

Quinte Region Explanatory Document

Version 7.5

Prepared by:
Quinte Region Source Protection Committee

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1.0 Introduction

This Explanatory Document was prepared by the Quinte Region Source Protection Committee as a companion document to the Source Protection Plan in accordance with the requirements of Ontario Regulation 287/07 (Section 40), under the *Clean Water Act*, 2006.

The Explanatory Document is a record of the policy development process, research and consultation. It provides an explanation of how the Source Protection Committee arrived at the policies in the Source Protection Plan. It provides stakeholders, the general public, policy implementers, other interested parties, as well as the Quinte Source Protection Authority and the Minister of the Environment an account of the rationale for the policies included in the Source Protection Plan by providing information that influenced policy decisions.

In accordance with Section 40 of Ontario Regulation 287/07 this Explanatory Document includes:

- an explanation of the Source Protection Committee's reasons for each policy in the Source Protection Plan;
- the reasons that Section 57 (*Clean Water Act*) prohibition is used to address the risk of an existing activity;
- a summary of comments received during pre-consultation and an explanation of how they affected policy development;
- a statement indicating that the Source Protection Committee is of the opinion that non-regulatory measures are sufficient to address significant threats, when used as a stand alone policy tool a summary of how financial implications may have affected policy decisions; and
- an explanation of how climate change considerations may have impacted policies.

The Explanatory Document is provided as supporting information to explain the policy development process and is not subject to public comment.

Policies in the Plan and this document are organized so that the policy numbers and names in both documents correspond. The reader is asked to refer to the Source Protection Plan for:

- **the complete policy text, including applicable areas and effective dates (Chapter 5);**
- **a list of threats and descriptions of vulnerable areas (Chapter 2);**
- **definitions of technical terms (Appendix A Acronyms and Appendix B Glossary);**
and
- **a description of the Plan development and tools available to the Source Protection Committee for addressing the threats to drinking water (Chapter 3).**

2.0 Policy Development Process

2.1 Background

The mission of the Quinte Region Source Protection Committee is:

To develop a locally shaped comprehensive plan for the sustainable protection of public drinking water sources in the Quinte Source Protection Region that is both science based and reflective of local knowledge and experience and that will serve to protect public drinking water sources.

The Quinte Region Source Protection Committee (herein referred to as ‘the Committee’) developed the source protection policies in stages. Policy development was based on the science and findings in the Updated Assessment Report. These findings include the identification of the zones or areas around each water source that are vulnerable to contamination, the identification of significant, moderate and low threat activities based on the list of 21 prescribed drinking water threats under the *Clean Water Act, 2006* and the identification of two condition-based threats from former landfills.

The Updated Assessment Report identified over 300 significant threats. The Committee’s focus was on developing policies to address the risk from the significant threats first. As time permitted several policies were developed to address some of the moderate and low threats, although it was understood by the Committee that most of the moderate and low threats would be addressed during a future round of source protection planning.

The *Clean Water Act, 2006* states that the objectives of the policies in the Source Protection Plan are to ensure that existing activities identified as significant threats “cease to be” significant drinking water threats and that other threats never become significant. The Committee considered that some existing significant threats may be adequately managed so as to reduce the risk or likelihood that the threat could cause damage to the water source and that this would meet the objective of “cease to be”. The Committee recognized that the threat would still exist but the risk from it would be adequately managed.

2.2 Evolution of Policies

Initial Committee discussions focused on existing activities that were enumerated as threats in our region and as a result, various possible threat scenarios evolved. Discussion of the various scenarios generated policy concepts that eventually became draft policies.

During the development of policies, the Committee worked through several versions and policy drafts as they incorporated feedback from the sectors they represented. Some committee members have areas of expertise directly related to the provision of safe drinking water and the impact of policies on particular industries such as agriculture. The Committee also sought input from specialized working groups formed to assist with the planning process and policy development. The working groups included local experts on: septic systems, fuel handling and

storage, municipal planning, agriculture, emergency planning and water system operation (see Section 2.4).

The Committee also relied on staff research and expertise provided by qualified professionals at Quinte Conservation. This includes two septic inspectors, three risk management officials/inspectors, two well inspectors and other specialists such as engineers and scientists on staff. Project staff received training on Source Protection Planning at workshops provided by Conservation Ontario and the Ministry of the Environment in March, June and September of 2011. The Committee and staff also made use of research completed by Conservation Ontario, Conservation Halton and the Cataraqui Region Conservation Authority.

Project staff provided the Committee with knowledge of local existing and historic conditions in the watersheds. This included examples of specific events and situations that occurred such as an oil spill in an intake protection zone in 2007. During implementation of the Early Actions and Early Response Drinking Water Stewardship Program, much information was learned about local wells and septic systems. Numerous faulty septic systems were replaced, abandoned wells decommissioned, sub-standard wells upgraded, improvements made to the storage of agricultural and non-agricultural source materials, and fuel storage upgraded.

Committee members also learned about local conditions through several watershed tours in 2008 and 2010 where they visited and learned from individuals at: each municipal drinking water source and treatment plants, a local agricultural operation, a salt storage facility, a well decommissioning in progress, vulnerable areas and sites slated for future development.

The Committee considered many factors in developing draft policies: existing and potential future circumstances, effectiveness, appropriateness, fairness, affordability, and other factors such as implementation timelines and the financial and technical capacity of implementing municipalities.

During the development process the Committee notified municipalities and persons whose activities could be a significant threat to the water sources that Source Protection Plans and policies were being developed that could affect them. Presentations about policy development and policy implementation were made to municipal councils throughout the planning process.

Draft policies evolved as input was obtained from the Committee and working groups. Committee members provided verbal input on draft policies at committee meetings and written input by email and on policy feedback 'score sheets' between meetings. The specific 'tools' or courses of action available to the Committee to address the threats are discussed in Chapter 3 of the Source Protection Plan (herein referred to as the Plan).

2.3 Policy Organization

Policies evolved as a result of consideration by the Committee of various threat scenarios and so the policies were grouped into threat categories: general, waste, sewage, agriculture, aquaculture, non-agricultural commercial fertilizer, non-agricultural pesticides, road salt, snow storage, fuel, dense non-aqueous phase liquids, organic solvents, and airplane de-icing.

Policies in the Plan and this document are organized so that the policy numbers and names in both documents correspond. The complete text of each policy is available in Chapter 5 of the Plan. The corresponding explanation and rationale for how those policies were developed are found in Section 8 of this report.

2.4 Working Groups

Working groups were established for the most prevalent threat categories in the Quinte Region. Working group members were local experts with experience in the nature of the threat activity and they provided their insight and expertise. The Committee consulted with the working groups as the policy concepts evolved, and through several versions of draft policies. These specialized groups provided their valuable input during policy development and generally prior to pre-consultation. Five working groups were formed:

- **Municipal Planning:** Members included municipal planners, consulting planners, representatives from the Ministry of Municipal Affairs and Housing, municipal staff and council members.
- **Emergency Response and Municipal Water Treatment Plant Operators:** This group included representatives from municipalities and the Ontario Clean Water Agency.
- **Agriculture:** Members included representatives from the Ontario Federation of Agriculture, local farm operators, land owners, and representatives of the Ontario Ministry of Agriculture, Food and Rural Affairs.
- **Septic Systems:** This group included municipal building officials, representatives of Health Units, and sewage system installers.
- **Fuel:** Members included home heating oil contractors, fuel delivery agents and Insurance industry representatives.

The Municipal Planning Working Group was formed early on in the process (2008) to ensure that local municipal planners were aware of and had input into the process of developing the Plan. Other working groups met several times during 2010 and 2011, and provided critical knowledge and feedback. The input from all the working groups was critical in refining the draft policies and this input is explained in Section 8.0 Explanation of Policy Decisions.

2.5 Pre-Consultation

In accordance with Ontario Regulation 287/07 the Committee conducted pre-consultation on draft policies. In October, 2011 those named as implementers in the draft policies were provided with the preliminary draft policies and asked for their comments. The purpose of the pre-consultation process was to ensure that draft policies proposed by the Committee would be implementable prior to taking the draft policies to the public during formal consultation in 2012.

The Committee modified some policies as a result of input received. Policy implementers consulted during pre-consultation were:

- The Corporation of the City of Belleville
- The Corporation of the Municipality of Centre Hastings
- Town of Deseronto
- Madoc Township
- Municipality of Marmora and Lake
- Town of Greater Napanee
- The Corporation of the County of Prince Edward
- Municipality of Tweed
- Township of Addington Highlands
- Township of Central Frontenac
- Township of South Frontenac
- The City of Quinte West
- The Corporation of Loyalist Township
- Township of North Frontenac
- Township of Stirling Rawdon
- Township of Stone Mills
- Townships of Tudor and Cashel
- The Township of Tyendinaga
- The County of Frontenac
- The County of Hastings
- The County of Lennox and Addington
- Quinte Source Protection Authority
- Cataraqui Source Protection Authority
- Trent Conservation Coalition Source Protection Authority
- Mississippi Rideau Source Protection Authority
- Hastings and Prince Edward Counties Health Unit
- Frontenac Lennox and Addington Public Health
- Ministry of Consumer Services
- Ministry of Municipal Affairs and Housing
- Ministry of Northern Development and Mines
- Ministry of Natural Resources
- Ministry of the Environment
- Ministry of Infrastructure
- Ministry of Transportation
- Ministry of Agriculture, Food and Rural Affairs
- Technical Standards and Safety Authority
- Mohawks of the Bay of Quinte
-

Policy implementers were encouraged to evaluate the draft policies by considering:

- overall standard
- effective dates
- implementation capacity (including cost)
- technical capacity
- monitoring to report on policy effectiveness
- local conditions
- consistency
- barriers to implementation

During the pre-consultation process two forums were held for the policy implementers tasked with reviewing the policies. The purpose was to allow policy implementers the opportunity to discuss draft policies, ask questions and hear from other implementers before submitting their comments. The first policy forum on October 18, 2011, hosted jointly by the Cataraqui, Mississippi Rideau and Quinte source protection areas and regions, was for provincial ministries and agencies. On November 8, 2011, a municipal implementation workshop was hosted by the Committee for municipalities in the Quinte Region.

For a summary of pre-consultation comments see Section 7.1.

3.0 Financial Considerations

This section includes general information regarding the financial considerations undertaken by the Committee during the development of the Plan. Specific information relating to the financial impacts considered by the Committee for specific policies is found in Section 8.0 Explanation of Policy Decisions.

The Committee recognized that protecting water sources has many benefits and makes good economic sense. They noted that the primary reason to protect our municipal drinking water sources is to protect public health. Other benefits include:

- ensuring a long-term supply of clean water;
- ensuring an adequate supply for economic growth;
- avoiding the cost and need to clean up contaminated water;
- reducing the cost of water treatment; and
- eliminating the need and expense of searching for new drinking water sources when existing ones become contaminated or depleted.

The Committee was cognizant of all these important factors as they developed the policies to protect Quinte's municipal drinking water sources. A presentation by Bruce Davidson, of the Concerned Citizens of Walkerton, to the Committee and Source Protection Authority on September 24, 2009 highlighted the grave and ongoing toll on people's lives and health and the related enormous financial costs of not properly protecting drinking water sources.

The economic impact of proposed policies was an important criterion considered by the Committee during policy development. The Committee discussed the possible potential costs of policy implementation and monitoring and the difficulty of estimating these costs accurately, particularly for a new program such as source water protection. It was with this awareness that the Committee worked, while considering the information available to them, to produce policies that may be implemented in a cost effective manner.

During deliberations the Committee discussed the potential economic impact on municipalities, other policy implementers and those directly affected by the policies. The Committee considered the financial capacity of the implementing bodies. The Committee also considered the direct and indirect financial costs and benefits to implementers, and affected landowners for both program delivery and on-the-ground actions, both at present and in the future. The cost of watershed monitoring required to demonstrate the effectiveness of the policies was another factor considered.

Some examples of the Committee's cost-related deliberations include:

- No policy was developed to require implementers (municipalities) to provide incentives, financial or otherwise. The Committee noted that the Ontario Drinking Water Stewardship Program was an existing incentive that successfully reduced threats to drinking water sources in the Quinte Region. An example cited is the raw water quality improvement at the Roblin Lake intake for the Village of Ameliasburgh following the replacement and/or upgrade of more than 20 private septic systems on lakefront properties.
- The initial threat specific, education and outreach policies were combined into one general policy. As a result, municipalities are encouraged to work together collaboratively; call on partners like the Conservation Authority; share and make the most of partner resources; thereby providing cost effective development and delivery.
- Estimates of the cost of education and outreach programs and risk management officials were discussed at the October, 2011 committee meeting. Break out groups at the meeting considered and discussed the costs to the municipalities, homeowners, businesses and agriculture. Costs resulting from required actions (e.g. septic inspections, risk management plans) were reviewed and discussed. During discussions on education and outreach programs, low cost, yet effective, suggestions were made such as spill emergency contact stickers for home heating oil tanks and similar tags for home heating oil delivery intake pipes.

As previously stated, other more specific details regarding financial considerations taken into account by the Committee may be found in the individual policy approach explanations in Section 8.0.

Some of the municipalities that responded during 2011 pre-consultation expressed concern about the cost of implementing the policies. A suggestion made at the Quinte Region municipal implementation workshop on November 8, 2011 was that the province should fund a portion of implementation startup costs. Following Committee discussion, the Chair sent a letter (December 16, 2011) to the Director of the Source Water Protection Branch, Ministry of the Environment, requesting support for municipal implementation costs.

During preparation of the updated Proposed Plan in 2013 (as a result of the updating of the Assessment Report with the results of the issues based threats assessment for the Village of Madoc wells), 'Applicable Areas' had to be added to several existing policies. The Committee considered that the financial impact of these policy updates was minimized for several reasons. During the technical work the focus area was adjusted and reduced. The technical rules suggested a setback distance from the creeks of 120 metres. This setback was reduced to 30 metres with approval from the Ministry of the Environment, and this is consistent with other environmental and land use planning setbacks and as per input from the clerks of the Township of Madoc and Centre Hastings. This resulted in fewer landowners being affected and less cost therefore incurred by the implementer. The Committee also extended the 'Effective Date' for a policy related to agricultural operations from three years to five, reducing the financial impact on the implementer by allowing costs for the required work to be spread over five years. The changes are noted under the specific policies in Section 8.

4.0 Climate Change Considerations

The Updated Assessment Report, 2011 included a section on Climate Change which indicated that depending on the type of climate change there may, or may not, be an impact on the quality and quantity of drinking water sources.

As the findings in the Updated Assessment Report, 2011 were not conclusive; considerations of climate change could not be addressed by the Committee during policy development. As a result the Draft Plan was not influenced by the climate change summary in the Updated Assessment Report, 2011.

The Committee did identify that future updates of the Assessment Report may identify local climate change trends that could require new or modified policies in the Plan. There was no new information available regarding climate change in the Quinte Region during the preparation of the Updated Assessment Report in 2013. As a result, no changes were made in this regard to the Proposed Source Protection Plan.

5.0 Water Quantity Considerations

The Committee discussed water quantity during their policy development deliberations. Three preliminary draft policies were created to address the Committee's water quantity concerns and these were circulated for comment during pre-consultation in the fall of 2011.

The intent of these preliminary draft policies was to:

- increase awareness about the need to protect sources of drinking water through the promotion of water conservation in vulnerable areas (Policy for Education and Outreach for Water Conservation);
- ensure that the procedures for both the renewal of existing Permits to Take Water and the issuance of new ones consider the impact on municipal drinking water supplies. (Policy regarding Prescribed Instruments and Permits to Take Water); and
- ensure sustainability of the water resource in the Quinte Source Protection Region through monitoring of development and water use. (Monitoring Policy for Development and Water Use).

However, the Water Budgets completed for the Quinte Region prior to and during the preparation of the Updated Assessment Report, 2011 showed that there are no identified water quantity threats at any of the municipal water sources. Comments received from the Ministry of the Environment during pre-consultation reminded the Committee of that fact and that; there was therefore, no legislative authority for water quantity policies in the Plan. The Committee then removed the water quantity policies relating to Permits to Take Water and Development and Water Use and incorporated a line into Policy G-I Education and Outreach that, among other actions, municipalities:

"...6) Promote voluntary action to protect sources of drinking water and water conservation measures such as water saving fixtures, tips on how to save water in the house, and water conserving appliances..."

6.0 Cross Boundary Drinking Water Systems: Bayside Intake

A drinking water source located in one source protection region that has a vulnerable zone, with existing or potential significant threats, which extends into another source protection region, is considered a cross boundary drinking water system.

The Bayside surface water intake in the Bay of Quinte located within the Trent Conservation Coalition (TCC) Source Protection Region, near the north shore of the Bay has an intake protection zone one (IPZ 1) that stretches into the Quinte Region. The IPZ 1 extends south from Bayside, across the Bay to touch a very narrow stretch of 1.3 kilometres along the north shore of Prince Edward County, in the Quinte Source Protection Region. No existing significant drinking water threat activities were identified as taking place on this strip of land, however there is potential for future threats.

During review of Quinte's Draft Plan project staff and Source Protection Committees became aware that the TCC policies for the Bayside intake will have no legal effect in Prince Edward County because under the *Clean Water Act, 2006* the policies from one region have no legal effect in another region. Also, the TCC's policies differed from the policies developed by the Quinte Source Protection Committee. A meeting was held with project staff from both regions and municipal staff from Prince Edward County. This cooperation led to a solution. The TCC Source Protection Committee agreed that the policies in the Quinte Source Protection Plan will apply to the small portion of the Bayside IPZ 1 in Prince Edward County. It was requested by the TCC that the Bayside drinking water intake be added to the applicable area section of policies in the Quinte Source Protection Plan where a significant drinking water threat could be established in the future – and the Quinte Committee agreed. For a list of which policies apply see Table 4.12 Applicable Policies Table for the Bayside Intake Protection Zone in Chapter 4 in the Plan.

7.0 Summary of Consultation Results

Consultation was an important part of policy development. During policy development, committee members consulted with the sectors they represent and brought forth concerns and comments to the Committee. Excellent local expertise was provided by the Working Groups described in Section 2.2. This consultation with local experts was ongoing during the development of preliminary policy concepts. Presentations were made to local municipal councils and discussions held with municipal staff throughout the planning process. Additional documentation regarding consultation undertaken during the source protection planning process may be found in Appendix G of the Assessment Report and Chapter 6 of the Source Protection Plan.

Details on consultation for the 2012 Draft Proposed and Proposed Source Protection Plan are provided in Sections 7.1 to 7.3 inclusive.

The results of issued based threats assessment for the Village of Madoc wells, conducted in the spring and summer of 2013, required the updating of the Assessment Report and several policies in the Proposed Plan. Therefore in the fall of 2013, consultation on those updates (Assessment Report and Proposed Source Protection Plan), was held concurrently. The summary of this consultation work is found in section 7.4. This consultation in 2013 was held before comments on the original Proposed Source Protection Plan (submitted in August 2012) were received from the Ministry of the Environment.

Following receipt of preliminary comments on the Proposed Source Protection Plan from the Ministry of the Environment in November, 2013, a targeted consultation to about one dozen property/business owners was held as a result of the proposed addition of two new policies related to waste disposal sites. The summary of this consultation is found in section 7.5.1

7.1 Pre-consultation Summary of Comments for the Draft Proposed Source Protection Plan

Pre-consultation packages were sent to implementing bodies on October 21 and 24, 2011 (see the list of those consulted during pre-consultation in Section 2.3). Pre-consultation comments were requested back by November 30, 2011. Some of these reviewers requested an extension and the following responded with comments by the January 26, 2012 meeting of the Committee:

- The County of Hastings
- Ontario Ministry of Agriculture Food and Rural Affairs
- The Corporation of the Municipality of Centre Hastings
- Township of Stirling Rawdon
- Hastings and Prince Edward Counties Health Unit
- Kingston Frontenac Lennox and Addington Public Health
- Ministry of Transportation
- Municipality of Marmora and Lake
- Ministry of Consumer Services
- Technical Standards and Safety Authority
- Ministry of Municipal Affairs and Housing
- Ministry of the Environment

Others who responded at a later date were:

- Municipality of Tweed
- Township of Madoc
- Township of South Frontenac
- The City of Quinte West
- The Corporation of Loyalist Township
- The County of Frontenac
- Ministry of Northern Development and Mines

Of the 19 responses, five indicated no concerns. Comments were generally supportive and constructive. Additional general comments included:

- Concern regarding implementation costs by some of the municipalities. One comment stated that the additional workload on municipalities will incur additional stress on strained budgets;
- Suggestions on specific policy wording that the Committee found useful to improve the readability and clarity of the policies; and
- Concern was expressed by one municipality that a portion of their well head protection area is in a neighbouring municipality and this requires the support and participation of that other municipality to adequately protect the water supply.

The Committee assumed that those that did not respond after follow up requests accepted the policies as drafted.

At the January 26, 2012 meeting the Committee reviewed and discussed a detailed list of comments and made changes that the members considered were required and appropriate. Specific changes to policies as a result of pre-consultation are reflected in the policy rationales found in Section 8.0.

7.2 Draft Proposed Source Protection Plan Summary of Comments

The Draft Proposed Source Protection Plan was posted for a 36 day comment period on April 12, 2012. Three public meetings were held during the consultation period. Meetings ran from 6:30 PM to 8:30 PM with a presentation at 7:00 PM on:

- May 7, 2012 at the Kiwanis Centre, 137 St. Lawrence Street East in Madoc;
- May 9, 2012 at Quinte Conservation, 2061 Old Highway 2 near Belleville; and
- May 10, 2012 at the Community Centre, 375 Main Street in Picton.

Thirty two people, other than the project staff and Committee members, attended the public meetings.

Members of the public had an opportunity to review and comment on the Draft Plan. Copies were available in paper or on DVD. Posters provided background information, explained how the policies in the Plan will affect threat activities and described the Ontario Drinking Water Stewardship Program. Maps were displayed of the vulnerable areas. Printed materials available included information about the *Clean Water Act*, drinking water threats, municipal water system summaries, and stewardship. A presentation was made that explained the Plan development process, provided information about the Plan and explained what the Plan would mean to affected landowners.

7.2.1 Summary of Comments from the 2012 Public Meetings on the Draft Proposed Source Protection Plan

The tone of the public meetings held in May 2012 was generally positive. Those in attendance had the opportunity to peruse information and ask questions informally prior to and following the formal presentation and during the presentation itself. At the presentation it was stated that project staff were available to meet and answer questions privately, either in person or on the phone.

Many of the questions and comments at the public meetings were general in nature and related to the focus and scope of the *Clean Water Act, 2006* or the work of the Source Protection Committee. Others were posed to clarify an aspect of the presentation. Some people attended to ascertain if the source protection program could assist with their specific water quality protection interests and concerns such as the spreading of biosolids or the practices of a local hog farm operation. Some attendees had specific questions regarding how the policies would

affect them or help to protect their property such as if a risk management plan could stop their neighbour's manure from running off his land, onto theirs and into the watercourse.

Other questions were technical, for example relating to delineation of vulnerable areas or significant threats. Several questions related to toxic sites in the region including the former Deloro mine site. Inspections of septic tanks and related costs and the maintenance and inspection of home heating oil tanks were also discussed.

Other questions related to the enforcement and implementation of policies; for instance, risk management plans and timelines for municipal implementation. Costs of risk management plans and municipal implementation were discussed.

Questions on agricultural activities related mainly to risk management plans and stewardship funding. Interest and support for the Ontario Drinking Water Stewardship Program funding was expressed by more than several people at each of the meetings.

Several of those attending had received correspondence because they were identified as having activities on their property that are or could be a significant threat and they reported having received several letters about the process.

7.2.2 Summary of Written Comments Received on the Draft Proposed Source Protection Plan

Fourteen written comments were received on the Draft Proposed Source Protection Plan. Following is a summary of those comments. Specific changes to policies as a result of comments on the Draft Plan are reflected in the policy rationales found in Section 8.

Eleven comments were received during the 36 day comment period that ended on May 18, 2012:

1. Three comments from members of the public

The three comments from members of the public did not require changes to the Plan but rather follow up from project staff to answer questions or provide information on stewardship funding. One of the commenters stated that he supports efforts to provide drinking water source protection.

2. Prince Edward County

Prince Edward County asked that Province of Ontario be identified as the body responsible for funding the implementation of the Plan.

3. Hastings and Prince Edward Counties Health Unit

The Health Unit suggested a new "Complete Communities" policy to enhance the goals of the Health Unit's Built Environment Working Group. The intent of the policy was to encourage municipalities to adopt "Complete Communities Guidelines" to be incorporated in next official planning cycle into land use zoning and related appropriate by-laws. This

was discussed by the Committee but found to be outside the scope of the *Clean Water Act, 2006* as it did not relate to an identified threat to a water source.

4. Bay of Quinte Remedial Action Plan

The Bay of Quinte Remedial Action Plan (BQRAP) suggested six policy modifications that would further the goals of the BQRAP. Some of the suggested policies related to the Bay of Quinte but not to the significant drinking water threats. One of the suggested policies called for collaborative research among levels of government and academia. These suggestions were considered by the Committee but found to be outside the scope of the *Clean Water Act, 2006* and the mandate of the Committee. However, during discussion of the comments on Policy G-9-F about raw water sampling, the Committee decided to encourage the Ministry of the Environment to include the toxin Microcystin-LR as a threat in the next round of source protection planning. Microcystin-LR is a naturally occurring toxin produced by cyanobacteria, also known as blue-green algae. Blue-green algae blooms, which have occurred in the Bay of Quinte, may produce a toxin that may be harmful to humans and animals if ingested or when there is direct contact. Boiling, chlorination and ultra-violet treatments are not effective and may enhance the release of toxins. During past occurrences of blue-green algae blooms in the Bay of Quinte, municipal drinking water supplies were closely monitored.

5. Mohawks of the Bay of Quinte

The Mohawks of the Bay of Quinte expressed concern regarding a proposed landfill expansion. The Committee noted that the Plan does include six policies relating to the threat posed by waste disposal activities and conditions. The policies address future landfills, expansion of existing landfills and closed landfill sites that have been identified as a significant drinking water threat. According to the technical rules, the specific landfill of concern to the Mohawks of the Bay of Quinte was not identified as a significant threat to any municipal drinking water source. However Policy 1-6-E & F does apply to moderate and low threat waste disposal sites and was developed to address concerns raised by the Mohawks of the Bay of Quinte and the municipal representative on the Committee from that area.

6. Transport Canada

Transport Canada provided information on their role and responsibilities and the Canadian Environmental Protection Act's 1994 glycol guidelines.

7. Ministry of Transportation

The Ministry suggested a simple wording change, with which, the committee agreed.

8. Ministry of Municipal Affairs and Housing

The letter from the Ontario Ministry of Municipal Affairs and Housing was supportive and noted that many of the comments from pre-consultation were taken into consideration.

9. Ministry of the Environment

Comments from the Ministry of the Environment noted that the mandatory requirements for the Plan content were addressed and the Plan was in compliance. There were specific suggestions for changes to align the Plan with the language of the *Clean Water Act, 2006*, improve clarity, technical accuracy and readability. Many of the comments resulted in wording changes to policies without changing the intent of the policies. The comments from the Ministry were carefully considered by the Committee in their review of the Draft Plan and most of the suggestions were incorporated. These changes are explained in the discussion of the specific policies found in Section 8.

Additional comments were received after May 18, 2012 but prior to the Source Protection Committee meeting on May 30, 2012 from:

Ministry of Agriculture, Food and Rural Affairs

The Ministry of Agriculture, Food and Rural Affairs submitted preliminary comments regarding agricultural source material storage and outdoor confinement areas asking that the Committee consider management rather than prohibition in WHPA A, however this is not a concern in the Quinte Region where there are none of these facilities in the WHPA A. It was also requested that properties with prescribed instruments already in place not be required to have risk management plans. However, the Committee noted that this may leave some threats unaddressed as prescribed instruments do not address all possible identified threats. More explanation on how these comments were addressed may be found in the individual policy discussions found in Section 8.

