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6.1

MEMORANDUM

TO: Halifax Watershed Advisory Board

FROM: Paul Morgan, Planner, Community & Regional Planning

DATE: April 20, 2011

SUBJECT: RFP for Birch Cove Lakes and Shubenacadie Lakes Watershed Studies

Attached are excerpts from an RFP that was recently issued by the Municipality. I would like to take the opportunity to explain why these studies are being undertaken at this time and the role of Halifax Watershed Advisory Board.

Community & Regional Planning, Community Services

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3.0 STUDY SCOPE AND REQUIREMENTS

3.1 Background

Regional Council of the Municipality has directed that watershed studies be undertaken in response to requests to initiate planning for new serviced communities through secondary planning processes. One of the requests is identified by the Regional Planning Strategy as “Highway 102 West Corridor adjacent to Blue Mountain – Birch Cove Lakes Park” and the other as “Port Wallis”. The Birch Cove Lakes watershed study is expected to provide input into negotiations for a wilderness park. Further detail regarding these initiatives can be found at:

<http://www.halifax.ca/council/agendasc/101116cowAgenda.html> (go to item 3)

The Regional Planning Strategy requires that watershed studies be undertaken as a prerequisite to more detailed secondary planning. The study objectives, as established by policy E-17, are set out as follows:

Watershed or sub-watershed studies concerning natural watercourses shall be carried out as part of comprehensive secondary planning processes. These studies shall determine the carrying capacity of the watersheds to meet the water quality objectives which shall be adopted following the completion of the studies. The studies, where appropriate, shall be designed to:

- (a) recommend measures to protect and manage quantity and quality of groundwater resources;*
- (b) recommend water quality objectives for key receiving watercourses in the study area;*
- (c) determine the amount of development and maximum inputs that receiving lakes and rivers can assimilate without exceeding the water quality objectives recommended for the lakes and rivers within the watershed;*
- (d) determine the parameters to be attained or retained to achieve marine water quality objectives;*
- (e) identify sources of contamination within the watershed;*
- (f) identify remedial measures to improve fresh and marine water quality;*
- (g) recommend strategies to adapt HRM’s stormwater management guidelines to achieve the water quality objectives set out under the watershed study;*
- (h) recommend methods to reduce and mitigate loss of permeable surfaces, native plants and native soils, groundwater recharge areas, and other important environmental*

functions within the watershed and create methods to reduce cut and fill and overall grading of development sites:

- (i) identify and recommend measures to protect and manage natural corridors and critical habitats for terrestrial and aquatic species, including species at risk;*
- (j) identify appropriate riparian buffers for the watershed;*
- (k) identify areas that are suitable and not suitable for development within the watershed;*
- (l) recommend potential regulatory controls and management strategies to achieve the desired objectives; and*
- (m) recommend a monitoring plan to assess if the specific water quality objectives for the watershed are being met.*

The Highway 102 West Corridor lands are within the Birch Cove Lakes Watershed (see Map 1) and the Port Wallis lands are within a sub-watershed of the Shubenacadie Lakes system (Maps 2a and 2b). As Lake Charles also flows towards Lake Micmac and Lake Banook, these lakes shall also be included in the study.

Watershed studies have previously been undertaken for each of these areas (see Appendix A: Resource Materials).

3.2 Study Scope and Tasks:

The study scope is to address the matters identified in Policy E-17 of the Regional Planning Strategy. In association with requirements of Policy E-17, the following specific tasks are to be undertaken:

- A. Meet with the Shubenacadie Canal Commission, the Shubenacadie Watershed Environmental Protection Society and the Dartmouth Lakes Advisory Board in a joint meeting and the Bedford Watershed Advisory Board in a separate meeting to explain the work to be undertaken and to hear any concerns or issues arising.
- B. Prepare a draft preliminary report for each study area with recommended water quality objectives for key receiving watercourses. Each report is to explain the criteria for the recommendations and will be presented at a public meeting and at a meeting of Regional Council for an endorsement of the recommendations. A separate public meeting will be scheduled for each watershed study and it should be assumed that separate presentations to Council will be required. Following each presentation at the public meeting, the Proponent will be expected to respond to questions arising and consider revisions based on the comments received which are to be incorporated into the final preliminary report to Council.
- C. Review existing water quality data available and undertake a sampling program needed to

establish a reliable and accurate baseline of the water quality in key receiving water courses.

