

**Watershed Based Source Protection:
Implementation Committee Report to
the Minister of the Environment**

Executive Summary

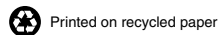
November, 2004

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Safe drinking water is essential to human health. To help ensure that sources of drinking water are protected, the provincial government has been developing a watershed-based source protection program for Ontario. Source protection plans would establish measures to protect both quality and quantity of sources of drinking water. Plans would be developed on a watershed basis with a focus on areas of land that are critical to the maintenance of healthy drinking water sources (i.e. wellhead protection zones, intake zones, recharge areas, etc).

In 2003, the government formed two committees to advise the Minister of the Environment on source protection planning and implementation. A Technical Experts Committee was established to create a process for assessing threats to sources of drinking water. An Implementation Committee was established to recommend strategies to implement and fund source protection. This report contains the 133 recommendations of the Implementation Committee. The Technical Experts Committee made its recommendations in a separate report.

The mandates of the two committees follow from Part Two Report of the Walkerton Inquiry, the second of a two volume report produced by Justice Dennis O'Connor. In that report, published in 2002, O'Connor made 22 recommendations related to source protection. O'Connor undertook the public inquiry after the tragedy that occurred in Walkerton, Ontario, in 2000, when seven people died and 2,300 others became ill from contaminated drinking water. In his report, O'Connor stated that protecting and enhancing natural systems is one of the most effective means of protecting the safety of Ontario's drinking water. He called source protection "the first line of defence" in a multi-barrier approach to ensuring safe drinking water. The multiple barrier approach covers all elements of the provision of drinking water, including source protection, treatment, distribution, monitoring, and responses to emergencies

Introduction and Purpose

This section contains key background information and provides context for the Implementation Committee report. The section also describes the government's actions to date on source water protection and provides a summary of the Committee's Terms of Reference. Lastly, the section highlights the overarching principles upon which source protection planning and implementation should be based.

Draft Drinking Water Source Protection Act

Draft drinking water source protection legislation, released to the public by the Ministry of the Environment in June 2004, proposes legislative provisions necessary for the development of source protection plans. The Ministry of the Environment has indicated that it will develop comprehensive legislation dealing with both the planning and implementation aspects of source protection after considering advice of the Implementation Committee and the Technical Experts Committee.

Terms of Reference

Under its Terms of Reference, the Implementation Committee was directed to provide the Ontario government with advice on the tools and approaches to implement watershed-based source protection. To this end, the Committee reviewed new and existing roles and responsibilities for the provincial government, municipalities, and conservation authorities, and undertook a review of innovative funding mechanisms.

Proposed Source Protection Planning Process

This section of the report describes the proposed source protection planning process according to the draft drinking water source protection legislation. The description of the planning process also incorporates information from the report of the Technical Experts Committee which is important to the work of the Implementation Committee. The description is followed by the Committee's advice on roles and responsibilities on source protection planning and implementation. This section also provides additional advice in a number of areas which the Committee believes are important to a successful source protection planning process. These include: federal lands, First Nations, transboundary issues, integration with other programs, Great Lakes, accessibility/sharing of information and training needs.

Under the proposed legislation, source protection plans will be prepared collaboratively by stakeholders within each watershed. A Source Protection Board (SPB), which would be the Conservation Authority Board (where one exists), will coordinate the planning process. The source protection boards will establish a multi-stakeholder source protection committee (SPC). The source protection committees will be responsible for developing a source protection plan for the watershed.

The development of each watershed's source protection plan will be based on a technical assessment of the sources of drinking water. In the assessment reports, source protection committees will report on their evaluation of the vulnerability of the drinking water sources and potential risks (both present and future) to these sources. The assessments will examine both the quality and quantity issues. For each threat identified, the risk of contamination or depletion will be assessed to determine the appropriate risk category (significant risk, moderate risk low risk and negligible risk). The SPB will approve the assessment report and ensure that it is made available to the public. The source protection plan will then identify measures to reduce the risks identified in the assessment report. Each measure will specify responsibilities, the timing and method for completion and monitoring, and evaluation activities. The public will be consulted throughout the process, and each source protection plan will be subject to approval by the Minister of the Environment.