Ministry of Consumer Affairs (MCS) and Technical Standards and Safety Authority (TSSA) joint response

A joint response was received from the Ministry of Consumer Affairs and TSSA. Their response stated that neither MCS nor TSSA have an environmental protection mandate and that source water protection falls beyond the respective expertise and authority of MCS and TSSA. The letter requested that the Committee consider the existing regulatory framework for fuels works to manage the risk to source water and that, in their opinion, the government of Ontario has no plans to review that regulatory framework. The letter referred the Committee to the Ministry of the Environment for provincial action to protect source water and encouraged the Committee to establish measures at the local level and assign responsibility to the appropriate municipality. The letter further indicated that information about licensed fuel storage and handling facilities and training sessions on fuel oil tanks could be provided for a fee. The letter also offered to include source water safety information in their brochures and to facilitate distribution of educational materials to fuel suppliers.

The Committee considered these comments but determined that the objectives of the *Clean Water Act, 2006* required the willing and full participation of MCS and TSSA. More explanation on

how these comments were addressed may be found in the discussion of Policy 15-6-E, found in Section 8.

Comments were received from **Kingston Frontenac Lennox and Addington Public Health** on June 1, 2012 that noted no objections to the format or content and also that the Draft Plan and Explanatory Document were easy to navigate and understand.

7.3 Proposed Source Protection Plan Comments – July 2012

Comments from the second public consultation, a 30 day comment period, held by the Source Protection Authority, during July 2012 on the Proposed Source Protection Plan were appended to the documents that formed part of the submission of the Proposed Source Protection Plan to the Minister of the Environment in August, 2012.

The following summarizes comments that were received:

1. A member of the public commented regarding implementation costs.
2. Three municipalities: the **Township of Tyendinaga, Hastings County** and the **Municipality of Tweed**, expressed concern over implementation costs.
3. **Bay of Quinte Remedial Action Plan Restoration Council** recommended future collaborative research on harmful cyanobacteria species that secrete toxins such as Microcystin-LR and the establishment of funding mechanisms to include private well systems along the Bay.
4. **Ministry of the Environment** suggested changes included a wording change to clarify applicable areas and suggestions regarding changing implementation timelines.
5. **Ministry of Agriculture, Food and Rural Affairs** provided comments largely in support of the agriculture related policies in the Plan. However several specific comments were provided and these are noted in the discussion of the agricultural policies in section 8.
6. **Ministry of Transportation** indicated support for the salt management and road sign policies in the Plan.
7. **Ministry of Consumer Services/Technical Standards and Safety Authority** comments requested that they be removed as the implementers of Policy 15-6-E. The Committee had received similar comments in the previous public comment period. See the discussion under this policy in section 8.
8. Three **Source Protection Committee Members** commented on their concerns for continued financial support from the Ministry of the Environment as the program shifts into

the implementation phase and the suggestion that the program be expanded to include private wells and protection of groundwater.

7.4 2013 Updates to the Proposed Source Protection Plan

New technical work was undertaken in 2013 (while the Proposed Source Protection Plan, submitted in August 2012, was still under review by the Ministry of the Environment). As a result of that technical work, updates were proposed to both the Assessment Report and Proposed Source Protection Plan in the fall of 2013. The work included: the verification of significant threats through ground truthing and contact with property owners and; issues based threats assessment for the Village of Madoc wells. No updates were required to the Proposed Source Protection Plan as a result of the threats verification work. Ten policies were updated as a result of the issues based threats work.

7.4.1 Proposed Updates to Proposed Source Protection Plan as per 2013 Issues Based Threats Assessment

Issues based threats assessment was undertaken in the spring and summer of 2013 related to the Village of Madoc wells. The raw water quality in these groundwater wells is known to be impacted by the quality of surface water in nearby local creeks, which can enter the groundwater through cracks and crevices in the bedrock. The project examined land use activities along the creeks upstream of the wells that may impact water quality in the creeks and thus the municipal water supply. New significant threat activities were enumerated related to septic systems and agricultural activities in the newly identified vulnerable area called the issues contributing area. The Village of Madoc wells are in the Municipality of Centre Hastings and the majority of the issues contributing area is within the Township of Madoc.

Both the Assessment Report and Proposed Source Protection Plan required updating as a result of the new technical work. The updates and related consultation for both documents were done concurrently. Consultation with the Ministry of the Environment was ongoing during the technical work.

Proposed updates to the Proposed Source Protection Plan included:

- a revised map of the Madoc Wellhead Protection Area showing the issues contributing area;
- the addition of the issues contributing area for the Village of Madoc wells in the 'Applicable Areas' of ten policies in the Plan, (seven related to sewage and three to agricultural activities);
- note regarding 'Effective Date' for one sewage inspection policy; and
- extended 'Effective Date' for one agricultural policy.

Specific details are included in the discussion of the following affected policies in Section 8:

- 2-1-E & F: requiring connection to municipal services where available;

- 2-2-E: requiring the inspection of residential onsite sewage systems;
- 2-3-F: concerning new development on lots of record;
- 2-4-E & F: concerning prescribed instruments for large sewage systems;
- 2-6-F: concerning prescribed instruments for future sewage infrastructure;
- 2-7-E: on managing existing sewage infrastructure;
- 2-8-F: on land use planning for new sewage treatment plants;
- 3-2-E & F: requiring risk management plans for agricultural operations;
- 3-3-E & F: on restricted land use for risk management plans for agricultural operations;
and
- 3-4- E & F: concerning prescribed instruments under the Nutrient Management Act.

7.4.2 Summary of Consultation Results – 2013 Updated Proposed Source Protection Plan

The concurrent consultation undertaken as a result of the technical work completed in 2013 is documented in Chapter 6 of the Plan and in Appendix G of the Updated Assessment Report.

Consultation was guided by requirements in Regulation 287/07 and a memo from the Ministry of the Environment dated March 26, 2013 entitled “Technical Work and Source Protection Plan Revisions Updates – Consultation Requirements Summary”.

Public consultation was undertaken from October 31, 2013 to December 6, 2013, with a public meeting held at the Madoc Township Hall on November 19, 2013. In addition to the Clerks of Centre Hastings and Township of Madoc; the Ministry of the Environment, Ministry of Agriculture and Food, and County of Hastings were also notified of the proposed updates and asked for comment.

No written comments were received during the consultation period.

Preliminary Consultation

An initial meeting was held with the clerks of Centre Hastings and Madoc Township about the new technical work on April 30, 2013. This meeting helped to guide the Committee’s decision to adopt the 30 metre setback from the creeks for the issues contributing area. The Ministry of the Environment was consulted and agreed with this approach. Early outreach to new persons who may have been affected by the technical work was sent to property owners in the study area in May, 2013. The letter included information on the study and a postage paid return questionnaire.

Communication was maintained with the clerks during and following the technical work as documented in Appendix G of the Assessment Report and Chapter 6 of the Plan. This type of consultation approach was considered appropriate and meaningful.

Summary of Comments from the Public Meeting

A public meeting was held at the Madoc Township hall in Eldorado on Tuesday, November 19, 2013, from 6:30 to 8:30 pm with a presentation at 7:00. Twenty six people attended, including some members of municipal council and several property owners that had received an invitation

in the letter advising them that they may be affected by the proposed updates to the Plan. Discussion and questions at the meeting included the 30 metre setback, fencing cattle out of the creeks, compensation for the area fenced along creeks, future funding for source water protection initiatives and stewardship projects, the causes of the Walkerton tragedy, oil tank maintenance, natural sources of contamination in the creeks from wildlife, the testing involved in determining the location of the wellhead protection area, and natural heritage planning.

7.5 Review and Approval of the Proposed Source Protection Plan

The Ministry of the Environment's preliminary comments on the Proposed Source Protection Plan (received November 19, 2013) were discussed in a conference call on November 26, 2013 which included Ministry staff, Quinte Conservation staff, the Chair of the Source Protection Committee and the Ministry liaison representative on the Committee. As a result of this conference call meeting; and after communication with Committee members, two new policies were created (see section 7.5.1).

On January 7, 2014, final comments were received on the Proposed Source Protection Plan from the Director of the Source Protection Programs Branch of the Ministry of the Environment (See Appendix A). The Proposed Plan was submitted for review in August 2012. The comments are summarized as follows:

1. To enable consistent reporting it was requested that monitoring policies be "outcome-based". Changes were advised for policies 3-4-E&F, 1-2-E, G-2-E and 5-1-F. In addition, the Ontario Ministry of Agriculture Food and Rural Affairs requested that monitoring policies (i.e. 3-4-E & F) require an annual summary of the actions taken to implement a specific policy rather than specific reporting requirements.
2. A clarification of wording to policy 2-4-E (management of large sewage systems) was requested to ensure that the policy focuses on the intended outcome. This would allow the province to consider more approaches moving forward.
3. Comments recognized that it was the intention of the Committee to address the handling and storage of DNAPLs and the non-agricultural application of commercial fertilizer on residential properties, where they are a significant threat, through policy G-1 (Education and Outreach) and policy G-7-E&F (Management of Household Hazardous Waste). As such, the Explanatory Document must indicate that the Committee is of the opinion that the policy will achieve the objectives of the Plan and that a policy to regulate or prohibit the activity is not necessary to achieve those objectives.
4. Regarding policies G-4-E and G-6-F (transport pathways) MOE requested that the policy be revised to allow for a provincially consistent approach which will meet the intent of the original local policy.

5. It was noted that policy 15-6-E (monitoring of existing handling and storage of fuel) as written does not address a significant drinking water threat, nor meet the intent of section 22 of O. Reg. 287/07. As such, revisions were recommended that would align with the Committee's intent and allow the policy to stay relevant over time.
6. Comments on waste disposal policies 1-1-F, 1-2 E and 1-3-F pointed out that these policies alone would not be sufficient to address three waste sub-categories as per the Table of Circumstances; for example the threat from liquid waste oil from activities at auto service stations. The Committee was asked to consider if additional consultation would be required as a result of changes to the Plan made to address the three waste sub-categories.
7. Comments noted that the applicable areas for sewage policies 2-5-E and 2-7-E would not adequately capture the threat to groundwater systems. However, it may be the case that none of these activities were existing threats when the policies were created nor will these activities become established before the Plan is approved. If that is so, then the Committee's rationale to address this should be clearly indicated in the Explanatory Document. Sewage policy 2-6-F should address the threat to groundwater systems by clarification of applicable areas.
8. MTO provided comment on the monitoring policy for policy 12-2-E&F (Salt Management Plans for Application of Road Salt). A clarification of wording was requested to simplify the existing monitoring policy.
9. Several clarifications were suggested to ensure policy 1-6-E & F is in alignment with the *Clean Water Act, 2006*.
10. Additional context and rationale for the revision of policy G-9-F was provided (further to previous conversations between Ministry and project staff at Quinte Conservation).
11. It was noted that Transport Canada had recently indicated they do not have a role in the approval of glycol plans and so, the text of policy 18-1-F should be updated accordingly.

Results of the above comments are detailed in the specific policy discussions in section 8. Two new policies, to address the threat from liquid waste (as per comment # 6), were created: 1-7-E & F and 1-8-E & F and are also discussed in section 8. Fewer than one dozen properties were affected by the two new policies and so a targeted consultation was held on these two policies from December 12, 2013 to January 15, 2014.

7.5.1 2013/2014 Targeted Consultation on Two New Waste Policies

Targeted consultation was held on two new policies created as a result of preliminary comments on the Proposed Source Protection Plan received from the Ministry of the Environment in late 2013.

The Ministry of the Environment identified that the risk from small quantities of liquid waste (e.g. waste oil from a car dealership) was not presently adequately regulated in the Proposed Plan.

As a result, the Source Protection Committee determined that the existing policies in the Proposed Plan were not sufficient to address the threat from liquid waste, including waste oil, which may be stored on commercial and industrial sites in the applicable vulnerable areas. To address this, the Committee voted by an email poll in early December, 2013 to create two new policies related to risk management plans. They are:

- Policy 1-7-E & F: Risk Management Plan for Waste Disposal Sites Not Regulated by Ontario Regulation 347/09; and
- Policy 1-8-E & F: Restricted Land Use Risk Management Plans for Waste Disposal Sites Not Regulated by Ontario Regulation 347/09.

It was determined that these two new policies could affect activities on about one dozen properties located in the vulnerable areas of the Village of Madoc, Town of Picton and Village of Ameliasburgh municipal water supplies. As a result, a targeted consultation (as suggested by the Ministry of the Environment) was held from December 13, 2013 to January 15, 2014 specifically for those property owners that could be affected by the two new policies.

The affected property owners were contacted directly by project staff in early December 2013 and then by letter (December 12, 2013) which included a Notice and information package. Recipients were invited to provide written comment on or before Wednesday, January 15, 2014. Affected municipalities, Centre Hastings and Prince Edward County, were also notified by letter on December 13, 2013. Information was posted on the project website at quintesourcewater.ca. No written comments were received.

7.6 2019 Consultation on Proposed Amendments to the Approved Source Protection Plan

Consultation was held on proposed updates to the Assessment Report and corresponding amendments to the Source Protection Plan in 2016 and 2017. This consultation was triggered by changes required to intake protection zone maps for the City of Belleville and the Town of Picton.

Maps for the Assessment Report and Source Protection Plan were originally created in 2009. By 2016, new areas of land had been developed within the City of Belleville and the Town of Picton. These newly developed areas had the potential for activities that could result in contaminant spills and runoff that could impact the municipal water sources. It was important to show the

possibility of impacts to the municipal water sources from the newly developed areas on updated intake protection zone maps.

The Quinte Region Source Protection Authority, in conjunction with the Quinte Region Source Protection Committee, proposed that the Assessment Report be updated and the Source Protection Plan be amended to include the newly revised intake protection zone maps for the City of Belleville and the Town of Picton. The Authority and Committee determined that in this way the reality on the ground would be better reflected in both documents. No changes were proposed to any of the policies in the Source Protection Plan; the amendment proposed was to the actual area to which to policies would apply in the City of Belleville and Town of Picton. In this way, only the two intake protection zone maps would change.

The Ministry of the Environment and Climate Change – Source Protection Programs Branch was pre-consulted. The City of Belleville and Prince Edward County staff and councils were pre-consulted regarding the proposed additional areas to be included in the intake protection zone maps. Resolutions were passed to endorse the new maps and proceed with public consultation.

A 37 day public consultation was held from November 17, 2016 to December 23, 2016. Persons with property or businesses in the newly added areas were contacted by mail and advertisements were placed in the Picton Gazette and the Belleville EMC. Social media posts identified the public consultation and a newsletter was also sent out. A notice was posted at QuinteSourceWater.ca which included an on-line comment form. The following summarizes comments that were received:

1. Four members of the public commented that the proposed intake protection zone 2 should be extended further than proposed to include a marine industrial area that falls within the Intake Protection Zone 3b. Source Protection Authority staff explained that the zones are delineated using science and a prescriptive method. It was further explained that the intake protection zone 2 for Picton is a 4-hour time of travel versus the typical 2-hour. To extend the zone, the municipality would have to a) decide that they are unable shut down the intake within the 4 hour time-period and require more time, b) determine the length of time they require to shut down the intake, then c) delineate the zone using the same method but longer time of travel. The zone cannot simply be extended to include a particular property of choice because of their current operation. No additional comments were received.
2. Ontario Ministry of Agriculture, Food and Rural Affairs (OMAFRA) asked for clarification whether agricultural activities would still be permitted until land is redeveloped and asked whether affected landowners had been contacted. Source Protection Authority staff responded that agriculture is not prohibited in the intake protection zone (IPZ) 2 for Belleville or Picton. If the zoning allows for agriculture than risk management plans are used to manage any significant agriculture threats in these zones. Once a response to these questions was received, OMAFRA had no additional comments/questions.

Ministries and any other Implementing bodies were provided with a consultation period from July 12 until August 4, 2017. Comments were received from the Ministry of the Environment, Conservation and Parks on September 15, 2017.

The Ministry of the Environment, Conservation and Parks sought clarification to ensure the proposed intake protection zone 2 extensions were delineated in accordance with the technical rules. The Ministry asked which version of the technical rules was used for the threat assessment and asked for an updated threat enumeration table and updated imperviousness percentages for the proposed zones. These comments were addressed and incorporated within the Assessment Report.

In response to the requirement of a new well system and subsequent technical work in the Village of Madoc, and after discussions with the Ministry of the Environment, Conservation and Parks the Quinte Region Source Protection Authority decided to combine the amendments for Belleville, Picton, and Madoc in to one single submission in 2019.

Consultation was held on proposed updates to the Assessment Report and corresponding amendments to the Source Protection Plan in the spring and summer of 2019. This consultation was triggered by changes required to the Wellhead Protection Areas for the Village of Madoc due to a new municipal well system.

Due to water supply challenges with its existing municipal wells, the Village of Madoc in the Municipality of Centre Hastings required an additional water source. Therefore, a new production well approximately 350 metres west of the existing Whytock well was drilled, and a new water treatment building adjacent to the new well was constructed. As part of this process, the Wellhead Protection Area for the Source Water Protection Program required an update, due to the change in well location. The Wellhead Protection Area (WHPA) was mapped around new well system, illustrating where and to what degree the groundwater is vulnerable to contamination. The original water taking model and report were updated. This update resulted in a slight shift from the previous Wellhead Protection Areas.

Commencing July 1, 2018, a new regulation under the *Safe Drinking Water Act* and an amendment to Regulation 287/07 under the *Clean Water Act* require that all Source Water Protection technical work and report amendments be completed and approved by the Ministry of Environment and Conservation and Parks prior to the new system providing water to the residents in Madoc Village.

Amendments to the Quinte Region Source Protection Plan and the associated reports were therefore required before the new well system is brought online. These amendments included updates to the text in chapter 5 of the assessment report, and updates to all corresponding maps related to the Village of Madoc's WHPA. Similarly, maps were updated in the source protection plan to reflect the new WHPA.

No new policies were added and no changes were proposed to the policies, however, the policies now apply in new geographic area (the new WHPAs). The source protection plan was

updated to include new information about policy effective dates in the newly affected areas as the existing policies were simply extended to the new wellhead protection areas. Therefore, upon the amendment's approval by the Ministry of the Environment, Conservation and Parks (MECP), the effective dates outlined on the policies commenced from the date the updated source protection plan took effect, as specified by the Minister.

Early engagement with municipal staff and municipal consultants occurred in June and July of 2018 and on July 11, 2018 and September 5, 2018, respectively, municipal councils of the Municipality of Centre Hastings and Madoc Township passed resolutions approving the proposed amendments

The Ministry of the Environment, Conservation and Parks (MECP)– Source Protection Programs Branch was engaged early in February 2019. This early engagement allowed the MECP to provide early feedback on draft technical and policy work, prior to pre-consultation. The following summarizes comments that were received:

1. Permitted daily maximum water takings were hard to determine and clarification was sought.
2. The rationale behind removing a condition from the Condition Report was asked for and a reminder to update the associated table was given.
3. Reference to the 76 provincial tables of circumstances required updates.
4. There appeared to be an overlap of the new intake protection zone 2 for Picton with the existing intake protection zone 3b. Clarification was sought.

These comments were addressed within the Assessment Report.

Pre-consultation commenced April 22 2019, with all implementing bodies. All agencies responsible for implementing policies within the source protection plan were provided with updated reports and maps, and comments were requested by May 13, 2019.

The Ministry of Transportation commented that they had reviewed the amended source protection plan and the related changes and had no concerns/comments at that time.

Letters were sent to all landowners in the new vulnerable areas on June 4, 2019, advising of the opportunity to comment, providing information about the amendments and enclosing the Notice. The 35 day public consultation began June 6, 2019. Written comments were requested by July 11, 2019. The following summarizes comments that were received:

1. The Ministry of the Environment, Conservation and Parks (MECP) commented they were pleased to provide ongoing support and comments to the source protection authority during the development and early engagement phases of these amendments. Ministry staff were satisfied that recent revisions made by the source protection authority staff to the proposed amended assessment report and plan addressed their previous comments.
2. Source Protection Authority staff received one phone call during the public consultation period regarding the public consultation letter that was mailed out to property owners in the new wellhead protection areas. The property owner was a farmer in the area who

wished to hear a summary of the letter and determine if any of the activities on his property were considered significant threats. As his property was located in the wellhead protection area C, no activities were considered significant threats.

3. One business owner commented that their business may be engaged in a few of the significant threat activities. The owner noted that should they have to curtail these activities they would oppose the location of the well. If the well location was to proceed and activities still curtailed, the business would be seeking compensation. Source protection authority staff called the business owner and discussed the circumstances that would make these activities significant threats. It was explained that none of the activities the business is engaged in are prohibited within the WHPA B. Rather, activities may require a risk management plan and a lengthy discussion about what is included in a risk management plan was had. At the end of the conversation the business owner was relieved to hear there would be no large financial implication of the new well and no further comments were received.

7.7 2022 Consultation on Proposed Amendments to the Approved Source Protection Plan

Consultation was held on proposed updates to the Assessment Report and corresponding amendments to the Source Protection Plan in 2022. This consultation was triggered a drinking water issue in the Tweed municipal well drinking water system.

Due to rising levels of nitrates in the municipal raw water supply, a nitrate issue was identified by the Quinte Region Source Protection Committee and an issue contributing area delineated. This required new maps in the assessment report and source protection plans, and policy amendments to address nitrate-related threat activities in the issues contributing area.

The Quinte Region Source Protection Authority, in conjunction with the Quinte Region Source Protection Committee, proposed that the Assessment Report be updated and the Source Protection Plan be amended to address the nitrate issue in the Municipality of Tweed.

The Ministry of the Environment, Conservation and Parks – Conservation and Source Protection Programs Branch was consulted with prior to any consultation requirement under the *Clean Water Act, 2006*. Municipal staff and councils were also consulted with regarding the identification of the issue, the issues contributing area, and proposed policy amendments. The municipal council passed a resolution on May 11, 2022 to endorse the new maps and proceed with public consultation.

The Ministry of the Environment, Conservation and Parks (MECP)– Source Protection Programs Branch was engaged early in May 2022. This early engagement allowed the MECP to provide early feedback on draft technical and policy work, prior to pre-consultation. The following summarizes comments that were received:

- Please state the version of the technical rules used for the Tweed drinking water amendments in the assessment report and source protection plan (i.e., the 2017 technical rules).
- Remove "significant groundwater recharge areas" under the water quality risk assessment as these areas are no longer associated with water quality risk assessments.
- In Chapter 5, Table 5-33, it was suggested there be the inclusion of a note indicating that additional threats may be identified for the Tweed drinking water system, specifically in WHPA-C and D, as a result of the delineation of the Nitrate Issue Contribution Area.
- Suggested wording for the amendment update table at the beginning of the source protection plan.
- For policy 3-2-E&F, consider revising the newly proposed text for policy to: In the Issues Contributing Area for Tweed, the risk management plan shall include measures to ensure the application rates, timing, and location are appropriate for crop uptake of nitrogen and to reduce the potential for Nitrate runoff or infiltration. Records retention and reporting shall be required to confirm.
- With respect to policy 3-4-E&F, the policy implies that the Ministry of Agriculture, Food and Rural Affairs (OMAFRA) could include terms/conditions in a Nutrient Management Act (NMA) instrument related to the frequency of the inspections that are carried out by the MECP. However, OMAFRA does not have the legal authority to write such a term/condition into any of the instruments they issue. As such, it is recommended that reference to the frequency of inspections as a term/condition be removed.
- The SPA should consider directing the compliance aspect of the policy to MECP as a whole and remove the explicit reference to the "Ministry of Environment Agricultural Officer" since it is the MECP that ensures its inspection program incorporates policy requirements. Compliance staff follow program direction provided by the MECP at large and by the region responsible for the delivery of the agricultural compliance program.
- Minor edits to the Explanatory Document.

These comments were all addressed prior to pre-consultation except for comments related to Policy 3-4-E&F. Quinte staff discussed with Ministry staff that Policy 3-4-E&F had several suggested amendments to address policy inefficiencies as part of the Section 36 amendments. As the Section 36 amendments would address the comments from the Ministry, it was agreed that these comments could be addressed in the later Section 36 amendments.

Ministries and any other Implementing bodies were provided a pre-consultation period from June 17 – July 8, 2022. All agencies responsible for implementing policies within the source protection plan were provided with updated reports and maps, and comments were requested by July 8, 2022.

The Ministry of Transportation asked for clarification then commented that they had reviewed the amended source protection plan and the related changes and had no concerns/comments at that time as the locations of the road signs would not change.

Hastings County commented that policies 3-2-E&F and 3-4-E&F should be clarified that soil sampling should occur prior to applying nitrates. These comments were addressed in the source protection plan. From a Planning Act perspective, Hastings County had no concerns with the amendments but asked that Quinte discuss implications of the amendments with the Municipality prior to public consultation so municipal staff and council was aware and could respond to questions from the public, should they receive inquiries.

The Ministry of the Environment, Conservation and Parks provided further comment and proposed policy text for Policy 3-4-E&F, and clarified the Ministry understood these comments will be addressed during the Section 36 amendment. Further comments related to reminders and small editorial changes. These comments were addressed except for Policy 3-4-E&F, which was explained would be addressed in the subsequent amendment.

A 35-day public consultation was held from July 26 to August 31, 2022. Persons with property or businesses in the newly delineated issues contributing area were sent letters advising of the opportunity to comment, providing information about the amendments, and enclosing the Notice. Newspaper advertisements were placed in the Tweed News. Social media posts identified the public consultation. A notice was posted at QuinteSourceWater.ca which included an on-line comment form. An additional week was provided for public comment, as few comments were received during the prescribed 35-day period. The following summarizes comments that were received:

1. Source Protection Authority staff received one phone call during the public consultation period regarding the public consultation letter that was mailed out to property owners in the proposed issues contributing area. The property owner owned a farm in the area who wished to hear a summary of the letter and determine if any of the activities on his property were considered significant threats. As only a portion of his property was in issues contributing area, staff explained the policies would only apply on the portion within the issues contributing area. Staff reviewed the revised policy text and explained the actions that would be taken to implement the policies with the property owner. The landowner noted this could save money in the long term but added agricultural activities are largely affected by weather conditions. Staff recognized this challenge and explained the proposed sampling had been completed successfully in the other wellhead protection areas of Tweed in the past. The landowner was encouraged to hear that. Finally, the landowner asked if these amendments would affect future residential development on the parcel. Staff reassured the landowner these amendments were not prohibiting any activity, rather managing the risk associated with the above noted activities. Staff explained, the only measure related to residential land uses would be related to the septic tank, should it be installed within the boundaries of the issues contributing area. The landowner was happy to hear this information and thanked staff for their time.

2. A landowner commented that their property was currently vacant, yet they were in the initial stages of planning a residential subdivision for the property. The landowner asked whether the proposed amendments would affect the future plans for the property. Staff explained the amendments were related to nitrates therefore the only potential measure would be related to septic systems if required on the property. The landowner clarified the property would be on municipal services therefore no septic systems would be required and was happy to hear the amendments would not affect the plans for the property. Staff also outlined any potential future significant drinking water threats for the property, and the landowner was happy to report none of the activities would be occurring on the property. A landowner commented they are very concerned about the rising nitrate levels and believed all measures must be taken to identify the contributing factors for the trending higher nitrates high nitrates in drinking water is a health concern and has a negative impact on property value. The landowner commented they were happy to have their septic system inspected to ensure they were not contributing to the nitrate levels in the groundwater.

No further comments were received.