- D. Review and update the modeling previously undertaken for each watershed study and identify any deficiencies or changes to assumptions to be made. Any changes or deficiencies are to be reported to the project steering committee before proceeding with updating the models. The modeling for the Birch Cove Lakes watershed should assume that the proposed Highway 113 will be developed.
- E. Undertake spatial modeling utilizing HRM LiDAR data for each watershed. The Proponent will use the data to develop an ArcGIS 9.3 Digital Surface Model (DSM) of each watershed. Further modeling will include the following tasks: watershed delineation including identification of vernal ponds, wetlands and intermittent streams; pre and post development analysis of impervious surface effects; and pre and post development watercourse sediment loads. Stormwater modeling is to take into account the anticipated effects of climate change (increased frequency and intensity of storm events).
- F. Evaluate the potential for existing control structures within each watershed to affect water Quantity and quality in downstream watercourses. The evaluation is to provide a quantitative assessment of the impact on water quality measures and a qualitative assessment of the sophistication of management needed to be effective.
- G. Liaise with provincial and federal representatives to determine if any regulations or guidelines affect the study outcome.
- H. Prepare a draft final report for each study area which addresses the applicable matters identified under Policy E-17 for presentation at a public meeting (one for each watershed). Again, the Proponent will be expected to respond to questions and will consider revisions to the final report which is then to be presented to Regional Council.

3.3 Steering Committee

A steering committee comprised of municipal and provincial staff will provide direction to the Proponent. Key assumptions to be used in the study are to be endorsed by the steering committee and draft reports are to be forwarded to the committee for editorial review before being made available to the public.

3.4 Project Management

- (a) The Proponent shall designate in their proposal, a project manager. All coordination for services with the Municipality and the Proponent shall be the responsibility of the project manager. The project manager shall ensure that any substitutions in proponent team personnel are approved by the Municipality's project manager.
- (b) The Proponent shall report to the Municipality through a review process and meetings at

various stages of the work program. The work progress shall be measured against a defined budget and work schedule.

- (c) A written monthly progress report is to be submitted with a schedule of tasks achieved compared to the original base schedule submitted at the start up meeting. For instances where the schedule has not been achieved, a brief written explanation as to why shall be included. The progress report can be submitted either as a hard copy or as an attachment to an electronic e-mail.
- (d) The Proponent's Project Manager shall meet: liaise with regulatory bodies, utilities, other levels of government and members of the community, as required. However, no meeting with stakeholder groups, including landowners or representatives of landowners within the study areas, is to be held without authorization from the Municipality's Project Manager.
- (e) Copies of all correspondence related to the project including agreements reached on behalf of the Municipality shall be provided to the Municipality's Project Manager.

3.5 Community Engagement Strategy

For all projects with a Community Engagement component, the Proponent must comply with the intent and recommendations of the Municipality's Approved Community Engagement Strategy. The approved strategy can be accessed on The Municipality Website at:

<http://www.halifax.ca/crca/documents/CommunityEngagementStrategyDec92008.pdf>

3.6 Timeframe

The Municipality would like to have these studies completed as expeditiously as possible but also needs to ensure that sufficient time is given to ensure that the study objectives of policy E-17 are addressed. The Proponent will therefore submit a time frame for completion which can be achieved for each study area.

Appendix A: Resource Materials

Murdock, A. and T. Clair. The Impact of Past Gold Mining Activities on the Shubenacadie River Headwaters Ecosystem. 1985

Vaughan Engineering. Shubenacadie Lakes Planning / Pollution Control Study. Prepared for the County of Halifax Shubenacadie Lakes Planning / Pollution Control Task Force. 1993.

Porter Dillon. Birch Cove Lakes Area Environmental Study: Issues and Opportunities. Prepared for City of Halifax. June 1996.

Porter Dillon and Associates. Birch Cove Lakes Area Environmental Study Task 2 Report. Prepared for City of Halifax. June 1996.

Canadian Council of Ministers of the Environment. 1999. Canadian water quality guidelines for the protection of aquatic life: Dissolved oxygen (freshwater). In: Canadian environmental quality guidelines, 1999, Canadian Council of Ministers of the Environment, Winnipeg.