Roles and Responsibilities

As part of its mandate, the Implementation Committee developed advice on the roles and responsibilities of the primary participants in source protection planning and implementation. These participants include the provincial government, municipalities, conservation authorities, the federal government, First Nations and other stakeholders. The Implementation Committee agreed that these participants must see source protection as a collaborative process. The management of the water source will have limited success if the planning and implementation

activities begin and end at jurisdictional lines. The source protection committees, with the help of source protection board, will be the primary bodies responsible for facilitating this collaboration.

Assessment Phase

One of the first responsibilities of the source protection committee will be to prepare a description of the watershed. The watershed description will set the foundation for developing a Terms of Reference (ToR) for the assessment report. The ToR will set out work assignments for the various parties. The source protection committee will coordinate the development of the ToR to suit the local watershed conditions and to ensure the work is coordinated across both municipal boundaries and watersheds. The Implementation Committee decided on two scales of work – local and regional/watershed – as a useful way to describe the roles and responsibilities for the assessment phase of source protection planning.

Local

The Implementation Committee agreed that municipalities should lead the assessment work, as well as the identification of management strategies in wellhead protection areas (WHPA) and intake protection zones (IPZ). These are the ‘vulnerable’ areas most directly connected to a drinking water system. Small municipalities may require assistance for this work from the source protection boards.

Regional/Watershed

The Implementation Committee used the term “regional” to recognize issues that have broader impacts across the watershed or within a portion of the watershed, such as extensive aquifers and recharge areas, intake protection zones, and vulnerable areas that extend across municipal boundaries. On behalf of the SPC, the SPB should negotiate a strategy for assigning and facilitating assessment work across municipal boundaries within a watershed. The distribution of work should recognize the distribution of expertise, capacity, previous work, investments and knowledge amongst participants.

The Implementation Committee decided that source protection boards should be responsible for work that involves the entire watershed, including the watershed description and the development of water budgets. The source protection boards will need the municipalities and the provincial government to provide assistance, particularly in fulfilling information needs.

Funding of the Assessment Phase

The Implementation Committee recommended that the provincial government take responsibility for funding the development of source protection plans up to the point of provincial approval. By assuming this responsibility, the government will ensure that source protection plans are developed, and that local working relationships are established.

Implementation Phase

Risk management should be defined on an issue-specific level. For “significant risks,” source protection plans must include measures to reduce the risks to acceptable levels. The management of risks within a specific plan area is expected to result in a mixture of localized measures and wider ranging measures that operate on a regional or watershed scale. In general, the landowners responsible for an activity which represents a risk to drinking water will be responsible for managing its activities in conformity with the source protection plan.

The Implementation Committee agreed that those responsible for a program area should be responsible for developing and ensuring implementation of the applicable measure in the source protection plan. For activities in wellhead protection areas and intake protection zones and other vulnerable areas within municipal boundaries, municipalities will be responsible for establishing a program measure (if it isn’t addressed through a specific provincial instrument). In conjunction with the work of all stakeholders, the province should accept responsibility for identifying and developing programs for any issues that, as a result of their prevalence or risk, are found to be of broad provincial interest. The assessment report will facilitate collaboration on the development of measures to address issues that cross municipal or watershed boundaries.

Funding of Implementation

The Implementation Committee agreed that the provincial government should ensure that source protection legislation clearly delineates the responsibilities and powers of municipalities, Conservation Authorities and other relevant agencies. The government should ensure that sufficient authority and financial ability exists for these jurisdictions to implement their responsibilities. The Committee recognized that incentives are often a useful tool to assist in implementation.

Federal Lands

According to the Treasury Board Secretariat’s Directory of Federal Real Property, there are 40 federal departments, agencies, corporations etc. with approximately 460,000 hectares of federal lands and waterways in Ontario, not including Reserve lands as defined under the Indian Act.

The Implementation Committee agreed that the federal government participate in source water protection and implementation to ensure that all sources of drinking water in Ontario are protected.