8.0 Explanation of Policy Decisions

The following explanations for policy decisions are listed in the order that the policies appear in Chapter 5 of the Plan. Policies are arranged by threat grouping and each set of policies includes a brief description of the threat particulars for the Quinte Region. The policy decisions also describe the approach taken and which tools were used by the Committee in developing the policies. For more explanation of the tools available to the Committee, please see Chapter 3 in the Plan.

The sewage (Section 8.3), and agricultural (Section 8.4) and fuel (Section 8.10) policy approach sections include significant background discussion. This reflects the fact that these are the most numerous significant threats identified in the Assessment Report.

Each policy discussion is intended to provide a good explanation of the evolution of and rationale for the policy. As a result some portions of explanations for similar policies, for example, those calling for restricted land use, are repeated in each restricted land use policy. The reason for this repetition is to allow a reader to obtain sufficient details under the individual policy headings without having to search through the entire document to understand the process taken by the Committee in developing the policy.

8.1 General Policies Approach

During their deliberations, the Committee was aware of the importance of education and outreach to the successful protection of drinking water sources. The Committee also determined that several other policies were necessary to complement the policies developed for significant threats. These policies include specific actions such as spills monitoring, emergency planning,

management of transport pathways, household hazardous waste collections, road signs erected to identify vulnerable areas and raw water sampling of municipal source water.

Policy G-1: Education and Outreach

From their earliest policy discussions, the members of the Committee recognized the need for, and the importance of, education and outreach to the success of the Plan. The Committee recognized that education and outreach programs will promote:

- protection of drinking water sources;
- awareness and understanding of the objectives of the Plan;
- understanding of specific policies thereby facilitating their successful implementation;
- awareness and understanding of vulnerable areas;
- voluntary actions to address significant threats and protect water;
- understanding and use of best management practices; and
- fulfillment of the legislative requirements of the Plan.

The Committee identified various different audiences that could potentially be reached by education and outreach initiatives including, but not limited to: the public, business owners, farms and agricultural operations and associations, oil delivery and distribution companies, insurance companies, real estate brokers and boards, landowners in vulnerable areas, and persons engaged in an activity identified as a significant threat in a vulnerable area.

Initially, sets of policies were developed, each with a threat specific education and outreach policy (e.g. sewage, agriculture, pesticides, fertilizer, fuel, DNAPLs, organic solvents). In most cases the municipality was named as the implementer with the understanding that they will likely work with partners such as the Conservation Authority (Quinte Conservation) to deliver the program. Quinte Conservation has experience working across municipal boundaries to deliver a broad range of programs, including education and outreach, and has offered to assist municipalities and other interested partners with the coordination and implementation of these programs.

Pre-consultation feedback suggested rolling all the separate education and outreach policies into one general policy. As part of their financial considerations, the Committee decided that this will allow for efficiencies of cost, scale and opportunity and improve the likelihood of the successful delivery of education and outreach related to source water protection in the region. It will also optimize partner participation and support.

In their pre-consultation comments:

- The Ministry of Agriculture, Food and Rural Affairs noted that they have materials available that could assist with education and outreach regarding agricultural activities and the application of pesticides and fertilizers;
- The Hastings and Prince Edward Counties Health Unit also offered their support for the delivery of the education and outreach program; and

- Kingston Frontenac Lennox and Addington Public Health offered limited support for education and outreach programs.

As a result of pre-consultation the Committee incorporated a line into the policy encouraging municipalities to promote voluntary action to protect sources of drinking water and water conservation measures such as water saving fixtures, tips on how to save water in the house, and water conserving appliances (see Section 5.0 Water Quantity Considerations).

During review of the Draft Plan, the Bayside IPZ 1 was added to the applicable areas for this policy (see Section 6).

In July 2012 comments on the Proposed Plan, the Ministry of the Environment suggested a clarification to identify applicable areas related to significant drinking water threats versus those for moderate and low threats and this was subsequently made.

In comments on the Proposed Plan the Ministry of the Environment noted that the household use of both DNAPLS and commercial fertilizer were significant threats in the applicable vulnerable zones and that documentation was required in the Explanatory Document to show how the Committee had addressed this threat.

- DNAPLS are a significant threat at any quantity in WHPA A, B and C (Section 8.11).
- Non-agricultural application of commercial fertilizer is a significant threat in WHPA A, and B and the IPZ 1 of Belleville, Deseronto, Ameliasburgh, Napanee and Point Anne and the IPZ 1 and 2 of Picton (Section 8.6).

The Committee determined that it was not appropriate or practical for the Source Protection Plan to prohibit or require risk management plans for small quantities of DNAPLS in products like nail polish remover or furniture stripper that may be found in private residential properties or for the application of commercial fertilizer on those properties. The Committee determined that a more effective approach would be a targeted education and outreach program to encourage the proper storage and disposal of small quantities of DNAPLS and the proper use of non-agricultural commercial fertilizer on residential properties. This targeted education and outreach complements policy G-7-E & F which encourages municipalities to provide opportunities for residents to properly dispose of household hazardous waste.

The Committee was, therefore, of the opinion that these two policies (G-1 and G-7-E & F) will adequately address the threat from the household use of DNAPLS and non-agricultural commercial fertilizer where they are a significant threat and that these policies if implemented will promote the achievement of the objectives of the Plan that the threat ceases to be/never becomes significant. Further, the Committee was of the opinion that a policy to regulate or prohibit the activity for small quantities of DNAPLS and non-agricultural commercial fertilizer in and around private residential households was not necessary to achieve those objectives (O. Reg. 287/07 ss. 40(2)(6)).

After the September, 2014 approval of the Source Protection Plan, it was noted that the explanation for the use of education and outreach to address the significant threat from home heating oil tanks in the WHPA B had not been included in this document and so, it was added here (and in the explanation of the policy development of the fuel policies and policy 15-4). As the Committee had originally considered a targeted education and outreach program to be effective to address threats from home heating oil, the Committee determined that it was appropriate for the Source Protection Plan to specify only education and outreach to address the threats from home heating oil tanks within the WHPA B. The Committee determined that education and outreach within the WHPA B would promote the achievement of the objectives of the Plan that the threat is managed and therefore ceases to be/never becomes significant within the WHPA B. Further, the Committee was of the opinion that a policy to regulate the activity of handling and storage of fuel for storage tanks greater than 250 and less than 2,500 litres below and partially below grade in in the WHPA B was not necessary to achieve those objectives (O. Reg. 287/07 ss. 40(2)(6)).

Policy G-2-F: Updating Spill Response Procedure and Emergency Response Plans

The original intent of this policy was to assist in assessing the effectiveness of source protection policies by reviewing information from the Ministry of the Environment and the Spills Action Centre related to spills and contamination in the Quinte Region.

The Committee developed policies to manage existing drinking water threats as well as prohibit some activities. A means of monitoring the success of these policies is through a review of the records of spills and contamination from activities taking place in the vulnerable areas. The occurrence of spills and contamination in a vulnerable area may be an indication that the policies do not adequately address drinking water treats. This review would include whether drinking water threats are being adequately managed and if the policies are protecting municipal drinking water. The Committee determined that other information such as non-compliance with provincial instruments would also help to assess if the policies are effective.

Pre-consultation input from the Ministry of the Environment suggested that the policy specify that the Spills Action Centre update their Emergency Response Plan to meet the requirements of this policy. The policy was amended accordingly.

The Committee considered that information gathered through this policy would assist in ensuring that future versions of the Plan adequately addressed the identified threats. However, spills are not identified as a significant threat and so the Ministry of the Environment, in their comments on the Draft Plan, suggested that the means to address spills is under Section 26(6) of Regulation 287/07. The Committee made the change accordingly and removed other requirements in the policy text because Section 26 (6) refers specifically to highways, railway lines and shipping lanes. The former policy had covered any spill in the entire WHPA A, B, C and E or IPZ 1, 2 and 3 with a vulnerability score of 8 or higher where significant threats could occur unrelated to highways, railway lines or shipping lanes. During the revisions the applicable area was changed to "All vulnerable areas where the release of contaminants in an IPZ or WHPA could result in

contamination of the drinking water supply.” This includes the Bayside IPZ 1, which was added to the applicable areas for this policy (see Section 6).

The Committee discussed pipelines located in the vicinity of vulnerable zones at their meetings in May and September 2013. Section 26(6) does not specifically refer to pipelines and so pipelines are not listed in the policy; however, it is the Committee’s intent that the report from the Ministry should also include spills from pipelines in the vulnerable areas.

During implementation, the Committee strongly encourages the Ministry of the Environment to report other spills in the vulnerable areas. The Committee determined it is important for the Ministry of the Environment to recognize the vulnerable zones in its emergency planning. The *Clean Water Act, 2006* did not contain a tool to allow the Committee to ask for reporting on spills in the entire area. The Committee considered that there may be stronger measures available to them in the next round of planning.

In January 2014 comments on the Proposed Plan, the Ministry of the Environment asked the Committee to make monitoring policies more outcome-based and where the Committee has specific, detailed reporting requirements that the Committee consider revising the language to make these ‘recommendations’. The Committee considered these comments and revised the wording accordingly.

Policy G-3-E & F: Emergency Planning in Intake Protection Zones and Wellhead Protection Areas

The intent of this policy is to protect municipal drinking water by requesting municipalities to include locations of Intake Protection Zones and Wellhead Protection Areas in their emergency response, spill contingency and spill prevention plans.

During policy development, the Committee, with the feedback from the Emergency Response and Municipal Water Treatment Plant Operators Working Group, determined that the emergency response, spill contingency and spill prevention plans should contain maps indicating the location of Intake Protection Zones and/or Well Head Protection Areas and the specific action to be taken in an emergency related to the protection of drinking water sources.

This policy also supports the intent of Policy G-8-E & F: Road Signs, that helps emergency responders identify areas where extra caution and consideration should be given to protect the drinking water sources.

The Committee determined it was important to encourage municipalities to change their emergency response plans to accommodate events that could occur in the vulnerable zones that could adversely affect the drinking water source. For example fire fighting runoff may contain contaminants dangerous to the drinking water supply. Emergency plans could be improved to include fire management protocols to protect water supplies. Emergency plans should also include water system operator notification so the intake may be turned off in time to prevent entry of pollutants or toxic substances, from fires, collisions or other events that may lead to any of the prescribed drinking water threats, entering into the public water supply.

The Committee considered the financial implications of this policy to be minimal because emergency response plans are updated regularly and maps required of the Intake Protection Zones and Wellhead Protection Areas may be obtained from the Quinte Source Protection Authority.

As a result of consultation on the Draft Plan, the text of the policy was clarified and the tool for this policy was changed from Emergency Planning to Specify Action pursuant to Section 26 (6) of Regulation 287/07. This change was made because spills are not identified as a significant threat and so the means available to the Committee to address this is under Section 26(6). Even though this section of the regulation refers specifically to highways, railway lines and shipping lanes it remained the Committee's intent for municipal emergency plans to be updated to include the maps of the WHPAs and IPZs so that all of the vulnerable areas are addressed, not only the locations where those areas are crossed by a road or railway.

The Committee discussed pipelines located in the vicinity of vulnerable zones at their meeting in May and September 2013. Section 26(6) does not specifically refer to pipelines and so pipelines are not listed in the policy; however, it is the Committee's intent that emergency responders be aware of the vulnerable areas near pipelines in order to protect municipal water sources from contamination in the event of pipeline leak or rupture.

During implementation, the Committee strongly encourages municipalities to recognize the vulnerable zones in their emergency planning. The Committee determined that this was important in order to adequately protect drinking water sources.

The applicable area for the policy is "All vulnerable areas where the release of contaminants in an IPZ or WHPA could result in contamination of the drinking water supply." This includes the Bayside IPZ 1, which was added to the applicable areas for this policy (see Section 6).

Policy G-4-E: Existing Transport Pathways – Well Decommissioning or Upgrading

The intent of this policy is to facilitate the decommissioning or upgrading of all abandoned wells and the upgrading or decommissioning of substandard wells in municipal wellhead protection areas.

The Committee recognized the rural nature of land use in and around the communities serviced by municipal wells. In these areas there is significant potential for the presence of abandoned wells and the need to upgrade wells that do not meet the Ontario Regulation 903 construction standards. These wells can present a hazard as they provide a transport pathway or conduit for the movement of contaminants from the ground surface into the aquifer. The Committee had an opportunity to learn about well decommissioning and the risk that unused wells present to municipal water sources when they witnessed the process of a well decommissioning in a WHPA A during one of several tours of the region.

The Ministry of the Environment has prepared a *Manual on Water Supply Wells – Requirements & Best Management Practices* (Dec, 2009). The manual provides a summary of the water well regulations and best management practices including advice on upgrading wells and

decommissioning abandoned wells. The Regulation requires a property owner to decommission a well that is not being used or maintained for future use. Other reasons to decommission a well include if the well produces water that is not potable, is mineralized, has natural gas or permits the movement of contaminants between subsurface formations. The best management practices manual and Regulation also indicate that a well owner must maintain the well at all times after the completion of the well's structural stage in a way that prevents surface water and other foreign materials from entering the well. In some cases this may require a well to be upgraded in order to prevent the movement of contaminants into the groundwater.

In considering the potential for unused, abandoned or improperly maintained wells to occur, and requirements of the Ministry of Environment, the Committee determined it was appropriate to write this policy requiring that, where indicated, wells be properly decommissioned or upgraded. Quinte Conservation is a licensed water well contractor and employs two licensed water well technicians who provided expertise to the Committee. The Committee considered the creation and future implementation of this policy would help to raise awareness of the need to protect groundwater in the vulnerable areas around municipal wells.

During pre-consultation the Ministry of the Environment recommended that Policies G-4-E and G-6-F be combined. The Committee determined that the policies were distinct and would remain separate in order to facilitate ease of implementation.

During consultation on the Draft Plan the Ministry of the Environment suggested some changes to the wording of the policy to allow for ease of implementation and increase effectiveness. Specifically the wording was changed from “proactively enforce” to “prioritize inspections in WHPAs to identify wells that do not meet requirements”. The Committee concurred with this suggestion because it is the Ministry of the Environment’s job to enforce Regulation 903 and so to require enforcement in the policy was not required. In order to meet the intent of the policy and make it more effective, the Committee added that each municipality should require wells, in the applicable area, constructed prior to the passing of Regulation 903 be upgraded to meet the current requirements for new well construction.

The applicable area was also revised to make the implementation of the policy more feasible by removing the WHPA D. The Committee considered that unmaintained and substandard wells in WHPA D, which is further from the water supply, had a lower priority because wells in this zone have less potential to impact the water supply than those in WHPAs A, B and C. The Committee determined that addressing the condition of wells in the WHPAs A, B and C would concentrate the work in the areas where the action will have the greatest positive impact on the water source.

A request was made by the Ministry of the Environment that this policy take effect on such date as the Director determines based on a prioritized program review. The Committee determined that within three years of the Plan taking effect was preferable. The Committee identified that leaving the effective date up to the Director provides a loop-hole in the policy which may make it appear that it is possible the policy may not ever be implemented. The Committee also identified that providing the flexibility for the Ministry of the Environment to essentially name their own

effective date would not be seen to be fair and equitable to other policy implementers who must comply with effective dates as they appear in the policy.

The Committee determined that the effective date of three years of the Plan taking effect was fair to municipalities and the Ministry of the Environment because it is the requirement that the mechanism be in place to allow the policy to be implemented, not that all the wells actually be upgraded to meet Regulation 903 within three years. The Committee also identified in their discussion that this policy implementation will be facilitated and the policy outcome more successful if the Province continues to provide funding for the Ontario Drinking Water Stewardship Program in sufficient amounts to encourage those with substandard, unmaintained and/or abandoned wells to come forward and act on remediating this threat.

In January 2014 comments on the Proposed Plan the Ministry of the Environment noted that the oversight of wells is an important part of the Government of Ontario objectives to protect Ontario's aquifers and groundwater supplies used by Ontarians for present and future drinking water users and that the Ministry continues to be responsible for all compliance and enforcement activities related to the construction, maintenance and abandonment of wells.

In the comments, the Ministry of the Environment asked the Committee to consider revising the policy to allow for a provincially consistent approach that will still meet the intent of the original policy. The Committee concurred, revising the policy text to strongly encourage the Ministry to undertake an updated risk-based program analysis of the wells regulation compliance program. The Committee noted that the program analysis should consider:

- increased Ministry of the Environment field presence with well contractors;
- complaint response prioritization where the presence of a transport pathway would endanger sources of municipal drinking water; and
- a focus of resources in areas where improperly constructed, maintained or abandoned wells may increase the potential threat to municipal drinking water sources.

The Ministry of the Environment asked the Committee to make monitoring policies more outcome-based and where the Committee has specific, detailed reporting requirements that the Committee consider revising the language to make these 'recommendations'. The Committee considered these comments and revised the wording accordingly.

Policy G-5-F: Transport Pathways Preventative Measures

The original intent of this policy was to protect the municipal water supply by discouraging the creation of future transport pathways, including new wells within 100 metres of a municipal well. Following consultation the applicable areas for this policy were extended beyond the WHPA A.

The Committee recognized that all wells, excavations, test holes, geothermal bore holes, pits and quarries etc. may potentially endanger the raw water supply of a drinking water system. New transport pathways may present a risk and should be discouraged in the WHPA A. The WHPA A is the most vulnerable area around a municipal well and in most cases any lots or buildings

would be serviced by the municipal water supply, meaning a new well would be unnecessary for a water supply. However, recognizing provisions in the regulations under the *Clean Water Act, 2006* the Committee deemed it appropriate to be proactive in preventing new transport pathways in the areas closest to municipal wells. Currently not all of the potential transport pathways, such as vertical geothermal bore holes, are adequately regulated to protect water sources.

During consultation on the Draft Plan it was discovered that existing regulations governing vertical geothermal bore holes were not adequate to assure the Committee that water sources were not endangered by this activity. During consultation on the Draft Plan an information session was hosted by the Ministry of the Environment that provided an overview of current regulations and practices in the geothermal industry. This information was used by the Committee to revise and reword the policy to add clarity and specifics so as to ensure protection of drinking water sources. Municipalities may, through the building permit process, require permits for activities such as installing geothermal systems, including vertical bore holes in accordance with the Ontario Building Code. The intent of the changes was to ensure that municipalities administered this building permit process. Changes to the policy wording required a corresponding addition to the applicable areas in order to make clear where the policy applies specifically to Earth Energy Systems. During discussion the Committee decided to add “Preventative Measures” in the title of the policy to better reflect the content and purpose of the policy.

Geothermal energy systems were not identified in the Updated Assessment Report, 2011 as a local threat and so the Committee was unable to create a policy with which the municipality must conform. As a strategic action policy municipalities must have regard for this policy. However, the actions in this policy are strongly encouraged by the Committee and seen as required to adequately protect the water sources. The Committee identified that earth energy systems be added to the list of prescribed drinking water threats in the next round of source protection planning.

Policy G-6-F: Inspections of Transport Pathways – Wells WHPA B, C and D

The intent of this policy is to protect the municipal water supply by requiring the Ministry of the Environment to prioritize inspection of all new wells constructed in the WHPAs B, C and D to ensure that they meet the requirements of Ontario Regulation 903.

The Committee developed Policy G-4-E to require decommissioning of abandoned wells and upgrading of wells in wellhead protection areas, and to discourage the construction of new wells in WHPA A. Following the same rationale, (e.g. transport pathways can endanger drinking water) it was deemed necessary to address the construction of new wells in the WHPAs B, C, and D. The Ministry of the Environment is responsible for administering Regulation 903 governing the construction of new wells. Under the Regulation contractors and technicians are licensed and are required to complete mandatory training in order to maintain certification. The Regulation requires a standard for construction however; no approval or mandatory inspection of a new well is required. Currently, inspections of construction and compliance with the

Regulation are completed randomly or as required when complaints are received by the Ministry. These new wells, if not properly constructed, could serve as transport pathways resulting in contamination of the water supply. The Committee determined that all new wells in the WHPAs B, C, and D should be inspected by the Ministry of the Environment in order to ensure that the well has been properly constructed.

As a result of consultation on the Draft Plan the Ministry of the Environment asked the Committee to 'prioritize' inspections of all new wells in the WHPA B and C, and remove WHPA D from the policy because the policy must relate to significant drinking water threats under Section 27 (1)(a) Ontario Regulation 287/07. The Committee chose to specify Section 27 (1)(b) of Ontario Regulation 287/07 in order that WHPA D may continue to be included in the policy. The Committee determined that this requirement would not be onerous because all new wells should be constructed in accordance with Ontario Regulation 903.

In January 2014 comments on the Proposed Plan the Ministry of the Environment noted that the oversight of wells is an important part of the Government of Ontario objectives to protect Ontario's aquifers and groundwater supplies used by Ontarians for present and future drinking water users and that the Ministry continues to be responsible for all compliance and enforcement activities related to the construction, maintenance and abandonment of wells.

The Ministry suggested a revision to the policy to allow for a provincially consistent approach which they considered would meet the intent of the original local policy and the Committee concurred.

The Ministry of the Environment asked the Committee to make monitoring policies more outcome-based and where the Committee has specific, detailed reporting requirements that the Committee consider revising the language to make these 'recommendations'. The Committee considered these comments and revised the wording accordingly.

Policy G-7-E & F: Management of Household Hazardous Waste

The intent of this policy is to prevent the contamination of municipal water sources by providing adequate household hazardous waste collection opportunities.

The Committee developed this policy to complement the DNAPL, organic solvent, non-agricultural application of commercial fertilizer and other policies. Education and outreach programs regarding DNAPLs, organic solvents and commercial fertilizer and pesticides have been called for in Policy G-1. The Committee wanted to ensure that residents have the opportunity to dispose of hazardous materials safely and conveniently. As a result, the Committee determined that municipalities should provide their citizens with the opportunity to dispose of hazardous materials in a safe manner.

Most municipalities already provide this service and no objections related to this policy were received. Therefore, the Committee determined there would be little or no new costs to the implementers of this policy.

During review of the Draft Plan, the Bayside IPZ 1 was considered to be included in to the applicable areas for this policy (see Section 6).

Policy G-8-E & F: Road Signs for Intake Protection Zones and Wellhead Protection Areas

The purpose of signing vulnerable areas is to make emergency responders immediately aware that they are in a drinking water source area that is vulnerable to contamination and that special consideration should be given to urgent spill containment and clean-up in order to protect the nearby drinking water source. Travelers along the signed roads will also become familiar with the drinking water protection areas and may take the initiative to learn more about source protection.

Chairs of the Source Protection Committees across the province agreed that a common sign to identify the most vulnerable areas in Ontario would be ideal. The Quinte Chair, Project Manager, Communications Coordinator, and Ministry of the Environment Liaison served on the provincial committee working with the Ministry of Transportation to develop this common approach. In their pre-consultation comments the Ministry of Transportation stated that they were supportive of working with the Ministry of the Environment and Source Protection Committees to develop a common provincial 'drinking water protection zone' road sign.

Standard wording for this policy was developed by the Ministry of the Environment and the Ministry of Transportation. The Committee concurred that the standard wording was acceptable. During review of the Draft Plan, the Bayside IPZ 1 was considered to be included in the applicable areas for this policy (see Section 6).

The legal effect of this policy is strategic and is therefore not legally binding on the municipality. The Committee identified that municipalities could implement this policy as funding permits.

Policy G-9-F: Raw Water Sampling Under the Drinking Water Surveillance Program for Municipal Drinking Water Systems

During the development of the Updated Assessment Report, 2011, the Committee discussed the Drinking Water Surveillance Program available to owners of municipal drinking water systems. The Committee noted, at that time, they wanted to include a policy in the Plan to encourage municipal water system owners to participate in this voluntary program.

The Drinking Water Surveillance Program, undertaken by the Ministry of the Environment's Environmental Monitoring and Reporting Branch, monitors trends and contaminant levels for a wide variety of parameters, thereby improving knowledge of new emerging contaminants and supporting standards and policy development. The program focuses largely on monitoring for chemicals and radionuclides that are not currently regulated and are emerging contaminants. As scientific advances identify more health impacts of chemicals and radionuclides, standards and guidelines are reassessed or developed.

The Committee became aware that there is a waiting list for municipalities to participate in this program and that not all parameters, relevant to the specific drinking water threats, are currently tested. Testing parameters evolve based on need in the province; therefore the Committee determined that there was a need to focus on parameters related to prescribed drinking water threats. As a result, the Committee created a policy requesting the Ministry of the Environment to expand the program for municipalities with drinking water systems to participate.

The Committee was concerned that there is not enough data collected related to raw (prior to treatment) water quality. This information will assist in evaluating the untreated source water and the potential impacts from prescribed drinking water threats.

In considering financial implications, the Committee identified that the Drinking Water Surveillance Program is funded by the province so there will be minimal cost to participating municipalities. Municipalities are currently responsible for collection and shipment of samples and the province provides laboratory analysis.

The Committee added this policy as a result of discussion of the Draft Plan.

As a result of consultation on the Draft Plan and comments from the Ministry of the Environment, the Committee changed this policy to be an Outreach and Education policy under Section 22 (7) of the *Clean Water Act, 2006*. The wording was changed to encourage the Ministry to support the program analysis and expansion of the Drinking Water Surveillance Program and to reach out to owners of the municipal drinking water systems. The Committee recognized that there is not enough raw water data and wanted to encourage the municipalities and Ministry to work together to achieve a better understanding of the raw water resources in order to better protect them. Applicable areas were changed from all WHPAs and IPZs to WHPA As and IPZ 1s to reflect the locations of the wells and intakes which occur only in these zones.

Comments from the Bay of Quinte Remedial Action Plan called the Committee's attention to the need for more information about Microcystin-LR. Microcystin-LR is a naturally occurring toxin produced by cyanobacteria, also known as blue-green algae. Blue-green algae blooms, which have occurred on the Bay of Quinte, may produce a toxin that may be harmful to humans and animals if ingested or when there is direct contact. Boiling, chlorination and ultra-violet treatments are not effective and may enhance the release of toxins. During past occurrences of blue-green algae blooms on the Bay of Quinte, municipal drinking water supplies were closely monitored. The Committee decided to encourage the Ministry of the Environment to include the toxin Microcystin-LR as a threat in the next round of source protection planning.

The Bayside IPZ 1 is considered to be included in the applicable areas for this policy (see Section 6).

In January 2014 comments on the Proposed Plan, the Ministry of the Environment suggested an amendment to the wording of this policy. The Ministry noted that the intent of this policy is to provide municipal drinking water system owners an opportunity to monitor and assess the

potential impact of land-based activities/threats on the raw water quality. However, it was noted that this does not align with the current mandate of the Drinking Water Surveillance Program.

The Committee concurred and changed the policy wording to suggest the Ministry of the Environment evaluate the need to expand the Drinking Water Surveillance Program and review the mandate of the program to include monitoring for contaminants originating from the threat activities identified in the Assessment Report and; if expanded the Ministry should review opportunities to include additional drinking water system owners and; if additional drinking water systems can be added, municipalities that are not already included in the program should participate.

8.2 Waste Policies Approach

Waste disposal activities are considered potential threats to drinking water due to the potential for leaching of many different types of contaminants into ground and surface water. There are many different types of waste disposal sites required to deal with the region's residential, institutional, commercial and industrial waste. However, few waste disposal sites are located within the vulnerable areas of municipal drinking water systems.

Based on the definition of a waste disposal site, in part V of the *Environmental Protection Act*, and threat activities, there have been no active waste disposal sites identified as significant threats to municipal drinking water sources in the Quinte Region. For this reason, no working group was established to aid in policy development. However, past land use activities, also known as conditions include closed landfill sites. Through the science of the Updated Assessment Report, 2011, contamination which could be a concern to the drinking water intakes was identified at two closed landfill sites, one in Picton and one in Belleville.