Canadian Council of Ministers of the Environment. 2002. Canadian water quality guidelines for the protection of aquatic life: Total Particulate Matter. In: Canadian environmental quality guidelines, 1999, Canadian Council of Ministers of the Environment, Winnipeg.

Canadian Council of Ministers of the Environment. 2007. Canadian water quality guidelines for the protection of aquatic life: Summary table. Updated December, 2007. In: Canadian environmental quality guidelines, 1999, Canadian Council of Ministers of the Environment, Winnipeg.

Dillon Consulting. Water Resource Management Study. Prepared for Halifax Regional Municipality. December, 2002 (Revised, September, 2003).
http://www.halifax.ca/environment/documents/wrms_report.pdf

SGE Acres. Final Report: Bedford Dams Comprehensive Review. Prepared for Annapolis Group Inc. October 2003.

Environment Canada. Canadian Guidance Framework for the Management of Phosphorus in Freshwater Systems. February, 2004.

SGE Acres. Bedford West Stormwater Management Pre-Design Brief. Prepared for Annapolis Group Inc. March 2004.

SGE Acres. Technical Report: Bedford Stormwater Management Plan. Prepared for Annapolis Group Inc. April 2004.

R.S. Scott and W.C. Hart, Centre of Water Resources Study, Dalhousie University. Water Quality Impact Assessment of Water Bodies Contained in the Bedford West Planning Area

Using a Phosphorous Loading Model Approach. Prepared for Annapolis Group Inc. April 28 2004.

Jacques Whitford. Bedford West Planning Area Subwatershed Management Plan. Prepared for Annapolis Group Inc. May 2004.

CBCL and Associates. Final Report: Greenfield Areas Servicing Analysis. Prepared for Halifax Regional Municipality. July 2004.

Dillon Consulting. Stormwater Management Guidelines. Prepared for Halifax Regional Municipality. March 2006.

<http://www.halifax.ca/environment/documents/HRMStormwaterManagementGuidelines2006.pdf>

Environmental Design and Management Ltd. Blue Mountain/Birch Cove Lakes Assessment Study. Prepared for Halifax Regional Municipality, N.S. Department of Transportation & Public Works and N.S. Department of Natural Resources. March 2006.

Jacques Whitford and Associates. Stormwater Management Plan for the Parks of West Bedford Sub-areas 3, 4 and 6 (Project No. 1030792). Prepared for West Bedford Holdings Ltd. December 2007.

Jacques Whitford. Fall-River-Shubenacadie Lakes Watershed Study and Appendices (Project No. 1025549). Prepared for Halifax Regional Municipality. July 2009.

Jacques Whitford Stantec Limited. January 2010. Water Quality Monitoring Functional Plan Report. (Project No. 1043788). Prepared for Halifax Regional Municipality.
<http://www.halifax.ca/environment/documents/HRM.Water.Quality.Monitoring.Functional.Plan.Jan2010.pdf> This FP is predicated, in part, on the work of Policy E-17, which forms the basis of this proposal.

SNC Lavalin. Bedford West Water Quality Monitoring Reports. (Project No. 020331). Prepared for Halifax Regional Municipality. Spring 2009 – Fall 2010.

Documents pertaining to the environmental assessment for the proposed Highway 113 can be found at <http://www.gov.ns.ca/nse/ea/highway113.asp>

-----Original Message-----

From: Paul Morgan [<mailto:morganp@halifax.ca>]

Sent: February-11-11 3:54 PM

To: Mark VanZeumeren

Subject: RFP - Watershed Studies

Hi Mark: A reminder from our meeting yesterday that I would like to have either (a) a good summary of the information that your consultants have available regarding sampling with detail regarding no. of years, frequency, location, what tests were done (anything that could be useful for our consultant to know; or (b) the actual records (which they would probably need anyways). Any questions, give me call. Thanks.

Community & Regional Planning
tel: 490-4482

Good Morning Paul;

Prior to 2004 testing was limited to TSS of the water leaving the site via Washmill Brook.

In 2004 a more extensive testing program was begun in accordance with NSE Approval requirements.

The program included ground water monitoring and testing for general chemistry, dissolved metals and total organic carbon via wells on the property and surface water monitoring and testing for general chemistry, total metals, total suspended solids and total organic carbon. Surface water testing locations included: Washmill Lake, Suzie Lake and flooded portion of the quarry.

