

NOTTAWASAGA VALLEY

**GENERAL GUIDANCE ON DEVELOPING AN INTEGRATED WATER RESOURCE
MANAGEMENT STRATEGY FOR SUBWATERSHEDS**

PREPARED FOR:

NOTTAWASAGA VALLEY CONSERVATION AUTHORITY
8195 8th Line
Utopia, Ontario L0M 1T0



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Utopia, Ontario L0M 1T0

Prepared by:



A Better Environment For Business

WESA Inc.
171 Victoria Street North
Kitchener, Ontario N2H 5C5

and

Rob de Loë Consulting Services
Guelph, Ontario N1C 1E9

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This document draws from a more detailed report by WESA and Rob de Loë Consulting Services (2009) and as such the Integrated Water Resource Management Strategy (IWRMS) presented herein is ideally suited for the local hydrogeological and social conditions of the Innisfil Creek subwatershed. General principles can however be summarized to provide a somewhat “generic” version of an Integrated Water Resource Management Strategy (IWRMS) for similar subwatersheds. This document provides general guidance on how to prepare a similar IWRMS in consultation with the stakeholders of other subwatersheds where similar water resource management issues exist. A key goal in preparing an IWRMS is to build on any previous work, in particular any water use assessments that might have been completed. This document is intended for the water users in a given subwatershed, relevant public agencies and others interested in improving water management in the given subwatershed. It is important to note that an IWRMS needs to be developed in consultation with the stakeholders of the given subwatershed. Successful implementation will directly reflect the positive tone of discussions and input of those who participate in the process.

Recent development pressures, adverse climate and water resource conditions, along with experiences relating to the implementation of various programs during seasons of water scarcity such as Ontario Low Water Response in 2007, show that an IWRMS is needed to ensure that human and environmental water needs can be balanced effectively. To illustrate, in a typical watershed where an IWRMS was helpful, a water use assessment survey among permitted water takers showed that 68% reported a shortage of water at some point over the previous seven years. Furthermore, experiences during dry summers, such as occurred in Ontario in 2007, demonstrate that intensive use of surface water resources in certain creeks and tributaries is not sustainable.

It is important to note that the details need to be developed in consultation with the stakeholders since the ultimate ownership of the IWRMS needs to be with the stakeholders of a subwatershed. Concerns of large-scale water users in a subwatershed, for example those representing the agriculture and golf course sectors, are important considerations. However, a broader perspective should be adopted that recognizes broader concerns relating to human and environmental water needs.

An IWRMS can serve as a road map for current and future water users in a given subwatershed.

- The strategy needs to be *integrated* in order to balance all water resource needs in a subwatershed including the natural environment. In other words, it needs to recognize how surface water and groundwater are related, how activities on the land affect water, and how water is important for both human uses (such as agricultural irrigation) and the environment;
- It needs to recognize the many stakeholders who have roles to play, including the water users themselves, various government agencies, municipalities and organizations representing various sectors;
- It also is important to recognize that an initiative like this is often not happening in isolation from other local and regional initiatives. Therefore, it is important to design the initiative to build upon, and coordinate with, any other efforts. Some of these other initiatives could include neighboring water users who already are coordinating scheduled water takings from specific sections of creeks, the Ontario Low Water Response Program and Local WRT, watershed plans, and in Ontario Source Water Protection initiatives such as the development of water budgets; and,
- Finally, the strategy also needs to be consistent with any regulatory requirements such as Ontario's PTTW program.

A key goal of an IWRMS is to manage water demands of water users in a subwatershed while maintaining or improving ecosystem conditions.

The strategy, which is summarized below, should be developed as follows:

- Existing water resource conditions in a subwatershed should be identified through review of previous studies. As a bare minimum the studies should involve detailed investigations of surface water conditions and groundwater resources in the subwatershed, along with an inventory of water takings. Through this sort of work it may become clear that a creek and its tributaries are not appropriate sources of water for many large-scale users. Feasible water supply alternatives should be identified, along with realistic options for water conservation and efficiency.
- A minimum of three workshops should be held with water users, staff from the local conservation authority or similar agency, and representatives of pertinent provincial and federal agencies. The overall goals of these workshops should be to share technical information, identify additional issues and concerns, discuss water supply alternatives and funding issues, consider options for an IWRMS, build consensus, and identify local leaders. Over the course of the workshops, a consensus will typically emerge regarding the appropriate way forward. That consensus should then be reflected in the IWRMS that develops, and gets discussed and supported by the water users in subsequent workshops.