First Nations

The full participation of First Nations in the source protection process will be crucial to ensuring all sources of drinking water in the province are protected, including on First Nations land. First Nations have a long history of environmental stewardship, and water plays a central and integral part of their heritage and way of life. As source protection legislation approaches introduction, the provincial government must strive to ensure the adequate participation of First Nations in the source protection process, both at the planning and implementation stages.

Transboundary Issues

In some cases, sub-surface aquifers, groundwater systems and surface water systems extend beyond existing watershed boundaries. An ongoing, open dialogue must be established and maintained among both source protection committees and municipalities who have adjoining watershed boundaries.

Integration with other programs

To ensure efficient use of available resources, and to avoid duplication of efforts, source protection plan development and implementation must be coordinated and integrated with water protection programs administered by all levels of government.

Great Lakes

The Great Lakes are the source of drinking water for approximately 75% of Ontario's population. The importance of the Great Lakes will increase significantly over the near term as greater demands arise for multiple uses, including drinking water. The province is committed to including the Great Lakes in source water protection and recognizes that there are a multitude of jurisdictional challenges in meeting this goal. The Implementation Committee agreed that source water protection principles, strategies, and policies should be incorporated into existing Great Lakes programs and resulting agreements so that they are protected and improved as sources of drinking water.

Accessibility/Sharing of Information

Accessing and sharing information requires a coordinated and cooperative approach among stakeholders and all levels of government. Currently, the provincial and federal governments, First Nations, municipalities and conservation authorities all collect data relevant to source protection. In order to ensure an efficient flow of reliable data, issues such as the need for province-wide coordination of information management, the development of data standards, and the need for a centralized repository and conduit for data must be addressed.

Training Needs

Education and training in source protection will be required for chairs and members of source protection boards and committees, as well as senior management staff. An orientation on source protection and related legislation, policies and processes in Ontario should be delivered to these individuals. This training should cover facilitation, communications, and effective decision-making, and should be tailored to meet local needs.

In addition, some form of dispute resolution mechanism will be needed as situations may arise where agencies participating in the source protection planning process (Source Protection Committees; Source Protection Boards, Municipal Councils, conservation authorities) have difficulty gaining agreement on a particular issue or action needed. The establishment of an alternative dispute resolution (ADR) process may aid in the resolution of differing positions and help to facilitate local support for source protection planning process. It may also reduce the

likelihood of appeals to MOE-approved plans and may increase public confidence in the planning process.

Implementation of Source Protection Plans

This section of the report gives some direction for the implementation of source protection plans, including considerations relating to the status of source protection plans, how measures contained in the plans should be implemented, amendment and updating of plans and how source protection should interact and be integrated with existing water-related programs.

Risk Management Measures Identified in the Source Protection Plan

Source protection plans will be prepared by local source protection committees within each watershed, with involvement and input from all levels of government as well as local communities and stakeholders. The source protection committees will identify the risks (significant, moderate, and low) of contamination or depletion to their drinking water sources, and identify actions to reduce those risks. For risks identified as “significant,” the committees will identify, evaluate and specify where it is mandatory that measures be taken to reduce the risk. For risks identified as “moderate” or “low”, committees will develop and evaluate options to mitigate the risks, and the province should require these measures to be implemented. The final plan will specify who will be responsible for each measure, the timing and method for completion, and the means for monitoring and evaluating its effectiveness.

Notification of Source Protection Plans

Once a source protection plan is approved by the province, there should be notification of the general public and of individual landowners/business operators who may be affected by new requirements or land use restrictions that will be put in place to protect sources of drinking water.

Plan Implementation, Monitoring and Amendment

Source protection is a continuous process; source protection plans must be “living documents”. Plans must continue to be reviewed and updated to fill in gaps and take advantage of new information and available technologies. A transparent, consultative approach is as important in the updating of source protection plans as it is in their initial formulation. The coordination and implementation of approved source protection plans must include effective monitoring, evaluation and reporting on the status and performance of a plan, as well as ongoing identification of any gaps that may exist and the steps that should be taken to address those gaps.

Status of Source Protection Plans

It is important that all provincial and municipal decisions affecting drinking water be consistent with approved source protection plans. In addition, source protection plans must prevail if conflicts with other instruments occur. A primacy clause would help ensure effective implementation of source protection plans by providing the legal basis for decision making in the event of such conflicts.