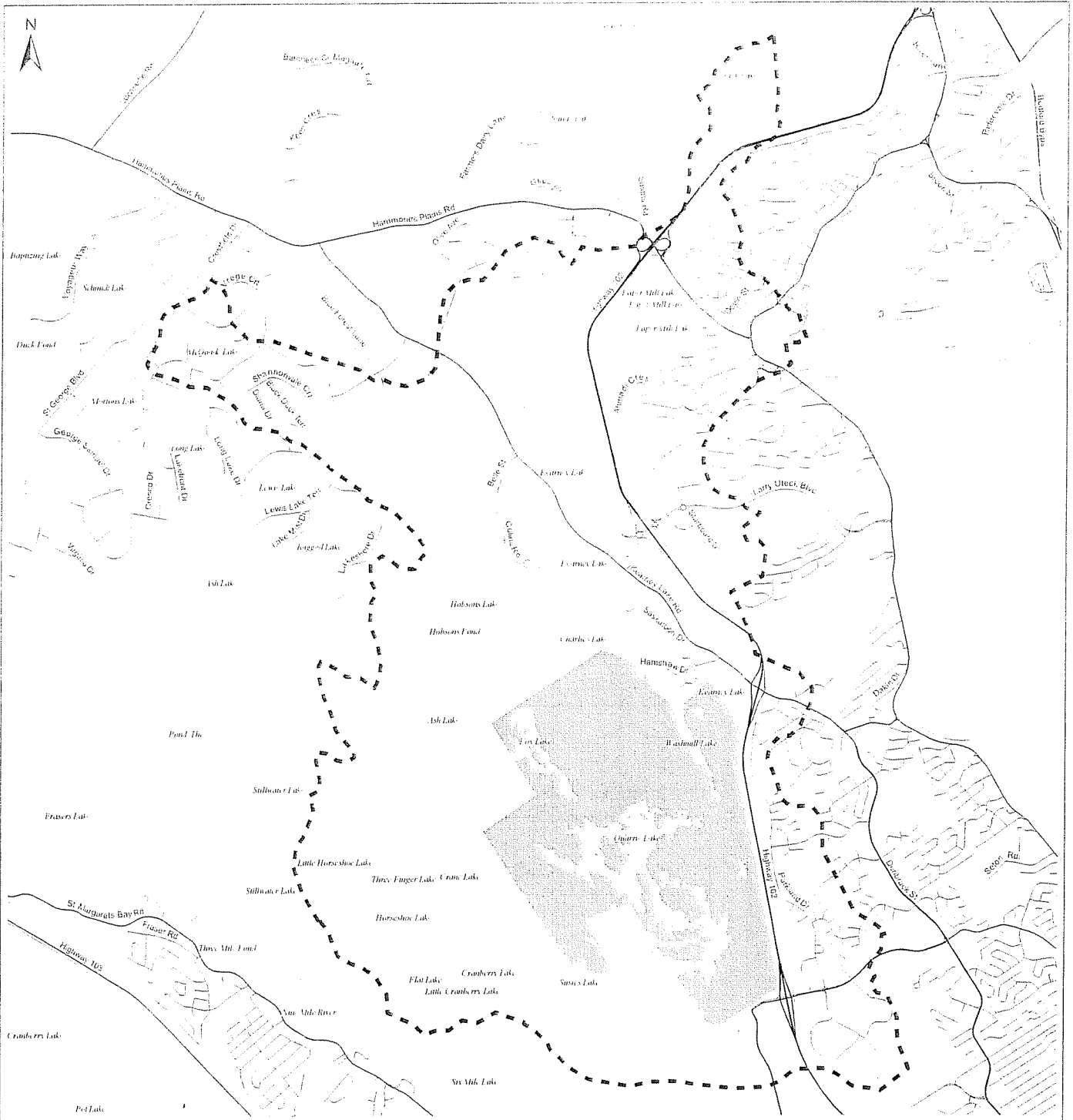
From 2004 - 2008 the sampling was monthly and from 2009 on it was taken semi-annually (October and March).

The accumulated data can be made available to the successful proponent.



Regards

Mark VanZeumeren, P.Eng.