Eight policies were developed by the Committee. Seven policies deal with waste disposal activities that are, or would be, significant drinking water threats in the vulnerable areas. Although no existing waste disposal sites were identified, the Committee created policies for both existing and future as it is possible that a small existing site may have been missed in the inventory or may have been established at the same time as the Plan was being created. The Committee, as a result of their discussions, concluded it was necessary to ensure that all waste disposal sites are adequately managed, not only those that would be a significant threat. One policy (1-6-E & F) addresses moderate and low threats from waste disposal sites.

The approach of the Committee was to prevent the establishment of new, or the expansion of existing landfill sites in vulnerable areas by requesting that the Ministry of the Environment and the municipality not approve new sites in the vulnerable areas. For existing sites the Ministry of the Environment has been asked to complete a review of prescribed instruments to ensure sites are properly managed. Policies have also been developed to address potential concerns at closed landfill sites, including monitoring and review, to ensure that the drinking water source is protected. The policies also ensure that existing and new waste disposal sites (including closed landfills) that are, or would be, moderate and low drinking water threats are properly managed.

In preliminary comments in late 2013 on the Proposed Source Protection Plan, the Ministry of the Environment identified that the risk from small quantities of liquid waste (e.g. waste oil from a car dealership) is not presently regulated through existing provincial instruments, such as Certificates of Approval or Environmental Compliance Approvals. This was discussed by Ministry staff, project staff at Quinte Conservation, the Source Protection Committee Chair and the Ministry liaison representative during a conference call on November 26, 2012.

Three waste related circumstances were identified, not currently regulated by Ontario Regulation 347/09, which can still constitute a significant drinking water threat and therefore must be addressed by policies in the Plan. When the policies for waste threats were originally developed, the Committee was advised that risk management plan policies could not be used to address waste related threats because these types of threats are already regulated under Ontario Regulation 347/09 using Environmental Compliance Approvals (formerly Certificates of Approval). However, because the three circumstances identified by the Ministry are not regulated through 347/09, risk management plans are considered an acceptable tool to address these specific threats.

Following the conference call, the Committee and project staff communicated by email regarding this; and in examining the circumstances and related threats, the Committee determined that the existing two policies in the plan, 1-1-F Prescribed Instrument for Prohibition of Future Waste Disposal Sites and 1-3-F Land Use Planning for Prohibition of Future Waste Disposal Sites were not sufficient to address the threats. As a result two new additional policies (1-7-E & F and 1-8-E & F) were developed in December, 2013 (see policy discussions). A targeted consultation for these two new policies was held from December 13, 2013 and January 15, 2014 with the approximately one dozen persons engaged in the newly identified significant threat activities. See section 7.5.1.

Policy 1-1-F: Prescribed Instrument for Prohibition of Future Waste Disposal Sites

This policy was created to ensure that the Ministry of the Environment does not issue a prescribed instrument in the vulnerable areas where new or expanding waste disposal sites are, or would be, considered a drinking water threat. There are no existing active landfill sites in the Quinte Region that are significant drinking water threats and it was the Committee's determination that current land use designations in the vulnerable areas would not allow for waste disposal sites as defined in Part V of the *Environmental Protection Act* in these areas.

A waste disposal site in these vulnerable areas would create a significant threat to the drinking water supply. In the event a contaminant entered the drinking water supply, clean up and remediation would be a lengthy and costly process. An alternate drinking water supply may have to be found, increasing the expense and hardship on communities or individuals affected.

The Committee determined that the threat from future waste disposal sites would be addressed through the use of the prescribed instrument and land use planning tools (as per Policy 1-3-F). Other available tools such as education and outreach would not ensure that no new waste

disposal sites were created. The *Clean Water Act, 2006* does not allow for the use of Part IV powers (outright prohibition or the use of risk management plans) to manage waste disposal sites when the waste disposal site is managed by a prescribed instrument. The Committee effectively prohibited future waste disposal sites in the vulnerable areas through the use of prescribed instruments. The complementary policy (Policy 1-3-F) was developed directing the municipality to use a land use planning approach to prohibit future waste disposal sites or the expansion of existing waste disposal sites in these vulnerable areas.

During preparation of the DRAFT updated Plan in 2022 (as a result of the identification of a nitrate issue, creation of an issues contributing area, and updating of the Assessment Report with the results of the issues based threats assessment for the Village of Tweed municipal wells), the applicable area of this policy was updated to include the new issues contributing area.

Policy 1-2-E: Prescribed Instrument for Management of Existing Waste Disposal Sites

The environmental approval process of the Ministry of the Environment is an existing and well-established means for addressing environmental protection at waste disposal sites. The policy directs the Ministry of the Environment to review and amend any applicable prescribed instruments (Certificates of Approval, Environmental Compliance Approvals) to ensure terms and conditions are updated to protect sources of drinking water.

Pre-consultation comments from the Ministry of the Environment recommended a change to the implementation schedule for this policy to three years (from the date the Plan takes effect) for compliance and the Committee agreed. The suggestion was also made that the compliance date may alternately be made at the discretion of the Director. The Committee did not agree with this suggestion as they considered that three years was sufficient.

During review of the Draft Plan the request was made again by the Ministry of the Environment that this policy take effect on such date as the Director determines based on a prioritized program review. The Committee determined that within three years of the Plan taking effect was preferable. The Committee identified that leaving the effective date up to the Director provides a loop-hole in the policy which may make it appear that there is the possibility that the policy may not be implemented. The Committee also identified that providing the flexibility for the Ministry of the Environment to essentially name their own effective date would not be seen to be fair and equitable to other policy implementers who must comply with effective dates as they appear in the policy.

In comments on the Proposed Plan, the Ministry of the Environment recommended the removal of a redundant paragraph in the policy regarding closed landfills that is not required because it is already covered by policies 1-4-E and 1-5-F. Comments also asked the Committee to make monitoring policies more outcome-based and where the Committee has specific, detailed reporting requirements that the Committee consider revising the language to make these

'recommendations'. The Committee considered these comments and revised the wording accordingly.

Policy 1-3-F: Land Use Planning for Prohibition of Future Waste Disposal Sites

This policy was created to ensure that municipalities prohibit future waste disposal sites or the expansion of existing waste disposal sites, in vulnerable areas where they would be a significant threat, through the use of land use planning.

Municipal land use planning is an effective way to protect sources of drinking water and direct development away from vulnerable areas. Based on current land use in the vulnerable areas the potential for the development of such sites is minimal. A waste disposal site in these vulnerable areas would create a significant threat to the drinking water supply, and in the event a contaminant entered the drinking water supply, clean up and remediation would be a lengthy and costly process. Contamination could also mean an alternate drinking water supply would have to be established, creating additional expense and hardship to the communities or individuals affected.

The Committee identified that other available tools such as education and outreach would not be effective to prevent a new waste disposal site from being created. The *Clean Water Act, 2006* does not allow for the use of Part IV powers (outright prohibition or the use of risk management plans) to manage the threat from waste disposal sites when the waste disposal site is managed by a prescribed instrument. The Committee determined that prohibition, through land use planning, and prescribed instruments (as per Policy 1-1-F) were the only tools available to ensure that no threats from waste disposal sites were created in the most vulnerable areas. The complementary policy (Policy 1-1-F) was developed directing the Ministry of the Environment to use prescribed instruments to prohibit future waste disposal sites or the expansion of existing waste disposal sites in these vulnerable areas.

Wording of the policy was improved to reflect pre-consultation input from the Ministry of Municipal Affairs and Housing and local municipal planners.

During preparation of the DRAFT updated Plan in 2022 (as a result of the identification of a nitrate issue, creation of an issues contributing area, and updating of the Assessment Report with the results of the issues-based threats assessment for the Village of Tweed municipal wells), the applicable area of this policy was updated to include the new issues contributing area.

Policy 1-4-E: Prescribed Instrument – Conditions for Management of Closed Landfill Sites

The Committee determined it was necessary that significant drinking water threats related to the former landfill sites in Picton (Delhi Park) and Belleville (Zwicks Park) be managed by the Ministry of the Environment. These two sites were identified as pre existing 'conditions' in the

Updated Assessment Report, 2011. The Committee specified the prescribed instrument approach because currently there is no formal mechanism, agreement or closure plan in place to monitor these sites on a regular basis. The City of Belleville conducts water quality monitoring at Zwicks Park and this policy will formalize the monitoring program. The Committee determined that monitoring was necessary to ascertain if contaminants from the sites are reaching the intakes and to ensure public safety related to the sources of drinking water. The Ministry of the Environment has the authority to identify specific monitoring requirements to adequately manage the sites and protect the sources of drinking water through the use of instruments.

During pre-consultation the Ministry of the Environment recommended that this policy and the next (Policy 1-5-E) be grouped separately from the waste policies because they are water quality threats based on pre-existing 'conditions' rather than existing activities. The Committee decided that as these are the only two condition policies and both pertain to waste disposal sites, it is best to leave them with the other waste disposal site policies. Had there been other condition-based policies grouping them in one section would have been appropriate.

In commenting on the Draft Plan the Ministry of the Environment requested the removal of the clause requiring them to prioritize annual compliance inspections based on proximity to drinking water systems where significant threats are being managed through the use of the prescribed instruments. The Committee agreed that it was not necessary to prioritize inspections. The Ministry would have to review the prescribed instruments as they monitor each site so the requirement for compliance inspections does not need to be spelled out.

During discussion of financial considerations the Committee identified that the relatively small cost to monitor these closed landfill sites is justifiable because of the importance of knowing the effect they have on the water sources. If monitoring identifies that remedial action is required appropriate and informed decisions may be made.

In January 2014 comments on the Proposed Plan, the Ministry of the Environment asked the Committee to make monitoring policies more outcome-based and where the Committee has specific, detailed reporting requirements that the Committee consider revising the language to make these 'recommendations'. The Committee considered these comments and revised the wording accordingly.

Policy 1-5-E: Management of Closed Landfill Sites

The Committee determined it was essential that significant drinking water threats related to the former landfill sites in Picton (Delhi Park) and Belleville (Zwicks Park) be managed by the municipality. As the owner of the drinking water systems, the municipality is required to conduct water sampling. However, contaminants that may be leaching from the former landfill sites may not typically be tested for in the raw water. Therefore, additional sampling of the raw water is required to determine if contamination from the former landfill sites is present at the intake. This requires an analysis and comparison of contaminants identified at the landfill sites (as per Policy 1-4-E) with parameters identified in the raw water. If it is determined that there are contaminants

in the raw water that are originating from the former landfill sites, actions must be undertaken to ensure that the contamination is adequately managed.

During pre-consultation the Ministry of the Environment recommended that this policy and the previous (Policy 1-4-E) be grouped separately from the waste policies because they are water quality threats based on pre-existing 'conditions' rather than existing activities. The Committee decided that as these are the only two condition policies and both pertain to waste disposal sites, it is best to leave them with the other waste disposal site policies. Had there been other condition-based policies grouping them in one section would have been appropriate.

During review of financial considerations the Committee identified that the relatively small cost to monitor these closed landfill sites is justifiable because of the importance of knowing the effect they have on the water sources. If monitoring identifies that remedial action is required appropriate and informed decisions may be made.

Policy 1-6-E & F: Prescribed Instrument for Management of Existing and Future Waste Disposal Sites (Moderate Threat)

The management and disposal of waste can result in contamination of both ground and surface water from leaks, spills and leaching of contaminants. Waste disposal sites are usually large in scale and clean-up and remediation may be complicated and require much time and money. For these reasons, the Committee determined it was essential to include policies for all waste disposal sites in the Quinte Region. The Committee wanted to ensure that any existing (including closed landfills) and new waste disposal sites that are or would be moderate and low drinking water threats are properly managed. To manage these threats the Committee recommended that the Ministry of the Environment put necessary measures in place through the Environmental Compliance Approval/Certificate of Approval process. (This policy is for moderate threats and applies to the whole Quinte Region watershed.)

Through pre-consultation, the Ministry of the Environment originally recommended that the effective date of the policy be increased to five years from the date the Plan takes effect. The Committee discussed this suggestion and agreed to lengthen the effective date. However, this was modified following further input as described below.

In commenting on the Draft Plan the Ministry of the Environment requested the removal of the clause requiring them to prioritize annual compliance inspections based on proximity to drinking water systems where significant threats are being managed through the use of the prescribed instruments. The Committee agreed that it was not necessary to prioritize inspections. The Ministry would have to review the prescribed instruments as they monitor each site so the requirement for compliance inspections does not need to be spelled out.

In January 2014 comments on the Proposed Plan, the Ministry of the Environment requested a revision be made to the timeline for this policy. The Ministry also noted that the wording of the policy as written implied that *all* existing instruments for this moderate threat will be reviewed and amended as necessary to manage the risk, but this scope of review is not provided for in the

Clean Water Act. The Committee agreed to revise the timeline to state “When the Plan takes effect” and added a clarification to note that the policy applies when decisions are made on amendments to the Environmental Compliance Approval associated with changes to the waste site or operations.

Policy 1-7-E & F: Risk Management Plan for Waste Disposal Sites Not Regulated by Ontario Regulation 347/09

The intent of this policy is to address waste related significant threats not currently regulated by Ontario Regulation 347/09. The need to address these threats was brought to the Committee’s attention through the Ministry of the Environment’s preliminary comments on the Proposed Plan received in late 2013. The Committee determined that these threats would not be adequately addressed through existing policies, Policy G-1 Education and Outreach and Policy 1-3-F Land Use Planning, alone. Therefore this policy and the next, 1-8-E & F, were developed in December of 2013 and confirmed at the January 22, 2014 meeting of the Committee.

The policy is intended to apply to commercial or industrial sites within the applicable areas that store liquid waste including, but not limited to, waste oil and waste paint, (more examples in discussion following) but not to domestic waste in private residences.

When the policies for waste threats were originally developed, risk management plans were not considered an acceptable tool for addressing waste related threats because these types of threats were already regulated under Ontario Regulation 347/09 using Environmental Compliance Approvals (formerly Certificates of Approval). However, since the Ministry identified three circumstances *not* regulated through 347/09, the Committee determined that a risk management plan policy would help to address these significant threat activities.

Development of risk management plans for storage of liquid wastes, including used oil, was specified as a policy approach because the risk management plans allow for site specific implementation of best management practices and mitigative measures to ensure the threat is adequately managed. Additional benefits to the risk management plan approach are that they will:

- require compliance by the landowner;
- consider each property on a case-by-case basis;
- incorporate any other existing measures that are already being used on the property;
- not duplicate any existing measures;
- enhance or address any circumstances not covered by other measures; and
- allow for flexibility in managing the drinking water threat.

The three circumstances identified by the Ministry of the Environment that would be significant threats in Intake Protection Zone 1 if the vulnerability score of 9 or greater and Wellhead Protection Area A and B (also with a vulnerability score of 10) are:

- 1) Polychlorinated biphenyls (PCBs);
- 2) Storage of hazardous waste or liquid industrial waste; and
- 3) Storage of wastes described in clause (p), (q), (r), (s), (t), or (u)* of the definition of hazardous waste as defined by O. Reg. 347 (General – Waste Management).

Some examples of actual land uses that may be considered a threat under these three sub-categories include: auto mechanic/service stations that produce waste oil; salvage yards; commercial industrial/manufacturing properties that process high end photography/photo finishing, laboratories, including laboratories associated with institutions, welding works, etc.

No existing threats from PCBs were identified during threats refinement work. Waste oil stored in a mechanic's garage could exist in these zones. Waste paint could also be stored in industrial or commercial sites in these zones. Waste oil and waste paint are not listed as circumstances in the threats table but the table does refer to hazardous liquid or industrial waste that could contain:

- Arsenic
- Chromium VI
- Barium
- Cadmium
- Dichlorophenoxy Acetic Acid
- Trichlorophenoxy Acetic Acid
- Mercury
- Selenium
- Silver
- Lead

Commercial or industrial sites storing liquid waste will be contacted by the risk management official to review and examine current storage practices so as to ensure the safety of the municipal water source.

*descriptions of (p), (q), (r), (s), (t), or (u):

- (p) waste that is a hazardous industrial waste, hazardous waste chemical, ignitable waste, corrosive waste, leachate toxic waste or reactive waste and that is produced in any month in an amount less than five kilograms or otherwise accumulated in an amount less than five kilograms,
- (q) waste that is an acute hazardous waste chemical and that is produced in any month in an amount less than one kilogram or otherwise accumulated in an amount less than one kilogram,
- (r) an empty container or the liner from an empty container that contained hazardous industrial waste, hazardous waste chemical, ignitable waste, corrosive waste, leachate toxic waste or reactive waste,

- (s) an empty container of less than twenty litres capacity or one or more liners weighing, in total, less than ten kilograms from empty containers, that contained acute hazardous waste chemical,
- (t) the residues or contaminated materials from the clean-up of a spill of less than five kilograms of waste that is a hazardous industrial waste, hazardous waste chemical, ignitable waste, corrosive waste, leachate toxic waste or reactive waste, or
- (u) the residues or contaminated materials from the clean-up of a spill of less than one kilogram of waste that is an acute hazardous waste chemical.

During preparation of the DRAFT updated Plan in 2022 (as a result of the identification of a nitrate issue, creation of an issues contributing area, and updating of the Assessment Report with the results of the issues-based threats assessment for the Village of Tweed municipal wells), the applicable area of this policy was updated to include the new issues contributing area.

Policy 1-8-E & F: Restricted Land Use Risk Management Plans for Waste Disposal Sites Not Regulated by Ontario Regulation 347/09

In their preliminary comments on the Proposed Plan in 2013, the Ministry of the Environment noted that small quantities of liquid waste, including waste oil (e.g. from a car dealership), are not presently regulated through existing provincial instruments. The Committee determined that the potential for adverse effects on municipal drinking water supplies from the storage of liquid waste, more specifically used oil from commercial sites should be addressed. Two new policies, 1-7-E & F and this policy were created to address this threat in December 2013 and confirmed at the January 22, 2014 meeting of the Committee.

The Committee wanted to assist municipalities in identifying areas where storage of liquid waste, including used oil from commercial sites, require risk management plans. The use of the restricted land use tool under Section 59 of the *Clean Water Act* was specified as the approach.

Restricted land use is used to identify or 'red flag' vulnerable areas where Plan policies require prohibition or risk management plans under Sections 57 and 58 of the *Clean Water Act, 2006*. The Committee specified this policy approach to assist municipalities in creating their own internal administrative processes to ensure compliance with the Plan.

Restricted land use policies require municipalities to screen planning applications and applications under the Building Code to determine if the proposed activities are subject to Section 57 (Prohibition) or Section 58 (Risk Management Plan) policies. The purpose is to help municipalities avoid inadvertently approving an application without complying with Source Protection Plan policies first. Restricted land use policies (through Section 59 of the *Clean Water Act, 2006*) reference the land use types where applications need to be screened and the types of proposed activities that are subject to the screening. If an application is made for an activity that

is subject to a risk management plan then the proponent must work with the risk management official to finalize a risk management plan before the application can proceed.

The Committee designated this policy as applying to both existing and future activities. They identified that restricted land use will assist municipal staff when, during the fulfillment of other duties, they may encounter an existing activity that requires a risk management plan. The staff member may then notify the risk management official in order that the threat is addressed as required in the Plan.

During preparation of the DRAFT updated Plan in 2022 (as a result of the identification of a nitrate issue, creation of an issues contributing area, and updating of the Assessment Report with the results of the issues-based threats assessment for the Village of Tweed municipal wells), the applicable area of this policy was updated to include the new issues contributing area.

8.3 Sewage Policies Approach

Sewage policies were the first group of policies on which the Committee worked. There is considerable staff expertise in this subject area at the Quinte Source Protection Authority (Quinte Conservation) including two septic inspectors, a hydro-geologist and a water resources engineer.

Given the largely rural nature of the Quinte Region many homes are serviced by private septic systems. Urban centres have sewage systems for sanitary sewer collection, sewage treatment plants and stormwater treatment ponds. Sewage systems are one of the most common drinking water threats found in the vulnerable areas around municipal drinking water supplies in Quinte. Eight policies were developed to address these threats.

The first discussions on how to address threats from sewage centred on hypothetical scenarios related to threats from onsite sewage systems in the Quinte Region. The scenarios discussed for onsite sewage systems were:

- 1) Existing septic system with no municipal system available;
- 2) Existing septic system with a municipal system available;
- 3) Proposed septic system with no municipal system available where lots have already been created or current zoning would permit residential development;
- 4) Proposed septic system with no municipal system available and; there are no lots of record or; zoning does not currently allow development;
- 5) Proposed septic system with a municipal system available; and
- 6) Existing septic system that does not pass inspection or meet current codes.

Discussions of these scenarios lead to the formation of policy concepts that were presented to the Septic Working Group for input. Draft policies were then discussed and developed at subsequent Committee meetings and with input from the Municipal Planning Working Group. Table 8.1 below, shows the various meetings where these policies were developed.

Table 8.1: Sewage Policy Development: Meetings

Dates of Discussion	Groups	Discussed
October 28, 2010	Source Protection Committee	septic concepts
November 4, 2010	Planners Working Group	septic concepts
January 20, 2011	Septic Working Group	septic concepts
January 27, 2011	Source Protection Committee	septic concepts
February 3, 2011	Planners Working Group	septic concepts
February 24, 2011	Source Protection Committee	septic concepts
April 28, 2011	Source Protection Committee	septic concepts
May 11, 2011	Planners Sub Working Group	septic policy development
May 26, 2011	Source Protection Committee	septic policy development
September 23, 2011	Source Protection Committee	septic policy development
January 26, 2012	Source Protection Committee	pre-consultation comments

The zones where septic systems are considered significant threats are the WHPAs A and B and IPZ 1s with a score of 10. All the septic systems in these zones will be required to have an inspection every five years according to recent changes to the Ontario Building Code. The purpose of the inspection is to ensure that systems are functioning as designed and that regular maintenance is being carried out.

The Committee has developed and endorsed a set of policies to supplement the inspection program and address situations where other alternatives are available. The policies also include strategies to allow future systems only when it can be proven that there will be no impact on the drinking water source.

Policies for sewage infrastructure including sanitary sewer networks/pipes, pumping stations, stormwater ponds, sewage treatment plant storage tanks, effluent discharges, and by-pass discharges were developed by the Committee. This infrastructure typically requires prescribed instruments to address environmental concerns.

Professional engineers and municipal planners were consulted to ensure a comprehensive understanding of the threats and selection of the best approaches. The Ministry of the Environment also provided input through the Liaison Officer to the Committee.

The following eight policies were developed. Some wording in the policies was improved at the suggestion of the County of Hastings Planning Department and the Ministry of Municipal Affairs and Housing.

'Applicable Areas' were added to policies 2-1-E & F, 2-2-E, 2-3-F, 2-4-E & F, 2-6-F, 2-7-F and 2-8-F, and the 'Effective Date' was updated for policy 2-2-E during the updating of the Plan in 2013 to reflect the results of issues based threats assessment completed for the Village of Madoc municipal wells as per the Updated Assessment Report.

Policy 2-1-E & F: Connection to Municipal Sewage Collection Systems – Private Sewage Systems (less than 10,000 litres/day) and Large Sewage Systems (greater than 10,000 litres/day)

Onsite sewage systems are one of the most common drinking water threats found in the vulnerable areas around municipal drinking water supplies in the Quinte Region. The use of municipal sewers instead of individual onsite sewage systems generally poses a lower risk to sources of drinking water because the use of municipal sewer services are regulated to a higher degree than individual onsite sewage systems. Municipal systems are operated by professionals and the Ministry of the Environment closely monitors their activities.

The Committee wanted to reduce the number of significant drinking water threats from onsite sewage systems. The Committee determined that where a municipal sewage collection system is readily available that existing and future development will be required to connect to municipal services. Existing septic systems will be decommissioned upon connection to municipal services. The result will be that sewage is treated by municipally operated systems that are managed and regulated by prescribed instruments.

The Committee considered that the financial implications of this policy and identified that the number of existing septic systems located where municipal service is available is very low. Stewardship funding has been used to fund up to 80 percent of the cost to landowners to decommission septic systems and connect to municipal services.

During preparation of the updated Proposed Plan in 2013 (as a result of the updating of the Assessment Report with the results of the issues based threats assessment for the Village of Madoc municipal wells), the applicable area of this policy was updated to include the new issues contributing area.

During preparation of the DRAFT updated Plan in 2022 (as a result of the identification of a nitrate issue, creation of an issues contributing area, and updating of the Assessment Report with the results of the issues-based threats assessment for the Village of Tweed municipal wells), the applicable area of this policy was updated to include the new issues contributing area

Policy 2-2-E: Inspection of Residential Onsite Sewage Systems (less than 10,000 litres/day)

An existing septic system in a vulnerable area where it is a significant drinking water threat must be managed through completion of inspections as mandated under the Ontario Building Code. The Ontario Building Code provides municipalities with a legislative framework to ensure that failed and improperly functioning onsite sewage systems (e.g. septic systems and holding tanks) do not continue to release untreated or poorly treated sewage to groundwater and surface water. Under the Ontario Building Code, municipalities are required to establish an onsite sewage maintenance inspection program for those areas where septic systems are significant drinking

water threats by April 2016 (e.g. within five years of the Assessment Report, 2011 being approved by the Ministry of the Environment).

The Committee considered inspections a suitable measure to manage these significant threats because they will promote regular maintenance, repairs or replacement as required. Upon the advice of the Ministry of the Environment, the Committee wrote this policy to support and enhance the requirements of the Ontario Building Code. The policy requires that inspections be prioritized based on proximity to the water sources, age of system and other factors that would result in identifying systems that may need to be improved or replaced.

The Quinte Source Protection Authority received funding under the Ontario Drinking Water Stewardship Program to partially fund septic system repairs and replacements within the most vulnerable areas. Many of these projects were undertaken by January of 2012. Nineteen projects were completed in 2008 in the vulnerable zone around the Ameliasburgh water supply and subsequent to that, raw water quality parameters at the intake began to show improvement.

During discussions of financial considerations, the Committee noted that the Ontario Drinking Water Stewardship Program significantly reduces the financial impact on the landowner wishing to upgrade the onsite system voluntarily. The Committee also identified that septic inspectors in the Quinte Region are typically municipal staff. They are required to inspect septic systems that have been identified as a significant threat. By prioritizing the inspections the inspectors can spread out the inspections over a five year period to reduce the annual inspection cost to the municipality.

During preparation of the updated Proposed Plan in 2013 (as a result of the updating of the Assessment Report with the results of the issues based threats assessment for the Village of Madoc municipal wells), the applicable area of this policy was updated to include the new issues contributing area. The note added to the 'Effective Date' was also updated to reflect the fact that the five year inspection date for the Madoc Issues Contributing Area will begin once the newly updated Assessment Report is approved.

During preparation of the DRAFT updated Plan in 2022 (as a result of the identification of a nitrate issue, creation of an issues contributing area, and updating of the Assessment Report with the results of the issues-based threats assessment for the Village of Tweed municipal wells), the applicable area of this policy was updated to include the new issues contributing area.

Policy 2-3-F: New Development and Future Construction on Lots of Record with Proposed Sewage Systems (less than 10,000 litres/day and greater than 10,000 litres /day)

In circumstances where connection to municipal sewage collection systems is not feasible, assessing future development on a case-by-case basis will ensure management of new drinking water threats. This land use planning approach allows for future development while still protecting drinking water sources.

In developing Policy 2-3-F the Committee discussed what approach could be taken to protect the water source where there are existing lots of record and no municipal sewage system is available. In its discussions the Committee noted that some historical lots of record were not created according to present day standards, that is, in some cases, lots of record may not be suitable for an onsite septic system in a vulnerable area near a drinking water source. The Committee decided to require the municipality to establish or implement official plan policies and zoning by laws that prohibit or discourage development of sewage systems in the vulnerable areas. Through discussions at the Committee and working group levels the possibility of allowing onsite systems, on existing lots of record, where it can be shown that a sewage system can be adequately managed and will not impact on the municipal water supply was raised. This led to the inclusion of the clause that calls for staff at the Source Protection Authority (Quinte Conservation) to work with municipalities in assessing applications for development on a case-by-case basis in areas where sewage systems would be a significant drinking water threat. This assessment may require that one or more of the following be prepared by a qualified professional: a hydrogeological study; engineered sewage system design; and best management practices and site design.