Interim Measures

Prior to the completion of the source protection plan, risks may be identified (e.g. in the assessment report) which are deemed to require more immediate attention. Those threats considered “significant” should be addressed immediately, rather than waiting for final approval of the plan or its implementation.

Implementation Tools

Overview

The recommendations in this section are related to the general authority of the provincial government and municipal governments to regulate the affairs of others with respect to activities which may pose a risk to a source of drinking water. The tools identified can be applied to a range of source protection risks.

Existing activities that were established prior to the delineation of the wellhead protection areas, intake protection zones and vulnerable areas were recognized as representing the greatest challenge to managing risks to sources of drinking water. The Committee emphasized that prevention of future risks (as opposed to managing risks once they are established) as the preferred approach when making decisions on the location and operational practices of future activities.

The Committee makes general recommendations on a range of broader tools which can be applied to a wide range of situations and settings (e.g. Land Securement, Education and Outreach, Best Management Practices, etc). The Committee considered making use of, or enhancing, existing implementation tools before developing new approaches. The Committee also emphasized that the most suitable approach for managing risks for a given issue will be best determined within each individual watershed as the potential risks to drinking water are locally assessed and evaluated.

A Continuum of Tools

The range of approaches that could be employed to manage risks to sources of drinking water can be categorized as a continuum that moves from binding/formal approaches to non-binding/informal approaches. This mix of tools also demonstrates that different approaches are capable of achieving similar outcomes depending on local circumstances.

A complete “tool-kit” for the implementing agencies would provide a range of “soft tools,” such as education and outreach, as well as more “formal” tools, such as legislated powers to pass regulations and inspect private businesses.

Provincial Source Protection Guidance Manual

The Implementation Committee agreed that a provincial guidance manual should be developed to assist all parties involved in source protection with the selection of appropriate management tools. The manual should be developed by the Ministry of the Environment with the assistance of other levels of government, conservation authorities, First Nations and other stakeholders. The manual should include a description of the range of existing and new legal authorities that can be employed, as well as the full range of non-legal tools available, including education and incentive programs.

Provincial Authority

In order to ensure consistency between local source protection plan approvals and permits that the province issues for a wide range of activities, the Implementation Committee makes recommendations dealing with the province's own lands and activities, new and expanding operations, and existing activities which operate under provincial approvals.

The Committee emphasized that a process should exist for ensuring consistency between local source protection plans and all provincially approved activities that affect drinking water sources in a watershed, regardless of the date of the original approval of that activity.

Municipal Authority

Municipalities have a major role to play in the implementation of source protection plans.

Legislative and jurisdictional reviews conducted by the Regions of Waterloo and Halton, as well as Oxford County, indicate gaps in municipal authority to address threats to vulnerable drinking water sources in existing built-up areas and from existing activities.

Some municipalities have suggested a need for by-law making authority that could include regulating, licensing, permitting, prohibiting, approving, and conditional actions similar to the "spheres of jurisdiction" currently used for other functions in the *Municipal Act*. Municipalities currently can require grading, drainage and other physical infrastructure to protect water sources through site plan control agreements for new development being considered under the Planning Act. A source-water protection "sphere of jurisdiction" under the *Municipal Act* should provide some similar ability for existing development and activities.

In addition, while the planning system is well structured to implement source water protection plans, for future uses it has been suggested that it could be useful to provide flexibility for municipalities to require source water protection measures as a condition of zoning approval for certain land uses in vulnerable areas.

Land Securement

Land securement for land conservation purposes refers to the acquisition of full title to land or partial title to land (e.g. a legally binding interest such as a conservation easement) to protect natural heritage features and ecosystem functions. Land securement can protect source water by providing protective buffers around reservoirs, priority stream segments, wetlands, groundwater recharge areas, wellhead areas, and other critical zones within source water protection areas.

The Implementation Committee agreed that the government should develop a Land Securement Program to meet source protection goals across watersheds. This program would be supported by a review of all ongoing acquisition and disposition programs, and a review of possible provincial and federal tax incentives. Such a program should be integrated and coordinated with other programs that achieve similar benefits.

