Conservation Ontario Submission to the Walkerton Inquiry

Public Hearing #4

Conservation Ontario, on behalf of all conservation authorities and specifically in partnership with Saugeen Conservation and the Grand River Conservation Authority, respectfully submits this paper in response to the Agenda outlined for Public Hearing #4. This paper addresses only those agenda items for which Conservation Ontario has expertise and perspectives.

Conservation Ontario Recommendations Regarding Source Protection:

a. Lead Role; Key Players

It is recommended that:

> **The Province provide stronger leadership for source protection by developing standards, procedures and regulations, which are guided by an integrated provincial water policy framework and which ensure that source protection programs are implemented at the local and watershed levels.**

The Province is ultimately responsible for water. Conservation Ontario believes that the Province should assume a stronger role in developing consistent standards, procedures and regulations regarding source protection to ensure performance at the local and watershed levels. This role can be clarified in an integrated provincial water policy framework.

In addition, the Province should recommit to the concept of watershed management and provide the necessary support (policy, funding, research, data management, monitoring, performance standards) to assist local and watershed agencies in developing and implementing source protection as part of watershed management plans.

It is recommended that:

> **The municipal level of government be responsible for decisions about the source of drinking water supply and participation in the design and implementation of source protection programs at the local level.**

And that:

> **These decisions be made in cooperation with the partner Conservation Authorities, where they exist, in the context of a watershed management plan.**

The Province has traditionally delegated the responsibility for the delivery of safe drinking water supplies and wastewater services to the municipalities. In order to fulfil this responsibility, the individual municipality should be responsible for identifying sources of existing and future water supplies and participating in the development and implementation of source protection programs. Specific roles of the various agencies, policies, standards, and financing mechanisms should be identified in an integrated provincial water policy framework.

Drinking water source identification and source protection strategies may involve lands that extend upstream or downstream of the individual municipality's jurisdiction. Therefore, it is important that these initiatives be conducted in partnership with conservation authorities, where they exist, as these agencies operate on a watershed basis and can bring together neighbouring municipalities and other key stakeholders in the development of an overall watershed plan. Watershed planning provides a means by which the planning and management for drinking water supplies can be integrated with that for environmental and other concerns. Source area protection should be regarded as an integral component of a watershed plan.

Municipal participation in watershed management including source protection is critical in the development of a plan and in a number of areas associated with the plan's implementation, including:

- Land use planning - municipalities are responsible for implementing Provincial Policy Statements under the *Ontario Planning Act*, through such means as the delineation and protective zoning of sensitive natural areas and the establishment of stormwater management requirements;
- Design and operation of water and wastewater infrastructure (e.g. site selection for wells and surface water takings);
- Public acquisition of sensitive lands; and
- Promotion of sound stewardship practices on private and public lands.

It is recommended that:

> **The Province recommit to its partnership with Conservation Authorities and recognize Conservation Authorities, through their partnership with municipalities, as the delivery agents for watershed management including source protection and landowner stewardship programs.**

And that:

> **This role be clarified in an integrated provincial water policy framework.**

Conservation authorities are the only agency in Ontario structured on a watershed basis, and therefore are well-positioned to take the lead in watershed management. Conservation authorities deliver watershed management programs to:

- Improve water quality;
- Reduce flood damages;
- Provide an adequate water supply;
- Protect natural areas and biodiversity; and,
- Provide environmental education.

Conservation authorities are, by definition, a long-standing partnership between watershed municipalities and the Province of Ontario for the management of water and natural resources on a watershed basis. Conservation Authority governing boards are currently comprised of representatives named by the municipal councils in the watershed. There are 38 conservation authorities in Ontario serving over 90% of Ontario's population.

Ontarians are most interested in the quality and quantity of water in their watersheds where they live, locate their businesses and enjoy recreation. Conservation authorities can provide the window to the public to get the information they need.

Conservation authorities already provide a local delivery mechanism for various federal, provincial and municipal initiatives and priorities (e.g. Dept. of Fisheries and Oceans Fisheries Habitat protection, Remedial Action Plans, Provincial Water Quality Monitoring Network, Provincial Groundwater Monitoring Network, Flood Warning and Forecasting, etc.). Conservation authorities are one of the few agencies promoting source protection and best management practices in rural areas as part of Rural Water Quality Programs. Such programs are being delivered by a number of conservation authorities including: the Upper Thames River, Grand River, Lake Simcoe Region, and the South Nation River in partnership with environmental farm organizations and municipalities. More recently, some are getting partial funding support through the rural water quality component of Healthy Futures for Ontario Agriculture.