By taking this approach the Committee has allowed flexibility to address new development while ensuring that the new development will not negatively impact the drinking water source.

In their financial considerations, the Committee anticipated that this circumstance will occur infrequently and that the cost to developers will not be overwhelming.

During preparation of the updated Proposed Plan in 2013 (as a result of the updating of the Assessment Report with the results of the issues based threats assessment for the Village of Madoc municipal wells), the applicable area of this policy was updated to include the new issues contributing area.

During preparation of the DRAFT updated Plan in 2022 (as a result of the identification of a nitrate issue, creation of an issues contributing area, and updating of the Assessment Report with the results of the issues-based threats assessment for the Village of Tweed municipal wells), the applicable area of this policy was updated to include the new issues contributing area.

Policy 2-4-E & F: Prescribed Instrument for Management of Existing and Future Large Sewage Systems with Design Capacity Greater than 10,000 litres/day

The Committee specified prescribed instruments to ensure adequate management of the risk to drinking water posed by large sewage systems in the applicable vulnerable areas. Certificates of Approval/Environmental Compliance Approvals are issued for large systems with a design capacity greater than 10,000 litres/day. These approvals are an existing and well-established mechanism for addressing environmental protection for large sewage systems.

The Committee wanted to ensure that these prescribed instruments are issued, reviewed and amended when necessary to protect drinking water sources. The requirements for existing and

future sewage systems were determined during discussions by both the Septic Working Group and Committee. Three requirements with respect to the existing systems and four requirements with respect to future systems were established to be consistent with other sewage policies developed by the Committee.

This policy is consistent with the approach taken in other sewage policies.

The financial implications of the policy were considered to be minimal.

As a result of Draft Plan consultation the Committee modified the wording in the policy in order to address comments from the Ministry of the Environment and yet not lose the intent of the policy. The Committee added “if required” for all review and amend statements for existing sewage systems. The direction in the policy to the Ministry was reworded so as to require adequate terms and conditions in the prescribed instrument rather than by giving direction to the Ministry. This will provide the Ministry with more flexibility to determine what is required on a site by site basis. The Committee also removed the clause requiring the Ministry to prioritize inspections in the monitoring section of the policy and agreed that it was not necessary to prioritize inspections as it is understood that the inspections would have to take place. Rather the Ministry is required to prepare an annual summary of the actions it has taken to achieve the outcomes of the policy and make that report available to the Source Protection Authority.

During preparation of the updated Proposed Plan in 2013 (as a result of the updating of the Assessment Report with the results of the issues based threats assessment for the Village of Madoc municipal wells), the applicable area of this policy was updated to include the new issues contributing area.

The Ministry of the Environment can implement this policy effectively and will be aware of municipal studies because Section 1.5 (page 7) of the Environmental Compliance Approval application form requires municipal signoff. Therefore the municipality has a responsibility to not allow future on-site systems greater than or less than 10,000 litres per day where municipal sewage services are available.

In comments on the Proposed Plan, the Ministry of the Environment noted that the policy directs the Ministry to include specific terms and conditions in environmental compliance approvals. The Ministry is developing outcome-based business processes for issuing or amending prescribed instruments for drinking water threat activities. The Ministry advised, that in developing this process, they are considering the terms and conditions proposed by the source protection committees. The Ministry noted that as written, the policy may not achieve the environmental outcomes intended and may not be relevant over time. Specifically the policy would prevent the province from considering more approaches moving forward and may not allow the consideration of local conditions. As a result, the Committee amended the policy to focus on the intended outcome, indicating that the province “should consider including”, rather than “require”, specific terms and conditions in prescribed instruments.

During preparation of the DRAFT updated Plan in 2022 (as a result of the identification of a nitrate issue, creation of an issues contributing area, and updating of the Assessment Report with the results of the issues-based threats assessment for the Village of Tweed municipal wells), the applicable area of this policy was updated to include the new issues contributing area.

Policy 2-5-E: Prescribed Instrument for Existing Sewage Infrastructure (sanitary sewer networks/pipes, pumping stations, stormwater ponds, Sewage Treatment Plant (STP) storage tanks, effluent discharges, and by-pass discharges)

The Committee specified prescribed instruments to ensure adequate management of the risk to drinking water posed by sewage infrastructure in the applicable vulnerable areas. The use of prescribed instruments is an existing and well-established mechanism for addressing environmental protection for sewage infrastructure. The Committee wanted to ensure that the review, approval and amendment when necessary of these instruments provided adequate protection for sources of municipal drinking water.

While preparing sewage policies the Committee realized the intent was similar for all sewage infrastructure. To keep the policies understandable and workable all sewage infrastructure has been included for this policy.

This policy is consistent with the approach taken in other sewage policies.

The Committee considered the financial implications of the policy to be minimal.

As a result of comments from the Ministry of the Environment during Draft Plan consultation, the Committee made several changes to the wording in the policy to improve clarity and allow for ease of implementation. The revised policy includes the requirements of the Committee yet provides flexibility to the Ministry.

The Committee also removed the clause requiring the Ministry to prioritize inspections in the monitoring section of the policy and agreed that it was not necessary to prioritize inspections as it is understood that the inspections would have to take place. Rather the Ministry is required to prepare an annual summary of the actions it has taken to achieve the outcomes of the policy and make that report available to the Source Protection Authority.

During Draft Plan review, Bayside IPZ 1 was added to the applicable areas for this policy (see Section 6).

In January 2014 comments on the Proposed Plan the Ministry of the Environment requested clarification on applicable areas which they identified did not adequately address the threat to groundwater systems. The Committee had not included WHPAs in the applicable areas because there are no existing sewage treatment plants in these vulnerable zones nor are there likely to be any in the future. However, because of the possibility and to be consistent with other policies, the Committee revised the policy to ensure it is more explicit regarding the threat being addressed under each applicable area.

During preparation of the DRAFT updated Plan in 2022 (as a result of the identification of a nitrate issue, creation of an issues contributing area, and updating of the Assessment Report with the results of the issues-based threats assessment for the Village of Tweed municipal wells), the applicable area of this policy was updated to include the new issues contributing area.

Policy 2-6-F: Prescribed Instrument for Management of Future Sewage Infrastructure (sanitary sewer networks, pumping stations, stormwater ponds, STP storage tanks, effluent discharges, and by-pass discharges)

The purpose of this policy is to ensure that the review and approval procedures related to future sewage infrastructure, that would be a significant threat, provide adequate protection for sources of municipal drinking water. The use of prescribed instruments is an existing and well-established mechanism for addressing environmental protection for sewage infrastructure. The Committee wanted to ensure that the approval of new instruments provided adequate protection of municipal drinking water.

During review of the Draft Plan and discussions of financial considerations and implementation costs the Committee revised the requirement for sanitary sewers to be constructed to an equivalent standard of a forced main and changed it to require hydrostatic testing to ensure compliance with the *Ontario Provincial Standards for Roads and Public Works* Section 410. The Committee identified that the requirement for a forced main standard was costly when compared to hydrostatic testing which they determined was adequate to ensure the protection of water sources.

As a result of comments from the Ministry of the Environment, the Committee revised the wording of the policy so as to be consistent with the approach taken in the other sewage policies. The list of terms and conditions in the policy text was formerly required to be included in the prescribed instrument and in the revised version it is a list for the Director to consider. This will allow for ease of implementation by providing flexibility to the Ministry.

The Committee also removed the clause requiring the Ministry to prioritize inspections in the monitoring section of the policy and agreed that it was not necessary to prioritize inspections as it is understood that the inspections would have to take place. Rather the Ministry is required to prepare an annual summary of the actions it has taken to achieve the outcomes of the policy and make that report available to the Source Protection Authority.

During Draft Plan review, Bayside IPZ 1 was added to the applicable areas for this policy (see Section 6).

During preparation of the updated Proposed Plan in 2013 (as a result of the updating of the Assessment Report with the results of the issues based threats assessment for the Village of

Madoc municipal wells), the applicable area of this policy was updated to include the new issues contributing area.

In January 2014 comments on the Proposed Plan the Ministry of the Environment requested clarification on applicable areas which they identified did not adequately address the threat to groundwater systems. The Committee had not included WHPAs in the applicable areas because there are no existing sewage treatment plants in these vulnerable zones nor are there likely to be any in the future. However, because of the possibility and to be consistent with other policies, the Committee revised the policy to ensure it is more explicit regarding the threat being addressed under each applicable area.

During preparation of the DRAFT updated Plan in 2022 (as a result of the identification of a nitrate issue, creation of an issues contributing area, and updating of the Assessment Report with the results of the issues-based threats assessment for the Village of Tweed municipal wells), the applicable area of this policy was updated to include the new issues contributing area.

Policy 2-7-E: Managing Existing Sewage Infrastructure

Sewage infrastructure may leak or fail, however, it is not reasonable or feasible to remove municipal sewage system infrastructure. The Committee decided that municipalities must establish appropriate management of sewage infrastructure in vulnerable areas. The purpose is to ensure that priority is given to establishing and maintaining an inspection, maintenance, and operational and emergency planning program to effectively manage sewage infrastructure located in vulnerable areas where it is considered a significant threat.

Implementing this policy could be considered an added expense to municipalities but in reality proper inspections and maintenance plans will save money in the long run and reduce the likelihood of catastrophic failures of the infrastructure. The likelihood of costly cleanups and dealing with emergency situations is reduced by implementing this policy.

During preparation of the updated Proposed Plan in 2013 (as a result of the updating of the Assessment Report with the results of the issues based threats assessment for the Village of Madoc municipal wells), the applicable area of this policy was updated to include the new issues contributing area.

In January 2014 comments on the Proposed Plan the Ministry of the Environment requested clarification on applicable areas which they identified did not adequately address the threat to groundwater systems. The Committee had not included WHPAs in the applicable areas because there are no existing sewage treatment plants in these vulnerable zones nor are there likely to be any in the future. However, because of the possibility and to be consistent with other policies, the Committee revised the policy to ensure it is more explicit regarding the threat being addressed under each applicable area.

Policy 2-8-F: Land Use Planning for Prohibition of New Sewage Treatment Plants

Land use planning tools were determined by the Committee as the policy approach to prohibit new sewage treatment plants in vulnerable areas where they would be considered a significant drinking water threat. The rationale is to prevent a facility with large amounts of materials that could potentially contaminate the water source from being established in a vulnerable area. Planning and prevention is an effective way to protect our sources of drinking water. The purpose of this policy is to ensure that any new sewage treatment plants will be established in areas where they will not impact the municipal drinking water supply.

This policy complements Policy 2-6-F which asks the Ministry of the Environment to issue prescribed instruments with adequate terms and conditions to manage the drinking water threat with the exception of new sewage treatment plants which are to be prohibited in the vulnerable areas indicated in the policy. The intent of this policy is not to prohibit the upgrading of existing sewage treatment plants. It will only affect the location of new plants and the Committee determined this to be a reasonable approach.

During Draft Plan review, Bayside IPZ 1 was added to the applicable areas for this policy (see Section 6).

During preparation of the updated Proposed Plan in 2013 (as a result of the updating of the Assessment Report with the results of the issues based threats assessment for the Village of Madoc municipal wells), the applicable area of this policy was updated to include the issues contributing area.

During preparation of the DRAFT updated Plan in 2022 (as a result of the identification of a nitrate issue, creation of an issues contributing area, and updating of the Assessment Report with the results of the issues-based threats assessment for the Village of Tweed municipal wells), the applicable area of this policy was updated to include the new issues contributing area.

8.4 Agricultural Policies Approach

Agricultural activities are considered to be threats to drinking water due to the potential for leaching or runoff of contaminants such as nutrients, pesticides and bacteria into ground and surface water. Given the largely rural nature of the Quinte Region, agricultural activities are widespread throughout, however the number of such activities that are a significant threat within vulnerable areas of municipal drinking water systems is relatively small.

All of the agricultural activities that are listed as prescribed drinking water threats can be found in one or more of the vulnerable areas of municipal drinking water systems in the Quinte Region. The most prevalent drinking water threats appear to be associated with the typical small mixed farming operations. Such threats include the sheltering, grazing, and pasturing of livestock as well as application of manure (referred to as Agricultural Source Material or ASM). The lowest number of agricultural threats is associated with the storage and application of non-agricultural

source material (NASM) (e.g. sewage biosolids). These activities do occur, but are found outside of the vulnerable areas associated with municipal drinking water systems.

The Committee invited Dr. John Fitzgibbon of the University of Guelph and Chair of the Ontario Farm Environment Coalition and a professional planner to speak to them on November 25, 2010 on the *Nutrient Management Act* and agricultural drainage. Dr. Fitzgibbon teaches in the areas of water resources and land use planning and management. This was an opportunity for committee members to discuss possible policy approaches with a recognized agricultural expert. This presentation added to and complemented the knowledgeable input from the two agricultural representatives on the Committee.

Stan Meeks of the Ontario Soil and Crop Improvement Association spoke to the Committee about Environmental Farm Plans on June 24, 2010. He reported that approximately 500 farmers in Hastings and Lennox and Addington Counties have completed a two day workshop training program and approximately 400 Environmental Farm Plans were approved for funding.

To assist in the development of agricultural policies a working group was formed to provide input on policies for dealing with the various threats. This group was comprised of landowners, members of the Committee and representatives of the Ontario, Hastings and Prince Edward Federations of Agriculture, the Ontario Soil and Crop Improvement Association and the Ontario Ministry of Agriculture, Food and Rural Affairs. Discussions by the group confirmed that agricultural operations that may be affected by the Plan in Quinte were relatively small scale compared to other regions of the province. Ground truthing done by project staff confirmed this. Vulnerable areas surrounding municipal wells are relatively small and the scale of the agricultural operations in these areas is small. The Agricultural Working Group indicated that farmers do not want to impact the environment or drinking water sources but also do not want to carry the burden of the expense for protecting drinking water.

In addition to consulting with the working group the Committee also visited a farm (October 28, 2010) located in a wellhead protection area to allow members to familiarize themselves with the nature of agricultural operations and the types of measures that can be implemented to manage drinking water threats.

Based on input from the working group and tools available to the Committee, policies were developed to deal with both existing and future agricultural activities that are or would be significant drinking water threats. The general approach taken by the Committee was to raise awareness about drinking water source protection in the agricultural community through education and outreach and to manage both existing and future threats. An exception was for the relatively small but highly vulnerable areas surrounding municipal wells (100 metre radius) where the Committee deemed it necessary to prohibit agricultural activities that are significant drinking water threats. The Committee considered that the management and prohibition of agricultural activities in this zone is consistent with the *Nutrient Management Act*. This overall approach was determined based on input from the working group and considered that many of the small farms found in the Quinte Region generally do not require a nutrient management plan or strategy

under the *Nutrient Management Act*. Specific details of the approach are provided in the actual agricultural policies.

'Applicable Areas' were added to policies 3-2-E & F, 3-3-E & F and 3-4-E & F, and the 'Effective Date' updated for 3-2-E & F, during the updating of the Plan in 2013 to reflect the results of the issues based threats assessment completed for the Village of Madoc municipal wells as per the Updated Assessment Report.

Policy 3-1-E & F: Prohibition of Agricultural Activities

The Committee determined that the prohibition of agricultural activities that are significant drinking water threats is to be applied in the WHPA A. This is the 100 metre radius around municipal wells and current agricultural land use in this zone is relatively small. This was confirmed by ground truthing and so the Committee believed that there would be little negative economic impact to farmers. The WHPA A is highly vulnerable and the potential for contamination of a municipal well from activities taking place in this zone is high. Therefore other tools such as risk management plans were not considered adequate to protect the drinking water source. The approach is considered to be relatively consistent with the *Nutrient Management Act* which restricts the application of nutrients within 100 metres of a municipal well. However, the *Nutrient Management Act* generally does not apply to smaller farms. By prohibiting agricultural activities that are significant drinking water threats in the WHPA A the Committee applied the intent of the *Nutrient Management Act* equitably to all farms. This was supported by the input from the Agricultural Working Group. Ground truthing also confirmed that there is a non-conforming activity in this zone near one municipal well where two horses are being kept. This land use is not consistent with the current zoning for the location and the municipality is not enforcing that non-compliance. Manure from the horses could contaminate the municipal well considering that this particular well is also a well that is under the influence of surface water where contaminants could easily and quickly be transported in runoff to the water source.

Pre-consultation comments from the Ministry of Agriculture, Food and Rural Affairs (OMAFRA) supported the prohibition in this zone with the exception of grazing and pasturing of livestock. Comments from this ministry indicated that this activity could be managed in situations where adequate soil depth exists and livestock density is low. However, the Committee noted that soil depth in Quinte is characteristically shallow over fractured bedrock. The Committee determined that to uphold the prohibition in this relatively small and sensitive zone is in the interest of the equitable application of policies to all farming operations and adequately protecting the water source.

Only small areas of farmland will be affected by this policy as confirmed by ground truthing and so the Committee considered that the affected activities could be directed elsewhere on the property out of the WHPA A. There is currently some pasturing identified in this zone. The Committee considered that the financial implications to affected farming operations would not be onerous.

Comments on the Draft Plan from OMAFRA differed from comments received during pre-consultation. They requested the Committee consider management of the activity rather than prohibition for existing outdoor agricultural source material storage and confinement because of significant investments in infrastructure that may already be in place and also because the prohibition of these existing facilities would result in economic hardship. Project staff followed up with OMAFRA and determined that the comments were made in general and not specifically respecting the situation in Quinte. The Committee noted that there are no existing outdoor storage and confinement facilities within the WHPA A or IPZ 1 in Quinte and so prohibition would create no economic hardship or negative impact in Quinte.

In comments on the Proposed Plan in July 2012, OMAFRA recommended that the policy apply only to the future storage of agricultural source material (ASM) and outdoor confinement areas. However, as previously noted, no actual existing ASM storage and outdoor confinement areas were identified and, the Ministry of the Environment had recommended that policies such as this should apply to both existing and future activities where there are no transition policies in place. As a result, it was not necessary to change this policy.

On November 6, 2013 staff provided the Ministry of the Environment details regarding the extent of the geographical area affected by this prohibition policy in the WHPA As (less than two hectares in the entire Quinte Region). Staff had contacted affected landowners and the economic impact was determined to be negligible.

Policy 3-2-E & F: Risk Management Plan for Managing Agricultural Activities (Agricultural Source Material (ASM), Non Agricultural Source Material (NASM), Grazing, Pasturing, Outdoor Confinement, Commercial Fertilizer and Pesticides)

Although there is existing legislation under the *Nutrient Management Act* to address the management of the majority of drinking water threats on farms, not all farms require approvals under this Act and some of the threats are not covered. Therefore, the Committee specified the development of risk management plans for agricultural operations as a policy approach. This addresses any drinking water threat activities not covered by Policy 3-4-E & F.

Additional reasons for using the risk management plan approach include:

- Risk management measures can be identified in the plan that will manage the risks and require compliance by the landowner and operator of the agricultural operation;
- The risk management plan will assess each property on a case-by-case basis and will consider existing measures such as nutrient management plans, NASM plans and other Certificate of Approvals/Environmental Compliance Approvals that are already being used on the property;
- The risk management plan will not duplicate any existing measures but enhance or address any circumstances not covered by other measures;
- The risk management plan allows flexibility in managing the drinking water threat; and

- There was agreement from the working groups and similarity to the Ontario Farm Environment Coalition approach.

The Ministry of Agriculture, Food and Rural Affairs (OMAFRA) supported the use of nutrient management standards and recommended that farms with prescribed instruments not be required to have risk management plans. The Committee determined however, that risk management plans were required because there was potential for there to be instances where not all the threat activities on an agricultural operation may be covered by prescribed instruments. An example discussed was a farm using or storing pesticides (which is not covered under a nutrient management plan). This threat could be addressed in a risk management plan. The Committee also noted that a risk management plan need not be a duplication of existing requirements; rather the risk management plan can reference the requirements of existing instruments such as a nutrient management plan, and require that it be followed.

In their comments, OMAFRA also requested a prohibition of agricultural activities in the IPZ 1 with score of 10. This request would affect Ameliasburgh (existing and future) and Point Anne and Picton (future only) which cover significantly larger areas than WHPA A zones. The Committee was aware of an agricultural operation in the IPZ 1 of the Ameliasburgh intake with the potential for livestock grazing. The Committee determined that for the IPZ 1s a risk management plan would be a preferable approach and less onerous for the farmer. The Committee noted that a risk management plan that calls for measures such as fencing the livestock out of the lake, and maintaining and /or improving the existing substantial vegetative buffer along the shoreline would protect the water source.

During Draft Plan review, Bayside IPZ 1 was added to the applicable areas for this policy (see Section 6).

During preparation of the updated Proposed Plan in 2013 (as a result of the updating of the Assessment Report with the results of the issues based threats assessment for the Village of Madoc municipal wells), the applicable area of this policy was updated to include the new issues contributing area. In consideration of the circumstances regarding these additional threats the Committee determined that a five year 'Effective Date' was more appropriate than three years (for the issues contributing area only) and that this change would reduce the financial impact on the implementer by allowing the implementer to spread the implementation cost over five years.

During preparation of the DRAFT updated Plan in 2022 (as a result of the identification of a nitrate issue, creation of an issues contributing area, and updating of the Assessment Report with the results of the issues-based threats assessment for the Village of Tweed municipal wells), the applicable area of this policy was updated to include the new issues contributing area. Additionally, the Quinte Region Source Protection Committee decided to amend the policy text to ensure measures are included within the risk management plan to ensure application rates, timing and location are appropriate for crop uptake of nitrogen and reduce potential for Nitrate runoff or infiltration. Records retention and reporting requirements were also added to the policy text.

Policy 3-3-E & F: Restricted Land Use for Prohibition and Risk Management Plans for Agricultural Activities

The Committee wanted to assist municipalities in identifying areas where agricultural activities are prohibited or require risk management plans. The use of the restricted land use tool under Section 59 of the *Clean Water Act* was specified as the approach.

Restricted land use is used to identify or 'red flag' vulnerable areas where Plan policies require prohibition or risk management plans under Sections 57 and 58 of the *Clean Water Act, 2006*. The Committee specified this policy approach to assist municipalities in creating their own internal administrative processes to ensure compliance with the Plan.

Restricted land use policies require municipalities to screen planning applications and applications under the Building Code to determine if the proposed activities are subject to Section 57 (Prohibition) or Section 58 (Risk Management Plan) policies. The purpose is to help municipalities avoid inadvertently approving an application without complying with Source Protection Plan policies first. Restricted land use policies (through Section 59 of the *Clean Water Act, 2006*) reference the land use types where applications need to be screened and the types of proposed activities that are subject to the screening. If an application is made that is prohibited by this plan then the application cannot proceed. If an application is made for an activity that is subject to a risk management plan then the proponent must work with the risk management official to finalize a risk management plan before the application can proceed.

The Committee designated this policy as applying to both existing and future activities. They identified that restricted land use will assist municipal staff when, during the fulfillment of other duties, they may encounter an existing activity that is prohibited or requires a risk management plan. The staff member may then notify the risk management official in order that the threat is addressed as required in the Plan.

During Draft Plan review, Bayside IPZ 1 was added to the applicable areas for this policy (see Section 6).

During preparation of the updated Proposed Plan in 2013 (as a result of the updating of the Assessment Report with the results of the issues based threats assessment for the Village of Madoc municipal wells), the 'Applicable Area' of this policy pertaining to agricultural source material, livestock grazing, pasturing and confinement was updated to include the new issues contributing area.

During preparation of the DRAFT updated Plan in 2022 (as a result of the identification of a nitrate issue, creation of an issues contributing area, and updating of the Assessment Report with the results of the issues-based threats assessment for the Village of Tweed municipal wells), the applicable area of this policy was updated to include the new issues contributing area.

Policy 3-4-E & F: Prescribed Instrument for the Management of Agricultural Activities (Agricultural Source Material (ASM), Non-Agricultural Source Material (NASM), and Grazing

The *Nutrient Management Act* is recognized as a prescribed instrument under the *Clean Water Act, 2006*. The regulations under the *Nutrient Management Act* address the application, handling and storage of agricultural source material and non-agricultural source material, the application of commercial fertilizers and the use of land for outdoor confinement. For farms requiring approval under this Act the prescribed instrument tool is considered the preferred approach for managing the drinking water threats that are addressed in such approvals. This approach ensures that approvals for farms regulated by the *Nutrient Management Act* are reviewed and updated to adequately protect sources of municipal drinking water.

The instruments under the *Nutrient Management Act*, nutrient management plans and strategies and non-agricultural source material plans, are existing and well-established mechanisms for addressing environmental protection of agricultural activities. Requiring the province to take extra caution in the issue, review, and if necessary, amendment of these instruments will ensure terms and conditions are included in the approvals to adequately manage the drinking water threat and protect sources of municipal drinking water.

The Ontario Ministry of Agriculture, Food and Rural Affairs (OMAFRA) supported this approach in their pre-consultation comments.

During Draft Plan review OMAFRA requested the removal of the storage of commercial fertilizer from this policy because it is not regulated by OMAFRA. The Committee added the Ministry of the Environment as an implementer for this policy so as to obtain information on policy effectiveness through annual reports submitted to the Source Protection Authority. The Committee removed the clause requiring the Ministry of the Environment to prioritize inspections in the monitoring section of the policy and agreed that it was not necessary to prioritize inspections as it is understood that the inspections would have to take place. Rather the Ministry is required to prepare an annual summary of the actions it has taken to achieve the outcomes of the policy and make that report available to the Source Protection Authority.

During Draft Plan review, Bayside IPZ 1 was added to the applicable areas for this policy (see Section 6).

In comments on the Proposed Plan in July 2012, OMAFRA asked that the monitoring requirements for this policy be changed. However, it was determined that the reporting requirements will provide valuable information and it was considered not to be an onerous task so the monitoring policy was not changed.

During preparation of the updated Proposed Plan in 2013 (as a result of the updating of the Assessment Report with the results of the issues based threats assessment for the Village of Madoc municipal wells), the applicable area of this policy was updated to include the new issues contributing area.

In January 2014 comments on the Proposed Plan, the Ministry of the Environment asked the Committee to make monitoring policies more outcome-based and where the Committee has specific, detailed reporting requirements that the Committee consider revising the language to make these 'recommendations'. In addition the Ministry of the Environment noted that, OMAFRA requested that monitoring policies directed at them be changed to request them to provide the Source Protection Authority with an annual summary of the actions taken to implement a specific policy, rather than including specific reporting requirements. The Committee considered these comments and request and revised the policy accordingly.

During preparation of the DRAFT updated Plan in 2022 (as a result of the identification of a nitrate issue, creation of an issues contributing area, and updating of the Assessment Report with the results of the issues-based threats assessment for the Village of Tweed municipal wells), the applicable area of this policy was updated to include the new issues contributing area. Additionally, the Quinte Region Source Protection Committee decided to amend the policy text to ensure measures are included within the prescribed instrument to ensure application rates, timing and location are appropriate for crop uptake of nitrogen and reduce potential for Nitrate runoff or infiltration. Records retention and reporting requirements were also added to the policy text. Further, the policy text was amended to ensure the application of ASM is not applied during restricted periods, or any other time when the soil is snow covered or frozen consistent with the *Nutrient Management Act*. The final amendment to the policy was to strongly encourage the Province, through the Ministry of Environment Agricultural Officer, to consider source protection information as a criterion when setting inspection targets and priorities as part of the Ministry's on-farm compliance program.