The Committee agreed that the expropriation of land should only be considered as a last resort (subject to the Expropriations Act, the Government Services Act, and the Provincial Parks Act) in order to protect vulnerable areas where human health or safety is at risk.

Best Management Practices

Certain public facilities, commercial and industrial businesses can pose a potential risk to sources of drinking water. The Implementation Committee suggested that the provincial government support the development and implementation of sector-specific best management practices as an effective means through which to reduce the threat posed by many of these operations, and to reduce the overall water-use of certain sectors.

The province should prioritize its work on developing BMPs by focusing on sectors and/or activities (such as urban and rural storm water management) that pose the most risk to sources of drinking water. By collaborating with interested stakeholders, the province can effectively identify priorities and develop BMPs, which in turn provide incentives to implement measures that will achieve source protection goals.

Research and Technology

Research and technology can play a critical role by determining the best combination of actions and measures to prevent the degradation of drinking water supplies.

The Committee supports the ongoing research and development of technologies related to source protection to support sound decision-making and to help provide appropriate tools that consider health, environmental, social and economic factors in the protection of Ontario's drinking water sources.

Education and Outreach

Education and outreach should be recognized as an essential component of development and implementation of source protection plans. Effective education and outreach initiatives can result in more efficient use of resources, increased partnerships and cooperation, and more innovative ways to protect sources of drinking water. For example, education and outreach could support stakeholders in the management of specific issues related to source protection, such as: owners/users of abandoned and private wells, septic systems, storage tanks; the agriculture sector; businesses that engage in specific activities (e.g. storage and application of pesticides, storage of other chemicals); and the local community.

Issue-Specific Implementation Tools

Local source protection planning committees should, in their threats assessment, attempt to characterize all potential threats in drinking water sources in the watershed.

The Implementation Committee wanted to ensure that specific tools and approaches were available to address a wide range of threats (i.e. activities, land uses and circumstances) within the watershed. For the most part, the IC made no assumptions about the prevalence of these threats; instead choosing to focus instead on ensuring that appropriate management strategies exist in the event that such threats to drinking water sources were identified.

This section of the report provides recommendations on risk management tools for a variety of specific issues that, depending on location and other factors, could represent a risk to sources of drinking water.

Funding of Source Water Protection

In public consultations, funding emerged as the most significant obstacle to source protection implementation. In Part Two Report of the Walkerton Inquiry, Justice O'Connor recommended a combination of funding mechanisms, and emphasized three key sources: user fees, provincial and/or municipal general revenues, and pollution charges. In formulating its advice, the Implementation Committee considered Justice O'Connor's recommendation and also reviewed funding tools used in other jurisdictions.

The development of funding recommendations began with developing key principles that, when applied consistently, will help inform a strategy to fund source water protection across Ontario. These principles include: Cost effective, Fair and Equitable; Ability-to-pay; Users' and Polluters' Pay; Payment for Benefits; Full Cost Accounting; Financial Oversight, Accountability and Transparency; Adequacy; Sustainable, Permanent and On-going; and Shared Responsibility.

The Implementation Committee examined, in a preliminary fashion, the potential costs of plan development and implementation. The cost of plan development was assessed based on past watershed experience from several conservation authorities. The resulting plan development costs were estimated to be \$1000 to \$1500 per square kilometer of watershed area or \$6.5 to \$10 million for an average watershed region. As for plan implementation, the Committee was able to make use of the Niagara Water Quality Protection Strategy, 2003, which included a detailed cost implementation plan. The

resulting cost estimate for the implementation of source protection was \$12.4 million per year. This estimate only provides a first approximation for one region of the province. As the development of source protection plans proceeds through its various phases, more detailed studies will need to be undertaken.

The Committee identified existing funding mechanisms and new funding sources to implement source protection plans. Numerous recommendations were made to ensure long-term sustainable revenue for source protection planning and implementation, including on-going source protection plan updating, monitoring and review. The Committee agreed that parties who are responsible for an activity which represents a risk to a source of drinking water should be responsible for funding its management. Beyond this obligation, provincial general revenue should be the primary source of funding for the implementation of source protection plans.