The development and implementation of watershed management plans offers an effective mechanism for the local delivery of provincial legislation and policy. Provincial water management objectives can be integrated with other environmental, social, and economic objectives, on a watershed basis, and implementation programs tailored to meet the specific needs of the watershed and its stakeholders.

Conservation authorities have co-ordinated and delivered effective on-the-ground programs, which have contributed to source protection, for over 50 years. Two recent surveys conducted by the Environics Research Group found that 82% of rural landowners consider conservation authorities to be one of the most credible/trusted source of information on land management. As well, 48% of respondents believe that conservation authorities, of all conservation organizations in Ontario, should set environmental priorities for private lands.

In order to fully carry out the role of delivering effective watershed management including source protection, the capacity of conservation authorities needs to be strengthened. Some areas for improvement include: examination of service delivery models (e.g. technical staff shared by conservation authorities, program lead by a conservation authority with expertise on behalf of others, etc.); availability of adequate and sustainable funding, and clarification of overall roles, policies, and standards within an integrated provincial water policy framework.

Where conservation authorities do not exist, the watershed based model can still be applied as a means of involving all key stakeholders on a watershed basis. In this regard, either the Province or another interested stakeholder could take the lead.

b. Public Involvement

It is recommended that:

Public participation be recognized as an integral component of watershed management, including source protection.

Ontario's legal and institutional division of water responsibilities among various levels of government and the common property nature of water requires participation from a variety of government, non-government, community, and private interests in decision-making. Through a participatory process, it is possible to:

- define the problems more effectively;
- access information that falls outside the scientific realm;
- identify alternative solutions that will be socially acceptable; and,
- create a sense of ownership for the plan or solution, which facilitates implementation.

Therefore, a participatory process should be part of watershed management, particularly in the following phases:

- defining the issues, goals, and objectives;
- providing information to aid the understanding of watershed processes;
- evaluating options and alternatives in the formulation of a watershed plan; and,
- creating linkages, partnerships, and action plans for implementation.

While a participatory process may extend the time needed during the initial stages of analysis and planning, such an investment is normally "returned" late in the process by avoiding or minimizing conflict. For this reason, public involvement is encouraged as early and as broadly in the process as possible to be most effective.

A shared, collaborative approach is required to ensure that implementation is carried out. This requires government agency participation and support as well as strong community involvement. This involvement can be informed and facilitated by the availability of real time, on-line information regarding the state of the resource.

It is recommended that:

Private landowner education and stewardship become an integral component of the implementation framework for all source protection programs, especially in areas of private servicing where source protection is the primary defence against potential water supply risks.

Such education and stewardship will foster the shift toward a more strategic approach to environmental management, as described by Valerie Gibbons in her report *Managing the Environment: Executive Summary* (Executive Resource Group, 2001). This "shift" involves the promotion of shared responsibilities for environmental management; recognition of the role for voluntary as well as regulatory means of achieving compliance; and the promotion of continuous improvement in the management of all sources of pollution, and not just a focus on the more easily regulated "point" sources.

Promotion of sound land stewardship practices (e.g. nutrient management, septic tank maintenance, proper wellhead protection and abandonment procedures, natural areas protection, chemical storage, etc.) assists in mitigating the effects of human activities on surface and groundwater systems. Stewardship is therefore an important aspect of overall drinking water source protection.

Approximately 20% of Ontario's population relies on private water supplies, such as rural private wells, where private landowners play a significant, and in many cases the primary, role in providing local source protection measures for their own water supplies. The Province should direct general education and stewardship programs to this community, while municipalities and conservation authorities should develop tailored programs as part of watershed management in order to address local circumstances.

Conservation authorities and municipalities have extensive experience with outreach and education programs. Rural Clean Water Programs and Children's Groundwater Festivals are recent examples of programs that have been delivered through municipal and Conservation Authority partnerships. There are also many other types of programs delivered by other non government organizations and community groups.

c. Source Protection Plans

It is recommended that:

Source protection plans be recognized as an integral part of a long term, secure water supply strategy;

And that:

Source protection plans be prepared as part of overall watershed management plans.

Source water protection represents the first layer in a multiple defense system for ensuring that clean water is available to all water users. Many groups agree that the watershed is the appropriate unit for the management of both surface and groundwater resources, as it is the unit within which interconnections between upstream and downstream activities can best be understood. Source protection is an integral part of watershed management.