8.5 Aquaculture Policies Approach

Aquaculture, also known as aquafarming, is the farming of aquatic organisms such as fish. It involves cultivation under controlled conditions in contrast to commercial harvesting of wild fish. Aquaculture facilities may include tanks, raceways, ponds, pits and lakes and may include equipment to re-circulate the water to add oxygen and/or remove wastes.

Pathogens are identified as contaminants that could make their way into surface and groundwater as a result of the management of agricultural source material (ASM) from aquaculture, threatening the safety of drinking water sources in certain situations.

In general, provincial ministries are responsible for aquaculture planning, site leasing, licenses and approvals for aquaculture sites, aquaculture training and education, the collection of statistics, the promotion of fish and aquaculture products, and the management of the industry's day-to-day operations. Aquaculture is considered a form of agriculture, and would therefore likely be permitted by municipalities wherever agricultural is allowed.

The Committee has specified that the Ministries of the Environment and Natural Resources must consider the impact on drinking water sources prior to issuing approvals for any aquaculture related activities in zones where these activities would be a moderate or low threat.

Policy 5-1-F: Management of Agricultural Source Material (Aquaculture) – Moderate and Low Threats

The intent of this policy is to ensure that future use of land and/or water for aquaculture does not contaminate municipal sources of drinking water. There are no existing moderate or low threats related to aquaculture in the Quinte Source Protection Region. However, in the future if an aquaculture operation was being considered in close proximity to a drinking water system it could result in moderate or low threats being created. The Committee decided that careful consideration must be given to the location of aquaculture operations in vulnerable areas. If these operations are allowed to exist in vulnerable areas, minimum standards and performance monitoring requirements need to be established through the use of prescribed instruments.

As a result of pre-consultation, comments from the Ministry of Natural Resources reported that they do not anticipate receiving any applications for this activity in the intake protection zones. The wording of this policy was changed to add 'if any' to for reporting to the Source Protection Authority on an as needed basis.

This policy was originally drafted using the specify action tool. However, based on comments from the Ministry of the Environment the tool was changed to prescribed instrument. The wording remained the same otherwise. The Ministry of Agriculture, Food and Rural Affairs pointed out during Draft Plan consultation that they do not approve aquaculture and therefore they were removed as an implementer.

In January 2014 comments on the Proposed Plan, the Ministry of the Environment asked the Committee to make monitoring policies more outcome-based and where the Committee has specific, detailed reporting requirements that the Committee consider revising the language to make these 'recommendations'. The Ministry also noted that O. Reg. 287/07 does not prescribe Ministry of Natural Resources (MNR) instruments regarding aquaculture and therefore this policy is not a prescribed instrument policy for MNR but rather a specify action policy.. The Committee considered these comments and revised the policy accordingly.

8.6 Non-Agricultural Commercial Fertilizer (Application, Handling and Storage) Policies Approach

Commercial fertilizers may threaten the safety of drinking water sources due to runoff, leaching, and leaks or spills resulting from improper handling, storage or application. They are associated with many land uses including agricultural, active recreational (golf courses, sports fields), institutional, industrial, commercial and residential.

The Ministry of the Environment has identified nitrogen and total phosphorus as chemicals that could affect drinking water sources under certain circumstances. These nutrients could threaten the safety of drinking water sources due to runoff, leaching or spills. Increased nitrate concentrations in groundwater sources may lead to adverse health effects while runoff rich in

nutrients can lead to algae blooms in surface water that can produce toxins that are harmful to humans and animals.

The Committee created policies that call for risk management plans, restricted land use designation and prohibition. In addition, the general education and outreach policy calls for education and outreach about commercial fertilizers. The municipality will be the implementer of these policies.

The application of non-agricultural commercial fertilizer is prohibited in the WHPA As on all properties, including on private residential properties. However, the policy requiring risk management plans to manage the application of commercial fertilizer in the WHPA B and IPZ 1 and 2, which is a significant threat in these areas, does not apply to residential properties. The Committee chose to address this threat on private residential properties through education and outreach (Policy G-1 and G-7-E & F Management of Household Hazardous Waste). See the rationale described in these policies and also in Policy 8-2-E & F below.

Policies following address the use of non-agricultural fertilizers for commercial use on parks, sports fields, golf courses etc. but not residential properties. In comments on the Proposed Plan the Ministry of the Environment noted that the household use of non-agricultural commercial fertilizer was a significant threat in the applicable vulnerable zones and that documentation was required in the Explanatory Document regarding how the Committee had addressed this threat.

The Committee determined that it was not appropriate or practical for the Source Protection Plan to prohibit or require risk management plans for small quantities of non-agricultural commercial fertilizer that may be used on private residential properties. The Committee determined that a more effective approach would be a targeted education and outreach program to encourage its proper use and application as called for in policy G-1. This targeted education and outreach complements policy G-7-E & F which encourages municipalities to provide opportunities for residents to properly dispose of household hazardous waste.

The Committee was, therefore, of the opinion that these two policies (G-1 and G-7-E & F) will adequately address the threat from non-agricultural commercial fertilizer use by private residential households where it is a significant threat and that these policies if implemented will promote the achievement of the objectives of the Plan that the threat ceases to be/never becomes significant. Further, the Committee was of the opinion that a policy to regulate or prohibit the activity for non-agricultural commercial fertilizer in and around private residential households was not necessary to achieve those objectives (O. Reg. 287/07 ss. 40(2)(6)).

Policy 8-1-E & F: Prohibition of the Non-Agricultural Application of Commercial Fertilizer

The Committee wanted to eliminate the potential for adverse effects on municipal drinking water sources from the application of commercial fertilizer and therefore determined that prohibition of the application of commercial fertilizers, under Section 57 of the *Clean Water Act, 2006* is to be applied to the WHPA A, which is the 100 metre radius around municipal wells. This zone is highly

vulnerable and the potential for contamination of a municipal well from activities taking place here is high. Therefore, other tools such as risk management plans were not considered adequate to protect the drinking water source.

This policy is consistent with Policy 3-1-E & F that prohibits the agricultural application of fertilizer in the WHPA A. This makes the prohibition equitable to all landowners in the WHPA A. This is also consistent with the *Nutrient Management Act*. The Committee determined that it was important to be consistent and equitable in both Policy 3-1-E & F and this policy.

Policy 8-2-E & F: Risk Management Plan for Non-Agricultural Application of Commercial Fertilizer

The Committee wanted to reduce the potential for adverse effects on municipal drinking water supplies from the application of commercial fertilizer. Development of risk management plans for non-agricultural related application of commercial fertilizer was specified as a policy approach because the risk management plans allow for site specific implementation of best management practices and mitigative measures to ensure the threat is adequately managed. Additional benefits to the risk management plan approach are that they will:

- require compliance by the landowner;
- consider each property on a case-by-case basis;
- incorporate any other existing measures that are already being used on the property;
- not duplicate any existing measures;
- enhance or address any circumstances not covered by other measures; and
- allow for flexibility in managing the drinking water threat.

This policy is consistent with Policy 3-2-E & F that requires risk management plans for agricultural operations. This makes the policy approach equitable to all landowners.

In comments on the Proposed Plan, the Ministry of the Environment noted that the application of commercial fertilizer can be a significant drinking water threat in all types of land uses. Therefore, non-agricultural application of commercial fertilizer on residential properties must also be addressed. The Committee determined that it was not appropriate for the Source Protection Plan to prohibit or require risk management plans for the non-agricultural application of commercial fertilizer used by private residential households. The Committee determined that a more effective approach would be a targeted education and outreach program to encourage proper application that may be undertaken around private residential households.

The Committee was of the opinion that policies G-1 and G-7-E & F will adequately address the threat from non-agricultural application of commercial fertilizer on residential properties where it is a significant threat and that this policy if implemented will promote the achievement of the objectives of the Plan that the threat ceases to be / never becomes significant. Further, the Committee was of the opinion that a policy to regulate or prohibit the activity non-agricultural

application of commercial fertilizer on residential properties was not necessary to achieve those objectives (O. Reg. 287/07 ss. 40(2)(6)).

During preparation of the DRAFT updated Plan in 2022 (as a result of the identification of a nitrate issue, creation of an issues contributing area, and updating of the Assessment Report with the results of the issues-based threats assessment for the Village of Tweed municipal wells), the applicable area of this policy was updated to include the new issues contributing area.

Policy 8-3-E & F: Restricted Land Use for Prohibition and Risk Management Plans for the Non-Agricultural Application of Commercial Fertilizer

The Committee wanted to assist municipalities to identify areas where the application of commercial fertilizer is prohibited or requires risk management plans. The use of the restricted land use tool under Section 59 of the *Clean Water Act 2006* was specified as the approach.

Restricted land use is used to identify or ‘red flag’ vulnerable areas where Plan policies require prohibition or risk management plans under Sections 57 and 58 of the *Clean Water Act, 2006*. The Committee specified this policy approach to assist municipalities in creating their own internal administrative processes to ensure compliance with the Plan.

Restricted land use policies require municipalities to screen planning applications and applications under the Building Code to determine if the proposed activities are subject to Section 57 (Prohibition) or Section 58 (Risk Management Plan) policies. The purpose is to help municipalities avoid inadvertently approving an application without complying with Source Protection Plan policies first. Restricted land use policies (through Section 59 of the *Clean Water Act, 2006*) reference the land use types where applications need to be screened and the types of proposed activities that are subject to the screening. If an application is made that is prohibited by this plan then the application cannot proceed. If an application is made for an activity that is subject to a risk management plan then the proponent must work with the risk management official to finalize a risk management plan before the application can proceed.

The Committee designated this policy as applying to both existing and future activities. They identified that restricted land use will assist municipal staff when, during the fulfillment of other duties, they may encounter an existing activity that is prohibited or requires a risk management plan. The staff member may then notify the risk management official in order that the threat is addressed as required in the Plan.

During preparation of the DRAFT updated Plan in 2022 (as a result of the identification of a nitrate issue, creation of an issues contributing area, and updating of the Assessment Report with the results of the issues-based threats assessment for the Village of Tweed municipal wells), the applicable area of this policy was updated to include the new issues contributing area.

Policy 9-1-F: Prohibition of Non-Agricultural Commercial Fertilizer Storage (greater than 2,500 kilograms or 2,500 litres; Nitrogen and Phosphorus)

The Committee wanted to eliminate the potential for adverse effects on municipal drinking water supplies from the storage and handling of commercial fertilizer. The Committee determined that prohibition (under Section 57 of the *Clean Water Act*) of non-agricultural commercial fertilizer storage is to be applied to the most vulnerable zones immediately surrounding municipal wells or surface water intakes. These zones are highly vulnerable and the potential for contamination of a municipal well or surface water intake from activities taking place in these zones is high. Therefore other tools such as risk management plans were not considered adequate to protect the drinking water source. The Committee identified that it was unlikely that it would be necessary to store this quantity of fertilizer in the applicable areas. Therefore there would be minimal financial impact.

This policy is consistent with the prohibition of agricultural commercial fertilizer storage, Policy 3-1-E & F. This makes the policy approach equitable to all landowners.

Policy 9-2-E & F: Risk Management Plan for Managing Handling and Storage of Non-Agricultural Commercial Fertilizer (greater than 2,500 kilograms or 2,500 litres; Nitrogen and Phosphorus)

The Committee wanted to reduce the potential for adverse effects on municipal drinking water supplies from the handling and storage of commercial fertilizer.

Development of risk management plans for non-agricultural related handling and storage of commercial fertilizer was specified as a policy approach because the risk management plans allow for site specific implementation of best management practices and mitigative measures to ensure the threat is adequately managed. Additional benefits to the risk management plan approach are that they will:

- require compliance by the landowner;
- consider each property on a case-by-case basis;
- incorporate any other existing measures that are already being used on the property;
- not duplicate any existing measures;
- enhance or address any circumstances not covered by other measures; and
- allow for flexibility in managing the drinking water threat.

This policy is consistent with Policy 3-2-E & F that requires risk management plans for agricultural operations. This makes the policy approach equitable to all landowners.

During preparation of the DRAFT updated Plan in 2022 (as a result of the identification of a nitrate issue, creation of an issues contributing area, and updating of the Assessment Report with the results of the issues-based threats assessment for the Village of Tweed municipal wells), the applicable area of this policy was updated to include the new issues contributing area.

Policy 9-3-E & F: Restricted Land Use for Prohibition and Risk Management Plans for Handling and Storage of Non-Agricultural Commercial Fertilizer

The Committee wanted to assist municipalities in identifying areas where the handling and storage of commercial fertilizer is prohibited or requires risk management plans. The use of the restricted land use tool under Section 59 of the *Clean Water Act* was specified as the approach.

Restricted land use is used to identify or ‘red flag’ vulnerable areas where Plan policies require prohibition or risk management plans under Sections 57 and 58 of the *Clean Water Act, 2006*. The Committee specified this policy approach to assist municipalities in creating their own internal administrative processes to ensure compliance with the Plan.

Restricted land use policies require municipalities to screen planning applications and applications under the Building Code to determine if the proposed activities are subject to Section 57 (Prohibition) or Section 58 (Risk Management Plan) policies. The purpose is to help municipalities avoid inadvertently approving an application without complying with Source Protection Plan policies first. Restricted land use policies (through Section 59 of the *Clean Water Act, 2006*) reference the land use types where applications need to be screened and the types of proposed activities (e.g. storage of fertilizer) that are subject to the screening. If an application is made that is prohibited by this plan then the application cannot proceed. If an application is made for an activity that is subject to a risk management plan then the proponent must work with the risk management official to finalize a risk management plan before the application can proceed.

The Committee designated this policy as applying to both existing and future activities. They identified that restricted land use will assist municipal staff when, during the fulfillment of other duties, they may encounter an existing activity that is prohibited or requires a risk management plan. The staff member may then notify the risk management official in order that the threat is addressed as required in the Plan.

During preparation of the DRAFT updated Plan in 2022 (as a result of the identification of a nitrate issue, creation of an issues contributing area, and updating of the Assessment Report with the results of the issues-based threats assessment for the Village of Tweed municipal wells), the applicable area of this policy was updated to include the new issues contributing area.

8.7 Non-Agricultural Pesticide (Application, Handling and Storage) Policies Approach

Pesticides may threaten the safety of drinking water sources due to runoff, leaching, leaks or spills resulting from improper handling, storage or application. They are associated with many

land uses including agricultural, active recreational (golf courses, sports fields), institutional, industrial, commercial and residential.

There are many kinds of pesticides, but for the Drinking Water Source Protection Program, the pesticides of interest are the chemicals used to control weeds (herbicides), or fungi (fungicides), or those used as a soil fumigant to control fungi, nematodes and weeds. Pesticides are potentially toxic to humans and other animals and may cause a variety of acute and delayed health effects in those exposed, including cancer.

The Committee has created policies that call for education and outreach, risk management plans, restricted land use designation and prohibition. The municipality will be the implementer of these policies.

Policy 10-1-E & F: Prohibition of the Non-Agricultural Application of Pesticides

The intent of this policy is to completely eliminate the use of pesticides in the WHPA A. The Committee intended that non-agricultural application of pesticides be eliminated in the most vulnerable zone immediately surrounding municipal wells. The improper application of pesticides can result in contamination of both ground and surface water. To limit the exposure to these dangerous chemicals and protect the environment, the province implemented a ban on cosmetic pesticides in April of 2009 through implementation of Ontario Regulation 63/09. This ban supersedes any local municipal bylaws and prohibits the use of certain pesticides on lawns, gardens, patios, driveways, cemeteries, parks and school yards. However, there are exceptions for public health and safety, invasive species, golf courses, sports fields, forestry, agriculture and public works. Given that these potential uses still exist the Committee deemed it necessary to extend the prohibition for all uses within the WHPA A. This was also deemed necessary to be fair and equitable to all parties given that a similar policy was developed to prohibit agricultural use in the WHPA A.

Policy 10-2-E & F: Risk Management Plan for Management of Non-Agricultural Application of Pesticides

The intent of this policy is to reduce the potential for adverse effects on municipal drinking water supplies from the application of pesticides. Where the application of pesticides is considered a significant drinking water threat and is not prohibited through either the provincial cosmetic pesticide ban (Ontario Regulation 63/09) or the Plan it is essential that their use be managed to adequately protect drinking water. The importance of proper use is highlighted by the highly vulnerable aquifer conditions found throughout the Quinte region where groundwater can become contaminated very easily. To accomplish this, the Committee specified the risk management tool to allow measures be put in place to protect drinking water.

This approach was reviewed with the operators of golf courses. Where the application of pesticides is permitted, the operator is required to obtain accreditation with the Integrated Pest Management Council of Canada. This accreditation specifies how pesticides are used and

includes requirements for annual reporting. It was determined that this requirement, in addition to best management practices and training of personnel would be minimum requirements for risk management plans in order to permit continued use of pesticides in the vulnerable areas and ensure protection of drinking water. This approach will also allow each property to be considered on a case-by-case basis and will incorporate any other existing measures that are already being used on the property (e.g. a golf course that may already have integrated pest management accreditation).

Policy 10-3-E & F: Restricted Land Use for Prohibition and Risk Management Plans for the Non-Agricultural Application of Pesticides

The intent of this policy is to assist municipalities to identify areas where the application of pesticides is prohibited or requires risk management plans. The Committee specified this policy approach to assist municipalities in creating their own internal administrative processes to ensure compliance with the Plan. In this way the municipality can 'red flag' the vulnerable areas where Plan policies require prohibition or risk management plans under Sections 57 and 58 of the *Clean Water Act, 2006*.

Restricted land use policies require municipalities to screen planning applications and applications under the Building Code to determine if the proposed activities are subject to Section 57 (Prohibition) or Section 58 (Risk Management Plan) policies. The purpose is to help municipalities avoid inadvertently approving an application without complying with Source Protection Plan policies first. Restricted land use policies (through Section 59 of the *Clean Water Act, 2006*) reference the land use types where applications need to be screened and the types of proposed activities that are subject to the screening. If an application is made that is prohibited by this plan then the application cannot proceed. If an application is made for an activity that is subject to a risk management plan then the proponent must work with the risk management official to finalize a risk management plan before the application can proceed.

The Committee designated this policy as applying to both existing and future activities. They identified that restricted land use will assist municipal staff when, during the fulfillment of other duties, they may encounter an existing activity that is prohibited or requires a risk management plan. The staff member may then notify the risk management official in order that the threat is addressed as required in the Plan.

Policy 11-1-E & F: Prohibition of the Handling and Storage of Non-Agricultural Pesticides

The intent of this policy is to ensure that there is no non-agricultural pesticide storage in the most vulnerable zones surrounding municipal wells or surface water intakes. The Committee determined that prohibition was the only tool to eliminate the potential for adverse effects from spills of large quantities of pesticides in the zones exhibiting the highest vulnerability (WHPA A and IPZ 1 with score of 10). In view of the high vulnerability of these zones and close proximity to the drinking water sources it was deemed necessary to use prohibition to prevent

spills/accidents from occurring. This approach will eliminate activities in these zones which would require the storage and handling of large volumes of pesticides such as manufacturing or sales. Given existing land use in these zones the probability of this occurrence is low. However, to ensure that storage of large volumes does not occur the prohibition was determined to be an appropriate tool that is fair to all parties given that a similar policy (3-1-E & F) was developed to prohibit the storage of agricultural pesticides.

Policy 11-2-E & F: Risk Management Plan for the Management of Handling and Storage of Non-Agricultural Pesticides

The intent of this policy is to reduce the potential for adverse effects on municipal drinking water supplies from the handling and storage of pesticides. Given the prohibition of the handling and storage of pesticides in the zones with the highest vulnerability the Committee specified the risk management tool to ensure adequate measures are put in place in the less sensitive zones but where this activity is still considered a significant drinking water threat. Significant regulations are in place for addressing the handling and storage of pesticides to protect water and prevent spills/containment. However, to ensure that additional measures are incorporated to consider the location of vulnerable areas around municipal drinking water systems the Committee determined it was appropriate to request the development of risk management plans. Other reasons include:

- measures can be identified in the plan that will manage the risks and require compliance by the landowner and operator;
- each property will be assessed on a case-by-case basis and existing measures such as leak detection and spill prevention will be considered;
- reduction of duplication of any existing measures and addressing any circumstances not covered by other measures; and
- flexibility in managing the drinking water threat.

This policy is consistent with Policy 3-2-E & F that requires risk management plans for agricultural operations. This makes the policy approach equitable to all landowners.

Policy 11-3-E & F: Restricted Land Use for Prohibition and Risk Management Plans for Handling and Storage of Non-Agricultural Pesticides

The intent of this policy is to assist municipalities in identifying areas where the application of pesticides is prohibited or requires risk management plans; the restricted land use tool under Section 59 of the *Clean Water Act, 2006* applies.

The Committee specified this policy approach to assist municipalities in creating their own internal administrative processes to ensure compliance with the Plan. In this way the municipality can 'red flag' the vulnerable areas where Plan policies require prohibition or risk management plans under Sections 57 and 58 of the *Clean Water Act, 2006*.

Restricted land use policies require municipalities to screen planning applications and applications under the Building Code to determine if the proposed activities are subject to Section 57 (Prohibition) or Section 58 (Risk Management Plan) policies. The purpose is to help municipalities avoid inadvertently approving an application without complying with Source Protection Plan policies first. Restricted land use policies (through Section 59 of the *Clean Water Act, 2006*) reference the land use types where applications need to be screened and the types of proposed activities (e.g. storage of pesticides) that are subject to the screening. If an application is made that is prohibited by this plan then the application cannot proceed. If an application is made for an activity that is subject to a risk management plan then the proponent must work with the risk management official to finalize a risk management plan before the application can proceed.

8.8 Road Salt (Application, Handling and Storage) Policies Approach

Road salt is used mainly as a de-icer or an ice prevention agent. The most commonly used products are sodium chloride and calcium chloride because they are effective, inexpensive, readily available, and easy to use. Road salt is considered a threat due to the potential of these products to run off the roads and enter sources of drinking water (both ground and surface water). Road salting is required to maintain human safety and it is a common activity. However, in the Quinte region the amount of road salting activities within vulnerable areas, where they would be considered a significant drinking water threat, is relatively small.

Before writing road salt policies the Committee visited a salt storage facility and talked with the operator. They gained valuable information regarding how salt is stored, the factors that affect salt application, and current management practices. This information assisted the Committee when it came time to write the policies. Policies call for the use of specify action, risk management plans, restricted land use and prohibition. In addition to those policies, the general education and outreach policy contains a road salt component.

Policy 12-1-E & F: Salt Management Plan for Significant, Moderate, and Low Threats Related to Application of Road Salt

The intent of this policy is to ensure that all municipalities follow Environment Canada's *Code of Practice for the Environmental Management of Road Salts* and create, review and update their salt management plans to manage the application of road salt in a way that minimizes the impact on the surrounding environment while still maintaining roadway safety.

The Committee recognized that the application of road salt is an important safety practice; however it requires management in such a way that it does not adversely affect the municipal drinking water supply. The salt management plan needs to identify the vulnerable areas around the municipal drinking water sources and include increased care within those areas to protect the water. This will not only benefit the environment but will also have the potential to result in more efficient operations, improved roadway safety and cost savings.

During Draft Plan review, Bayside IPZ 1 was added to the applicable areas for this policy (see Section 6).

Policy 12-2-E & F: Salt Management Plan for Application of Road Salt

The intent of this policy is to ensure that the Ministry of Transportation follows the *Code of Practice for the Environmental Management of Road Salts* of Environment Canada, as amended, and creates, reviews and updates their salt management plans to manage the application of road salt in a way that minimizes the impact on the surrounding environment while still maintaining roadway safety.

The Committee recognized that the application of road salt on provincial highways is an important safety practice but that it requires management in such a way that it does not adversely affect the municipal drinking water supply. The salt management plan of the Ministry of Transportation needs to identify the vulnerable areas around our municipal water supply sources and include increased care within those areas to protect the water. This will not only benefit the environment but will also have the potential to result in more efficient operations, improved roadway safety and cost savings.

As a result of pre-consultation comments from the Ministry of Transportation the wording of this policy was changed to require that salt management plans remain up-to-date with standards and that notice will be provided to the Source Protection Authority when these plans are updated.

During Draft Plan review, Bayside IPZ 1 was added to the applicable areas for this policy (see Section 6).

In January 2014 comments on the Proposed Plan, the Ministry of the Environment noted that the Ministry of Transportation (MTO) had provided comments requesting that the policy be revised to read that the MTO will provide an up-to-date copy of their Salt Management Plan to the SPA upon request, rather than MTO being responsible for reporting annually if update/changes are made to the Plan during the previous calendar year as per the existing monitoring policy. The Committee concurred and made the changes as requested, also changing the wording of the monitoring policy from “should provide” to “shall provide” an up-to-date copy of their Salt Management Plan to the Quinte Source Protection Authority for all significant threats (Picton).

Policy 12-3-E & F: Risk Management Plan for the Management of Application of Road Salt

The intent of this policy is to reduce the potential for adverse effects on the quality of municipal drinking water supplies from the application of road salt on commercial roads and parking lots.

The Committee specified the development of risk management plans for the application of road salt on commercial properties as a policy approach because the risk management plans will consider each property on a case-by-case basis. This will allow the risk management official and landowner to determine:

- where the need for salt exists;
- where runoff will occur and other landscape considerations like buffer strips;
- alternatives that can be used; and
- incorporate any other existing measures that are already being used on the property.

Policy 12-4-E & F: Restricted Land Use for the Application of Road Salt

The intent of this policy is to assist municipalities in identifying areas where the commercial application of road salt requires risk management plans.

The Committee specified this policy approach to assist municipalities in creating their own internal administrative processes to ensure compliance with the Plan. In this way the municipality can 'red flag' the vulnerable areas where Plan policies require risk management plans under Section 58 of the *Clean Water Act, 2006*.

Restricted land use policies require municipalities to screen planning applications and applications under the Building Code to determine if the proposed activities are subject to Section 57 (Prohibition) or Section 58 (Risk Management Plan) policies. The purpose is to help municipalities avoid inadvertently approving an application without complying with Source Protection Plan policies first. Restricted land use policies (through Section 59 of the *Clean Water Act, 2006*) reference the land use types where applications need to be screened and the types of proposed activities (e.g. storage of road salt) that are subject to the screening. If an application is made that is prohibited by this plan then the application cannot proceed. If an application is made for an activity that is subject to a risk management plan then the proponent must work with the risk management official to finalize a risk management plan before the application can proceed.

The Committee designated this policy as applying to both existing and future activities. They identified that restricted land use will assist municipal staff when, during the fulfillment of other duties, they may encounter an existing activity that is prohibited or requires a risk management plan. The staff member may then notify the risk management official in order that the threat is addressed as required in the Plan.

Policy 13-1-E & F: Prohibition of Existing and Future Handling and Storage of Road Salt (between 500 – 5,000 tonnes and greater than 5,000 tonnes)

The intent of this policy is to ensure there are no existing or future road salt storage facilities located in the most vulnerable areas surrounding municipal wells and surface water intakes.

The Committee determined that it was necessary to prohibit new road salt storage facilities in the areas where they would become significant threats. A spill of road salt in these areas could quickly and easily contaminate drinking water sources. These vulnerable areas are small and do not have a lot of land available in which to locate these facilities. The Committee was reasonably

certain that the threat does not currently exist based on ground truthing by project staff, so there is no adverse economic impact as a result of this policy.

Risk management plans and education and outreach cannot ensure that these facilities will not be developed. If they were developed new significant drinking water threats would be created as no known storage facilities currently exist in vulnerable areas. Development of any new facilities could be directed outside the vulnerable areas.

During review of comments on the Draft Plan the Committee changed this policy to include existing and future circumstances. The Committee was reasonably certain that there are no existing road salt storage facilities in the applicable areas and so this would not pose a financial or economic burden. Existing circumstances were added to the policy in the event that an existing activity was missed or one was established in the interim in order that no transition policy is required for the interim period until the Plan is approved and implemented.

