REQUEST FOR EXPRESSION OF INTEREST

Development of a Rural Stormwater Management Model in Connection with the Healthy Lake Huron Initiative

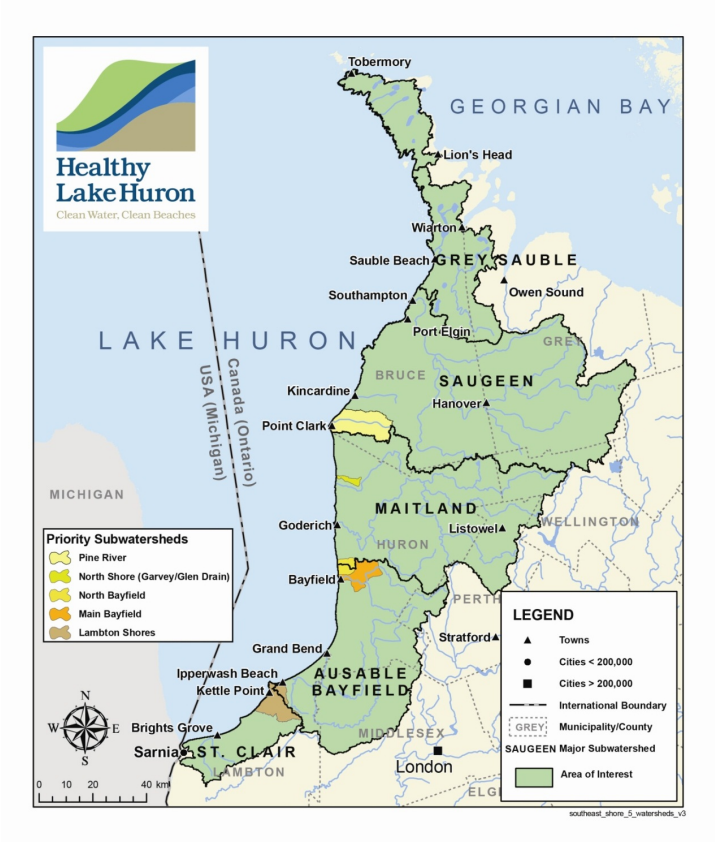
with funding support from the

Showcasing Water Innovation Program

June 2012

1.0 BACKGROUND

The southeast shores of Lake Huron from Sarnia to Tobermory have very diverse rural watersheds. Agriculture is the prime land use and the population base is quite low. However, the nearshore of Lake Huron is a prime tourism attraction to tens of thousands of people from urban areas such as London, Toronto, Kitchener as well as Detroit and Port Huron. This area has seen ongoing issues with respect to beach postings (from pathogens) and algal fouling, which have resulted in numerous complaints and concern from the public and the tourism industry. Through systematic rural land drainage and the loss of historical wetlands within watersheds, many tributaries along the southeast shores are prone to episodes of intense runoff from the land where peak flows build quickly and runoff along with the associated contaminates are discharged directly to Lake Huron. In response to these issues, a collaborative partnership called the Lake Huron Southeast Shores Executive Steering Committee (LHSSESC) was formed in July, 2010. The LHSSESC includes five conservation authorities, three counties, four health units, two federal agencies, and four provincial agencies. This new partnership is working towards solutions to the Lake Huron Southeast Shores water quality concerns. This partnership will create and implement integrated watershed plans within each of the five identified priority watersheds. (See more detail at www.healthylakehuron.ca)



The five priority watersheds were selected from 26 candidate watersheds flowing directly into Lake Huron between Sarnia and Tobermory. Some of the selection criteria used included:

- Community acceptance / interest in a water quality project
- A watershed with issues presenting themselves at the beach / nearshore

- Local capacity to deliver technical work, if funds are available
- Smaller sized watersheds
- Readily identifiable sources of nutrients and bacteria
- Relevant ongoing or planned studies or monitoring
- Shoreline is used for beach recreation

The cooperation of private landowners in the priority watersheds is key in having the ability to access private property for sampling as well as to have willing partners to adopt Best Management Practices (BMPs).

Although stormwater management models have been used for stormwater management in urban areas for decades, there is no stormwater management model for rural Ontario. The project will develop and test a rural stormwater model, which will greatly assist in determining how best to manage storm runoff from rural areas with low population and high tourist demand. The project will have three main components: 1) development of the model; 2) monitoring of five priority watersheds within the study area, and; 3) testing the model based on present rural stormwater management practices in the priority watersheds to assess the ability of the model to predict the effect of the changes and benefits. Field testing will involve the assistance of a local watershed community team which includes members of the LHSSESC as well as watershed landowners. The Rural Stormwater Management Model (RSWMM) will help in the development of integrated watershed management plans, the determination of the most appropriate BMPs, and the selection of cost effective ways of improving nearshore water quality.

A Rural Stormwater Management Model would showcase a new innovative technological approach that would be transferable to other Great Lake watersheds, (many of which are also experiencing similar nuisance algae and beach posting issues), fulfill a water management need in a rural community and improve opportunities for the local economy both in terms of implementing stewardship practices on private land and the local tourism.