Watershed management is not so much about managing natural resources, but about managing human activity as it affects these resources. The watershed management process can be seen as a continuum that includes producing a plan, implementing the plan, monitoring the effectiveness of the plan, and evaluating and updating the plan. This process brings together all key stakeholders, thus providing the opportunity for all important issues to be considered, resources fairly allocated, and plan recommendations to be implemented. Stakeholders are more likely to participate in the implementation of the plan if they have been actively involved in its development.

Watershed planning provides a means by which the planning and management for drinking water supplies, can be integrated with that for other water uses and environmental management concerns. An integrated approach results in improved effectiveness at meeting overall objectives. The steps involved in developing a drinking water source protection plan mirror those of a watershed plan, and the only difference is that the watershed plan addresses a broader range of water management objectives. The basic steps include:

1) inventory and issues scoping;
2) creating a vision, goals and objectives;
3) evaluating alternative management strategies;
4) defining the management plan and implementation framework; and
5) monitoring and evaluating the plan.

The issue of water supply and source area management is inextricably linked to other aspects of water and related land management. Water supplies may be derived from surface or groundwater sources and may serve a municipal supply network or private residents, farms, or businesses. Water supply sources are threatened in three ways by human activities in the watershed. Firstly, the quantity of water available for supply is reduced by activities that decrease the infiltration of water into the ground (e.g. urban pavement) or channel water away quickly before it can infiltrate (e.g. urban and rural drainage). Secondly, the future availability of water supply is threatened by overuse such as excessive demand, inefficient water use, and inappropriate allocation. Thirdly, the quality of water available for water supply is threatened by pollution from both point and non-point sources. The importance of considering water source protection within a watershed context is emphasized because water supply is affected not only by human activities local to the water supply, but anywhere from within the watershed upstream of the point of taking. Thus, the activities of an upstream community can affect the quantity and quality of a downstream community's water supply, even if that downstream community is in another municipality.

Like other aspects of watershed management, source protection strategies are often implemented through land use planning (e.g. municipal zoning of sensitive areas, stormwater management), water resource regulations (e.g. restrictions on water takings), stewardship programs, and/or conservation easements or public acquisition of sensitive lands. Some mechanisms are more relevant to the protection of existing water supply sources, while others contribute toward the long term protection of potential future sources. Often the approaches used to protect drinking water sources also provide broader public/environmental benefits.

The current practice of watershed planning in Ontario has not consistently integrated drinking water supply strategy and source protection efforts, typically led by municipalities, with watershed environmental planning efforts, often led by conservation authorities. However there are examples, such as in the Grand River Basin, where these initiatives are being conducted in a more integrated fashion with successful results. Guidelines and standards, developed by the Province, would be necessary to assist in this transition.

It is recommended that:

> **The Province require that local agencies prepare watershed management plans to assess and protect existing and future water sources within the context of other environmental, economic and social considerations.**

And that:

> **The Province specify baseline standards for the preparation of these watershed plans.**

Currently in Ontario there is no requirement for the preparation of watershed plans, although the provincial ministries and conservation authorities have advocated for this approach since the early 1990s (Conservation Ontario, March 2001, p.38). Watershed planning has also gained the support of many municipalities and other watershed stakeholders. Some municipalities use the watershed plan as a guide in preparing their Official Plans and long term water and wastewater infrastructure master plans.

A number of land use or resource use activities have the potential to impact drinking water sources and water supplies, and should be reviewed in the context of a watershed management plan. These activities include proposals under the *Planning Act*, *Ontario Water Resources Act*, and the *Environmental Assessment Act*. These statutes might be considered as mechanisms to trigger the initiation of a watershed plan.

Existing watershed plans in Ontario are varied in the terms of the scope of issues addressed, the level of detailed analysis and the extent of recommendations. This is due, in part, to the legitimate differences in issues among watersheds, resources available, and interests of the stakeholders. However, the effectiveness of watershed management in Ontario could be improved if some baseline standards were specified. In the case of drinking water supplies, for example, there needs to be standards for the development of

source protection programs (e.g. procedures for risk assessment, resource allocation, etc.).

It is recommended that:

The Province provide the tools necessary to support implementation of the watershed plan.