Policy 13-2-E & F: Restricted Land Use for the Handling and Storage of Road Salt

The intent of this policy is to assist municipalities in identifying areas where the handling and storage of road salt is prohibited.

The Committee specified this policy approach to assist municipalities in creating their own internal administrative processes to ensure compliance with the Plan. In this way the municipality can 'red flag' the vulnerable areas where Plan policies require prohibition of an activity under Section 57 of the *Clean Water Act, 2006*.

Restricted land use policies require municipalities to screen planning applications and applications under the Building Code to determine if the proposed activities are subject to Section 57 (Prohibition) or Section 58 (Risk Management Plan) policies. The purpose is to help municipalities avoid inadvertently approving an application without complying with Source Protection Plan policies first. Restricted land use policies (through Section 59 of the *Clean Water Act, 2006*) reference the land use types where applications need to be screened and the types of proposed activities (e.g. storage of road salt) that are subject to the screening. If an application is made that is prohibited by this plan then the application cannot proceed. If an application is made for an activity that is subject to a risk management plan then the proponent must work with the risk management official to finalize a risk management plan before the application can proceed.

The Committee designated this policy as applying to both existing and future activities. They identified that restricted land use will assist municipal staff when, during the fulfillment of other duties, they may encounter an existing activity that is prohibited or requires a risk management plan. The staff member may then notify the risk management official in order that the threat is addressed as required in the Plan.

8.9 Storage of Snow Policies Approach

Snow plowed from roads and parking lots can be contaminated with road salt, oil, grease and heavy metals from vehicles, litter, and airborne pollutants. Therefore it is essential that snow be stored and disposed of in an appropriate manner. Storing large quantities of snow in one location concentrates the contaminants in melt water, which results in a greater impact on the surrounding environment. If the storage area is large, a significant release of chemicals to groundwater or surface water can occur. The main source of sodium and chloride in snow is road salt. Other contaminants are generally from vehicle fluids, exhaust, brake linings, tire and engine wear and pathogens from pet waste.

The Committee created policies that call for the use of risk management plans and restricted land use to be implemented by the municipality. Ground truthing has shown that there are currently no existing snow storage facilities in vulnerable areas. The Committee created policies for future snow storage facilities to ensure the threat is adequately managed.

Policy 14-1-E & F: Risk Management Plan for the Storage of Snow

The intent of this policy is to reduce the potential for adverse effects from the existing and future storage of snow on the quality of municipal drinking water supplies.

The Committee specified the development of risk management plans for the storage of snow as a policy approach because the risk management plans will consider each property on a case-by-case basis. The risk management official will be able to consider site specific conditions and any existing measures in place. The Committee determined that prohibition was too stringent a tool and that risk management plans would be the most appropriate as plans will cover items identified in the Transportation Associations of Canada's best practices like site selection, facility design and construction, operation, monitoring and maintenance. Risk management plans will also incorporate any other existing measures that are already being used on the property.

It is anticipated that this will not affect many parcels of land and so there will be little economic impact as a result of this policy.

During review of comments on the Draft Plan the Committee changed this policy to include existing and future circumstances. The Committee was reasonably certain that there are no existing snow storage facilities in the applicable areas and so this would not pose a financial or economic burden. Existing circumstances were added to the policy in the event that an existing activity was missed or one was established in the interim in order that no transition policy is required for the interim period until the Plan is approved and implemented.

During preparation of the DRAFT updated Plan in 2022 (as a result of the identification of a nitrate issue, creation of an issues contributing area, and updating of the Assessment Report with the results of the issues-based threats assessment for the Village of Tweed

municipal wells), the applicable area of this policy was updated to include the new issues contributing area.

Policy 14-2-E & F: Restricted Land Use for Risk Management Plans for the Storage of Snow

The intent of this policy is to assist municipalities in identifying areas where the storage of snow requires risk management plans.

The Committee specified this policy approach to assist municipalities in creating their own internal administrative processes to ensure compliance with the Plan. In this way the municipality can ‘red flag’ the vulnerable areas where Plan policies require risk management plans for the storage of snow under Section 58 of the *Clean Water Act, 2006*.

Restricted land use policies require municipalities to screen planning applications and applications under the Building Code to determine if the proposed activities are subject to Section 57 (Prohibition) or Section 58 (Risk Management Plan) policies. The purpose is to help municipalities avoid inadvertently approving an application without complying with Source Protection Plan policies first. Restricted land use policies (through Section 59 of the *Clean Water Act, 2006*) reference the land use types where applications need to be screened and the types of proposed activities (e.g. storage of snow) that are subject to the screening. If an application is made that is prohibited by this plan then the application cannot proceed. If an application is made for an activity that is subject to a risk management plan then the proponent must work with the risk management official to finalize a risk management plan before the application can proceed.

The Committee designated this policy as applying to both existing and future activities. They identified that restricted land use will assist municipal staff when, during the fulfillment of other duties, they may encounter an existing activity that is prohibited or requires a risk management plan. The staff member may then notify the risk management official in order that the threat is addressed as required in the Plan.

During preparation of the DRAFT updated Plan in 2022 (as a result of the identification of a nitrate issue, creation of an issues contributing area, and updating of the Assessment Report with the results of the issues-based threats assessment for the Village of Tweed municipal wells), the applicable area of this policy was updated to include the new issues contributing area.

8.10 Fuel Policies Approach

Handling and storage of fuel are considered to be threats to drinking water due to the potential for spills and leaking of fuel. The need for fuel to heat homes and power vehicles and machinery means the presence of fuel storage tanks is common throughout the Quinte Region. The

handling and storage of fuel is one of the most numerous significant threats to drinking water sources identified in the Quinte Region primarily because of the number of home heating oil tanks. Fuel storage tanks have the potential to leak and contaminate both ground and surface water. Once spilled, fuels can be highly mobile and flow with groundwater or surface water for great distances making them difficult and very costly to clean up. Fuels are persistent in the environment and spills can have a major negative impact on surface and groundwater quality. Without adequate cleanup or management, these contaminants can impair our water sources.

About 60 percent of Canada's contaminated sites involve petroleum hydrocarbon contamination (CCME, 2001)*. Spills related to the handling and storage of fuel have resulted in many expensive insurance claims that have caused insurance companies to increase premiums for homes heated with oil.

In developing policies to address the threats from the handling and storage of fuel, the Committee gathered background information about this activity and called on the expertise of local experts serving on the Fuel Working Group.

*Canadian Council of Ministers of the Environment (CCME).(April 30-May 1, 2001). Canadian Council of Ministers of the Environment, Canada-Wide Standards for Petroleum Hydrocarbons (PHC) in Soil. 8 pp. Fuel storage tanks, from 250 to 2,500 litres capacity that have been installed partially below or below grade may be used for many purposes. In the Quinte Region the most common use of tanks of this size is for home heating oil. Such tanks are usually 900 litres capacity and are commonly installed in the basements of homes thereby meeting the Ministry of the Environment definition of partially below or below grade. Heating oil tanks that are installed above grade, typically outside of homes, do not meet this circumstance and are not considered significant threats but rather, are classified as a moderate drinking water threat. Storage volume refers to the total storage of fuel on the property and not just tank capacity.

Heating oil tanks that are partially below or below grade are considered a significant drinking water threat if they are located in Wellhead Protection Areas A or B with a vulnerability score of 10.

The Committee considered a number of regulations and requirements already in place to attempt to prevent and reduce the impact of spills and leaks. These include regulations under the Technical Standards and Safety Authority (TSSA) and the *Environmental Protection Act* and the *Water Resources Act*.

The TSSA Regulation 213/01 requires that furnace oil tanks be inspected every 10 years by the fuel delivery agent or when changing fuel delivery companies, whichever comes first. It was the opinion of the Fuel Working Group that an inspection every ten years was not adequate to address the threat. Some, but not all, fuel distributors conduct yearly inspections for insurance purposes.

The Ontario Installation Code for Oil-Burning Equipment (based on CSA B139, with Ontario amendments) specifies that the homeowner is responsible for maintenance of oil burning equipment on an annual basis. However many homeowners are not aware of this requirement and it is not enforced.

Furnace oil tanks tend to leak from the inside out in the bottom few inches of the tanks where water can accumulate. This water develops from condensation inside the tank and reacts with bacteria to result in corrosion. Prediction of leaks is difficult, however regular inspection and maintenance of the tank can assist in prevention of leaks by ensuring the tank is installed and maintained properly. New methodology that uses ultrasonic testing has been developed to assist in testing the thickness of metal to identify weak spots where the tank may breach. The thickness of steel in the tanks can also have a bearing on when tanks corrode. New code requires the installation of single wall tanks of 12 gauge steel, however there are many tanks that were installed under the previous code which are single wall 14 gauge steel. The Canadian Oil Heat Association estimates that 80 percent of the tanks in homes today are thinner 14 gauge steel.

Table 8.2 below based on information provided by the Canadian Oil Heat Association, shows the other factors that present potential for leaks.

Table 8.2: Home Heating Oil Spills

Item	% of Total Spills
Overfilling of tanks during fuel delivery	11
Piping connecting tank to furnace	29
Corrosion of tanks	45
Other (installation error/vandalism, etc)	15

Working Group Meetings

To provide input on policy development a working group was formed to discuss various policy concepts and options. This group was comprised of heating oil contractors, fuel delivery agents and insurance industry representatives. A meeting was held on February 18, 2011 where policy options were discussed and input received.

The experts on the working group agreed that fuel tanks located outside failed at a much higher rate than tanks found in basements. This fact was forwarded to the Ministry of the Environment and it is anticipated that above grade tanks will be considered as significant threats in the next source protection planning cycle.

During discussions, it was noted that there has been vast improvement in the regulations for the installation of new heating oil systems and the licensing of contractors. The need to educate homeowners as well as industry professionals about maintenance and best management practices was identified. The overall opinion was that, with changes in regulations, available technology and best management practices, the threat from heating oil tanks could be managed. Quinte Conservation staff attended training from the Canadian Oil Heat Association to learn about best practices of fuel oil storage tank installation.

Policy Development

The Committee identified that outdoor above grade tanks posed a greater risk than tanks in the basement but the outdoor tanks were not considered significant threats under current prescribed drinking water threats. The Committee originally decided the best option would be an education and outreach approach to make owners of tanks aware of the requirement to maintain and inspect tanks annually. However, the experts on the Fuel Working Group were concerned that that was not a strong enough approach. Much consideration was then given to the development of risk management plans for homeowners with oil tanks. The plans would include maintenance and inspection requirements, as well as the use of double bottom or double wall tanks.

Based on all the information received and reviewed it was determined that the best available options were to manage the threat from existing fuel tanks in the WHPA A through risk management plans and to prohibit future tanks in the WHPA A to avoid increasing the number of drinking water threats. It was also determined that education and outreach would be the only tool used to address the threat from home heating oil tanks in the WHPA B (PolicyG-1 and Policy 15-4).

Policy 15-1-F: Prohibition of the Future Handling and Storage of Fuel (storage tanks greater than 250 and less than 2,500 litres below grade and greater than 2,500 litres above and below grade)

The intent of this policy is to eliminate the likelihood of future fuel oil spills in the most vulnerable areas by prohibiting new fuel storage tanks in the applicable vulnerable areas where they would be a significant drinking water threat.

The Committee wrote a policy to prohibit future fuel storage in the applicable vulnerable areas after considering spill response time and the potential for fuel to contaminate municipal drinking water supplies. There are regulations in place to address the handling and storage of large volumes of fuel (e.g. gas station); however, the Committee considered that the existing protection under these regulations was not adequate to protect the most vulnerable zones closest to municipal wells and intakes. Regulations also exist for small fuel tanks (e.g. residential); however, the Committee considered that the requirement for inspections, leak detection, etc., were not sufficient to address the risk. Therefore, the Committee determined that prohibition was the safest and best tool to eliminate future threats. To prevent the release of fuel in

vulnerable areas, future fuel storage tanks are prohibited through Section 57 of the *Clean Water Act, 2006*, where they would be significant threats.

In pre-consultation comments the Ministry of Natural Resources stated that prohibition of fuel tanks in WHPA B would be too restrictive for aggregate operators. The Committee determined that the policy would not be changed as it only prohibits large fuel tanks and development of aggregate operations can occur in less vulnerable areas.

Through pre-consultation TSSA indicated that they cannot uphold the prohibition of fuel tanks. This heightened the need for the Committee to include this policy.

Policy 15-2-E & F: Management of Existing and Future Handling and Storage of Fuel (above grade storage tanks greater than 250 and less than 2,500 litres) – Moderate Drinking Water Threat

The intent of this policy is to ensure that adequate measures are taken to manage above grade fuel storage tanks installed in the wellhead protection area, WHPA A, where they are, or could become, a moderate drinking water threat. The policy encourages municipalities to require a higher standard of oil tank installation in the applicable area.

Fuel storage tanks have the potential to leak and cause wide spread contamination of both ground and surface water. The Committee consulted with experts in the home heating oil business and discovered that home heating oil tanks located outside and above grade fail 23 times more often than those inside the dwelling. The Committee was concerned that adequate measures be taken to prevent leaks from existing and new fuel tanks installed outside or above grade. The use of double bottom tanks installed outside is a mandatory requirement of the CSA code in most of Canada with the exception of the Province of Ontario. To minimize the potential threat, the Committee decided to recommend that double-bottom or double-walled tanks with leak protection be required for installations above grade.

In the next source protection planning cycle it is anticipated that the outdoor above grade tanks will be elevated to significant threats in the applicable zones and will therefore require risk management plans as per Policy 15-4-E.

The Ministry of the Environment commented (July, 2012) on the effective date for this policy with respect to future oil tank installations. However, it was determined that for future policies, the implementation should begin when the Plan takes effect. None of the implementing municipalities expressed this concern and so no change was made.

Policy 15-3-E: Risk Management Plan for Existing Handling and Storage of Fuel (storage tanks greater than 2,500 litres above and below grade)

The intent of this policy is to reduce the potential for adverse effects from large fuel storage tanks on municipal drinking water supplies.

The Committee determined that the development of risk management plans for large fuel storage tanks was a good policy approach because the risk management plans will consider each situation on a case-by-case basis and will incorporate existing measures that may already be used on the property.

There are only two known situations for these fuel tanks in the Quinte Region. Through consultation with the operator of a marina at a working group meeting it was reported that many best management practices to minimize risk are already mandatory requirements. The Committee also became aware of additional measures for managing the risk of leaks and spills through the recent staff review of a site plan agreement regarding the development of a gas station. This information assisted in providing the Committee with assurance that risk management plans would assist in managing the threat from existing activities.

The Committee expected that the financial implications of ensuring the threats are managed properly will be reasonable.

In their comments on the Draft Plan the Ministry of Agriculture Food and Rural Affairs requested a prohibition on farms for fuel related activities in the IPZ 1 with score of 10. This request would affect Ameliasburgh, Point Anne and Picton. The Committee specified that it wanted to be fair and equitable and treat fuel related activities the same regardless of land use and so the Committee determined that for the IPZ 1s a risk management plan would be a preferable approach.

Policy 15-4-E: Risk Management Plan for Existing Handling and Storage of Fuel (storage tanks greater than 250 and less than 2,500 litres below and partially below grade)

The intent of this policy is to reduce the potential for adverse effects from existing small fuel storage tanks (greater than 250 and less than 2,500 litres) on municipal drinking water supplies.

The Committee specified the development of risk management plans for small fuel storage tanks as the policy approach as the risk management plans will consider each situation on a case-by-case basis and will incorporate any existing measures that are already being used on the property. The Committee initially chose education and outreach as the tool to manage this activity. However, upon consultation it was decided that this approach was not adequate to address the activity in close proximity to municipal wells. Therefore risk management plans were chosen as the preferred tool to manage this threat in the WHPA A.

The Committee recommended that a risk management plan template, for landowners with home heating oil tanks in the WHPA A, be developed that will outline the minimum requirement for risk management plans and include inspection requirements. This will assist in minimizing the cost of implementing the policy.

In their comments on the Draft Plan the Ministry of Agriculture Food and Rural Affairs requested a prohibition on farms for fuel related activities in the IPZ 1 with score of 10. This request would

affect Ameliasburgh, Point Anne and Picton. The Committee specified that it wanted to be fair and equitable and treat fuel related activities the same regardless of land use and so the Committee determined that for the IPZ 1s a risk management plan would be a preferable approach.

As the Committee had originally considered a targeted education and outreach program to be effective to address threats from home heating oil, the Committee determined that it was appropriate for the Source Protection Plan to specify education and outreach to address the threats from home heating oil tanks within the WHPA B. The Committee determined that education and outreach within the WHPA B would promote the achievement of the objectives of the Plan that the threat is managed and therefore ceases to be/never becomes significant within the WHPA B. Further, the Committee was of the opinion that a policy to regulate the activity of handling and storage of fuel for storage tanks greater than 250 and less than 2,500 litres below and partially below grade in in the WHPA B was not necessary to achieve those objectives (O. Reg. 287/07 ss. 40(2)(6)).

Policy 15-5-E & F: Restricted Land Use Designation Prohibition and Risk Management Plans for Handling and Storage of Fuel

The intent of this policy is to assist municipalities in identifying areas where storage of fuel activities are prohibited or require risk management plans.

The Committee specified this policy approach to assist municipalities in creating their own internal administrative processes to ensure compliance with the Plan. In this way the municipality can 'red flag' the vulnerable areas where Plan policies prohibit fuel tanks or require risk management plans under Sections 57 and 58 of the *Clean Water Act, 2006*.

Restricted land use policies require municipalities to screen planning applications and applications under the Building Code to determine if the proposed activities are subject to Section 57 (Prohibition) or Section 58 (Risk Management Plan) policies. The purpose is to help municipalities avoid inadvertently approving an application without complying with Source Protection Plan policies first. Restricted land use policies (through Section 59 of the *Clean Water Act, 2006*) reference the land use types where applications need to be screened and the types of proposed activities (e.g. storage of fuel) that are subject to the screening. If an application is made that is prohibited by this plan then the application cannot proceed. If an application is made for an activity that is subject to a risk management plan then the proponent must work with the risk management official to finalize a risk management plan before the application can proceed.

The Committee designated this policy as applying to both existing and future activities. They identified that restricted land use will assist municipal staff when, during the fulfillment of other duties, they may encounter an existing activity that is prohibited or requires a risk management plan. The staff member may then notify the risk management official in order that the threat is addressed as required in the Plan.

Policy 15-6-E: Code Review for Handling and Storage of Fuel (storage tanks greater than 250 litres, installed above or below grade)

The intent of this policy is to assess the effectiveness of the policies to protect sources of municipal drinking water from potential spills or leaks of fuel oil from commercial scale activities such as gas stations and marinas, through the review of information from the Ministry of Consumer Services. It requires the Ministry and the Technical Standards and Safety Authority (TSSA) to recognize the vulnerable zones surrounding public water sources in the execution of their work.

The Committee created this policy because they identified a gap in the availability of information about spills related to large fuel storage tanks. For instance, the Ministry of the Environment is only notified if a spill goes off a property. The Committee noted that information about spills is vital to adequately protect vulnerable areas. Information and statistics available over time may gauge existing policy effectiveness and show trends that can point to new actions that may be taken by the Committee to improve the effectiveness of source protection policies. The reports required by this policy include details on inspections and other items such as unsafe conditions, fuel spills, or other compliance issues and were not considered to create an onerous financial impact on the reporting agency. Initially this policy named the Technical Standards and Safety Authority as the implementing body, however as a result of pre-consultation the implementer was changed to the Ministry of Consumer Services.

Comments received from the Ministry of Consumer Services (MCS) and the Technical Standards and Safety Authority (TSSA) on the Draft Plan stated that neither MCS nor TSSA have an environmental protection mandate and that source water protection falls beyond the respective expertise and authority of MCS and TSSA. Comments requested that the Committee consider the existing regulatory framework for fuels works to manage the risk to source water and that, in the opinion of MCS and TSSA, the government of Ontario has no plans to review that regulatory framework. The letter referred the Committee to the Ministry of the Environment for provincial action to protect source water and encouraged the Committee to establish measures at the local level and assign responsibility to the appropriate municipality. The letter further indicated that information about licensed fuel storage and handling facilities and training sessions on fuel oil tanks could be provided for a fee.

The Committee identified three options in reviewing the comments from MCS and TSSA and considered that the policy could be omitted, left as is, or modified. During discussions, the Committee expressed concern that the Draft Plan comments from MCS and TSSA illustrated a lack of understanding of the scope and importance of the *Clean Water Act, 2006* and also that action was required within the provincial government to ensure that all ministries are aware of and heed the requirements of the *Clean Water Act, 2006* to protect sources of public drinking water. The Committee further identified that compliance with the Act is not only the job of the Ministry of the Environment and municipalities. The Committee identified that MCS and TSSA have an important role in fuel management and therefore it was appropriate to create a policy requiring their participation in protecting water sources.

The Committee noted that gaps exist in the “existing regulatory framework for fuel works” as described by MCS and TSSA, and that simple improvements could be made to the framework so as to improve the protection of water sources. As an example of such simple improvements, the Committee noted that actions such as geo-referencing the actual location of fuel storage facilities rather than recording such sites by property address only, would be an easy low cost improvement. Another gap identified by the Committee in the “existing regulatory framework for fuel works” was a number of costly and detrimental leaks and spills that have occurred in the Quinte Region since 2007, one within the IPZ 1 of a municipal water source. The Committee also noted that many people remain unaware of the requirement for regular inspection of fuel tanks.

The Committee identified, that the government of Ontario, in creating and passing the *Clean Water Act, 2006*, had clearly demonstrated that everyone in Ontario has a role to play in protecting water sources. The Committee noted that there is an approved and accepted scientific report (Updated Assessment Report, 2011) that shows where and how drinking water sources are vulnerable and that, now that the information is known and available there is a duty to act. The Committee further determined that it is important for MCS and TSSA to recognize the vulnerable zones surrounding water sources identified in the Updated Assessment Report, 2011 and, as required by this policy in the Plan.

As a result of all the above determinations the Committee did not change the implementer of this policy, nor make the changes requested by MCS and TSSA.

On August 1, 2012, comments received from MCS and TSSA requested that they be removed as implementers of this policy. The reasons given were that they do not have an environmental mandate and that they could not provide the requested information because of their Information and Privacy Policy. They also suggested that the Committee achieve its objectives through the Part IV tools. The Committee previously received similar comments and after careful consideration chose to include this policy because:

- The policy only asks MSC to beware of the vulnerable zones and to provide any information that they or TSSA have related to concerns or non compliance in the applicable areas;
- The Information and Privacy Policy is not a concern because the Source Protection Authority is also bound by the Municipal Freedom of Information and Protection of Privacy Act and the information could be presented in such a way to protect personal privacy; and
- The Committee has written policies to address fuel threats using Part IV powers but the policy pertaining to MSC and TSSA is meant to supplement other policies and ensure that all the ministries and agencies involved in the storage and handling of fuel are aware of the goals and objectives of the Source Protection Plan.

In January 2014 comments on the Proposed Plan, the Ministry of the Environment noted that this policy was not a permissible policy under the *Clean Water Act* as currently written as it did not address a significant drinking water threat, nor meets the intent of section 22 of O. Reg.

287/07. Comments stated that the policy, as worded in the Proposed Plan would be more applicable to a monitoring policy because it asks MCS to provide information to assess the effectiveness of risk management measures to address fuel storage.

The comments state further that with regards to MCS providing spill, inspection and non-compliance information to the Source Protection Authority, the Ontario Installation Code for Oil-burning Equipment currently requires fuel spills or leaks to be reported to the Ministry of the Environment's Spills Action Centre; therefore, requiring MCS to report on fuel spills and leaks would establish a costly and redundant system that would duplicate an already existing mechanism that has proven highly cost-effective. In addition, TSSA inspections and investigation reports outlining any non-compliances and orders issued are currently available as per TSSA's access to information and privacy policy. Similarly, any site assessments and remediation reports prepared following clean up of spills and leaks by environmental engineering firms retained to oversee clean up are available through TSSA's access to information and privacy policy.

As a result, the Ministry recommended the revision of the policy to align with the Source Protection Committee's intent. MCS acknowledged that the code review process is the appropriate vehicle for Source Protection Committees to provide recommendations and suggested revisions to the codes. The fuel codes are developed by Code Committees made up of technical experts representing a broad spectrum of stakeholders including industry, regulatory authorities and consumers.

The policy wording was revised to recognize and encourage the incorporation of source water information in general terms to allow the policy to stay relevant over time and recognize the Code Committee's role in the code review and development process. As a result of these comments, the Committee revised the policy wording to strongly encourage the consideration of source water protection when codes are reviewed. The Committee also strongly encouraged TSSA to continue to include information regarding new code requirements and leak resistant technology in its communications products and request that fuel suppliers, promote to their customers, the importance of regular maintenance as described in Section 13 of the Ontario Installation Code for Oil-burning Equipment, to increase awareness of and compliance with this requirement (e.g. a reminder printed on the fuel bill). The policy title was updated to reflect these changes.

8.11 Dense Non-Aqueous Phase Liquids (DNAPLs) Policies Approach

Dense non-aqueous phase liquids (DNAPLs) are chemicals that are heavier or denser than water and do not dissolve easily in water. When spilled on the ground, these substances sink below the water table, creating contamination of the groundwater that can last for decades or centuries. DNAPLs are extremely difficult to locate and remove from below the ground and complete cleanup is considered unattainable.

Some common DNAPLs are dry cleaning chemicals, cleaning and degreasing solvents and varnishes. DNAPLs are used widely in many industries and are found in smaller quantities in common household products like adhesives and cleaners. The most common DNAPLs are

chlorinated solvents, for example, Trichloroethylene (TCE), which is used to clean metal products, and is also found in paint removers or strippers, spot removers and rug-cleaning fluids.

Because they are persistent in the environment, DNAPLs pose a threat at greater distances from wells than some other chemical threats. DNAPLs are also considered a very high risk based on the likely inability to remediate the aquifer and the time needed to replace a well. The best way to protect the water source is to make sure that DNAPLs do not get into it in the first place, which is the goal of source water protection. The rules state that the presence of DNAPLs in any quantity in the WHPA A, B and C are a threat.

The Committee created policies that call for the use of risk management plans, restricted land use and prohibition. In addition, the Committee decided that an education and outreach program will increase awareness in vulnerable areas regarding the importance of protecting drinking water from contamination from DNAPLs. It will encourage and promote, through voluntary action, the proper storage and handling of DNAPLs. The municipality will be the implementer of these policies.

The Committee decided that the commercial and industrial storage and handling of DNAPLs, now and in the future, will be prohibited in the vulnerable area immediately surrounding a municipal well (WHPA A).

In other areas risk management plans will be required for existing commercial and industrial handling and storage of DNAPLs. The plans will consider each property on a case-by-case basis and incorporate any other existing measures that are already in place. The risk management official will work with the property or business owner to develop a plan to ensure the safe handling and storage of DNAPLs.

Restricted land use calls for municipalities to 'red flag' the areas where the handling and storage of DNAPLs are either prohibited or require a risk management plan. This will assist the municipalities to create their own internal process to ensure compliance with the Plan.

The Committee also developed a related policy (Policy G-7-E & F) that calls for municipalities to provide opportunities for residents to dispose of hazardous materials in an appropriate manner such as through household hazardous waste collection programs.

Policies following address the handling and storage of DNAPLS in commercial or industrial use but not in private residential households. In comments on the Proposed Plan the Ministry of the Environment noted that the DNAPLs are a significant threat at any quantity in WHPA A, B and C and that documentation was required in the Explanatory Document regarding how the Committee had addressed the threat from DNAPLS in private residential households.