The following is a brief description of an example of an Integrated Water Resource Management Strategy (IWRMS) and Implementation Framework. Five key topics are addressed in this example of a strategy:

- Planning Objectives;
- Water Supply Alternatives;
- Stakeholders and Their Roles and Responsibilities;
- Individual and Collective Management Options; and,
- A Suggested Governance Model.

A key **Planning Objective** is to cooperatively develop an Integrated Water Resource Management Strategy (IWRMS) to serve as a road map for current and future water users in a subwatershed.

The long term Planning Objective should be, through future programs and local initiatives, to shift water takings from direct takings from surface water towards alternative sources such as dugout ponds, storage ponds and groundwater sources – as is feasible and appropriate. It is recognized that financial support is a critical component of this long term objective being met. A second key long-term planning objective should be to identify and implement measures for improved water management, e.g., through individual water conservation measures and through collective efforts to adopt irrigation scheduling and improve monitoring.

Feasible **Water Supply Alternatives** such as dugout ponds, storage ponds and underlying aquifers on a subwatershed scale needs to be determined. If sufficient data is available, individual site assessments should be provided to the stakeholders before or in conjunction with discussions about developing an IWRMS. The level of information about any underlying aquifers should as a bare minimum include average interpreted thicknesses and potential average yields. This will identify any potential alternative groundwater supply in the subwatershed.

The **Stakeholders and Their Roles and Responsibilities** include the permit holders, the municipal sector, the local conservation authority or similar agency and the Federal and Provincial agencies. It is recommended that the process be driven as directed by the stakeholder group (in Ontario this would be Permit holders). The other agencies are encouraged to coordinate efforts and contribute with in-kind and financial support where available in order to meet the IWRMS objectives as directed by the stakeholder group. Initially these contributions may include, but are not limited to, use of a meeting room, in Ontario holding Permit To Take Water (PTTW) Seminars, and coordinating meetings between agencies to investigate the possibility of streamlining any regulatory requirements such as monitoring requirements for the PTTW in Ontario.

Individual and Collective Management Options range from simple but effective measures such as instituting water conservation techniques and sharing ideas on how to reduce demand on water through simple low cost efforts to self-policed irrigation schedules from communal supplies.

While options such as these often involve costs to the individual water user, they have the substantial benefit of providing a measure of independence.

Collective management options developed through a Water Users' Cooperative (WUC) made up of members from the local stakeholder group can be very beneficial in further developing and implementing an IWRMS. The WUC can have cost-share benefits and in Ontario range from the development of a template Schedule for Water Conservation Measures and/or hosting a PTTW Seminar to coordinating the development of communal water supply alternatives and/or activities such as communal monitoring to meet the need of the local permit holders.

The amount of leadership, time and money required for any of the individual or collective management options is directly proportional to the number and nature of initiatives the stakeholders wish to pursue. Securing adequate leadership, time and money in the short term is a key consideration that will shape the success of a collaborative approach to an IWRMS. In addition, the long term financial viability of an IWRMS will depend upon the level of effort made by the stakeholder group and its partners in seeking financial support and incentives through available sources of funding.

A **Governance Model** for a Water Users' Cooperative (WUC) should be agreed upon by the local stakeholder group early in the workshops process. Workshop participants need to agree that a stakeholder-led model is the preferred governance model. The exact membership, structure and mandate of a WUC do not need to be determined up front. However, the following points should be acceptable in principle as a starting point:

- Membership in a WUC should be open to all water users in the subwatershed. Other residents of the subwatershed who are not necessarily water users should be able to participate;
- An Executive Committee is needed to provide leadership, to make decisions and to communicate with stakeholders. Membership of the Executive Committee should, at minimum, include the following: Chair, Vice-Chair, Treasurer, and Secretary;
- Ad Hoc Committees and Working Groups are needed to allow for broader involvement of the membership of the WUC, and to provide a venue for leadership development and a pool from which to identify future leaders. Ad Hoc Committees and Working Groups also can help to prioritize issues, and to help the Executive Committee;

- A WUC should meet as a whole at least once a quarter and that the Executive Committee members should connect with each other at least once a month. Initially, or at times when a pressing issue is at hand, this meeting frequency may need to be increased;
- Given the nature and mandate of a WUC, training in conflict management and in Ontario the PTTW and Low Water Response programs are advisable;
- Good communication is needed from the outset. In order for a WUC to work effectively as a local voice on water resource management issues, communication must extend beyond the natural boundaries of industry specific sectors and issues; and,
- Regular email communication should be established to provide updates on issues and to report progress on priorities that the WUC has identified. Agendas and minutes should be taken at all Executive and WUC meetings and forwarded to all WUC members.