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Map 1
Birch Cove Lakes Watershed

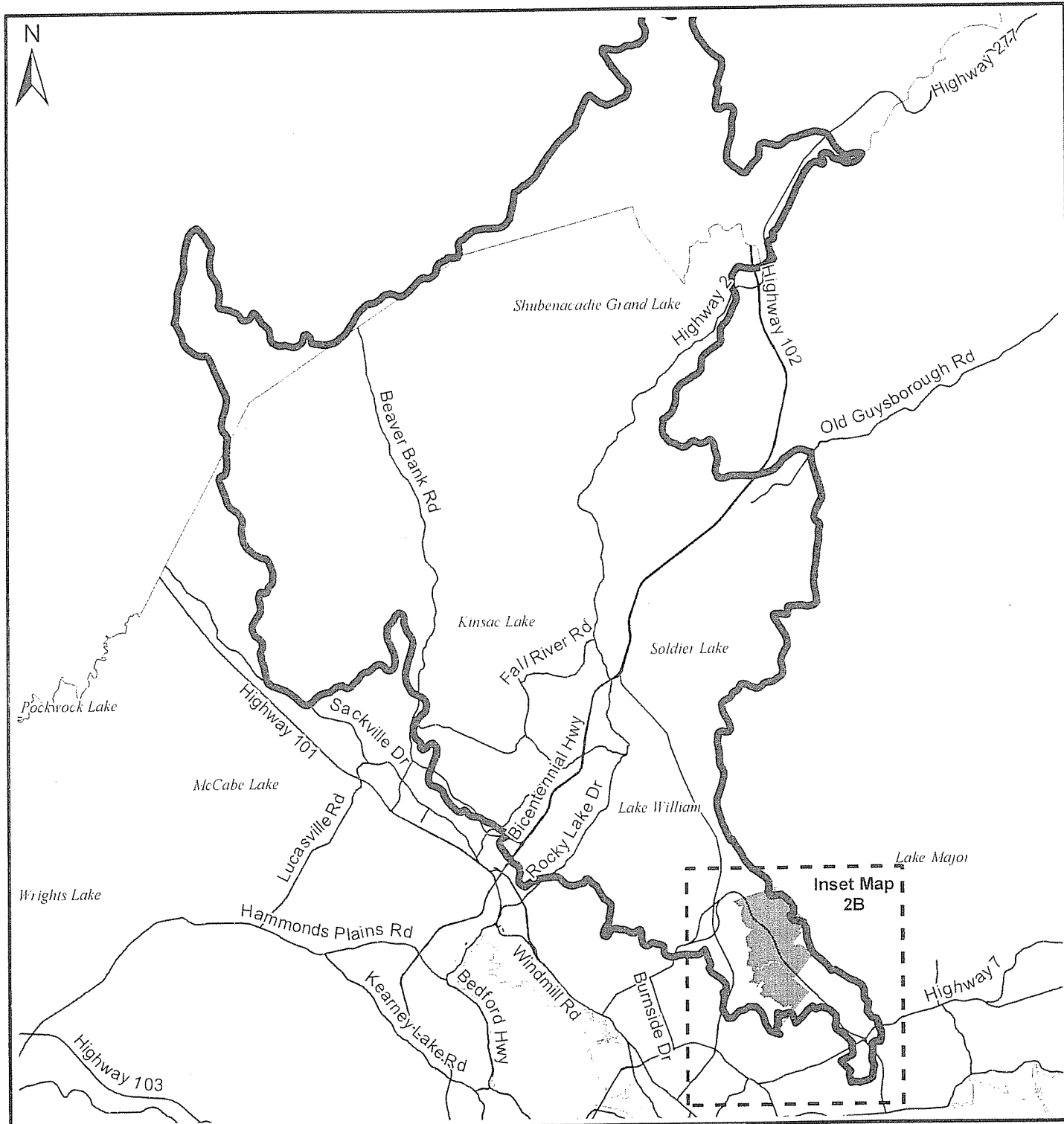
-  Watershed Boundary (Kearney Run)
-  Hwy 102 West Corridor Lands

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Bedford / Beaver Bank Hammonds Plains and Upper Sackville /
 Halifax / Timberlea, Lakeside, Beechville
 Plan Areas

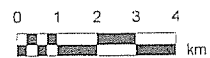
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Map 2A: Shubenacadie Lakes Watershed