The Committee determined that it was not appropriate or practical for the Source Protection Plan to prohibit or require risk management plans for small quantities of DNAPLs in products like nail polish remover or furniture stripper that may be found in private residential properties. The Committee determined that a more effective approach would be a targeted education and outreach program to encourage its proper use and application as called for in policy G-1. This

targeted education and outreach complements policy G-7-E & F which encourages municipalities to provide opportunities for residents to properly dispose of household hazardous waste.

The Committee was, therefore, of the opinion that these two policies (G-1 and G-7-E & F) will adequately address the threat from small quantities of DNAPLs for household use where it is a significant threat and that these policies if implemented will promote the achievement of the objectives of the Plan that the threat ceases to be/never becomes significant. Further, the Committee was of the opinion that a policy to regulate or prohibit the activity for DNAPLs in private residential households was not necessary to achieve those objectives (O. Reg. 287/07 ss. 40(2)(6)).

Policy 16-1-E & F: Prohibition of Dense Non-Aqueous Phase Liquids (DNAPLs)

The intent of this policy is to ensure that no commercial or industrial handling and storage of dense non-aqueous phase liquid (DNAPL) occurs in the WHPA A (100 metres radius around the well) where it is or would be a significant drinking water threat.

The Committee considered that given the serious nature of the impact to the drinking water source from the entry of dense non-aqueous phase liquids (DNAPLs), it is imperative to prohibit the handling and storage of commercial or industrial DNAPLs in the WHPA A. As the WHPA A is the most vulnerable zone around a municipal drinking well and no other tool could guarantee that DNAPLs will not be stored in this area, prohibition was determined to be the most appropriate tool. Prohibition will ensure that DNAPLs cease to be a significant threat within the WHPA A. WHPA As are small areas that contain very few properties. The Committee determined it was reasonable that the development of any new commercial/industrial facilities could be directed outside the vulnerable areas and any existing storage could be moved to an area on the property that was not within the WHPA A.

In comments on the Proposed Plan, the Ministry of the Environment noted that DNAPLs are a significant drinking water threat at any volume and in any land use. Therefore, the handling and storage of DNAPLs in a residential setting must be addressed.

DNAPLs are a significant threat at any quantity in WHPA A, B and C. However, the Committee determined that it was not appropriate for the Source Protection Plan to prohibit or require risk management plans for small quantities of DNAPLs that may be found in private residential households. The Committee determined that a more effective approach would be a targeted education and outreach program to encourage proper storage and disposal of small quantities of DNAPLs that may be found in private residential households. This targeted education and outreach complements policy G-7-E & F which encourages municipalities to provide opportunities for residents to properly dispose of household hazardous waste.

The Committee was of the opinion that these two policies (G-1 and G-7-E & F) will adequately address the threat from small quantities of DNAPLs in private residential households where they are a significant threat and that these policies if implemented will promote the achievement of the objectives of the Plan that the threat ceases to be / never becomes significant. Further, the

Committee was of the opinion that a policy to regulate or prohibit the activity for small quantities of DNAPLs in private residential households was not necessary to achieve those objectives (O. Reg. 287/07 ss. 40(2)(6)).

Policy 16-2-E & F: Risk Management Plan for Managing the Handling and Storage of Dense Non-Aqueous Phase Liquids (DNAPLs)

The intent of this policy is to reduce the potential for adverse effects from the handling and storage of dense non-aqueous phase liquids (DNAPLs) outside the WHPA A where the activity is prohibited by Policy 16-1-E & F.

The Committee specified the development of risk management plans for commercial and industrial handling and storage of DNAPLs as a policy approach because risk management measures can be identified in the plan that will manage the risks and will require compliance by the landowner and operator of the commercial operation. These plans could address practices including containment, training, and spill contingency plans. The risk management plans will consider each property on a case-by-case basis, will incorporate any other existing measures that are already being used on the property, and will require regular inspections as part of the plan.

In January 2014 comments on the Proposed Plan, the Ministry of the Environment noted that DNAPLs are a significant drinking water threat at any volume and in any land use and so the handling and storage of DNAPLs in a residential setting must be addressed.

DNAPLs are a significant threat at any quantity in WHPA A, B and C. However, the Committee determined that it was not appropriate for the Source Protection Plan to prohibit or require risk management plans for small quantities of DNAPLs that may be found in private residential households. The Committee determined that a more effective approach would be a targeted education and outreach program to encourage proper storage and disposal of small quantities of DNAPLs that may be found in private residential households. This targeted education and outreach complements policy G-7-E & F which encourages municipalities to provide opportunities for residents to properly dispose of household hazardous waste.

The Committee was of the opinion that these two policies (G-1 and G-7-E & F) will adequately address the threat from small quantities of DNAPLs in private residential households where they are a significant threat and that these policies if implemented will promote the achievement of the objectives of the Plan that the threat ceases to be / never becomes significant. Further, the Committee was of the opinion that a policy to regulate or prohibit the activity for small quantities of DNAPLs in private residential households was not necessary to achieve those objectives (O. Reg. 287/07 ss. 40(2)(6)).

Policy 16-3-E & F: Restricted Land Use for Handling and Storage of Dense Non-Aqueous Phase Liquids (DNAPLs)

The intent of this policy is to assist municipalities in identifying areas where the handling and storage of dense non-aqueous phase liquids (DNAPLs) is prohibited or requires a risk management plan.

The Committee specified this policy approach to assist municipalities in creating their own internal administrative processes to ensure compliance with the Plan. In this way the municipality can ‘red flag’ the vulnerable areas where Plan policies prohibit the handling and storage of DNAPLs or require risk management plans under Sections 57 and 58 of the *Clean Water Act, 2006*.

Restricted land use policies require municipalities to screen planning applications and applications under the Building Code to determine if the proposed activities are subject to Section 57 (Prohibition) or Section 58 (Risk Management Plan) policies. The purpose is to help municipalities avoid inadvertently approving an application without complying with Source Protection Plan policies first. Restricted land use policies (through Section 59 of the *Clean Water Act, 2006*) reference the land use types where applications need to be screened and the types of proposed activities that are subject to the screening. If an application is made that is prohibited by this plan then the application cannot proceed. If an application is made for an activity that is subject to a risk management plan then the proponent must work with the risk management official to finalize a risk management plan before the application can proceed.

The Committee designated this policy as applying to both existing and future activities. They identified that restricted land use will assist municipal staff when, during the fulfillment of other duties, they may encounter an existing activity that is prohibited or requires a risk management plan. The staff member may then notify the risk management official in order that the threat is addressed as required in the Plan.

8.12 Organic Solvents Policies Approach

A solvent is a substance capable of dissolving another substance to form a solution. Organic solvents contain carbon as their base (petroleum based). Organic solvents are used routinely in commercial industries. They are useful because they can dissolve oils, fats, resins, rubber, and plastics. For example, solvents can be used to dissolve dirt on machinery. They are found in paints, varnishes, lacquers, adhesives, glues, and degreasing/cleaning agents, and in the production of dyes, polymers, plastics, textiles, printing inks, agricultural products, and pharmaceuticals. Many organic solvents are recognized as carcinogens, reproductive hazards and neurotoxins. The specific organic solvents to which to policies apply are set out in the Plan.

The Committee created policies that call for the use of risk management plans, prohibition and restricted land use. In addition, the Committee decided that an education and outreach program (Policy G-1) will increase awareness in vulnerable areas regarding the importance of protecting drinking water from contamination from organic solvents. It will encourage and promote, through

voluntary action, the proper handling and storage of organic solvents. The municipality will be the implementer of these policies.

Policy 17-1-F: Prohibition for Future Handling and Storage of Organic Solvents

The intent of this policy is to ensure there are no commercial or industrial organic solvent storage facilities in the vulnerable areas where it would be a significant drinking water threat.

The Committee determined that given the risk posed by the handling and storage of organic solvents it is imperative to prohibit the handling and storage of commercial or industrial organic solvents in the vulnerable areas where they would become significant threats. The use of any other tool, such as risk management or education and outreach would manage the threat but given that the vulnerable areas this policy applies to are the most vulnerable around drinking water supplies, prohibition was determined to be the only tool that will guarantee that the handling and storage of organic solvents ceases to be a significant threat. Risk management plans could address items of operating practice but the possibility for leaks or spills would still exist. The Committee determined that as this policy is for future storage facilities, development of any new facilities could be directed outside the vulnerable areas.

The Committee identified that the potential impact resulting from a spill of these dangerous chemicals justifies their prohibition. The resulting cost of this policy is negligible because it applies to future activities.

Policy 17-2-E: Risk Management Plan for Handling and Storage of Organic Solvents

The intent of this policy is to reduce the potential for adverse effects from the handling and storage of organic solvents on municipal drinking water supplies.

The Committee specified the development of risk management plans for commercial and industrial handling and storage of organic solvents as a policy approach because risk management measures can be identified in the plan that will manage the threat and that will require annual inspections. The risk management plans will consider each property on a case-by-case basis, be created with the landowner, address items of operating practice, and incorporate measures already used on the property.

The Committee identified that the cost of implementing this policy would outweigh the cost of remediation of contamination resulting from a spill.

Policy 17-3-E & F: Restricted Land Use for Handling and Storage of Organic Solvents

The intent of this policy is to assist municipalities in identifying areas where the handling and storage of organic solvents is prohibited or requires a risk management plan.

The Committee specified this policy approach to assist municipalities in creating their own internal administrative processes to ensure compliance with the Plan. In this way the municipality can 'red flag' the vulnerable areas where Plan policies prohibit the handling and storage of organic solvents or require risk management plans under Sections 57 and 58 of the *Clean Water Act, 2006*.

Restricted land use policies require municipalities to screen planning applications and applications under the Building Code to determine if the proposed activities are subject to Section 57 (Prohibition) or Section 58 (Risk Management Plan) policies. The purpose is to help municipalities avoid inadvertently approving an application without complying with Source Protection Plan policies first. Restricted land use policies (through Section 59 of the *Clean Water Act, 2006*) reference the land use types where applications need to be screened and the types of proposed activities that are subject to the screening. If an application is made that is prohibited by this plan then the application cannot proceed. If an application is made for an activity that is subject to a risk management plan then the proponent must work with the risk management official to finalize a risk management plan before the application can proceed.

The Committee designated this policy as applying to both existing and future activities. They identified that restricted land use will assist municipal staff when, during the fulfillment of other duties, they may encounter an existing activity that is prohibited or requires a risk management plan. The staff member may then notify the risk management official in order that the threat is addressed as required in the Plan.

8.13 Airplane De-Icing Approach

The major concern with the practice of airplane de-icing is that runoff not properly managed can contaminate surface water or groundwater. There are no existing aircraft de-icing activities identified that are significant threats to municipal drinking water supplies. The likelihood of this happening is small but nevertheless the Plan needed to address the possibility. In the future if an airport with de-icing facilities is proposed in a WHPA A or B, or an IPZ 1 or 2 with a vulnerability score of 9 or higher it will be considered a significant threat.

Policy 18-1-F: Management of Runoff Containing Airplane De-icing Fluid

The intent of this policy is to ensure that chemicals used in the de-icing of aircraft do not contaminate municipal sources of drinking water.

The Committee looked at a number of considerations when developing the approach to address aircraft de-icing. Airplane de-icing is an important safety activity and is currently regulated under the Canadian Aviation Regulations. Airplane de-icing fluid management plans are used to mitigate the risk of aircraft de-icing.

The Committee considered prohibition but if an airport was ever built in a vulnerable area prohibition would deprive that airport of an important safety function. The Committee considered

land use planning to prohibit airports from being built in those vulnerable zones but a municipality would likely never recommend an airport in that location.

The approach chosen was for the municipality to be involved in the development of the airplane de-icing fluid management plan to ensure that the airplane de-icing fluid management plan recognizes and addresses concerns related to the drinking water supply. This could include the storage, handling and use of de-icing fluid as well as emergency contingency plans in the event of a spill.

This approach will ensure that the operators of the de-icing facility are aware of the vulnerable areas and that proper emergency measures are in place in the event of a containment breach. A specify action policy was chosen to achieve this result. In the unlikely event that an airport was considered in Well Head Protection Areas or Intake Protection Zones the policy requires that the municipality shall work with all parties responsible for the use of de-icing fluid to ensure that the required measures are in place.

Municipalities would be involved in the planning and development of an airport on many levels so taking the extra step of being involved in preparing the airplane de-icing fluid management plan would be a reasonable, workable and affordable solution.

In comments on the Proposed Plan, the Ministry of the Environment noted that Transport Canada had recently indicated they do not have a role in the approval of glycol plans as they are removed from the day to day management of airport facilities. Given this, the Committee changed the policy text to replace “Transport Canada” with “airport authority, operator, de-icing service provider, air carriers, companies and or individuals” responsible to ensure that concerns with respect to de-icing fluid management and the drinking water supply are addressed.

Appendix

Appendix A: Ministry of the Environment Comments on the Proposed Source Protection Plan

Ministry of
the Environment

Source Protection Programs
Branch

14th Floor
40 St. Clair Ave. West
Toronto ON M4V 1M2

Ministère de
l'Environnement

Direction des programmes de protection
des sources

14^e étage
40, avenue St. Clair Ouest
Toronto (Ontario) M4V 1M2



January 6, 2014

Mr. Terry Murphy
General Manager/Secretary Treasurer
Quinte Conservation Authority
2061 Old Highway 2, RR #2
Belleville, Ontario K8N 4Z2

Mr. Max Christie
Chair, Quinte Region Source Protection Committee
79 River Road
Napanee, Ontario K7R 3H3

Dear Mr. Murphy and Mr. Christie:

Thank you for submitting the Proposed Source Protection Plan for the Quinte Region on August 7th, 2012. We have completed our review of the submitted proposed plan and we thank you, the committee and the source protection authority staff for all your hard work.

This letter provides you with the recommended revisions and next steps. I understand that staff from my office have been in contact with SPA staff to discuss the next steps and where appropriate the outcome of these discussions have been incorporated here.

The purpose of these recommended revisions is to help ensure the plan and Explanatory Document (ED) are compliant with the legislation and that the policies in the plan are appropriate and implementable. Please note that the ED will require revision to reflect changes made to the plan.

We encourage you to assess the impacts of the revisions and to discuss them with relevant stakeholders as you deem appropriate. A brief summary of any further consultation or informal notifications you carry out as a result of these revisions to the plan should be submitted as well.

Please keep in contact with your Liaison Officer, Wendy Lavender as you work towards addressing these revisions.

Please also note that you do not need to update the policies as they appear in the policy database at this time. We will work with you at a later date to determine if and how any future changes to the database entries are made.

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Thank you again for your strong efforts to protect Ontario's source water. Your committee members and staffs dedication and commitment to achieve this milestone is valued and appreciated.

Sincerely,



Ling Mark
Director
Source Protection Programs Branch
Ministry of the Environment

cc.
Keith Taylor, Project Manager, Quinte Source Protection Region
Wendy Lavender, Liaison Officer, SPPB
Lul Hassan, Review Coordinator, SPPB
Melanie Ward, Manager, Source Protection Approvals

Appendix A. Recommended Revisions for Quinte's Proposed Source Protection Plan

1. With regards to monitoring policies, the province is committed to working with the source protection authorities and source protection committee in the Quinte Region to deliver on a reporting framework to enable consistent reporting on the environmental outcomes of the program. As you know, the Minister will in turn have to report on progress and program effectiveness.

Source protection committees have identified a wide range of reporting requirements. To enable consistent reporting, we are asking committees to make their monitoring policies more outcome-based. For example, *"The ministry shall prepare an annual summary of the actions it has taken to achieve the outcomes of the source protection plan policies and make that report available to the SPA"*. Where the committee has specific, detailed reporting requirements, we request that the committee revise the language to make these "recommendations" (i.e., monitoring policies in policies 3-4-E&F, 1-2-E, G-2-F, and 5-1-F).

The province is developing performance metrics, informed by input from the source protection authorities and committees, which will help formalize the provincial reporting framework. We will continue to build additional reporting elements over time to address reporting needs and make this information available publicly.

As you consider revising your monitoring policies, it may be helpful for you to know that the province is already delivering on some of the reporting elements through our existing Access Environment. This is a geospatially enabled database allows the public to access any Environmental Compliance Approval issued since the late 1990s - <http://ontario.ca/im81>. We will continue to work with source protection authorities to look at opportunities to increase access to information to address local reporting needs.

In addition, OMAF has requested that monitoring policies directed at them (i.e., policy 3-4-E&F) be changed to request them to provide the Source Protection Authority with an annual summary of the actions taken to implement a specific policy, rather than including specific reporting requirements. Please consider making this change to the policy.

2. Policy 2-4-E directs MOE to include specific terms and conditions in environmental compliance approvals. As written, the policy may not achieve the environmental outcomes intended and may not be relevant over time. Specifically the policy would prevent the province from considering more approaches moving forward and may not allow the consideration of local conditions.

Please amend your policy to focus on the intended outcome of the policy. Where the SPC wants to include specific terms and conditions, please amend the policy to indicate the province "should consider including", rather than requiring specific terms and conditions in prescribed instruments. MOE is developing outcome-

based business processes for issuing or amending prescribed instruments for drinking water threat activities. In developing this process, we are considering the terms and conditions proposed by the source protection committees.

3. In discussions with SPPB staff, it was indicated that the SPC had in fact intended to address the handling and storage of DNAPLs and the non-agricultural application of commercial fertilizer in a residential setting using Policy G-1, the general education and outreach policy.

If you are utilizing an education/outreach/ incentive policy, section 22(7) of the Act requires that where education/outreach is the only policy set out in the plan to deal with significant drinking water threats (i.e. handling and storage of DNAPLs and the non-agricultural application of commercial fertilizer on residential properties), a statement is required in the ED that the SPC is of the opinion that:

- i) the policy, if implemented, will promote the achievement of the objectives of the plan that the threat ceases to be / never becomes significant;
- ii) a policy to regulate or prohibit the activity is not necessary to achieve those objectives (O. Reg. 287/07 ss. 40(2)(6)).

Please add the statement and additional rationale to the ED to meet this regulatory requirement if you intend to use G-1 to address significant threats.

4. Policies G-4-E and G-6-F are transport pathway policies that have identified the MOE as the implementing body addressing well decommission/upgrading and inspections of wells, respectively. The oversight of wells is an important part of the Government of Ontario objectives to protect Ontario's aquifers and groundwater supplies used by Ontarians for present and future drinking water users. The MOE continues to be responsible for all compliance and enforcement activities related to the construction, maintenance and abandonment of wells.

The ministry has been asked by six committees to undertake different approaches to further enhance the wells program. The MOE has reviewed the committees' recommendations and timelines, and requesting that the policy be revised to allow for a provincially consistent approach that we believe will meet the intent of the original local policy.

5. The Clean Water Act and associated legislation requires that source protection plans include policies to address significant threats and meet the Ontario Regulation 287/07 section 22 test of "cease to be a significant drinking water threat". Policy 15-6-E is not a permissible policy under the Clean Water Act (CWA) as it does not address a significant drinking water threat, nor meet the intent of section 22 of O. Reg. 287/07. The policy, as currently worded would be more applicable to a monitoring policy because it asks MCS to provide information to assess the effectiveness of risk management measures to address a fuel.

In addition, with regards to MCS providing spill, inspection and non-compliance information to the Source Protection Authority, the Ontario Installation Code for Oil-burning Equipment currently requires fuel spills or leaks to be reported to the MOE's Spills Action Centre; therefore, requiring MCS to report on fuel spills and leaks would establish a costly and redundant system that would duplicate an already existing mechanism that has proven highly cost-effective. In addition, TSSA inspections and investigation reports outlining any non-compliances and orders issued are currently available as per TSSA's access to information and privacy policy. Similarly, any site assessments and remediation reports prepared following clean-up of spills and leaks by environmental engineering firms retained to oversight clean up are available through TSSA's access to information and privacy policy.

As such, we recommend revisions to policy 15-6-E to align with the source protection committee's intent. MCS acknowledged that the code review process is the appropriate vehicle for source protection committees to provide recommendations and suggested revisions to the codes. The fuel codes are developed by Code Committees made up of technical experts representing a broad spectrum of stakeholders including industry, regulatory authorities and consumers.

Revising the policy wording to recognize and encourage the incorporation of source water information in general terms allows the policy to stay relevant over time and recognizes the Code Committee's role in the code review and development process.

6. Policies 1-1-F (PI) and 1-3-F (LUP) prohibit future waste disposal sites or the expansion of an existing waste disposal site while policy 1-2-E is a PI policy intended to manage existing waste disposal sites.

We would like to ensure that you are aware of how these policies/tools will work on the ground during implementation and that you consider whether you have used appropriate tools to address this drinking water threat.

First, the waste threat includes ten sub-categories as per the Table of Circumstances. The PI (i.e., Environmental Compliance Approval (ECA) under the Environmental Protection Act (EPA)) that addresses waste is available for seven of the ten waste sub-categories. For the remaining three waste sub-categories, Ontario Regulation (O.Reg.) 347 under the EPA provides exemptions from requiring an ECA for certain activities where the waste is generated. However, these three sub-categories are still identified as significant threats to sources of drinking water under the Clean Water Act (CWA) for facilities that generate this waste and store it on site. The circumstances where an ECA is typically not available for these three waste sub-categories are:

1. Polychlorinated biphenyls (PCBs);
2. Storage of hazardous waste or liquid industrial waste; and
3. Storage of wastes described in clause (p), (q), (r), (s), (t), or (u) of the definition of hazardous waste as defined by O. Reg. 347 (General – Waste Management).

Some examples of actual land uses that may be considered a threat under these three sub-categories include: auto mechanic/service stations that produce waste oil; salvage yards; commercial industrial/manufacturing properties that process high end photography/photo finishing, laboratories, including laboratories associated with institutions, welding works, etc.

Given the foregoing, policy 1-2-E, which uses the PI tool, does not fully cover the three sub-categories of waste. Therefore, there are no existing threat policies for waste that address existing threats of the three waste sub-categories.

We also note that in policy 1-3-F you have used LUP as a policy tool to address the future waste threats by prohibiting the establishment of new waste disposal sites where they would be significant. This policy does address the three waste sub-categories that cannot be covered by policy 1-1-F; however, depending on the types of uses that are present or planned in the vulnerable areas, using the LUP tool could pose some challenges during implementation.

LUP policy 1-3-F could broadly prohibit both the larger facilities such as landfills and transfer stations, as well as potentially all future small generators of waste, e.g., service stations and industrial uses. Given this, the source protection committee should assess how to cover all sub-categories of waste and whether policy 1-3-F is too broad, as written. For example, in rural or residential settings, where growth and development is not anticipated to occur, restricting these types of waste using LUP may be both appropriate and effective. However, if areas of growth and development are proposed, the SPC should consider the impact of prohibiting future land uses, such as commercial and industrial/employment land uses.

Please also consider if additional consultation would be required based on the changes made to the policy(ies).

7. We note that sewage policies 2-5-E (PI), 2-6-F (PI) and 2-7-E (Specify Action) may not capture all the areas where threats could be significant for the threat subcategory "Sewage System Or Sewage Works - Storage Of Sewage (E.G. Treatment Plant Tanks)". From your policy, we have interpreted this threat subcategory to be encompassed under Part b) and more specifically under "STP Storage Tanks".

Policies 2-5-E and policies 2-7-E:

The applicable areas in these policies for "...STP Storage tanks" are in IPZ 1 and 2 with vulnerability scores of 9 or higher. This captures the surface water circumstances for both pathogens and chemicals for the threat subcategory. However, these policies do not address groundwater systems.

The minimum vulnerability score is 8 for this threat subcategory to be significant in a groundwater system (chemical). Mapping indicates that all 4 of the groundwater systems in the Quinte Source Protection Area have a vulnerability score of 8 or

higher in WHPA A, B, C (Peats Point and Madoc also have a score of 8.1 in WHPA E). Therefore a policy is required to address this threat subcategory in groundwater systems.

It may be the case that none of these activities were existing threats at the time of drafting the policies; however there is the chance that following the completion of drafting the policies and prior to the plan coming into effect, such existing threats may have been established. If the SPC is reasonably sure that this threat will not come into existence between now and when the Plan takes effect then you are not required to add a policy to address this threat for groundwater systems, but this rationale needs to be clearly indicated in the Explanatory Document. However, if the SPC is not confident that there won't be any new threats established in these areas then it is necessary to ensure that the policy is applicable in all areas where the threat could be significant.

Policy 2-6-F

This policy captures all the applicable areas for "... STP Storage tanks" in IPZ 1 and 2 for both the pathogen and chemical circumstances. It also captures groundwater systems for WHPA A and B (vulnerability score of 10) in Deloro, Peats Point, Point Anne, Madoc and Tweed. However, as stated above, the minimum vulnerability score is 8 for this threat subcategory to be significant in a groundwater system (chemical). Therefore, in order for this policy to address this threat subcategory in groundwater systems it must include areas with vulnerability scores of 8 and 9 as well.

8. The MTO has provided a comment on the monitoring policy for policy 12-2-E&F. The policy is in regards to "Salt Management Plans for Application of Road Salt." The MTO has requested that the associated monitoring policy for 12-2-E&F be revised to read that the MTO will provide an up-to-date copy of their Salt Management Plan to the SPA upon request, rather than MTO being responsible for reporting annually if update/changes are made to the Plan during the previous calendar year as per the existing monitoring policy. Please consider making this change to the policy.
9. There are challenges with how the prescribed instrument policy (1-6-E&F) for existing moderate threats is presented in the plan. The current policy wording implies that all existing instruments (i.e., already issued by the ministry) for this moderate threat will be reviewed and amended as necessary to manage the risk, however this scope of review is not provided for in the CWA. Rather, once the plan takes effect, the CWA requires MOE to "have regard" to policies addressing moderate threats that are existing (activities already underway) whenever it makes (i) a decision on any new instruments and (ii) on amendments to the ECA associated with an application to change the site or operations. To address this, the timeline for this policy should state "When the Plan takes effect", and text or a footnote should be added to clarify the policy applies when decisions are made on amendments to the ECA associated with changes to the waste site or operations.

10. Various MOE Divisions have been working together in reviewing policies towards having policies that are implementable, balance the ministry's programs and mandates, and still maintain the intent of the policies. Further to the conversation Ministry staff have had with the project manager and CA staff we are providing additional context and rationale for the revision of policy G-9-F in your plan that identifies MOE as the implementing body.

MOE understands that the intent of this policy is to provide municipal drinking water system owners an opportunity to monitor and assess the potential impact of land-based activities/threats on the raw water quality. However, this does not align with the current mandate of the Drinking Water Surveillance Program (DWSP). MOE is interested in the science available in the approved Assessment Reports and would like to investigate the need to evaluate the current program in relation to the source protection science. That said, undertaking a significant expansion of the program is also likely to create a significant resource pressure. The ministry's allocation for running DWSP is quite limited, and typically systems join because they received an invitation to do so from MOE (because we have an interest in the particular system), or because a system owner independently engaged in the program. Undertaking proactive outreach of this sort could result in significant pressure to add systems to the program that we could not appropriately support given our existing allocation.

The DWSP, undertaken by the MOE's Environmental Monitoring and Reporting Branch, monitors trends and contaminant levels for a wide variety of parameters, improving our knowledge of new emerging contaminants and supporting standards and policy development. The program focuses largely on monitoring for chemicals and radionuclides that are not currently regulated and are emerging contaminants. As scientific advances identify more health impacts of chemicals and radionuclides, standards and guidelines are reassessed or developed.

11. Policy 18-1-F requires the municipality to work with Transport Canada in the management of runoff containing airplane de-icing fluid. Transport Canada has recently indicated they do not have a role in the approval of glycol plans as they are removed from the day to day management of airport facilities. Given this, the policy text should be changed to replace Transport Canada with airport authority/operator since this body is responsible for approval of glycol management plans.