2.0 Objective of Project – Develop a Rural Stormwater Management Model

Develop a physically-based computer model which will help practitioners choose the location for BMPs or other stewardship projects in a watershed which will have the most water quantity and water quality benefits at the watershed outlet. In addition, the model developed should be able to be used as a tool by Municipal Drainage Engineers when designing new municipal drainage works or making improvements to existing municipal drainage works.

3.0 SCOPE OF WORK

The Ausable Bayfield Conservation Authority (ABCA), the project's lead agency, is requesting Expressions of Interest from Businesses/ Companies/ Agencies to provide consulting services for the background review, collaborative discussions, and development of a mathematical model to be able to define and predict impacts of rural stormwater runoff.

The successful Applicant at the Request for Proposals stage will work directly with the ABCA, the Southeast Shores Executive Steering Committee, and sub committees, in performing this work within the guidelines established for the Showcasing Water Innovation Project Funding.

Some general considerations that need to be incorporated into a rural stormwater management model are:

- Event-based model
- Model needs to simulate runoff from spring snowmelt and winter rainfall, runoff during the crop growing period and during the spring and fall seasons
- Model output should represent the impact that field scale projects have at the outlet of the subwatershed
- Model should be applicable to small agricultural watersheds (one (1) to 20 km^2 size)
- Model should provide water quantity information such as peak flow and volumes
- Model should provide water quality information such as sediment and nutrient loadings. Nutrients could be bound to sediment or carried as a dissolved component of the runoff water.
- Want to incorporate field tile drainage systems. Will they have an impact in an event model or will their impact be picked up as an antecedent condition?
- Need to be able to handle micro drainage like road ditches and small culverts.
- Need to be flexible enough to be able to adjust drainage boundaries based on infrastructure like road ditches etc.
- Need to be able to define the range of input data detail that the model needs to be able to work with. The range would be from very coarse data to very detailed.

Some model governance issues that need to be considered

- Model needs to be cost-effective for purchase and use
- Needs to be a mechanism established that will allow the model to be supported and updated on a regular basis
- The SSESC partners will have a free copy of the model and free upgrades for a 5 year period
- Assume the model will be on a Windows platform

The general timeline for the project is outlined below.

Mid-June 2012	- Request expressions of interest for project
July 13, 2012	- Expressions of interest due
July 31, 2012	- Select up to 5 applicants to submit full proposals
September 15, 2012	- Full proposals due
October 30,2012	- Deadline for selection of successful consultant
Spring – fall 2013	- Technical workshops, model development
February 1, 2014	- Final report, and all deliverables due

4.0 BUDGET

The budget for consultant fees for the development of a rural stormwater management model is up to $200,000.

A final budget determination will be made after consideration of all full proposals.

5.0 SUBMISSION CONTENT

Your submission must include the following components:

1. Your approach to addressing all of the requirements listed under the Scope of Work, including any comments on the Scope of Work or Schedule.
2. Comments on key success factors and challenges.
3. An outline of the input datasets or range of data requirements envisioned as being necessary to calibrate and validate the model being developed
4. A description of your organization/company including the name, contact information and résumés for all personnel or associates who will be actively involved in the project.
5. Comments on the suitability of financial resources available for the project
6. Experience with respect to the skills and qualifications required for this project, including local knowledge of rural resources, research and writing.
7. At least two references for similar projects including the name of the organization, the contact person, and contact information.
8. Any conflict of interest that may affect your ability to work with the Ausable Bayfield Conservation Authority and its partners on the project.

The entire submission should be no more than 10 pages in length.

Questions in advance of submission may be directed to:

Alec Scott, Water and Planning Manager, Ausable Bayfield Conservation Authority
ascott@abca.on.ca • 519-235-2610

6.0 CONSULTANT SELECTION AND TIMING

Three hard copies plus one digital 'PDF' copy of your submission must be received at

Ausable Bayfield Conservation Authority
C/o Alec M. Scott
RR #3, 71108 Morrison Line
Exeter, ON N0M 1S5
Phone: 519-235-2610
Fax: 519-235-1963
Email: ascott@abca.on.ca

by 4:00 p.m. local time on Friday July 13, 2012.

Expressions of Interest that are incomplete or received after the deadline will NOT be considered.

This request is subject to revision up until 24 hours before the submission deadline.

Submissions will be evaluated by the Technical Committee for the project, using the following criteria:

- Understanding of the scope of work and deliverables – 30%
- Innovative approach and enthusiasm for the project – 10%
- Experience demonstrated through the successful completion of similar work – 10%
- Qualifications and skills of individuals proposed – 20%
- Knowledge of study area with respect to rural resources – 20%
- Ability to effectively use available financial resources – 10%

From the Expressions of Interest received, the Technical Committee and SSESC may select up to a maximum of 5 Applicants to prepare a full proposal on the project based on a more detailed terms of reference.

Successful Expression of Interest Applicants who are invited to submit a full proposal will be required to submit a detailed project budget outlining projected expenditures