The **First Steps (Short Term)** and **Next Steps (Long Term)** of the **Implementation Framework** are as follows:

- The development of an agreed upon Terms of Reference (TOR) should be the first priority of a newly formed WUC. The TOR should outline a governance model such as the one described above and that everyone agrees will serve the group well. The TOR should also establish an identity and articulate a mandate for the group which can later develop into a vision statement and a message with goals and objectives;
- Once the WUC is established, it is recommended that a formal “Letter of Introduction” be prepared that summarizes who the WUC speaks for and what its mandate is. This letter should also identify a contact person (typically the Chair or Secretary). As an initial step, it is recommended that this letter be sent out to relevant provincial and federal agencies (OMAFRA, OMOE, OMNR, DFO, AAFC), the local conservation authority or similar agency and the local municipalities. A press release of a similar nature can be prepared from this Letter of Introduction in order to advise the community at large of its existence and mandate;

- The WUC should pursue relevant training in the form of workshops or clinics. In Ontario this might include a PTTW Clinic where the PTTW Application process is described in detail or workshops on Conflict Resolution, Best Management Practices (BMPs), new technologies or any other topic which may seem important to the WUC at the time of its establishment. In essence the WUC should seek to be as well prepared as possible to meet its mandate; and,
- In Ontario, in order to link in with the process of the Ontario Low Water Response it is strongly advisable that the WUC seeks to have a representative on the Local WRT (Water Response Team).

Next steps (Long Term) will have to be driven by the WUC, but may include the following:

- Education and communication on new regulations and policies;
- Conflict resolution and mediation training;
- Coordination of water use scheduling where water shortages have been reported;
- Coordination of “land swapping” with existing permit holders, in particular where water shortages have been reported;
- Establishing a self-policing framework;
- Coordination of development of communal water supplies, e.g., alternative source development, hydrogeological investigations, communal permit applications;
- Development of templates that can be used in permit applications, e.g., In Ontario a Schedule for Water Conservation Measures; and,
- Coordination of proposals and applications for funding or seeking to partner with other agencies pursuing similar objectives and goals.

It is recognized that these longer term plans far exceed the resources of a volunteer based framework and that compensation and available time are critical issues that would need to be addressed before these can move forward.

WESA Envir-Eau

160, boul. de l'Hôpital, Bureau 204
Gatineau, Québec
Canada J8T 8J1
Téléphone: (819) 243-7555
Télécopieur: (819) 243-0167
Courriel: envireau@envireau.ca

440, boul. René-Lévesque Ouest,
Bureau 350
Montréal, Québec
Canada H2Z 1V7
Téléphone: (514) 844-7199
Télécopieur: (514) 841-9111
Courriel: montreal@envireau.ca

WESA Inc.

3108 Carp Road
P. O. Box 430
Ottawa, Ontario
Canada K0A 1L0
Telephone: (613) 839-3053
Fax: (613) 839-5376
Email: wesacarp@wesa.ca

3380 South Service Road
Garden Level
Burlington, Ontario
Canada L7N 3J5
Telephone: (905) 639-5789
Fax: (905) 639-9460
Email: wesaburlington@wesa.ca

3533-B McDonald Drive
Yellowknife, Northwest Territories
Canada X1A 2H2
Telephone: (867) 873-3500
Fax: (867) 873-3500
Email: wesayellowknife@wesa.ca

171 Victoria Street North
Kitchener, Ontario
Canada N2H 5C5
Telephone: (519) 742-6685
Fax: (519) 742-9810
Email: wesakw@wesa.ca

273 Elm Street
Sudbury, Ontario
Canada P3C 1V5
Telephone: (705) 575-6075
Fax: (705) 525-6077
Email: wesasud@wesa.ca

The Tower, The Woolen Mill
4 Catarqui Street
Kingston, Ontario
Canada K7K 1Z7
Telephone: (613) 531-2725
Fax: (613) 531-1852
Email: wesaking@wesa.ca

4 Kern Road, Unit 1
Toronto, Ontario
Canada M3B 1T1
Telephone: (416) 383-0957
Fax: (416) 383-0956
Email: wesatoronto@wesa.ca