Watershed plans can be implemented through a variety of tools that are administered by several agencies at the provincial and local level. These tools can generally be categorized under the headings of: land use planning, water and wastewater master planning, water resource regulations, land and water stewardship programs, public land securement programs, infrastructure development and maintenance, remedial measure programs, and other operational activities.

Appropriate policies need to be in place to strengthen recognition and implementation of the results of an approved watershed plan. For example:

- Land use planning and water and wastewater planning processes should include requirements for the preparation of a watershed plan and ensure that the watershed plan is used to set the context for decisions.
- Approval and licensing systems, where appropriate (e.g. permits to take water, certificates of approval for water and wastewater projects), should be guided by the watershed management plan.
- Mechanisms are needed to foster coordination of private landowner stewardship services, delivered by various groups, to achieve the most benefit and contribute to implementation of the watershed plan at the local level.
- Funding mechanisms need to be available.

Experience indicates that the province, municipalities, and conservation authorities will implement the watershed plan successfully if the partners have been actively involved in developing the plan and if it is socially and economically practical as well as environmentally sound.

It is recommended that:

The Province clarify roles and responsibilities for the provision of source protection programs for private rural water supplies.

Source protection for private, rural water supplies is largely being overlooked, yet for many rural water users source protection is the first and only line of defence against drinking water risks. Such water uses include private domestic, as well as commercial, industrial and agricultural users. Private landowners bear responsibility for their own drinking water source protection in so far as it involves their own lands. The Province, municipalities and conservation authorities share roles in planning and implementing source protection programs for these rural water supplies. There are aspects of source protection programs, such as opportunities for well water testing through Health Units, private well monitoring by some municipalities, and various watershed stewardship programs, that are available to varying degrees throughout Ontario. However, at present

there is no clear leadership responsibility or standards of practice that are defined, thus placing these supplies at greater risk.

d. Groundwater Management

It is recommended that:

Groundwater management be recognized as an integral component of watershed management.

Groundwater is an important component of the hydrologic cycle and plays a crucial role in watershed management. Watershed management aids us in understanding how watershed land use activities can impact the groundwater system, from both rural and urban areas and for both private and municipal users.

Regional groundwater analysis is carried out as part of an overall watershed study and aids in determining the quantity and quality of groundwater available, sources of pollutants, and action required to prevent contamination of the source or recharge areas. These studies are usually carried out by Conservation Authorities and/or municipalities in co-operation with the Ministry of the Environment. More detailed small scale groundwater studies to define well head protection areas and optimize well field operations are usually carried out by municipalities after the regional analysis has been completed. A regional aquifer analysis usually provides sufficient information for the private rural areas.

The four stages in regional and local analysis are: defining the aquifer system, defining the aquifer characteristics, installing a monitoring system and modelling the aquifer system. The analysis determines the safe yield of the aquifer, the environmental impacts of increased withdrawals and requirements for groundwater protection. Groundwater and surface water systems are interconnected by recharge of surface water in to groundwater zones and by discharge of groundwater into a surface system. Not only can the groundwater recharge areas be polluted by land use activities at the surface but streams that receive groundwater discharge can also be impaired by contaminated groundwater. A comprehensive groundwater management plan must provide recommendations for protection of the water source, management of water use and management of land use that may present a source of contamination.

Implementation of the groundwater component of a watershed plan is often achieved through best management practices for rural and urban areas, protection of natural aquifer barriers (geology, natural attenuation) and land use management (well head protection zone). Finally, a groundwater monitoring network is necessary to evaluate existing and future conditions dealing with groundwater quantity and quality, such that effectiveness of the groundwater management plan can be evaluated.

Previous Conservation Ontario recommendations regarding source protection plans have called for the Province to specify baseline standards for the preparation of watershed plans. These standards and guidelines should address groundwater management components of the watershed planning process.

It is recommended that:

As part of an integrated provincial water policy framework, the Province should prepare a provincial groundwater management policy.

The University of Waterloo developed a strategic outline for groundwater source protection and management, based on input received at a workshop held in Waterloo, Ontario in May, 2001. Conservation Ontario believes that further development of the groundwater policy must be carried out as part of an overall integrated provincial water policy framework. The groundwater policy should provide for the management of groundwater in relation to watershed units; address interactions between groundwater and surface water; and identify source protection as an integral component of groundwater management.

e. Financing

It is recommended that:

Adequate and stable source(s) of funding be established to finance watershed management throughout Ontario.