Over and above provincial general revenue, specific recommendations were made on three funding approaches considered the most viable to support source protection implementation in Ontario: water and sewage rates, water taking charges, and pollution charges.

Water and Sewage Rates

The Implementation Committee felt that water and sewage rates should be used to pay for at least some portion of the municipal share of funding source water protection. The Sustainable Water and Sewage Systems Act (2002), once proclaimed, will make it mandatory for municipalities to assess and report on the full cost of providing their water and sewer services and to prepare long-term cost-recovery plans. These plans will consider, among other things, the costs associated with source protection measures.

Water Taking Charges

Currently, water consumers on municipal systems in Ontario pay the costs of accessing, treating and distributing water. However, those who take water directly from source do not pay for the water itself. On average, households in Ontario pay \$45 a month for water and wastewater services. Compared to other OECD countries, and other provinces in Canada, this is a relatively low rate for water services and does not reflect the true cost of providing water and waste water services. In December 2003, the government announced its intent to apply charges to water takings from the watershed for commercial purposes. The Implementation Committee recommended that the provincial government proceed with the introduction of volume-based water taking charges to fund a portion of source protection implementation, with only limited exemptions permitted.

Pollution Charges

The Implementation Committee agreed that a pollution charge in Ontario would be a valuable tool to fund source protection. Pollution charges achieve several goals: They provide incentives for modifying behaviour (e.g., emission reductions); they ensure polluters internalize the costs associated with their impact on the environment; and they offset some of the costs associated with environmental management activities. The Implementation Committee supported the

provincial government's work on pollution charges and recommended that the province move forward in developing a pollution charge policy framework, including undertaking consultations with experts in the field as well as broad public consultations.

Financial Incentives

The Implementation Committee felt strongly that incentive programs and financial assistance be created to enhance source protection, encourage voluntary implementation of source protection measures, promote compliance, and provide for long term sustainability of water use. Incentive programs and financial assistance may be particularly useful where a lack of "ability-to-pay" prevents certain source protection activities. Incentives may be defined in a variety of ways and include: partnerships, cost-sharing, grants and loans, technical assistance, tax credits, information and education, and recognition programs. The Committee believes that all incentive programs should include an educational and technical component.

Financial Incentives for Agriculture/Farm Water Protection Plans

The Implementation Committee agreed that provincial, federal, and local funding sources should be used to provide additional financial assistance for Farm Water Protection Planning (FWPP) and projects undertaken by farmers in vulnerable areas and for large livestock farms. The provincial government should establish a system of cost-share incentives for FWPPs and projects early enough to allow improvement to be made in an orderly and cost effective manner.

Financial Incentives for Private Property Owners not on Municipal Systems

The Implementation Committee recognized that private property owners may stand to benefit from source protection activities but could also pose a contamination risk to source water. The Committee believes that incentive programs should be developed to encourage and assist private property owners with covering the costs of specific activities beneficial to source protection. Furthermore, municipalities should be given the authority to levy source protection charges on properties not connected to municipal systems.

Conclusion

Protecting drinking water sources was a key focus of Part Two of the *Report of the Walkerton Inquiry*. In Part Two, Justice O'Connor described source protection as a primary measure in a multi-barrier approach to ensuring safe drinking water.

The purpose of this report is to convey the advice of the Implementation Committee to the Minister of the Environment for consideration in the development of source protection legislation and the overall watershed based source protection program.

The Committee was mandated to provide advice on how best to implement strategies to protect watersheds and to examine innovative funding mechanisms and incentives. In this report, the Implementation Committee recommends a range of proposed tools to facilitate watershed based source protection planning in Ontario.

The Committee also devised several guiding principles and recommendations in relation to funding source protection. The recommendations cover a range of proposed funding methods involving charges, fees, and taxes, and include a variety of innovative funding mechanisms. Many of these funding approaches have been implemented in other jurisdictions, both within Canada and abroad.

The Committee urges the government to consider the recommendations and advice of the Implementation Committee in the drafting of drinking water source protection legislation.