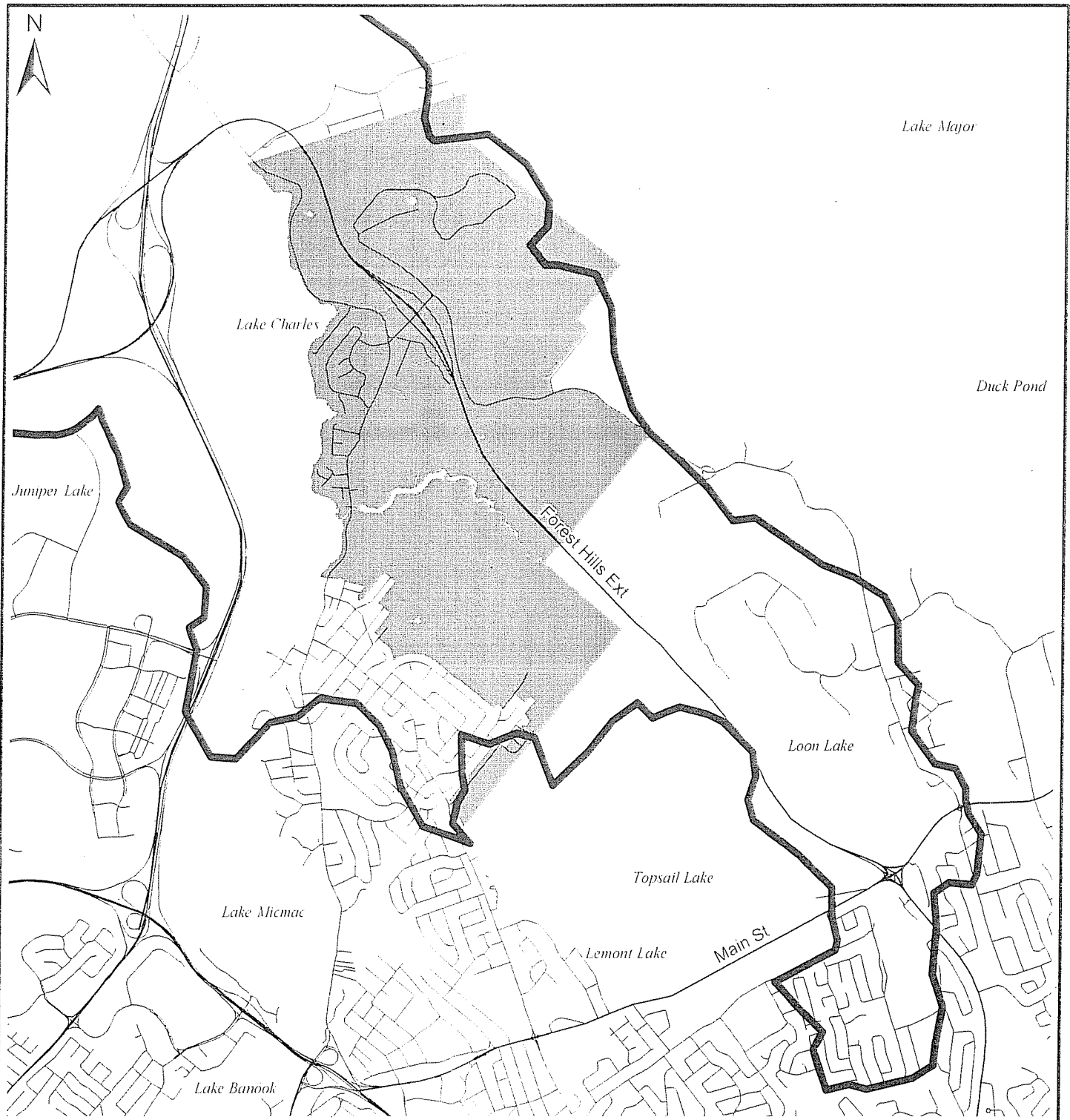
-  Study Area (Shubenacadie Grand Lake)
-  Port Wallis Lands

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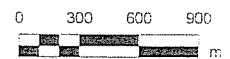
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Map 2B: Shubenacadie Lakes Watershed

-  Study Area (Shubenacadie Grand Lake)
-  Port Wallis Lands

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Beaver Bank, Hammonds Plains and Upper Sackville / Bedford / Cole Harbour and Westphal / Dartmouth / North Preston, Lake Major, Lake Loon, Cherry Brook and East Preston / Planning Districts 14 & 17 / Sackville Plan Areas

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