At present, watershed management in Ontario is inadequately resourced and funded to fulfill the role that it could and should play in protecting the long term security of drinking water supplies. The lack of resources has severely limited monitoring activities necessary to understand watershed systems and track watershed health. It has slowed progress at completing technical studies that provide the basis for effective decision making. There has been a shift from more stable tax based provincial funding sources to specialized provincial grant programs (e.g. Healthy Futures for Ontario Agriculture). While there is a role for these programs, there are often limitations on eligibility and acceptable types of expenses which has sometimes proved to be a constraint for these programs. These programs tend to be transient, often tied to the cycle of governments, whereas the need exists for a longer term financial commitment if these issues are to be dealt with properly. Overall, the lack of resources and funding has led to a lack of capacity in much of Ontario to undertake and deliver watershed programs.

Provincial, municipal and conservation authority investments in securing water supplies and water quality require long-term stable funding to support watershed management operations. Conservation Ontario estimates that the total cost of watershed management activities carried out by conservation authorities, municipalities and the Province amounts to about $282 per capita for persons living in fully serviced municipalities. Municipal governments use the largest proportion of this, about 97%, to finance water supply, wastewater, and storm water management systems. Of the remaining 3%, about $4.30 per capita is expended by the Province and $4.50 per capita is expended by the

conservation authorities on watershed management including source protection. Conservation Ontario (March 2001, pp26-27) further estimates that the operational cost of upgrading the watershed management activities of conservation authorities to the level required for effective planning and management of water resources would require about a 75% increase over current funding levels. This would represent an increase in expenditures on watershed management of approximately $3.50 per capita annually. Given that an average family of four with cable TV pays $123 per capita annually on a non-essential service, this would be a small price to pay to ensure adequate protection and management of the water resources upon which we all depend.

Funding sources include the traditional tax-based programs, as well as innovative approaches such as user pay mechanisms, special provincial grant programs, cost sharing incentives, private-public partnerships, and voluntary actions.

It is recommended that:

> ***At least some*** **costs of source protection programs be recovered from water users, including municipal, private and other users (i.e. user pay principle), and from effluent dischargers (i.e. polluter pay principle).**

And that:

> **The broader public/environmental benefits be funded by provincial and/or federal governments.**

In addition to the traditional tax-based funding sources, source protection can be at least partially funded by a user pay approach, through the municipal water bill and the issuance of provincial Permits to Take Water, and polluter pay mechanisms such as stormwater management fees. Water users include the private, commercial, and industrial sectors as well as municipalities. Where local funding sources are inadequate, the Province should supplement or provide mechanisms for appropriate distribution of funding to these areas to ensure a base level of watershed management. Incentive-type programs and innovative funding opportunities are required to support capital investments (i.e., projects, studies, structures) necessary to implement watershed management plans. In so far as watershed management programs generate broader public/environmental benefits beyond strictly water supply or wastewater assimilation, there remains justification for continuing to fund a portion of the program costs from the traditional tax-base and other sources.

Standards or guidelines from the province are needed to guide in the determination of which watershed management costs can legitimately be linked to drinking water supply and wastewater management. For example, the network of dams and reservoirs in Ontario serve multiple purposes. If a dam's significant function is to create a water supply reservoir, then a portion of the dam's operational costs should be eligible for funding from water use charges. However, if the dam's purpose is primarily for flood control, then funding should come from other sources. In another example, funding for a portion of land securement and stewardship program costs should be eligible for funding

via water use charges or polluter pay charges where there is a significant contribution to source protection.

It is recommended that:

> **The Province support research into the quantification or valuation of economic benefits and the delineation of beneficiaries (public/environmental interests versus actual water users) associated with source protection programs and broader watershed management programs.**

It is generally accepted that prevention costs less than remediation. New York City, the Regional Municipality of Waterloo, and a partnership of Eastern Ontario municipalities have all found that they could realize significant savings and avoid costly infrastructure investments by investing in source controls identified through watershed planning processes. Similarly, a number of other groups have attempted to define the benefits realized from various watershed management initiatives.

In Canada, there is no accepted method of assigning a value to the benefits received from source protection or watershed management programs, although a variety of valuation methods have been advanced and could serve as models. Further research into this area would be worthwhile, as this information would assist in evaluating alternative management strategies from an economic standpoint and in developing/contributing to funding formula that split out broader public/environmental benefits from water use benefits.

Note: Conservation Ontario will be submitting a report which provides additional background to this recommendation. The report will provide a summary of evidence demonstrating the benefits from and values of watershed management.