbidity, conductivity, colour, dissolved organic carbon);
- nutrients (phosphorus, nitrogen and nitrogen to phosphorus ratios);
- lake trophic status.

f) Fisheries Resources

- location and distribution of fish and fish habitat; and
- recharge/discharge areas in relation to fish habitat.

C. Resource Significance

This section of our work is critical as it will place in context the significance of the natural heritage features on and adjacent to the property, as set out in various policy documents including the 2005 **Provincial Policy Statement**, the Municipality of Highlands East Official Plan, and information sources such as the Ministry of Natural Resources' Natural Heritage Information Centre. For example, while we will certainly identify many natural features including water quality and fish habitat, which is a matter of Provincial interest, only a few will be significant and merit isolation and protection through subdivision re-design and/or other mitigation measures.

D. Site Potential/Constraint Map

A site potential/constraint map will be prepared indicating where development can occur and under what conditions. It will also reveal those areas that either need to be protected from a natural heritage perspective or where remediation/rehabilitation is required. This map will

be a point of departure for evaluating the development proposal and will be a key product of our EIS.

E. Description of Mitigation and Monitoring Measures

1. Preparation of a land/lake linkage phosphorus model to show that concentrations of phosphorus will be less than historical concentrations once the proposed residential/commercial development is in place.
2. Identification of available mitigation measures, including design alternatives, buffers, landscape treatment, enhanced stormwater management, if required, etc.
3. Identification and evaluation of effects that can be reduced or eliminated by mitigation measures.
4. Identification of boat docking sites and evaluation of boating impacts on existing recreational boating activities.
5. Justification for any monitoring deemed important from an environmental perspective.

F. Compliance with 2005 Provincial Policy Statement, and Municipal Official Plan

The section is critical. It will confirm how the proposed application complies with various provincial, county and township planning, environmental, and development policies.

EXPERIENCE

I will direct and manage the assignment and complete sections relating to impact analyses, including water quality, mitigation and policy implications. I have over 40 years of applied environmental research and management experience with the Ontario Water Resources Commission, the Ministry of the Environment, Hough, Stansbury + Michalski Limited, and my own firm, and have directed or participated in biophysical and wetland evaluations, water quality, limnological, and fisheries analysis, environmental plans, policy formulation, impact assessment studies, and site rehabilitation and enhancement projects across Ontario. Over the years, I have specialized in the subject of lake carrying capacity and lake and stream impact analyses, assisting both public and private sector clients in preparing such assessments/models. As well, I am a strong advocate of using biophysical site potential/constraint mapping to demonstrate how various types of development/uses can be compatible with landscape attributes, which is the approach that I propose for this assignment.

Jamie Nairn, Terrestrial Ecologist, has expertise in forestry, and the physical, chemical and biological characteristics of soils, and site drainage, and will cover these attributes of the assignment. He is a Professional Agrologist with over nine years of consulting and project management experience in both

Ontario and British Columbia. His consulting experience in Ontario relates to lakeshore development and lake carrying capacity assessments, environmental monitoring (surface and ground water), construction supervision of golf courses and infrastructure projects, and environmental impact studies.

Craig Mann, B.Sc.F., B.Ed., is a Terrestrial Ecologist and Forester with six years of experience in undertaking forestry, vegetation and wildlife surveys. He has additionally carried out several water quality monitoring programs. Craig has used his teaching skills to run outdoor and environmental education courses, as well as lake stewardship programs.

SCHEDULE

We intend to undertake one day of field investigation; on the subject property, likely between June 15th and June 30th to complete our biophysical analysis. As well, I propose to collect water samples from Pusey Lake either the first or second full week in May. At this point, our draft report can be provided between mid August and the first week in September; a final report will follow after you and others on your advisory team have had an opportunity to review it.

COSTS

Our costs for undertaking the work as set out above are estimated to be between \$12,000 and \$14,000, inclusive of all professional fees and expenses, but exclusive of the G.S.T. Public meetings are not included, although fees and expenses to meet with agency officials to obtain information, for example with the Ministry of Natural Resources in Minden, is included. Would you please sign both copies of this letter/proposal (which I am forwarding by email and mail), and return one copy to me; it will constitute our authorization to undertake the assignment. You can retain the second copy which I have signed.

A retainer of \$1,500 will be required, which will be charged against our final invoice.

* * * * *

For your information and interest, further material on Michalski Nielsen Associates Limited can be found on our website www.mnal.ca. If you would like to review a couple of our reports dealing with redevelopment of properties on at-capacity lakes, I would be pleased to send these to you.

Mr. Allan Clark/May 2, 2008

8.

Should you have any questions, or if further clarification is needed with respect to the above, do not hesitate to call. We very much look forward to working with you, and providing a top quality product, on time and on budget.

Yours truly,

MICHALSKI NIELSEN ASSOCIATES LIMITED

Per:

Michael Michalski

MM/be



Michael Michalski
Michalski Nielsen Associates Limited

Allan Clark

May 2, 2008

Date

Date

cc.: David Hill